

OPPORTUNITIES PROVIDED BY CIRCULAR ECONOMY FOR FIRMS

*PhD Gabriela Cornelia Piciu⁴⁹
PhD Alina Georgeta Ailincă⁵⁰*

Abstract:

Today, though there are many projects at the international, regional and national level underlining the need to implement sustainable development; just a small number of them find the best manner to put this concept into practice. Thus, the implementation of sustainable development concepts can be made through circular economy. Therefore the paper presents the necessity to move from a linear model to the circular model, then a few methods of transition to circular model from linear production model. The new model of circular economy considers that the companies need to create more value by reducing the dependence on the limited resources. Taking into account the above, the paper emphasizes the importance of reconsidering the best use of resources at a time when the major risks are threatening the welfare and prosperity. Also, the indicators analysed by Europe 2020 strategy (including Program 20-20-20), highlights the importance of the switching to a different type of economy, the circular economy. Thus, this article highlights the benefits of circular economy, from the social and environmental perspectives.

Key words: circular economy, methods of transition, benefits of clean production,

JEL classification codes: F64, O34, Q57

1. Introduction

As the paradigm of manufacturing in the last two centuries have been handled by the linear model, today it feels more and more the need for a new Industrial Revolution to free up production practices. In these times, the old model endangers the competitiveness between the regions of the world and between states due to the volatility and the lack of predictability of raw materials prices. At the same time, the resource scarcity, grater urbanisation, the increasing regional disparities and between environments (urban-rural), extraordinary advancement of technology, all of them offer the opportunity of finding appropriate solutions through the circular economy model. The assumption that the natural resources are usually much cheaper and accessible are more and more not validated. Circular economy enrols in the paradigm of sustainable development, ensuring economic growth by reusing finite resources. Besides, as the European Commission states the "Circular economy offers an opportunity to reinvent our economy, making it more sustainable and competitive. This will bring benefits for European businesses, industries, and citizens alike." [12]

The growing scarcity of resources together with advances in technology and greater urbanisation

In European Union, in order to reduce waste, boost recycling and a more judicious resources use, the paradigm of circular economy can use the Europe 2020 strategy targets. Thus, the strategy can be a useful tool for circular economy having five headline targets concerning: employment (e.g. to be employed 75% of the 20-64 year-olds), research and development (e.g. investing in R&D no less then 3% of the European Union GDP), education (e.g. no less then 40% of 30-34-year-olds completing third level education and the early school leaving rates being reduces below 10%), poverty and social exclusion (e.g. the number of people at risk of poverty and social exclusion being reduced with 20 million), energy sustainability and climate change (e.g. the reduction of greenhouse gas emissions with 20% or even 30% comparing with 1990, the increase in energy efficiency with 20% and at least 20% of energy coming from renewable).

Besides the help of sustainable development indicators and Europe 2020 strategy indicators, at the EU level the circular economy targets aims explicitly at:

- recycling 65% of municipal waste by 2030,

⁴⁹"Victor Slăvescu" Center for Financial and Monetary Research, Romanian Academy, Bucharest, Romania, e-mail: gabriela_piciu@yahoo.com

⁵⁰"Victor Slăvescu" Center for Financial and Monetary Research, Romanian Academy, Bucharest, Romania, e-mail: alina.glod@gmail.com

- recycling 75% of packaging waste by 2030,

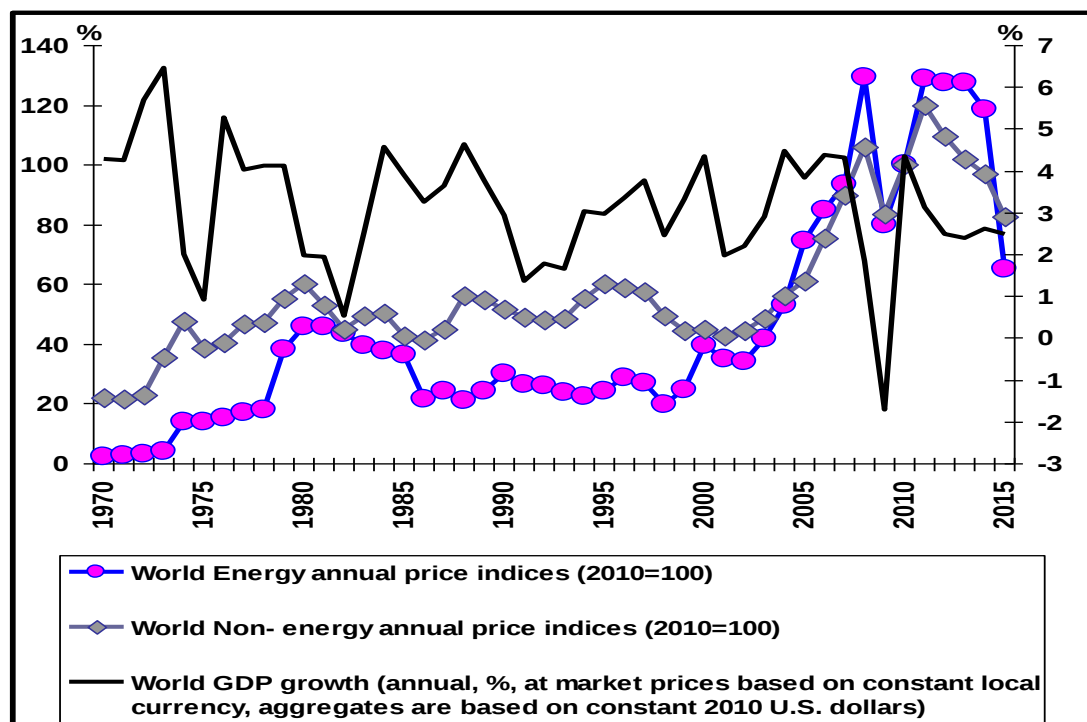
- reduce landfill to maximum of 10% of municipal waste by 2030 and forbidding separately collected waste land-filling.

At the same time, European Commission is looking to diversify and promote economic instruments and incentives for increasing the recycling rates, for offering “greener” products to the market and for stimulating industrial symbiosis and discourage land-filling throughout the EU.

2. THE IMPORTANCE OF THE TRANSITION TO THE CIRCULAR ECONOMY MODEL

Considering the threats on medium and long term regarding the welfare, prosperity and competitiveness, the discussions on more judicious use of resources contribute to obtaining adequate responses in the economic environment. Thus, in a circular economy, companies have increasingly more chances of reducing the dependencies on limited resources. The problem arises from the general macroeconomic context trend. In this sense, in recent times, there are numerous debates regarding the capacity of decoupling the evolution of commodity prices from the economic growth rates, knowing that the economies of the world are no longer capable to sustain high GDP growth rates with small increases in prices (see, fig.no.1).

Figure 1 - Comparisons between the trends of World GDP growth rate and World commodity price indices of energy and non-energy products



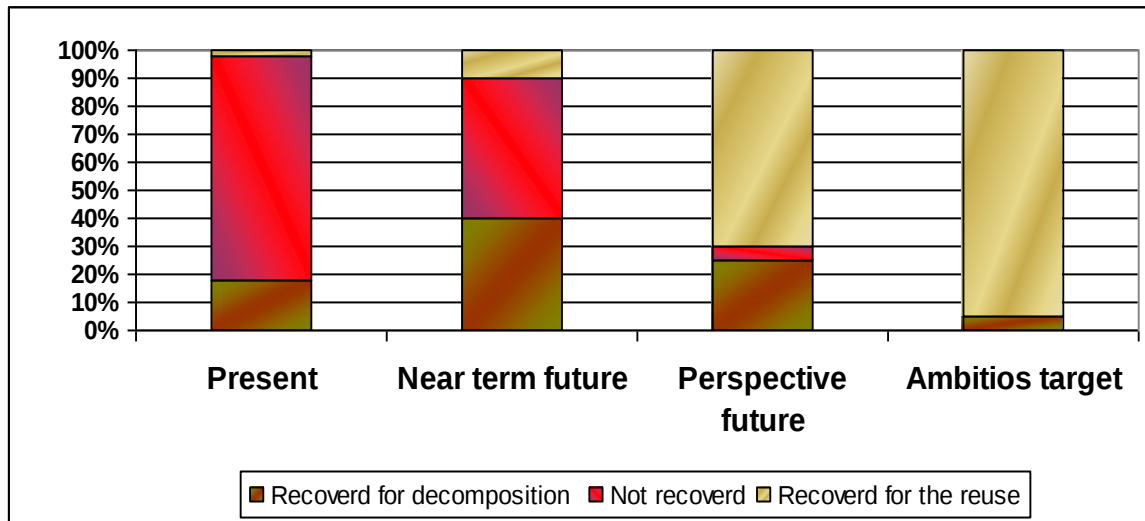
Source: authors' conception on the basis of the statistical data of World Bank Commodity Price Data (The Pink Sheet) and World Development Indicators, updated 17/11/2016

The necessity for a new economic model cannot be ignored any longer taking into account the volatility of the resource market and the increasing chances of their exhaustion. Thus, in circular economy, in order to use natural and less natural resources as long as possible, companies are trying to reuse components and even entire products in the production process. [10]

No just the variation or the growth of commodity prices can be a problem for the economies of the world but rather the continuous growth of wastes, which is a great problem for the environment. A discussion that can be made is between durable goods and consumer goods. Thus, according to the 2013 Ellen MacArthur Foundation report “Towards the circular economy opportunities for the consumer goods sector”: “Fast-moving consumer goods currently account for 35 per cent of material inputs into the economy, a significant part of total consumer spending on tangible goods, and 75 per cent of municipal waste. Importantly, the consumer goods sector absorbs more than 90

per cent of our agricultural output—possibly our most embattled resource in the future. "Thus, the waste management cannot be just a private or the companies' problem but rather a whole society problem: private and public, all together. The solutions can be beneficial for all. So, according to 2013 Ellen MacArthur Foundation report, the circular model: "offers materials savings in Europe that could be worth USD 380 billion in an initial transition period and up to USD 630 billion with full adoption." [8]. The capacity of transition to the circular model is frail but with the proper incentives and ambitious targets – the future might look much better (see fig.no.2).

Figure 2 - Possible trends for the circular economy



Source: authors' conception on the basis of the data from Euromonitor 2011, Expert interviews, Ellen MacArthur Foundation circular economy team and 2013 Ellen MacArthur Foundation report.

Note: decomposition means that materials can be biodegraded or recycled and reuse means the direct or indirect reutilisation for the same or different industry.

The emergence of circular economy model is, on the one hand, the recognition of the awareness of real value of (natural) resources, and on the other hand the response to the aggressive throwaway culture (e.g. it is considered, at the global level, that the cost of throwing at trash bin is more than 2 trillion of US dollars), needing more and more to highlight the benefits of reusing and considering waste a new valuable resource. The circular economy is a forward looking thinking that sustains on longer horizon of time the economic growth and has an important impact on transforming the production and consumption chains by encouraging the use of materials and waste over and over again, in cascade (as in the blue economy framework). The circular model of an economy is not just a conservative policy towards the environment but a way of efficient cost reduction and material saving. Thus, the companies can use this economic model of circular economy in order to reduce risks (e.g. concerning the chain of supply with raw materials) to cut costs, to protect the environment in which it works and to develop a reputation of a "green company" among others companies and customers.

The transition to a circular economy from the linear model (extract-use-throw) implies a substantial change of production process, necessitating the restructure of the old ways business practices, interdisciplinary collaborations, media and social support, policymaker incentives included in adequate laws, investors attention and breakthrough innovations. Thus, the research and development of innovative methods of processing and remanufacturing should be encouraged by policymakers to meet the technical challenges of putting production on circular paradigm. [2]

3. PROS AND CONS OF CIRCULAR ECONOMY

Circular economy implies basically a restorative rethinking of the production (manufacture, design and packaging), distribution, selling and consumption processes. A smart design, a good choice of materials, a functional raw materials saving production process will contribute to the increase in resource productivity, sustainable profits and larger new business opportunities for managers.

Considering the principles of circular economy, the companies must focus on selling services rather than selling goods (e.g. service economy), retaining and protecting property rights on products. In this way, the companies are motivated to conceive products with longer lifetime. [5]

The circular model of a national economy needs a significant financial public and private investment. In order to implement circular model, the state has to promote research and innovations (e.g. - inspired by nature as Biomimicry), IT and a friendly business environment in which is promoted the reuse of resources. The companies' financial capacities to sustain the implementation in day to day life of circular model are too small, are without prospects and incentives. This will lead to the postponement or quitting in implementing this model.

Thus, one major argument against the implementation of circular economy is the precarious financing at company level. The transition to the circular model requires a new approach about business risks and costs. In this sense, the sources of financing must be also diversified. In the present, the main source of financing of this type of businesses is the banking loan. Thus, it is crucial to improve banks' ability to finance circular businesses [4]. At the same time, new ways of obtaining the funds must be considered (e.g. sale of stakes on stock exchange, finding daring investors, related (twin) businesses in order to support circular business, more judicious management of expenses and extremely - selling the company with a linear model of production and opening a new circular business from scratch).

Another major problem is that the extended lifetime of the product must be reflected in the companies' revenues. But, in a context of poor economic growth, a persistent deflation and an increasing global commercial competition, the idea of higher prices (which reflect the investment in circular model) that should sustain higher revenues does not seem financially advantageous for the companies.

The incapacity to envisage the risks, the uncertainties related to the reducing, repairing, reusing and recycling processes, the uncertainties regarding the prices of natural and reused resources (including the operational costs) make the estimation of the full potential of the circular businesses model to be more difficult.

But the profits are there to be harvested and the firms and financial institutions that are willing and capable to switch to this new type of business are increasing in number. According to McKinsey the savings from the transition to circular economy are about 630 million of dollars by 2025. A tremendous relief could come from decoupling from prices fluctuations of resources market. [6]. Thus, with lower volatility of quantities and prices of the resources comes a greater security for supply, increasing the resilience of the company with a circular model of business.

The circular economic model can help companies to address some strategic challenges: reduced margins of the profit on the grounds of globalization process, fragmentation of the markets, high geographical dispersion of the production process, high barriers on entrance on product markets, stagnation of mature markets, low final goods prices and increased competition. In this sense, the holistic understanding of the production process will allow companies to identify inefficient areas and adopt practices of remanufacturing and creating mutually beneficial partnerships with their suppliers. [9] Thus, the companies can maximize the number of consecutive cycles of products and closing the loop. If it is designed adequately, each additional cycle takes some of the net material, energy and labour costs of creating a new product or a component of the product. [3] In this sense, the natural capital is preserved and the wastage is reduced and reconfigured. This internal and external (e.g. taking back for recycling any product ever made by this type of company and promoting local suppliers) reverse logistics could solve numerous supply problems, being more effective due to a frequently collection of wastes and could save important transport cost (on the grounds of smaller collection distances), reduce the consumption of energy and the carbon footprint.

A strong drawback for implementing circular model is the complexity of materials. These modern goods contain several different materials in an intricate composition. Thus, the companies have to tackle the process of refurbishment and reuse in an innovative manner. The cost can be in a first phase quite elevated, so small companies can have an insurmountable financial problem in order to implement this circular approach.

The circular model of the economy can synchronize the companies' interests with the consumers' interests and in order to work properly the benefits must be mutual. The basic role of the companies is to increase consumers' fidelity, satisfaction and reputation.

In circular economy model the consumer has an important role because the chain of the product transformation and use does end at consumption phase. The adoption of such a model requires of course the existence of motivations or benefits for the consumer. For example: in exchange for a discount voucher or a lower price old products can be returned in order to buy a new product or a free repair for an item of clothing or shoes. For food product, in order not wasting food, less good-looking or close to expiration products they can be sold with a lower price and the expired but still good for consumption products could be donated to needy canteens or the assisted social shelters. The purpose of preserving the product utility must come first for companies and the consumers can be drawn into this clever mechanism. The consumer can have the satisfaction of contributing to a better, more secure world concerning the preservation of the natural resources. At the same time, ensuring his independence (e.g.. food, clothing, energy, etc.) might motivate him to collaborate but equally it could transform him into a powerful negotiator for the sale of his waste.

Companies that have a good connection with customers have many alternatives for recycling and reuse: can recycle their own used goods using an integrated resource recovery system, can work with specialized recycling companies (to recover some of the products components or to sell the whole damaged product as waste which by recycling can become components for other companies) or to sell degraded products on waste trade markets. Decreasing the cost of sorting and separation can develop enormously the recyclers markets and can reduce barriers of entrance on these markets.

Even at the end of its cycle of life the value added of a product is still high enough to motivate recycling and reusing. Therefore both companies and the state should invest heavily in the transition to the circular economy. The state will gain from encouraging the implementation of circular economy by preserving natural resources and ensure a stable and sustainable flow of alternative resources for the production process at the companies' level. It will be able to benefit from new business opportunities and from the creation of new jobs, thus can collect more revenue from broadening the tax base and can reduce cost with social assistance. The benefits that would flow from this transition to circular model would be very large, at the global level and the net savings from materials could be quite impressive. The highest benefits may come from the automotive sector, machinery and equipment industries. [1] Also forests, grasslands and agricultural lands could major benefit from this model by using the land for cultivation and protecting flora and fauna and not for burying waste.

Concerning Europe 2020 Strategy at European Union level, the comparisons between the values of these indicators in years 2000, 2008 and 2014 or 2015 with the Europe 2020 targets are quite alarming regarding: poverty, gross domestic expenditure on R&D, share of renewable energy in gross final energy consumption and early school leaving from education and training. Basically, all social indicators seem to be less well aimed than the environmental ones (see fig. no.3). Thus, in the context of adopting the circular economy model not only the management of environmental issues will be much better covered but especially the Europe 2020 strategy social and educational indicators (e.g. by creating new and sustainable jobs and adapting the education system to the needs of the circular economy).

The transition to the circular economy will need an important development of research and innovation field in numerous industries and will contribute to the reduction of energy consumption per unit of output using more and more the renewable energy sources. Thus, the European Union must use its will and power to increase the incentives for research and development field both at European and at the national level.

For circular economy important requirements are related with the redesign of materials and the rethinking of the systems of production, distribution and consumption. Their innovation potential is a great opportunity to be exploited for the next close future. Thus, the giant companies should and would be probably most interested in this important change for the world economies. [11]

Figure 3 – The trends of the Europe 2020 targets in EU countries



Source: Eurostat data, authors' calculation and interpretations

The remanufacturing and recycling industries are already absorbing more labour force in Europe, United States and all around the globe and its importance in revitalizing the labour markets is still at the beginning. The less skilled workers and the top ultra-specialized workers (e.g. researchers, product developers, inventors, etc.) will likely be the most wanted for the development of this field. Therefore, most likely, immigrants will play a key role in this overview image. This could create initially some adjusting problems for the developed economies and especially for domestic/old ways workers. Of course, the situation will improve in short time, considering also the fact that labour market competition is more than necessary in order to boost this system. Therefore, the circular economy will provide many benefits (resource preservation, sustainable economic development, reduction of costs, new and sustainable jobs etc.) that will appear gradually. Initial, this approach will imply new working models and numerous innovations that will reflect mostly into the costs of the transition to circular economy. [7]

Conclusions

In a circular economy, companies have increasingly more chances of reducing the dependencies on limited resources and must rethink the whole business - starting with the renegotiation of the contracts with suppliers and the motivation of consumers to become part of the business transformation. But no matter how large companies are on the market of various products and services will not be able to implement the transition to the circular economy, requiring also the involvement of the state, of the judicial system, of the regulators on product standards, of investors, of researchers and teachers, of inventors, of consumers, of employers, of employees and of trade unions.

If is implemented correctly – in the right dose with the right incentives, the circular economy can bring benefits for everyone involved and especially for the environment and the human society as a whole. It can also provide answers to the transition to a truly sustainable development of human society, leaving future generations the chance of a prosperous future. The transition won't be easy; costs can be extremely high at first, but the benefits that will follow will certainly worth the effort.

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