Towards sustainable development in post-transition European Union states

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Abstract

Even though the sustainable development concept has been largely debated in the literature and its essence is very clear, the way in which it is implemented differs between countries and regions. The main challenge for the European Union is to tackle the differences in the development level between and within the member states, especially in the countries that joined the EU in the 21st century. The purpose of the present paper is to analyze the challenges and opportunities of the sustainable development in the post-transition European Union states, between 2010 and 2018. Although our results show that all the investigated states have made considerable progress in achieving a higher level of sustainable development during the analyzed period, the decision makers should take a more holistic long-term approach. This would involve closer cooperation between public sector, private sectors and nongovernmental organizations in taking environmental and socio-economic decisions.

Keywords: sustainable development, post-transition European Union states, economic growth, social development, environmental protection

Introduction

The fall of Berlin Wall in 1989 and the subsequent dissolution of the Soviet Union in 1991 led to significant political, social and economic confusion, as countries transitioned to democracy, but also to optimism, since the road seemed to be open for the reunification of a divided Europe. Thirty years after the end of communism, the European Union includes eleven post-communist member states. All of them attempted to restructure their economies in the direction of free, competitive markets and democratic capitalist societies. However, they did not do this at the same speed and to the same degree. The evolution of these economies has been very different, depending on particular features of the socio-economic, political, institutional and cultural environment. Despite all the progresses they have made, the post-communist Central and Eastern European Union (CEE) members have not already reached optimal development levels, as many issues are still in need of improvement. It is considered that aspects related to social justice and environment are the key problems that have

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to be solved by these countries in developing a path towards a sustainable future (Sullivan and Briant, 2013). During the communist regime, social justice issues were disregarded, while the society was informally divided by classes: the poor ones – the majority of the population, and the wealthy people – the ruling elite (Kryshtanovskaya and White, 1996). Therefore, social equity was replaced by corruption, poverty and lack of fundamental rights (Deacon, 2000). Meanwhile, the environment was not an aspect taken into account in the communist strategy of increasing industrial output within a small time frame and at the lowest costs. Consequently, many countries confronted with water and air pollution (Bulgaria, Hungary or Romania) or with deforestation (such as Czechoslovakia and Poland). The lack of the environmental awareness added to all these negative consequences (Sullivan and Briant, 2013).

Therefore, the main challenge for the European Union is to tackle the differences in the development level between and within the member states, especially in the countries that joined the EU in the 21st century. As stated by the EU strategy, these differences are one of the largest threats for the sustainable development of the Union, since they can adversely affect its socio-economic functioning (European Commission, 2007; European Economic and Social Committee, 2019). In order to closely monitor the changes in the level of development of the member states, EU uses the Sustainable Development Indicators. They offer an overall picture of whether the European Union has made progress in achieving the objectives and targets of the sustainable development strategy.

The purpose of the present study is to analyze the achievements made in economic, social and environmental areas registered by eleven post-transition European Union countries and, based on these aspects, to identify the challenges and opportunities of the sustainable development in these member states. In order to achieve this objective, we have used a quantitative method that involved five steps, with the help of which we have analyzed the data collected for a selection of the global sustainable development indicators, for the period 2010-2018.

The rest of this paper is structured as follows: the next section briefly summarizes the literature on the sustainable development, with a particular focus on the Central and Eastern Europe (CEE) states. The third section presents the methodological approach and the last sections highlight the results of our analysis and the conclusions.

1. Theoretical background

Literature's approaches of the sustainable development concept are focused especially on the balance between three main dimensions: the pursuit of economic growth, social integration and

environmental protection, so that not to endanger the capabilities of future generations to meet their needs (Bluszcz and Kijewska, 2015).

Economic growth is one of the most important policy goals across the world (Moldan *et al*., 2012), having a large theoretical and empirical approach. Between 1990 and 2009, most of the CEE countries had registered impressive productivity gains, driven especially by manufacturing sector. This has been accompanied by a substantial inflow of foreign direct investment to industry and by financial and business-related services (Bijsterbosch and Kolasa, 2010). Actually, even if immediately after the fall of the communism the CEE region faced large technological gaps, in the beginning of 2000's it benefited from large spillovers of foreign direct investment (FDI). Later on, the outbreak of the financial crisis has also considerably reduced the FDI inflows. Overall, the economic crisis has differently affected the CEE countries, depending on some particular conditions existing at that time and on the economic measures taken by the decision makers (Iacovoiu, 2013). Yet, most of these economies have already recovered since 2013. Some of them have even experienced a significant expansion in 2017-2018 due to private consumption, increasing fixed asset investments and exports (Coface, 2019). This was especially the case of Poland, Hungary and Latvia. Even though some empirical studies noticed that the tendency toward equalization of income levels usually occurs within homogeneous groups of countries, the evolution of the economic growth in the CEE states differed. Thus, between 1995 and 2018, the best performers in economic growth were Lithuania, Latvia, Estonia and Poland. Meanwhile, Romania and Bulgaria registered the poorest growth performance (Rapacki and Prochniak, 2019).

Together with the economic growth, environmental and social issues received a large approach in the empirical and theoretical studies focused on sustainable developed. The social dimension of the sustainable development concept has been related to various aspects: social cohesion (Penninx *et al*., 2004), living standard, demographic changes (Stec *et al*., 2014), issues related to health protection (Barton, 2000) or social equity (Bramley and Power, 2009). The social equity has often been regarded as equitable access to aspects of everyday life, such as education and training, public services, culture and recreation (Gordon *et al*., 2000). In the case of the post-communist EU members, it was argued that the centrally planned system left social inequality and contributed, to a large extent, to the environmental deterioration (OECD, 1999). Moreover, between 1990 and 2000, consumption fell and income distribution became more unequal, with the lowest earnings in the Czech Republic, Hungary and Poland (Flemming and Micklewright, 2000).

Social sustainability could be regarded as a positive condition within communities and, meanwhile, a process within communities that can achieve that condition (McKenzie, 2004). As some researchers argued, social sustainability is the only foundation on which meaningful environmental

sustainability can be grounded (Dillard *et al*., 2009). Meanwhile, other empirical studies have highlighted the relation between environmental deterioration and economic growth. Archibald and Bochniarz (2008) argued the environmental Kuznets curve on six CEE states (the Czech Republic, Slovakia, Bulgaria, Poland, Hungary and Romania), stating that environmental pollution rose as income increased, after 2000.

Therefore, achieving sustainable development in CEE states could mean a better quality of life, a cleaner environment, a higher level of social activity and more effective public governance (Cichowicz and Rollnik-Sadowska, 2018; Raszkowski and Bartniczak, 2018). According to European Commission and United Nations, EU should pay particular attention to the following aspects while monitoring the progress towards achieving sustainable development in the member states: reducing poverty, eliminating hunger, achieving food security, improving nutrition, promoting sustainable agriculture, ensuring well-being for all, providing an inclusive and equitable quality of education, promoting lifelong learning opportunities for all, achieving gender equality, promoting sustainable economic growth, ensuring sustainable consumption and production and combatting climate change and its consequences.

2. Research methodology

The sample analyzed in this article includes eleven post-communist Central and Eastern European Union members: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

The data was collected for a selection of the global sustainable development indicators, established by United Nations, corresponding to the 17 sustainable development goals, considered by European Commission in analyzing the member states' progress in the implementation of the three dimensions of sustainable development. The data was collected from Eurostat database, for the period 2010-2018. The indicators corresponding to goals 14 and 15 were not included in the research because of the absence of statistical information for the considered period.

In order to achieve the established objective, we have used a quantitative method that involved the following steps:

- Selection of the indicators. According to their nature, each indicator was considered to be stimulus or non-stimulus (see Table 1 in the Appendix part). We considered that stimulus were those variables for which an increased value indicates the desired development of the studied phenomenon. Meanwhile, non-stimulus indicators were those variables for which a decrease of

the values indicated the desired development of the studied aspect (Strahl, 1984). We made this classification in order to see the direction of the indicators' trend.

- Normalization of the variables' values in the range 0 – 1. Afterwards, we have aggregated the indicators into the three dimensions by using equal weights.
- Calculating indicators of development for three studied dimensions: social, economic and environmental, for each country, in the analysed period: 2010-2018. In order to do this, we have computed the average values of the indicators for the above-mentioned period.
- Classification of the EU countries according to the relative level of sustainable development.

For the economic dimension, four goals were considered (with the corresponding indicators): decent work and economic growth; industry, innovation and infrastructure; reduce inequalities; partnerships for the goals. The social dimension was analyzed with the help of the five indicators, namely: no poverty; zero hunger; good health and well-being; quality education; gender equality. The environmental aspect was considered from the point of view of clear water and sanitation, affordable and clean energy, sustainable cities and communities, responsible consumption and production, climate action, peace, justice and strong institutions.

3. Results and discussions

The implementation of sustainable development's dimensions did not vary much among the 11 analyzed states, as confirmed by the low value of the coefficient of variation. However, countries from the sample were highly diversified in terms of the indicator characterizing the "zero hunger" aspect.

In each subsequent year of the considered period, the countries made progresses in all three dimensions – economic, social and environmental. Yet, some goals were better achieved than others. It is the case of "good health and well-being" – for which value of the "share of people with good or very good perceived health" increased for men in seven countries and for women in six countries, "quality education" – which had positive changes in almost all the countries, for both men and women, in two indicators "tertiary educational attainment" and "employment rates of recent graduates", "affordable and clean energy" – all three indicators being smaller in 2018 than in 2010 in almost all the states, "decent work and economic growth" – the "real GDP per capita" was higher in all countries in the end of the analyzed period, "industry, innovation and infrastructure" – which registered an increase in "gross domestic expenditure on R&D by sector" in 8 countries, "sustainable cities and communities" – recycling rate of municipal waste systematically increasing, and "climate action", all states having a lower "greenhouse gas emissions". Meanwhile, unfavorable trends were noticed for the "gender employment gap" and "reduce inequalities" indicators in most of the analyzed countries.

Calculating the development indicators for the three dimensions of the sustainable development, we notice that the smallest variations in values among the analysed states were registered for the economic aspect, while the environmental and social dimensions had the highest variations. The position of the 11 countries in the three dimensions and the obtained scores can be seen in Table 2.

The analysis of all these indicators allows us to assume that the main challenges for the EU in implementing the sustainable development concept in the 11 post-transition CEE members are related to social stratification and depletion of natural resources. Among these two, social social stratification remains the major challenge for the CEE countries. Sustainable development cannot be achieved if an extensive part of society is at risk of poverty and income gaps are very high. Actually, this should be the major concern of the EU officials, since the stratification may lead to other important negative consequences, such as social exclusion, increased rate of criminality, unemployment and poverty. Another concern should be related to the resource depletion faced by CEE countries, due to the increasing demand for raw materials. Up to a certain point, it could be viewed as a normal phenomenon for the developing states that are trying to catch up with the developed world. Yet, on long term, it is important to implement rational resource policies and focus more on renewable energy sources.

Table 2. Ranking of the 11 post-transition EU states and indicators' values for the three sustainable development (SD) dimensions: social, economic and environmental, between 2010 and 2018

Ranking*	Country	Synthetic indicator of SD**	Social dimension		Economic dimension		Environmental dimension	
			Value***	Position	Value***	Position	Value***	Position
1	**Lithuania**	0.6033	0.48	6	0.38	4	0.95	1
2	**Slovakia**	0.5667	0.55	5	0.39	3	0.76	4
3	**Slovenia**	0.5400	0.71	1	0.42	2	0.49	10
4	**Latvia**	0.5333	0.40	9	0.35	5	0.85	2
5	**Czech Republic**	0.5133	0.66	2	0.38	4	0.50	9
6	**Estonia**	0.5100	0.61	3	0.44	1	0.48	11
7	**Croatia**	0.4933	0.45	7	0.35	5	0.68	7
7	**Hungary**	0.4933	0.42	8	0.31	7	0.75	5
8	**Poland**	0.4867	0.56	4	0.34	6	0.56	8
9	**Romania**	0.4733	0.35	10	0.28	9	0.79	3
10	**Bulgaria**	0.4300	0.29	11	0.29	8	0.71	6

Source: Author's calculation base on Eurostat Database (2019)
Notes: *The ranking was made by taking into account the value of the synthetic indicator of sustainable development;
** The synthetic indicator was calculated as a non-weighted arithmetic mean of the three sustainable development dimensions' values;
*** Indicators' values for the three sustainable development dimensions were calculated as the non-weighed arithmetic means of normalized values.

The results revealed some opportunities that can be exploited by the CEE states in the coming years. The positive changes in the field of education, in general, and in tertiary education, in particular, in almost all the analyzed states, together with increasing recycling rate of municipal waste, adopting cleaner energy and reducing greenhouse gas emissions could represent the basis for enhancing higher ecological awareness. This might be extremely important for sustainable development for several reasons. Firstly, through ecological education can be influenced the attitudes and perceptions regarding the surrounding world in the direction of respecting the environment. Secondly, an interdisciplinary approach might raise the awareness about environmental risks and their causes and effects. Thirdly, education could stimulate individual and group initiatives to protect the natural environment.

Conclusions

The analysis of this paper was focused on eleven post-communist Central and Eastern European Union members. The data was collected from Eurostat database for a selection of the global sustainable development indicators, established by United Nations, corresponding to the 17 sustainable development goals, for the period 2010-2018.

Our findings show that the dimensions of the sustainable development have registered a gradual improvement in the analyzed states, fact that might suggest a positive trend for the future. However, up to now, none of the analyzed countries is characterized by a favorable situation. Comparing the synthetic indicator of sustainable development, Lithuania is the leader of the ranking, while the last position is taken by Bulgaria.

In terms of environmental protection, Lithuania and Latvia were the leaders among the states from the analyzed sample. Meanwhile, Slovenia and the Czech Republic recorder the highest progresses in the social dimension. Slovenia, together with Estonia, also registered the highest economic growth. At the opposite pole, the worst economic situation is shown by Romania, closely followed by Bulgaria. Bulgaria is also on the last position in the social dimension ranking. Meanwhile, the lowest progress in the environmental aspect was registered by Estonia. Another important result of our study highlights that the largest differences between the eleven analyzed states were in the social and environmental dimensions. Actually, it was noticed that the main challenges for the EU in implementing the sustainable development concept in the 11 post-transition CEE members are related to social stratification and depletion of natural resources. The results of the study could motivate the decision makers to take specific actions in the CEE countries. For these economies, sustainable development should also be perceived from the perspective of an important goal in

eliminating the differences in the quality of life within and between EU states. To achieve this goal, a regulatory framework that includes key social, economic and environmental aspects play an essential role for the route towards the sustainable development in the eleven post-communist Central and Eastern European Union economies. Meanwhile, a closer cooperation between public sector, private sectors and nongovernmental organizations in taking environmental and socio-economic decisions is vital.

The results of this study can be viewed as an introduction to other research projects. One future research direction could include an analysis of these eleven CEE states by using other indicators and different research methods. Another possible direction could be related to a more complex research not only from the methodological perspective, but also from the considered sample. Depending on data availability, the future analysis can be extended to other states from the Central and Eastern Europe area, non-EU members, such as Albania, Belarus, Ukraine, Bosnia and Herzegovina, Serbia, Montenegro or Macedonia.

References

Archibald, S. and Bochniarz, Z. (2008), Assessing sustainability of the transition in central European countries – A Comparative analysis, in: Bochniarz, Z. and Cohen, G. (eds.), *The Environment and sustainable development in the New Central Europe*, Library of Congress, pp. 19-43.

Barton, H. (2000), The neighbourhood as ecosystem, in: Barton, H (ed.), *Sustainable Communities: the Potential for Eco–Neighbourhoods*, London: Earthscan, pp. 86–104.

Bijsterbosch, M. and Kolasa, M. (2010), FDI and productivity convergence in Central and Eastern Europe: an industry-level investigation, *Review of World Economics*, 145(4), pp. 689-712.

Bluszcz, A. and Kijewska, A. (2015), Challenges of sustainable development in the mining and metallurgy sector in Poland, *Metalurgija*, 54(2), pp. 441–444.

Bramley, G. and Power, S. (2009). Urban form and social sustainability: the role of density and housing type, *Environment and Planning*, B36, pp. 30–48.

Cichowicz, E. and Rollnik-Sadowska, E. (2018), Inclusive Growth in CEE Countries as a Determinant of Sustainable Development, *Sustainability*, 10, 3973.

Coface (2019), *Do external risks overshadow long-lasting solid economic growth in Central and Eastern Europe?* (retrieved from http://www.coface.ro/en/News-Publications/News/Coface-

publishes-CEE-Top-500-companies-Do-external-risks-overshadow-long-lasting-solid-economic-growth-in-Central-and-Eastern-Europe).

Deacon, B. (2000), Eastern European welfare states: The impact of the politics of globalization. *Journal of European Social Policy*, 2, pp. 146-161.

Dillard, J., Dujon, V. and King, M.C. (2009), *Understanding the social dimension of sustainability*, Routledge.

European Commission (2007), *Fourth report on economic and social cohesion, growing regions, growing Europe* (retrieved from http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion4/pdf/4cr_en).

European Commission (2015), *Sustainable Development Goals* (retrieved from https://ec.europa.eu/international-partnerships/sustainable-development-goals_en).

European Economic and Social Committee (2019), *Exposing EU policy gaps to address the Sustainable Development Goals – Study* (retrieved from https://www.eesc.europa.eu/en/our-work/publications-other-work/publications/exposing-eu-policy-gaps-address-sustainable-development-goals-study).

Eurostat (2019), *Database: Sustainable development indicators* (retrieved from https://ec.europa.eu/eurostat/data/database).

Flemming, J. and Micklewright, J. (2000), Income distribution, economic systems and transition, in: Atkinson, A. and Bourguignon, F., *Handbooks in economics. Handbook of income distribution*, vol. 1, North-Holland: Elsevier, pp. 843-905.

Gordon, D., Adelman, L., Ashworth, K., Bradshaw, J., Levitas, R., Middleton, S., Pantazis, C., Patsios, D., Payne, S., Townsend, P. and Williams, J. (2000), *Poverty and Social Exclusion in Britain*, York: Rowntree.

Iacovoiu, V.B. (2013), Perspectives on Romania's Economic Growth through the Evolution of Direct Investment Flows, *Economic Insights – Trends and Challenges*, vol. II (LXV), No. 1, pp. 84-95.

Kryshtanovskaya, O. and White, S. (1996), From Soviet nomenklatura to Russian elite, *European-Asia studies*, 48(5), pp. 711-733.

McKenzie, S. (2004), Social Sustainability: Towards some definitions, Hawke Research Institute, *Working Paper Series*, 27.

Moldan, B., Januskova, S. and Hak, T. (2012), How to understand and measure environmental sustainability: indicators and targets, *Ecological Indicators*, 17, pp. 4–13.

OECD (1999), *Environment in the transition to a market economy. Progress in central and eastern Europe and the new independent states*, Paris.

Penninx, R., Kraal, K., Martinello, M. and Vertovec, S. (2004), Introduction: European cities and their new residents, in: Penninx, R., Kraal, K., Martinello, M. and Vertovec, S. (eds). *Citizenship in European Cities: Immigrants, Local Politics and Integration Policies*, Ashgate: Aldershot, pp. 1–16.

Rapacki, R. and Prochniak, M. (2019), EU Membership and Economic Growth: Empirical Evidence for the CEE countries, *The European Journal of Comparative Economics*, 16(1), pp. 3-40.

Raszkowski, A. and Bartniczak, B. (2018), Towards Sustainable Regional Development: Economy, Society, Environment, Good Governance Based on the Example of Polish Regions, *Transformations in Business & Economics*, 17, pp. 225–245.

Stec, M., Filip, P., Grzebyk, M. and Pierscieniak, A. (2014), Socio-economic development in the EU member states – concept and classification, *Engineering economics*, 25(5), pp. 504–512, doi:10.5755/j01.ee.25.5.6413.

Strahl, D. (1984), *Metody ekonometryczne w programowaniu rozwoju przemysłu*, Wrocław: Skrypty Akademii Ekonomicznej Oskara Langego.

United Nations (2015), *Transforming our world: the 2030 Agenda for Sustainable Development* (retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld).

Appendix

Table 1. Sustainable development goals (SDG) and corresponding indicators, for the 11 post-transition EU states

SDG	Global SDG Indicators	Indicator Type
1. No poverty	People at risk of poverty or social exclusion (%)	Non-stimulus
	In-work at-risk-of-poverty rate (%)	Non-stimulus
2. Zero hunger	Agricultural factor income per annual work unit (euro / annual work unit)	Stimulus
3. Good health and well-being	Share of people with good or very good perceived health, % of population aged 16 or over, males	Stimulus
	Share of people with good or very good perceived health, % of population aged 16 or over, females	Stimulus
4. Quality education	Tertiary educational attainment by sex, % of population aged 30 to 34, males	Stimulus
	Tertiary educational attainment by sex, % of population aged 30 to 34, females	Stimulus
	Employment rates of recent graduates, % of population aged 20 to 34 with at least upper secondary education, male	Stimulus
	Employment rates of recent graduates, % of population aged 20 to 34, with at least upper secondary education, females	Stimulus
	Adult participation in learning, % of population aged 25 to 64, males	Stimulus
	Adult participation in learning, % of population aged 25 to 64, females	Stimulus
5. Gender equality	Gender employment gap (%)	Non-stimulus
6. Clear water and sanitation	Population having neither a bath, nor a shower, nor an indoor flushing toilet in their household by poverty status, % of population (%)	Non-stimulus
7. Affordable and clean energy	Final energy consumption (million tons of oil equivalent)	Non-stimulus
	Final energy consumption in households per capita (kg of oil equivalent)	Non-stimulus
	Energy productivity (euro / kg of oil equivalent)	Non-stimulus
8. Decent work and economic growth	Real GDP per capita (euro / cap.)	Stimulus
	Employment rate, % of population aged 20 to 64, males	Stimulus
	Employment rate, % of population aged 20 to 64, females	Stimulus
	Long-term unemployment rate, % of active population, males	Non-stimulus
	Long-term unemployment rate, % of active population, females	Non-stimulus
9. Industry, innovation, and infrastructure	Gross domestic expenditure on R&D, by sector (% of GDP)	Stimulus
	Share of busses and trains in total passenger transport (% of total inland passenger/km)	Stimulus
	Share of rail and inland waterway activity in total freight transport (% of total inland freight ton/km)	Stimulus
10. Reduce inequalities	Purchasing power adjusted GDP per capita (real expenditure per capita, in PPS)	Stimulus

	Income distribution (% distance to poverty threshold)	Non-stimulus
11. Sustainable cities and communities	Recycling rate of municipal waste (% of total waste)	Stimulus
12. Responsible consumption and production	Resource productivity and domestic material consumption (euro / kg)	Stimulus
13. Climate action	Greenhouse gas emissions (in CO2 equivalent) Share of renewable energy in gross final energy consumption (%) Greenhouse gas emissions intensity of energy consumption (index (2000 = 100))	Non-stimulus Stimulus Non-stimulus
16. Peace, justice and strong institutions	Population with confidence in EU institutions by institution (%)	Stimulus
17. Partnerships for the goals	General government gross debt (% of GDP)	Non-stimulus

Source: Adapted from European Commission (2015), Eurostat Database (2019), United Nations (2015)
Note: indicators reflecting the economic dimension are coloured in grey, the social aspects are in yellow and those concerning the environmental dimension are in green.