

# INTEGRATION TENDENCIES OF THE CIRCULAR, SOCIAL AND SHARED ECONOMY IN THE REGIONS ON THE EXAMPLE OF THE CZECH REPUBLIC

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## Abstract

The circular and social economy can be defined as an alternative to the market and the public sector. Both economies, together with the shared, also represent an important economic and social factor in the all-round development of the regions. Various forms can be encountered that link economic activities with social and environmental goals. Within the framework of the microeconomic interconnectedness of the circular and social economy of the region, a response to its ecological and social needs can be ensured in an innovative way. In the Czech Republic, businesses with specific disabilities form part of the social economy. In connection with the onset of Industry 4.0 (digital technology, robotics, artificial intelligence) and the aging of the population, the risk of unemployment of disadvantaged people can be perceived as increasingly important. The priority interest of integrative circular, social and shared economy will be the provision of employment for all disadvantaged persons as a result of their inability to adapt to the innovation trends of Industry 4.0.

**Key words:** circular economy, social and shared economy, regional development

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## Introduction

An extremely current trend in waste management is the introduction and promotion of the so-called "circular economy", the goal of which is the maximum return of secondary raw materials and energy back into the production and consumption cycle and the transformation of waste into "resources". In its essence, it is a concept of increasing the efficiency of production, the main goals of which are the protection of the environment and the growth of the quality of human life. The introduction of the principles of the circular economy cannot be at the expense of the quality of the final products and thus the profitability of the company (Jonášová, 2018). This procedure significantly contributes to the protection of the

environment and to the creation of new jobs, especially in the mentioned "circular economy". Therefore, parallel to the circular economy, the social economy is growing in importance. This is typical of various forms of social entrepreneurship and essentially represents a modern concept in solving some social and economic issues faced by the countries of the developed world at the beginning of the 21st century. Following the example of the Czech Republic, social entrepreneurship takes many forms. A large part consists of businesses that employ people with difficult access to the labor market.

The circular and social economy, as an alternative to the market and the public sector in the position of tools for regulating the market economy, represents an important economic, social and ecological factor. Their entities are characterized by the fact that the goals of their business are different from commercial firms. Their various forms can be found in the world, which connect economic activities with social and environmental goals in a given region. In essence, they respond to the needs of public welfare in an innovative way and represent a source of stable economic growth. That is why their importance is growing worldwide, and states where the mentioned mechanisms of the functioning of economies have not yet been adopted legislatively or otherwise are beginning to create conditions for their functioning within the framework of macroeconomic and microeconomic economic policy (Volek & Novotná, 2015). The same is the case in the Czech Republic, where social entrepreneurship (as an area of the social economy) and the circular economy have enjoyed unprecedented interest in the last few years.

## **1 Processing methods**

The functioning existence of the economic system, not only in the national but also in the regional dimension, is connected with institutions that represent a prerequisite for the creation of stable economic growth, the important determinants of which are linked social and environmental aspects. This is the starting point for the intentions of a linked social and ecological policy, which is an integral and integral part of public and regional economic policy. The corresponding quality of life of the population also develops from its level. Participating entities in the quality of life are also institutions and communities within regions, cities and municipalities.

For the reasons mentioned above, analytical and comparative methods prevail during processing. These are applied to the development of the interconnectedness of the circular, social and shared economy with regard to the importance of applying the principle of

subsidiarity (to the policy of settlements, cities and regions). At the same time, the fact of the development of the aforementioned interconnectedness is compared with the theoretical concepts of human capital.

## **2. Results**

### **2.1 Initial philosophy and vision of the issue**

Industry 4.0 should contribute to an increase in product quality, better working conditions or an increase in productivity and work flexibility. Currently, there is no unequivocal consensus among experts as to whether the onset of Industry 4.0 will cause massive job losses or not. Brynjolfsson and McAfee were the first to warn about the emerging trend of Technology 4.0, within the framework of the presentation of their joint work from 2014 *The Second Age of Machines*. Here they argue (Brynjolfsson & McAfee, 2014) that new technologies can lead to higher unemployment and growing social inequality. Another more radical opinion is held by Ford in 2017, who in his book *The Robots Are Coming* warns of massive layoffs caused by the advent of automation and artificial intelligence (Ford, 2017). According to him, higher education and retraining will not solve the problem of unemployment. He is also fundamentally against the idea that the advent of technology will threaten only the lowest-paid jobs, because according to his analysis, even highly qualified employees should be worried about their jobs. A completely different opinion is seen in the fact that professional workers will always be needed and the risk, however, lies in the dismissal of handling, support and non-specialist staff. According to certain theoretical concepts, there is no risk of job loss, on the contrary, it can be predicted that a higher degree of automation will even increase employment. On the basis of research by the World Economic Forum in 2016 among the 371 largest employers in 15 countries of the world, it follows that the greatest loss of jobs will not be experienced by blue-collar professions, but by professions in the field of administration. Only the second most vulnerable group are those professions in the field of production. On the contrary, an increase in job opportunities is expected in the area of financial operations, trade and management. However, workers in these areas will require much more logical and mathematical skills (Džbánková & Sirůček, 2013).

The circular economy will focus on the ecological transformation of fully physically and morally amortized technological devices into future "resources" - production factors (Egorov, & Harstad; 2017). These are challenges for the social economy in the area of entrepreneurship in which disadvantaged individuals find employment. This can clearly

contribute to a significant reduction of possible adverse social and environmental impacts that accompany structural changes in the economy as a result of the introduction of Technology 4.0 (Duernecker & Vega-Redondo, 2018).

Based on the comparison and analysis of the above-mentioned theoretical concepts of experts and empirical results on the mentioned issue regarding the possible impacts of Technology 4.0 on employment, it is certain that there are potentially vulnerable social groups of the population. Regardless of which professions are most affected by the issue, its solution can still be seen through the applied integral unification of the circular, social and shared economy. Forecasts confirm that in addition to ecological benefits, the transition to a circular economy also means other benefits. This is evidenced by a study by McKinsey & Company from 2015, according to which the circular economy can save up to 1.8 trillion euros per year in addition to reducing emissions in Europe (Duernecker & Vega-Redondo, 2018). According to a study by the Club of Rome, the transition to a circular economy in the Czech Republic would mean the creation of up to 150,000 new jobs (Duernecker & Vega-Redondo, 2018).

## **2.2 Macroeconomic forecast of employment development based on expected demographic development and regional reality using the example of the Czech economy**

According to demographic forecasts, it has been clear since the beginning of the 21st century that, like most advanced economies, the Czech Republic is also struggling with the phenomenon of population aging. As a result of the increase in the share of the demographic group of people in the post-productive age in the economy after 2030 (shown in Table 1), insufficient saturation of the needs of the labor market can be expected, with which all businesses, sectors and fields of the national economy can be affected.

**Tab. 1: Development of the composition of the population of the Czech Republic by age groups in the years 2010 - 2065 (selected years in %)**

Age limit	2010	2015	2020	2025	2035	2045	2055	2065
0 – 14	14,2	15,1	16,1	14,8	13,0	13,1	13,9	13,2
15 – 64	70,6	67,2	63,7	63,4	62,4	57,2	53,7	54,6
65 +	15,2	17,7	20,2	21,8	24,6	29,7	32,4	32,2

Source: Czech Statistical Office 2020 and own processing

Problems with meeting the needs of businesses as employers were already evident before the start of the pandemic crisis (before 2020). At that time, many companies and sectors showed a long-term shortage of workers in a relatively wide range of qualifications, which is also evidenced by the low unemployment rate, as evidenced by Table 2.

**Tab. 2: Share of unemployed people in the Czech Republic 2005 – 2021**

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The share of the unemployed	7,37	8,17	7,46	6,24	5,19	3,77	3,07	2,87	4,02	3,49

Source: Czech Statistical Office 2020 and own processing

It is also necessary to keep in mind that a similar situation exists and will prevail in a number of other economies, including developed ones. For this reason, the lack of labor force caused by demographic development can realistically be deepened by unfavorable migration trends - i.e. the departure of the Czech labor force abroad in search of better conditions, as the incoming young generation will undoubtedly be more active in migration than the older generations on the labor market, who were and are in in this direction, they are often far more conservative, are more tied to the family, lag behind in knowledge of foreign languages, etc. (Novotná & Volek; 2014). In connection with the applications of Industry 4.0 technologies, to which the Czech economy is directed, there is a shortage of qualified workers. As a result of the change in the nature of production processes, manual work is changing to control the programming of fully digitized and robotic machines. A workforce with insufficient education and skills will be “replaced” by robots if they do not retrain. However, from another point of view, workers who are willing to adapt to new changes will find more interesting and less physically demanding work. Thus, the prerequisites for the growth of labor productivity are created. It increased by 13% in industrial enterprises and by 16% in the entire economy between 2010 and 2019. Unfavorable developments in 2012 and 2013 contributed to the weaker productivity growth in industry. The growth in industrial performance in the following period of the upward phase of the business cycle (after 2013) was accompanied by a strengthening of employment. Until 2015, it was characteristic of the Czech economy that more of the company's income went to profit and less to wages, at the same time between 2015 and 2020 there was a higher growth rate of wages compared to labor productivity (Czech Statistical Office, 2021). It can therefore be stated that, especially five years before the

pandemic crisis, the development of business costs did not support the pressure to reduce prices.

Thus, the above-mentioned forecast of the risks of insufficient saturation of the needs of the labor market with the subsequent development of wages for the Czech economy was quite clear until the events of February 24, 2022 – the aggression of the Russian Federation in Ukraine. As of this date, as a result of the wave of migration from Ukraine, it is difficult to establish longer forecasts of future developments on the labor market. It is based on the reality that the impact of migration on the economies of receiving countries depends primarily on the characteristics of the immigrants and on the conditions prevailing on the domestic labor market. According to available sources, roughly 84.6 thousand Ukrainians found work in the Czech Republic from the Russian invasion of Ukraine to June 30, 2022 (Czech Statistical Office, 2022). Some return over time or have left their jobs, so as of that date, 68,800 Ukrainian citizens with temporary protection were working in the Czech Republic (Czech Statistical Office, 2022). For domestic employees, the influx of foreign labor means competition on the labor market. This also has a negative effect on the price of work. It is logical, because companies in the position of employers almost always make money from labor immigration. They can thus pay lower wages and thus pay lower mandatory statutory social and health insurance expenses compared to domestic workers. However, the aforementioned negative effect on the price of labor can also mean a positive benefit, which is reflected in the calculation in the overall reduction of production costs, which can subsequently result in lower production prices for consumers. Another positive phenomenon could mean a boost for the entire Czech economy, since for the umpteenth year already, the employment offices offer more job vacancies than there are registered applicants. This is clearly proven by the employment statistics as of June 30, 2022, when the unemployment rate was 3.1%, businesses lacked over 360,000 employees, while the registered number of job applicants at employment offices was approximately 260,000 (Czech Statistical Office, 2022). For almost three-quarters of vacant positions on that date, companies are asking for applicants with a basic or lower education.

On the other hand, it is necessary to monitor the development of employment within the regions. Although the overall macro-economic indicator may show a favorable development, from a micro-economic point of view, on the contrary, the mentioned indicator may be unfavorable (Gokhale & Raffelhüschen, 1994). In the Czech economy, which shows a macroeconomic level of unemployment that is one of the best in the European Union, it can

also be pointed out that it is higher in some regions from a microeconomic point of view. This is evidenced by the indicators of the unemployment rate at the end of the 1st quarter of 2024 (Czech Statistical Office, 2024). The Ústecký region (6.01 %) and the Moravian-Silesian region (5.37 %) had the highest share of unemployed persons. The mentioned regions have the long-term highest share of unemployed people. On the contrary, the lowest unemployment was in Prague (2.85 %) and in the regions of Zlínský (3.06 %), Vysočina (3.09 %), Plzeňský (3.09 %) and Pardubice (3.14%). There are differences in the unemployment rate between individual regions. Regions affected by higher unemployment are the result of industrial restructuring, restructuring and the demise of large heavy industry enterprises. The reasons for high unemployment can of course be various, one of the most significant being the structure of the economy of the given region, a one-sided focus on industries that are in decline, insufficient qualification of the population for other activities, their degree of flexibility, ability to learn new things. It cannot be ruled out that the mentioned regions may represent a potential risk of unemployment growth in the future with appropriate manifestations of other related pathological social events (poverty, social exclusion, etc.). The integration of the aforementioned circular, social and shared economy can be seen as a certain prevention tool.

### **2.3 Application of Smart region technologies for all-round support of human resources**

The solution to the interconnectedness of population aging and depopulation of regions can be seen in the integral development of socially circular business with a shared economy with the implementation of technologies within the Smart region. Their introduction will be necessary while respecting the principle of transparency and subsequent control of the interested bodies of state administration and self-government. A possible solution can be seen in the introduction of a complex specific system of planning, programming and budgeting in the conditions of the region. The main input data can be obtained from transparent indicators such as the competitiveness index of the region. This is defined by the region's ability to produce economic goods and provide its residents with a sustainable quality of life (Newbert, 2018). While the competitiveness of regions is usually measured using a composite index, which must contain characteristics including all important aspects of competitiveness, such as productivity, export and employment rate (Pavelka, 2017). If it wants to maintain its competitiveness in the long term, it cannot find its competitive advantage in the form of low labor costs, but it should support the creation of innovations. The competitiveness index

should thus include aspects of the knowledge economy, such as the support of science, research and innovation, the education of the population or the share of innovation-oriented enterprises in the region. The European Union measures the competitiveness of regions at a level using the Regional Competitiveness Index, which consists of 11 pillars that assess both inputs and outputs of territorial competitiveness. The above-mentioned index methods will help to compare the selected region with Czech and European regions and thus rebuild the basis for planning, programming and budgeting of projects of interest.

## **Conclusion**

The interconnectedness of the circular and social economy represents an important economic and social factor. The basis can be seen in micro-economic co-relation while respecting the principles of sustainable development and social responsibility. The subjects of both mentioned economies are typical in that their business goals are different from commercial firms. In the world, one can meet their various forms, which connect economic activities with social and environmental goals in a given micro-economic entity, for example, a municipality and a region.

Within the framework of the microeconomic interdependence of the circular and social economy of the region, a response to its ecological and social needs can be ensured in an innovative way. In the Czech Republic, the circular, social and shared economy has enjoyed unprecedented interest in the last few years and is taking many forms. A large part is made up of businesses that employ people with disabilities. Also, with the advent of Industry 4.0 technologies and the aging of the population, acceleration due to more difficult access to the labor market can be expected. The interconnectedness of the circular and social economy in areas of interest, cities and regions can significantly contribute to the reduction of this problem. Its priority interest will be to ensure employment for people within selected enterprises, especially as a result of their inability to adapt to innovations in digital technologies, robotization and artificial intelligence. The technologies applied within the framework of the circular economy are therefore a challenge. For this reason, a multifunctional meaning can be seen in the interconnectedness of the circular and social economy, which simultaneously fulfills several effects, namely economic, social and ecological (Balaman et al., 2018). When implementing this program, it is a priority interest to start from the principle of subsidiarity, which means assigning a decision-making position to municipalities and regions.

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