

RISKS OF THE CIRCULAR ECONOMY AND PROSPECTS FOR THEIR NEUTRALIZATION IN GEORGIA

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Abstract

Globalization, the establishment of inclusiveness in the economy, and the scarcity of material, energy, and human resources are among the major challenges of the modern world, requiring businesses to adopt adequate responses and adapt economic systems to new demands.

In the era of technological progress and rapid social transformation, Georgia's reserves of material and labor resources remain relatively limited. The implementation of a circular economy and the application of new instruments can significantly reduce dependence on traditional resources and improve the ecological environment.

The introduction of a circular economy in Georgia requires a comprehensive approach in which all opportunities characteristic of the circulation process are utilized as efficiently as possible.

Among the many vectors of the circular economy, one of the most promising directions is the implementation of technologies characterized by a high level of secondary resource utilization, the rational recycling of household waste, and the replacement of traditional energy resources with renewable and biologically clean energy sources.

The implementation of such technologies involves numerous risks and requires specific and complex approaches to risk neutralization. The aim of this paper is to identify the risks associated with the circular economy in Georgia and determine the prospects for their mitigation.

Keywords: circular economy, business model, resources, economic system, innovation, sustainable development.

In business, the repeated use and recycling of resources within the circular economy significantly reduces the cost of goods and services while creating opportunities for additional profit generation. At the same time, the circular economy functions as an economic mechanism that can help eliminate resource scarcity in business, improve the ecological environment, and enhance competitiveness.

The share of the circular economy in the global economy remains relatively small, and there is still a long way to go in this direction. "Only 7.2% of the modern global economy currently operates according to the principles of circularity, while the dominant economic model remains linear. In 2023, approximately 2 billion tons of municipal solid waste were generated worldwide, and by 2050 this figure is expected to increase to 3.4 billion tons. The vast majority of this waste is managed unsustainably. Georgia's circularity rate does not exceed 1.3%, which is significantly below the already low global average of 7.2%." [1]

The scarcity of material and energy resources is one of the major challenges hindering sustainable global development today, while the circular economy represents the model that can help the civilized world address these problems. "Humanity consumes approximately 100 billion tons of raw materials annually for various purposes, 90% of which eventually end up in landfills." [2]

Many countries in Europe and Asia are taking significant steps toward radically improving the circularity of their economies. For example, "According to the Dutch government, their goal is to recycle approximately 50% of waste by 2030 and 100% by 2050." [2]

Waste disposal and recycling remain one of the most serious challenges for Georgia today. "Approximately 900,000 tons of waste are generated annually in Georgia, more than 75% of which is disposed of in landfills. Landfilling is the least desirable method of waste management, especially when landfills are inadequately maintained." [3]

We believe that Georgia has already lost a certain amount of time in managing this system, as short-term decisions and incorrect calculations have turned into long-term challenges. However, this does not yet mean that opportunities have been lost.

Georgia still faces shortages of material and energy resources. In order to avoid potential economic shocks, it is essential to maximize the opportunities provided by the circular economy and strengthen its mechanisms of influence on economic processes. Such an approach increases the prospects for the sustainable development of an innovative ecosystem and enables businesses to actively utilize Georgia's specific natural resources, such as solar, wind, and hydropower energy.

Considering the existing specifics, the implementation of two circular economy models appears particularly promising for Georgia. The first is related to waste recycling and involves resource recovery and their secondary use; the second involves replacing traditional energy resources with renewable and environmentally clean resources.

According to a report by the Rocky Mountain Institute (RMI), "Wind and solar energy projects are expected to account for at least 33% of global electricity generation by 2030, compared to only 12% today.

According to the report of the President of the COP28 Climate Summit, Sultan Al Jaber, "Currently,

the production cost of one megawatt-hour of solar energy is approximately \$40, and by the end of the decade this cost is expected to decrease by half to around \$20.”[4]

Georgia demonstrates promising prospects in terms of renewable energy utilization. “Since 2025, an increase in the import of renewable energy technologies has been observed in Georgia. In particular, imports of electric generating units and rotary electric converters have quadrupled, mainly due to the import of wind turbine generators. Imports of solar panels increased by 80%. The growth of renewable energy technologies is associated with the rapid pace of solar and wind power plant construction in the country.”[4]

The main advantages characteristic of the circular economy include reduced production costs, the creation of new markets, and the improvement of the ecological environment.

The improvement of the institutional framework for the circular economy in Georgia, along with the successful implementation of strategies and tactics, is primarily connected with the refinement of the legislative framework. At the same time, it is necessary to pursue active policies aimed at waste recycling and reducing environmental pollution. Under an appropriate resource circulation management model, Georgia’s economy will become more inclusive.

In the process of implementing the circular economy in Georgia, it is necessary to establish proper conditions for risk regulation, which implies the more active use of existing insurance mechanisms. This process primarily concerns insurance companies, since they specialize in risk reduction and compensation for financial losses.

Some of the existing risks are material in nature, while others are mental or cultural. High mental risks are обусловлены by the fact that the economic policy of Georgia, as a post-Soviet country, was historically oriented toward the inefficient consumption of resources (due to the abundance of resources in the Soviet Union) and based on the principle: “extract, consume, dispose.”

As for material risks, these include the high initial investment costs in this sector, the process of recycling toxic substances and waste, increasing costs associated with waste neutralization, infrastructural difficulties related to waste collection, logistical problems, and others.

At certain stages of implementation, there may also be risks associated with reduced revenues from extractive industries, additional energy consumption in recycling processes, and the need to allocate extra space for waste storage and recycling.

It should also be taken into account that recycled waste often requires additional processing due to its low-quality characteristics, which increases material risks and the cost of final products.

Moreover, the circular economy in business may encounter risks such as conflicts with shareholders and investors, as well as the low professional and qualification skills of employees.

The circular economy is characterized by all the risks generally associated with economic activity: risks

caused by natural events (natural disasters, earthquakes, droughts, etc.), business-related risks (accidents, catastrophes, fires, etc.), and financial risks (bankruptcy, decline in asset value, growth of creditor liabilities, etc.).

The risks of the circular economy also include the replacement of primary raw materials with secondary raw materials whose extraction and supply are poorly organized or insufficiently studied.

In Georgia, the most relevant issue in terms of waste recycling is plastic recycling, as plastic causes enormous damage both to the ecological environment and to human health. In order to address this problem, new governmental regulations are needed that will focus on organizing the collection and recycling of plastic products such as bottles, bags, and plastic containers.

The effectiveness of waste management mechanisms requires consensus and political will between the population and the government, which would significantly improve the investment environment in this field.

In Georgia, the management of circular economy risks should be viewed as a unified, continuous, and constantly evolving process that ensures the identification, measurement, assessment, and neutralization of existing risks in this sector.

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