New strategies for sustainable growth in European Economies

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Abstract

This editorial presents several recent contributions to the debate on strategies for sustainable growth, in relation to the experience of different European countries. It introduces a special issue composed of a selection of articles presented during three workshops organized or supported by the International Network for Economic Research (INFER). The articles included in this special issue discuss the impact of technological innovation on firms' productivity and employment, as well as the role agriculture plays in bioeconomy growth. They also highlight the importance of financial markets in the promotion of sustainable activities.

Keywords: sustainable growth, European economies, technological innovation, productivity, employment, bioeconomy.

Since 2000, European countries have experienced different crises which have had a high and persistent impact on economic growth: the bursting of the dot-com bubble, the Global Financial Crisis (GFC), the European sovereign debt crisis, and the Covid-19 pandemic. As Figure 1 shows, the average potential growth rate decreased over this period, and particularly following the GFC, in the euro area (EA) and also in most Central European and Baltic (CEB) countries, especially in those with strong relationships with the euro area.[1]

Insert Figure 1 here

The current crisis caused by the Russian invasion of Ukraine will certainly amplify this trend for both groups in the upcoming years. Given the growing awareness of climate change, particularly in Europe, where temperatures have increased more than twofold compared to the global average,[2] defining new strategies for sustainable growth has become one of the key European challenges.

A deeper analysis of the CEB countries, summarized in Figure 2, shows a significant convergence of these economies towards the euro area prior to the GFC. However, the situation is asymmetric: as a new EA member state, Lithuania has shown the most regular economic growth, along with Poland, followed by Romania for the non-euro area member states. With the exception of Poland, after 2007, convergence of the real GDP for all new euro area or non-euro area member states was slower than before. Indeed, for countries such as Croatia or Slovenia, real GDP per capita as measured by purchasing power parity (PPP) actually decreased between 2007 and 2014. The situation appeared even more worrying for certain EA member states such as Greece, strongly affected by the debt crisis, or Italy and Portugal, where real GDP per capita in PPP has systematically fallen since 2000.

Insert Figure 2 here

[1] Forecasts for 2022 were not considered in this computation, as they were not included in the World Development indicators database. However, given the Russian invasion of Ukraine and its international implications, the 2022 potential growth rate will be lower than in 2021 for all countries.
[2] As noted by the World Meteorological Organization in November 2022

Demographic trends, decreasing investment in a context of low domestic savings rates, decreasing capital inflows post-2008, and insufficient global factor productivity are all determinants of the reduced potential growth and slowing down of convergence in Europe. Regarding demographic trends and using the estimations of the Warsaw Institute that take into account fertility, migration and longevity issues, the projected workforce in Eastern Europe will fall by more than 25% between 2019 and 2100 (Lakomy, 2019). Trends will differ for Western Europe, and we can expect an almost 4% increase in active population. These trends do not appear to be related to significant differences in fertility rates across Western and Eastern European countries. They are mainly due to an increasing number of immigrants to Western Europe coming from Eastern Europe and from other non-European countries. The problem of population aging is a major issue. As noted by the IMF, a shrinking labor supply and the lower productivity of older workers, together with greater pressure on the public purse for health care and pensions, would increase the costs of Eastern European economies and slow down the process of convergence (Petrakis, 2020). However, this would also affect potential growth in other European countries.

As the main driver of economic growth, in Central and Eastern Europe investment also fell significantly after 2008: in line with World Bank Indicators, gross fixed capital formation in CEB countries (as a % of GDP) decreased from 27% in 2008 to 21% in 2021. There is also a high correlation between the evolution of GDP in other euro area member states, as shown in Figure 2, and the dynamics of gross fixed capital formation. In Portugal, for instance, there is a strong and continuous decrease of gross fixed capital formation from 28% of GDP in 2000 to 15% of GDP in 2014, followed by a moderate increase up to 20% of GDP in 2020.

The fall in foreign direct investment (FDI) net inflows from 12.1% of GDP in 2007 to 1.7% of GDP in 2015[3] explains the slow dynamics of GDP between 2007 and 2014 for CEB in Figure 2. At the same time, the high level of FDI net inflows in these countries, in 2016 and especially since 2019 (up to 13% of GDP in 2020) undoubtedly supported economic growth and the GDP per capita increase between 2014 and 2021. This confirms the importance of integrating Central and Eastern European countries with the rest of the world, an aspect extensively discussed in many articles previously published in Eastern European Economics.

The main challenge for CEE countries and for Europe in general is that of defining new strategies to generate and support sustainable economic growth. The European Commission has proposed two main directions. The first seeks to improve productivity growth, which is a key condition for a more efficient use of resources, leading to more sustainable production. Research and Innovation (R&I) is at the core of productivity and crucial for European economic growth. As noted by the European Commission in its SRIP Report 2020,[4] *"boosting productivity growth requires refocusing the use of available resources and investments towards more efficient production activities and systems, which also need to be environmentally friendly to ensure a sustainable growth path. Hence, increasing the efficiency of the production process can be compatible with sustainable production and supporting the sustainable transition."* The second direction relates to "green economic growth" capable of fighting climate change and environmental degradation, as described by the European Commission in the "European Green Deal." With strong links with the first direction, the challenge of the European Green Deal[5] is

[3] Following World Bank Indicators

[4] "Science, research and innovation performance of the EU 2020" (SRIP 2020)

[5] The European Green Deal should also improve the well-being and health of citizens and future generations by providing, among others, fresh air, clean water, healthy soil, biodiversity, healthy and affordable food.

to transform the European Union into a modern, resource-efficient, and competitive economy, ensuring no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use. Agriculture becomes one of the main actions of this new European program. While the ambitions of this program are laudable, they remain difficult to achieve in the current context of the European economy. The already slowing economic growth, amplified by the war, may substantially delay structural changes and the implementation of new technology necessary to the "greening" of economic activity. This may be due, for example, to increasing financing costs (due to the simultaneous economic recession and high inflation that characterized Europe in 2022). Demographic decline and human capital migration might also limit internal technical progress and innovation in many European countries and increase the costs of access to new technology produced elsewhere (Peri, 2016). The European Green deal sets out ambitious long-term objectives, but neither provides the paths to reach them nor sufficiently discusses short-to-medium term implications and transition costs (Laurent, 2020).

There are only a few research articles in the literature linked to the directions proposed by the European Commission to support sustainable economic growth, with a focus on Eastern European Economies. For instance, Jacobs et al. (2017) analyze traditional productivity spillovers from foreign to local firms and reverse productivity spillovers from local to foreign firms in Slovakia. They argue that the extent of mutual productivity spillovers depends on absorptive capacity and the technology gap. Gajewski and Kutan (2021) investigate the relation between labor productivity and wages in Poland and the role played by multinational corporations in decoupling wages from productivity. Sectors with the highest presence of multinational corporations tend to have higher labor productivity but lower wages. This has a negative impact on aggregate demand and slows economic growth. Nosheen et al. (2021) study the impact of climate change technologies on green growth in the European Union. In particular they show that renewable energy is pro-growth and that the authorities concerned should thus promote and encourage the use of this type of energy. The International Network For Economic Research (INFER) [6] has recently organized or supported three workshops related to these topics: the *INFER-PUEB Workshop on New Economics: Innovation, Digitalization and Revolution* organized in March 2021 in Poznan, the INFER-supported Joint Conference: *Euro Working Group for commodities and financial modeling 63rd meeting and XVIII International Conference on Finance and Banking FI BA 2021,* organized in May 2021 in Bucharest and the INFER-supported *International Conference "Current Economic Trends in Emerging and Developing Countries" event (TIMTED-2021*), organized in June 2021 in Timişoara. This special issue is composed of articles presented during these events. They discuss the impact of technological innovation (high-tech or artificial intelligence) on company productivity and employment, as well as the role that agriculture plays in bioeconomy growth, as one of the main actions of the European Green Deal. They also highlight the importance of financial markets in the promotion of sustainable activities.

Company productivity is indeed closely related to technological innovation. However, the simple adoption of high tech is not always enough to increase global factor productivity and ensure sustainable growth. High-tech implementation can be beneficial if other innovations are simultaneously implemented to support it, in organizations, customer and supplier relationships or new product design, for instance. In the paper "*Differences in the Impact of Innovation*

[6] INFER is a non-profit organization supporting science and research in all areas of economics. It currently has more than 250 active members and several institutional members, across 37 countries on five continents, as well as a large circle of more than 1,000 occasional participants and supporters. INFER encourages scientific discussion during workshops on specific topics as well as hosting annual conferences. It also offers numerous publication opportunities to its members.

Relationships on Firms' Productivity: Evidence from CIS 2014", Viktor Stojkoski, Katerina Toshevska-Trpchevska, Elena Makrevska Disoska, and Dragan Tevdovski explore whether complementarity relationships exist between such types of innovation and how important they are for generating increasing return to scale. The analysis is conducted using cross-sectional data taken from the Community Innovation Survey (CIS2014) for Central and Eastern Europe as well as for Western European countries. The results indicate that all types of innovation have a statistically significant positive impact on company productivity in both regions. However, for companies operating in CEE markets, any complementarity is identified from among the different types of innovation analyzed. Contrary to the Western European market, where organizational and process innovations are complementary, there are no synergies between the varieties of innovational activities in CEE markets. Encouraging such synergies may be a starting point for improving productivity and company performance in this region. This could also help avoid certain negative implications that new technologies might have on other macroeconomic aggregates such as employment.

The second contribution to this special issue, "*AI, Demand and the Impact of Productivity-enhancing Technology on Jobs: Evidence from Portugal,"* proposed by Pedro Bação, Vanessa Gaudêncio Lopes and Marta Simões, is dedicated to understanding the consequences of artificial intelligence (AI) and high-technology utilization for sectoral employment. The authors first propose a theoretical framework for discussing the supply and demand determinants for sectoral output. The estimation of the model for Portugal, a peripheral European country that experienced a decrease in average growth during the 21st century, provides interesting results for other European economies and for CEE countries in particular. In the context of a Bayesian multilevel model, the results indicate that the employment impact of automation is negative and of similar magnitude in all economic sectors, from the most traditional to the most modern, not only in sectors with the highest presence of multinational corporations as for Gajewski and Kutan (2021). This might be explained by the fact that the utilization of AI and high tech will increase productivity and hence reduce labor demand and wages in the economy, thus creating negative impacts on global demand and economic growth.

The third contribution to the special issue examines agriculture as the main bioeconomy sector, and specifically its role in promoting bioeconomy growth. Indeed, as a driver of the bioeconomy, the agriculture sector - including animal culture and production, hunting and related services, forestry and logging, and fisheries and aquaculture - can use organic products throughout the entire production chain. In their article "*Agriculture's Contribution to the Growth of Romanian Bioeconomy: A Regional Approach*," Laura Mariana Cismaș and Emilia Mary Bălan highlight the heterogeneous capacity of agriculture to support the bioeconomy in different administrative regions of Romania. By applying a cluster analysis to regional data that revealed disparities in terms of development in the different regions, the authors conclude that significant private and public investment should be oriented toward "greening" agriculture, and regional policies must be implemented to encourage this bioeconomy engine.

Last but not least, the health of the financial system is essential to facilitating the implementation of structural policies in all economic sectors, to encourage innovation and "green" activities. In the fourth contribution to this special issue, Elena Valentina Ţilică addresses this question by analyzing the "*Crisis transmission channel for 17 East-European countries during the Global Financial Crisis"*, using a dummy regression model with GJR-

GARCH and EGARCH frameworks. Was the propagation of the GFC linked to the connection of the Eastern European markets with the US market, or with other leading European markets? Euronext would appear to be the main transmission channel for most but not all Eastern European markets. Latvia and Serbia, for instance, were mainly affected by the London Stock Exchange, while there was no sign of contagion for Slovakia. Sensitivity to these markets also differs from one country to another. The authors suggest that specific national policies need to be tailored to improve the resilience of Eastern European markets to future financial shocks.

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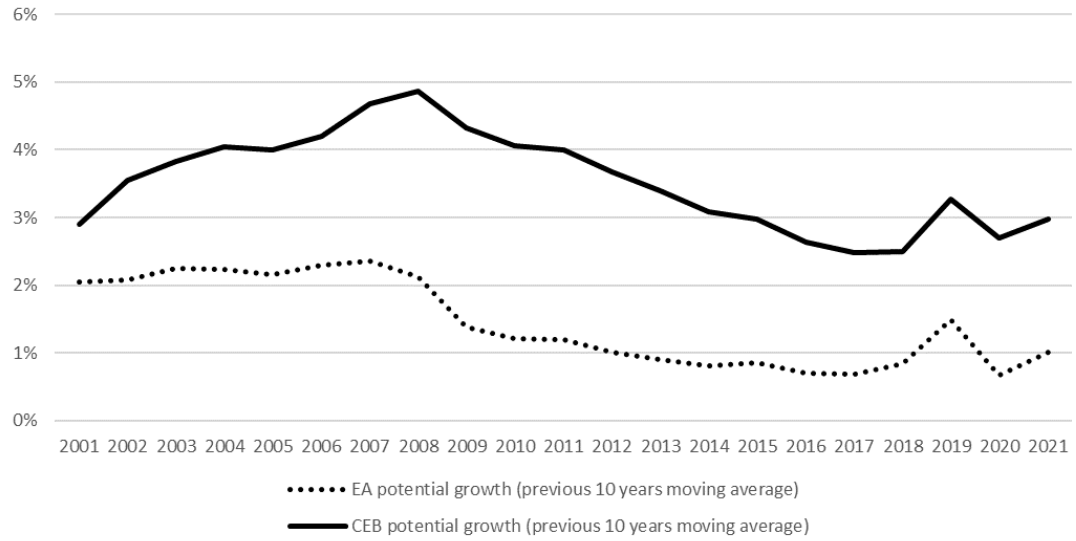
Disclosure statement

The authors report there are no competing interests to declare.

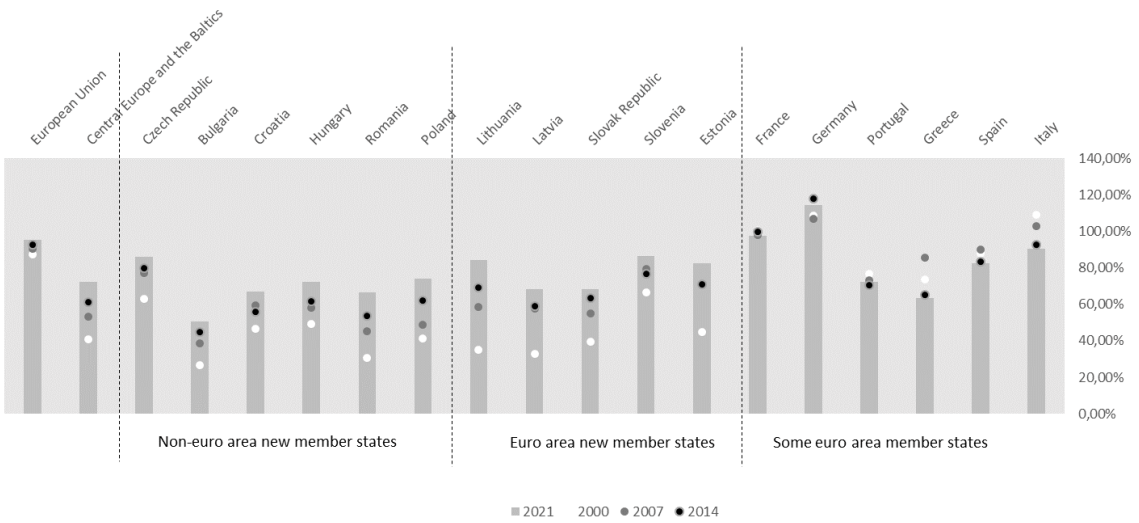
Figures

Figure 1. Potential real GDP per capita growth (in PPP constant 2017 international $)



Source: Authors' computation based on World Development indicators database, World Bank
Note: The potential GDP Growth is computed as a moving average growth rate on the previous 10 years for Central European and Baltic (CEB) countries and for Euro Area (EA) countries. CEB include:
Czech Republic, Bulgaria, Croatia, Hungary, Romania, Poland, Lithuania, Latvia, Slovak Republic, Slovenia, Estonia.

Figure 2. Real GDP per capita in PPP (as a percentage of euro area real GDP)



Source: Authors' computation based on World Development indicators database, World Bank

Figure captions

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