ECONOMIC, SOCIAL AND LEGAL ASPECTS OF ENTERPRISE MANAGEMENT

CONTEXT OF THE POLITICAL AND ECONOMIC CRISIS

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Monika Dobska, Ryszard Kamiński

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WORLD EXPERIENCE OF CIRCULAR ECONOMY IMPLEMENTATION AND PROSPECTS FOR UKRAINE

Nataliia Pavlikha[1], **Olha Korneliuk**[2]

Abstract

The essence and principles of circular economy are studied, the advantages of the introduction of circular economy are analyzed; features of functioning of circular business models; the development of the circular economy in the countries of the European Union is studied, the prospects of introduction of the closed-cycle economy are substantiated, the influence of COVID-19 on the prospects of the circular economy development is analyzed. The advantages of the circular economy are analyzed taking into account the need to adapt to the new conditions caused by the COVID-19 pandemic.

Keywords: circular economy, circular business model, sustainable development, resource efficiency, growth strategy.

1. Introduction

Society`s desire for economic growth leads to an increase in the use of natural resources and consumption of wastes and contributes to the strengthening of anthropogenic pressure on the environment. The importance of responsible

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consumption and production is growing, but a balanced settlement of these issues requires a balanced and long-term political and economic effort focused on both production and consumption. Instead, the study of the practical basis for the implementation of the concept of circular economy in the world, including in the EU, provides a significant opportunity to solve problems of waste collection and disposal for Ukraine. Global challenges to improve waste management, according to experts, provide significant business benefits, and the introduction of circular business models enables the efficient movement of materials, energy, labour, and information to restore natural and social capital. To study the advantages, directions, and features of the circular economy of Ukraine and foreign countries it is necessary to: explore the essence and principles of a closed-loop economy; analyze the benefits of implementing a circular economy; to analyze the peculiarities of the functioning of circular business models; to study the development of the circular economy in the countries of the European Union; analyze the prospects for the introduction of a closed-loop economy; to analyze the impact of COVID-19 on the prospects for the development of the circular economy.

2. Theoretical aspects and principles of circular economics

Reducing resources and increasing waste and pollution can increase threats to human well-being and well-being, as well as to business, competitiveness, profits, and business continuity. Scientists have studied that currently, the Earth needs almost a year and a half to restore what is used for the year ("environmental footprint"). Both government and business entities are already aware of the risks of existing linear resource management systems. The need to move to an inclusive and circular economy, also known as a circular economy or a closed-cycle economy, has become apparent. The circular economy is an industrial system that is designed to be restorative. The idea is that instead of throwing away products before their value is fully realized, they should be used not only once but also repeatedly. Currently, only a few percent of the value of the original product is recouped after use[3].

[3] Skonberh K., Viikman A., *Tsyrkuliarna ekonomika ta perevahy dlia suspilstva*. Zvit pro doslidzhennia na vymohu Rymskoho klubu za pidtrymky Fondu MAVA. http://www.clubofrome.org.ua/wp-content/uploads/2017/08/The-Circular-Economy-CoR_UA-2.pdf.

The linear economy has traditionally followed a take-make-dispose step-by-step plan. This means that the raw material is collected and then converted into products that are used until they are finally disposed of as waste. Value is created in this economic system by producing and selling as many products as possible. The circular economy adheres to the 3R principle: reduce, reuse, recycle[4].

The prospect of sustainable development in a circular economy is different from the linear one. Working on sustainability in a linear economy, the focus is on environmental efficiency, which aims to *minimize the environmental impact for the product itself*, which continues to overload the system; and in a circular economy, sustainability is achieved by *increasing the eco-efficiency of the system*[5]. Differences between linear and circular economies are systematized in Table 1.

Table 1. Differences between linear and circular economy*

	Linear	*Circular*
The basic principle	Take-make-dispose	Reduce, reuse and recycle
Goal	Eco-efficiency	Eco-efficiency
Cycle	Short-term, from purchase to sale	Long-term, multiple cycles
Reuse	Downsicking (conversion of one material into a lower quality material)	Disposal, cascade, and high-quality recycling

* Compiled based on [How is a circular economy different from a linear economy? https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/how-is-a-circular-economy-different-from-a-linear-economy].
Source: own study.

The reuse of materials and waste as raw materials solves the problem of shortage of natural resources, high prices for raw materials, and reduces dependence on imported materials, which has become especially relevant in the era of quarantine and closed borders. Circular economy strategies can help to avoid the negative effects of isolation, as within this concept supply chains and sales channels are often geographically closer to the place of production.

The scientific literature uses a large number of different definitions of the circular (circular) economy. This diversity is due to the fact that the concept is used

[4] Nechytailo D., *Z chystoho arkusha: yak pratsiuie i chym vyhidna tsyrkuliarna ekonomika.* Ekonomichna pravda. 2020. 2 veresnia. https://www.epravda.com.ua/columns/2020/09/2/664626/

[5] *How is a circular economy different from a linear economy?* https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/how-is-a-circular-economy-different-from-a-linear-economy

by a large group of researchers and professionals. Such different approaches complicate the process of measuring circularity. Table 2 shows different approaches to the definition of a circular economy.

Table 2. Approaches to the definition of a circular economy *

Author	The content of the definition
World Economic Forum	A circular economy is an industrial system that is restored or restored according to intentions and plans. It replaces the concept of end-of-life with restoration, switches to renewable energy, eliminates the use of toxic chemicals that impair reuse and return to the biosphere, and aims to eliminate waste through the excellent design of materials, products, systems, and business models
Ellen MacArthur Foundation	Going beyond the current mining model, which requires problem-solving, the circular economy aims to redefine growth, focusing on the positive benefits for society as a whole. This entails the gradual separation of economic activity from the consumption of limited resources and the removal of waste from the system. Supported by the transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: waste and pollution design; keeping products and materials in use; restoring natural systems

*Compiled based on [*Circular Economy: Definition, Principles, Benefits And Barriers*. https://youmatter.world/en/definition/definitions-circular-economy-meaning-definition-benefits-barriers/]

Source: own study.

In the definitions of the circular economy, three elements are often emphasized: closed cycles, renewable energy, and systems thinking. Some researchers argue that social inclusion is also a necessary part of the circular economy. In a circular economy, material cycles are closed by the example of an ecosystem. The concept of waste does not exist, as each residual stream can be used to make a new product. In this system, it is important not only to properly process materials but also to ensure that products and raw materials remain high quality in these cycles. The circular economic system is powered by renewable energy sources. Since it is impossible to process energy, it is not about energy cycles, but about "cascade-type energy flows", such as joint production of heat and electricity.

System thinking. The circular economy requires not only closed material cycles and renewable energy sources but also systems thinking. Each subject of the economy (company, person) is connected with other subjects; together they form a system in which the actions of one participant influence other participants.

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The principles of the circular economy are as follows [6]:

- energy and resources are gold. The products are designed for long-term consumption (quality materials are used) and optimized for the reuse cycle, which will facilitate their processing, transformation, or renewal. The ultimate goal is to preserve and increase natural capital by controlling final stocks and balancing the flow of renewable resources.
- imitation of natural cycles and constructions. The circular economy model distinguishes between technical and biological cycles. Consumption occurs only in biological cycles, where materials based on biological bases (such as food, linen, or cork) are designed to return to the system through processes such as anaerobic digestion and composting. In turn, technical cycles recover products, components, and materials through strategies such as reuse, repair, recovery, or recycling. One of the goals of the circular economy is to optimize the yield of resources through the circulation of products, components, and materials that are used most usefully at all times in both technical and biological cycles.
- use of renewable energy only. This principle of the circular economy is due to the fact that the energy needed to feed this cycle must be renewable in nature, in order to reduce dependence on resources and increase the resilience of systems.

3. Advantages of the circular economy introduction

Many countries around the world have already begun the path to a circular economy. Thus, the European Union has adopted a Circular Economy Action Plan. Germany, Great Britain, and France became the countries with the most developed circular economy. The Netherlands, Scotland, Slovenia, France, Belgium,

[6] *Circular Economy: Definition, Principles, Benefits And Barriers*. https://youmatter.world/en/definition/definitions-circular-economy-meaning-definition-benefits-barriers/

and Finland are also in the lead, while others (such as Italy and Portugal) have recently made significant progress. Cyprus, Greece, Malta, and Romania are lagging behind. And within the framework of the Association Agreement between Ukraine and the EU, our country has committed itself to harmonize national legislation with European. This contributed to the adoption in 2017 of the National Strategy for Waste Management, which provides, in particular, the introduction of the principles of the circular economy.

In practice, the transition to a circular economy is a long and laborious process. According to The Circularity Gap, which is presented annually at the World Economic Forum in Davos, only 9% of the materials in the world economy are reused. However, many businesses have already joined the transformation of the economic model. Thus, from the first hundred Fortune Global lists, 44% of companies have chosen a circular economy strategy. The leaders in this are the FMCG sectors, as well as the automotive industry, while the oil industry, financial services, and health care are not yet so widely practiced in a closed cycle. The transition to a circular economy model reduces the cost of raw materials, new markets appear, improves dialogue with customers, increases their loyalty, develops new products, creates a competitive business model, improves brand reputation, the company prepares for challenges that will bring it trends of the future[7].

Globally, the economy would receive 2 trillion USD per year from more efficient resource management. This is due to the fact that the cost of raw materials will be significantly reduced while contributing to employment and innovation. Circularity has the following advantages for the economy[8]:

1. Significant resource savings. Despite the introduction of the circular economy, production and prices of primary raw materials are still rising. According to Circle Economy, 9% of all raw materials were completely processed by 2019. In 2018, this percentage was slightly higher – 9.1%. Theoretically, in a circular economy, 100% of all raw materials are completely recycled, and no new primary raw materials are required. It will take a long time to achieve this scenario, as you will need to find methods of complete recycling of materials.

[7] Nechytailo D., *Z chystoho arkusha: yak pratsiuie i chym vyhidna tsyrkuliarna ekonomika.* Ekonomichna pravda. 2020. 2 veresnia. https://www.epravda.com.ua/columns/2020/09/2/664626/

[8] *What are the economic benefits of the circular economy?* https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/ce-economic-advantages/

2. Economic growth. An important principle of the circular economy is the separation of economic growth from the consumption of raw materials. As a result, the economy is not hampered by a shortage of raw materials for growth. It is expected that the movement towards a circular economy will promote economic growth. The United Nations Environment Plan (UNEP) estimates that in 2050 the world economy will benefit from more efficient use of 2 trillion resources. dollars a year. In a circular economy, this gain will be achieved on the one hand, by increasing turnover from new circular measures, and on the other - by creating more functionality from the same number of materials and means of production.
3. Employment growth. In a circular economy, labour is valued more than raw materials. As a result, employment is growing. These jobs will be expanded for time-consuming processing and quality repairs; jobs in the logistics sector through the return of local products; new enterprises through innovation, service economy, and new business models.
4. Incentive for innovation. The circular economy challenges innovative solutions based on a new way of thinking. This leads to the search for new approaches, interdisciplinary cooperation between designers, manufacturers, and processors, and, consequently, sustainable innovation.
5. Change in demand. The last important factor in the economic benefits of a circular economy is change and a better understanding of demand. The way companies treat their customers and the role they play throughout their lives ultimately leads to less use of raw materials, less waste, and changes in production[9].

The benefits of a circular economy are transformed into opportunities for entrepreneurs. The benefits for business are as follows:

- new income. As a result of the transition to a circular economy, companies reduce material costs and develop completely new markets where they can make a profit. In many sectors, raw materials are subject to high costs. Extraction of new raw materials and uncertainty about their supply in a linear economy raise the price of these materials. Thus, circularity can

[9] *What are the economic benefits of the circular economy?* https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/ce-economic-advantages/

offer new opportunities for profit through lower costs, increased security of supply of raw materials, closer cooperation, and a stronger supply chain.

- stable inventory. The circular economy ensures that the company uses less new raw materials and more recycled raw materials and that the value of these raw materials is maximized throughout their life cycle. As a result, the entrepreneur incurs relatively lower material costs than labour costs, which means that costs and availability of materials have less impact on the stability of the business model. Thanks to greater stability, the company can make more profitable and targeted long-term investments. A good example is Vanderlande, which installs luggage and parcel systems around the world. Vanderlande has developed a conveyor belt that can be quickly disassembled and assembled. Thus, the company spends less on material costs.
- growing demand for services. Within the circular economy, there is a demand for new services where there are opportunities for workers and entrepreneurs: reverse logistics companies that collect, transport, repair, and redistribute products after use for re-introduction to the market; marketers and sales platforms that help increase product life and increase utilization; product recovery and repair experts who facilitate reuse and repair. Milgro is a circular economy service provider that can serve as an example. In addition to recycling, Milgro helps companies derive value from residual flows. In addition, it helps startups sell innovative products with new raw materials. For example, Milgro has developed a raw material management system that provides an understanding of the supply of wasted vegetables to affiliates. This system makes it possible to offer these vegetables again to such processors as Verspillingsfabriek[10].
- optimized customer relations. The circular economy offers new business models and opportunities to retain customers. The transition from product delivery to services, leasing models, and leases creates a long-term relationship between the customer and the supplier, as there are more contacts during the life of the product. An example is BMA-ergonomics, which provides a residual value guarantee for the sale of its office chairs. After the period of use, office chairs are bought and collected from the company that

[10] *What are the economic benefits of the circular economy?* https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/ce-economic-advantages/

purchased them. This has the advantage of BMA ergonomics in that it can repair and resell office chairs. Equally important, the redemption guarantee means that the customer automatically contacts BMA ergonomics again when he has to buy new office chairs.

Circular business models aim to eliminate waste - not only from production processes, but systematically throughout the various life cycles and uses of products and their components. Reusing materials through product development helps to define the concept of circular business models and distinguish it from recycling, which loses a lot of energy and labour. A circular business model is a general term for different business models that seek to use fewer materials and resources to produce products and services, as well as extend the life of existing products and services through repair and refurbishment, and complete product lifecycle recycling. , benefiting from the residual value of products and materials. Based on studies of European practical experience in implementing the concept of circular economy, Accenture experts have developed a generally accepted classification of innovative business models[11].

1. Circular suppliers – a model in which limited resources are replaced by fully renewable sources. This model is based on long-term research and development, which provides a full supply of resources that are processed or biodegradable and form the basis of a circular system of production and consumption. Leading the economy in the implementation of this model are industries such as automotive and energy. Renault is the first automaker to commit to the circular economy concept by establishing a subsidiary, Renault Environment, in 2008 to control the flow of automotive waste and parts. As a result, vehicles are 85% reusable and contain 95% of end-of-life parts. The company`s revenue from circular economy practices is 0.5 billion Euros per year.
2. Resources recovery – a model based on the use of technological innovations for the recovery and reuse of resources, which allows preventing their loss by reducing waste and increasing the profitability of production from reverse flows. This model is most suitable for companies that produce large amounts of by-products for efficient recovery and recycling. One of the most striking examples of this model is the experience of Danish drug manufacturers Novo Nordisk, enzyme manufacturers Novozymes

[11] Ruda M.V., Myrka Ya.V., *Tsyrkuliarni biznes-modeli v Ukraini*. SMEU. 2020. 2. 1. S. 107 – 121. https://doi.org/10.23939/smeu2020.01.107

and DONG Energy, together with Denmark`s largest refinery, Statoil, which exchanges waste and by-products[12].

3. Sharing platforms - a model based on the exchange or sharing of goods or assets. Provides promotion of platforms for interaction between users of the product (individuals or organizations), thereby increasing the level of its use. This business model is interesting for manufacturers who have a low utilization rate or underutilization. This model includes transport exchange resources: BlaBlaCar (international online service for finding car passengers), RelayRides (car rental service), and Airbnb (platform for renting and leasing private housing).
4. Product life extension – a model that allows companies to extend the life cycle of their products through repair, modernization, reconstruction, or restoration. More suitable for manufacturers of industrial equipment, new models of which provide a slight increase in productivity compared to earlier ones.
5. Product as a Service – a model in which customers use the product, renting it with payment upon use. It is an alternative to buying a product, providing it for use, for example, through a lease, lease, etc. If the manufacturer retains ownership of all materials and equipment, there is an incentive to create a product with a long life cycle. Using this business model, Philips implements the Circular Lighting program, according to which the company provides lighting services instead of lighting fixtures[13, 14].

4. Circular economy in terms of COVID-19

In the wake of the Covid-19 pandemic, which is vulnerable to global environmental, health, and economic systems, many people from governments, businesses,

[12] Ruda M.V., Myrka Ya.V., *Tsyrkuliarni biznes-modeli v Ukraini*. SMEU. 2020. 2. 1. S. 107 – 121. https://doi.org/10.23939/smeu2020.01.107

[13] Ruda M.V., Myrka Ya.V., *Tsyrkuliarni biznes-modeli v Ukraini*. SMEU. 2020. 2. 1. S. 107 – 121. https://doi.org/10.23939/smeu2020.01.107

[14] *Accenture Strategy: Circular Advantage – Innovative Business Models and Technologies to Create Value in a World Without Limits to Grow*. https://www.accenture.com/t20150523t053139w /us- en/_acnmedia/accenture/conversion-assets/dotcom/documents/global/pdf/strategy_6/ accenture-circular-advantage- innovative-business-models-technologies-value-growth.pdf

and civil society are calling for a response to the devastating effects of the pandemic. For example, a union of 180 European politicians, business leaders, MEPs, and environmental activists has called for investment in a "new European economic model: more sustainable, protective, more sovereign and inclusive". More than 100 investors, representing 11.9 trillion Euros in assets, also called on European business and finance leaders to ensure environmental recovery. Investment and policy action will determine the direction of economic recovery in both the short and long term. The pandemic may also change the roles of government and market players in the coming years.

European Commission President Ursula von der Leyen presented this vision of Europe, saying: "We need to "fight forward", not "fight back". And we will need to build a sustainable, green, and digital Europe. This is based on our growth strategy, the European Green Course, as well as the double transition and the possibility of digitization and decarbonisation". As an integral part of this European strategy, the circular economy is the basis for sustainability and regeneration. Politicians, CEOs, and other influential people are mobilizing businesses and governments around the world to join the path of sustainable recovery using a circular economy in response to the economic impact of the coronavirus pandemic[15].

Policies that are in line with the principles of the circular economy can play a vital role in revitalization packages. Prior to the pandemic, a number of governments took steps to promote a circular economy, recognizing the need for a new economic model that would be less useless and environmentally harmful, and less critical of globalized supply chains and cheap raw materials. Following the COVID-19 crisis, it is critical for policymakers to address the global systemic risks of today`s linear economy as they seek to provide more jobs and steady growth in the short term and reduce the long-term risks of climate change and biodiversity loss.

To achieve these short- and long-term goals through the circular economy, policymakers have to play a key role in:

- establishing a common direction of movement;
- creating incentives to create a circular low-carbon economy;
- promoting cooperation for decision-making at the system level;
- opening up opportunities for circular investments to achieve key state priorities.

[15] *The circular economy: a transformative Covid-19 recovery strategy.* 2020. Ellen Macarthur Foundation. https://www.ellenmacarthurfoundation.org/assets/downloads/Circular-economy-and-the-Covid-19-recovery.pdf

Many of the uncertainties surrounding the COVID-19 virus and its potential cure still burden the economy and people`s lives and livelihoods. There are also uncertainties about the economic impact of the pandemic, policy response, speed of recovery and the extent to which changes caused by the pandemic will persist in society, such as changing consumer patterns, business travel, work from home. As a result, macroeconomic forecasts show significant differences, and McKinsey`s study emphasizes that uncertainty is still present, which is "toxic to economic recovery". Research has shown that the vast majority of economic stimulus policies that have been in place in the G20 since the pandemic are "rescue" policy rather than a recovery policy[16].

Many countries around the world still give priority to "brown" incentive packages over "green" ones, weakening, for example, pollution control laws and energy efficiency standards for vehicles. Only a few EU member states, the United Kingdom and Canada set certain conditions for incentive packages to focus on creating a more sustainable transition. A recent analysis by the European Central Bank (ECB), the World Bank, and the OECD shows that "greener" economies with less carbon are better able to recover faster. In particular, countries with stronger environmental measures are expected to have higher GDP and sectoral growth compared to countries that do not prioritize these measures. Therefore, to ensure long-term recovery, it is crucial that government ambitions and actions not only focus on protecting the national economy in times of crisis but also pave the way for broader economic reform that is more resilient to future global risks[17, 18].

The state of development of the circular economy in Ukraine can be assessed as very low or absent. The potential window of opportunity for Ukraine in the context of the new EU industrial policy is the integration of Ukrainian industries into new industrial processes in the EU. The new proposal of the European Commission

[16] *The circular economy: a transformative Covid-19 recovery strategy.* 2020. Ellen Macarthur Foundation. https://www.ellenmacarthurfoundation.org/assets/downloads/Circular-economy-and-the-Covid-19-recovery.pdf

[17] *The circular economy: a transformative Covid-19 recovery strategy.* 2020. Ellen Macarthur Foundation. https://www.ellenmacarthurfoundation.org/assets/downloads/Circular-economy-and-the-Covid-19-recovery.pdf

[18] *The Circularity Gap Reform 2020.* https://circulareconomy.europa.eu/platform/en/news-and-events/all-news/2019-circularity-gap-report-reveals-world-only-9-circular-and-trend-negative

on the priorities of the Eastern Partnership directly indicates that the EU will support and promote the circular economy in neighbouring countries with a focus on energy-intensive sectors.

Circular economy policy strategies provide a path to sustainable and low-carbon economic recovery. However, this path must be supported by additional policies to ensure a more inclusive and equitable transition that reduces inequalities within and between countries. The circular economy is also a mechanism for implementation to achieve mutually reinforcing economic, social, and environmental goals; solving problems and policy goals. This is done by stimulating innovation and competitiveness, increasing productivity, reducing dependence on resources and the environment, increasing sustainability, and creating new jobs..

5. Conclusions

Closed-loop economics replaces the traditional linear concept of economics. A circular economy is an industrial system that is restored or restored according to intentions and plans. They replace the concept of end-of-life restoration, move to the use of renewable energy, eliminate the use of toxic chemicals, aimed at eliminating waste. Circulation has the following advantages for the economy: significant resource savings, economic growth, employment growth, the incentive to innovate, and change in demand. The main task of the circular economy is to use materials more efficiently and minimize waste. Given the uncertainty of the pandemic, coordinated international policies and cooperation between public and private entities will be important for shaping a post-pandemic future that promotes growth and resilience in the face of future shocks.

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