Restarting real economic convergence in CESEE

Doris Ritzberger-Grünwald, Josef Schreiner¹ Economic transition, European integration and EU membership have spurred an unprecedented process of social, political and economic modernization in Central, Eastern and Southeastern Europe (CESEE). Economic catching-up, however, has slowed since the Great Recession of 2008. Potential growth rates moderated notably and have not yet returned to the dynamism of the early 2000s. After providing a short overview of the status quo of transition in the 11 CESEE EU Member States², this study elaborates on the reasons for weakening potential growth by focusing on the contributions of labor, capital and productivity to potential output. At the same time, we try to identify the most suitable policy options to reaccelerate economic dynamics in CESEE in the medium term.

JEL classification: J11, J21, O11, O30, O40, O57 Keywords: Central, Eastern and Southeastern Europe, convergence, potential growth, demography, capital, productivity

The past two decades marked a rather successful period for the economic development of Central, Eastern and Southeastern Europe (CESEE). Income levels trended higher without generating worrisome disruptions in income distribution. This positive momentum was not restricted to economic variables but extended to education and life expectancy, thereby exerting a broader impact on living conditions in the region.

GDP per capita (measured at purchasing power parity) in the CESEE EU Member States increased from 40% of the euro area average in 1995 to 66% in 2017. Income levels have risen substantially in every single country of the region. In 2017, the Czech Republic reported the highest GDP per capita in CESEE at around 81% of the euro area average. This clearly exceeds the levels of Greece and Portugal, coming close to the levels achieved in Spain or Italy (around 88% of the euro area average).

However, hopes of harmonizing income levels with Western European standards within one generation that had been raised at the beginning of transition have not been fulfilled. While full convergence in GDP per capita by 2030 seemed a realistic scenario in the boom years prior to the 2008 crisis, this goal has since shifted further into the future. Given current GDP growth rates, average GDP per capita in CESEE will reach euro area levels by 2045 at the earliest. An even more realistic scenario would be the following: As it took 22 years to close less than half the gap (1995: 60% vs. 2017: 34%), it might take another 28 years, or maybe more, to close half of the remaining gap, which would result in CESEE GDP levels of 80% to 90% of euro area levels in 2045.

The strong rise in GDP per capita in CESEE went hand in hand with a slight increase in inequality. This was grist to the mill for those whose expectations in the new market-oriented system have not been fulfilled. Most of the promises initially associated with the privatization of state-owned firms did not come true, as selling shares on a grand scale did not result in equally distributed ownership

¹ Oesterreichische Nationalbank, Economic Analysis and Research Department, doris.ritzberger-gruenwald@oenb.at; Foreign Research Division, josef.schreiner@oenb.at. Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank (OeNB) or of the Eurosystem.

² Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

rates (EBRD, 2016). On average, income in CESEE remains distributed rather evenly by international comparison. According to Eurostat statistics, the richest 20% of CESEE households earned 5.3 times the income of the poorest 20% in 2016. This figure is in line with euro area averages (5.2). The comparable figures come to 7.1 in Russia (2011), 8.3 in the United States (2015), 12.5 in Brazil (2013), 28.3 in China (2011) and as much as 37.6 in South Africa (2015).

Transition needs to be evaluated not only against the background of purely economic measures but also a broader range of aspects conducive to a successful society. To cover some of these aspects, the Human Development Index (HDI) collected by the World Bank can be a useful tool. The HDI is a composite indicator comprising data measuring a decent standard of living (gross national income per capita), knowledge (expected years of schooling and mean years of schooling) and a long and healthy life (life expectancy at birth). The HDI paints a favorable picture for CESEE: Since 1990, almost all CESEE countries went from a high level of human development (or, in Croatia, a medium level of human development) to very high level of human development, thus securing a place among the most advanced nations. Furthermore, CESEE countries not only climbed up the HDI, but did so more quickly than the euro area countries, thereby reflecting that the catching-up process has not come to an end yet. The CESEE average HDI rose by 0.65% per annum from 1990 to 2015, while the euro area average HDI only increased by 0.57% per annum in the same period.

This progress was not only related to CESEE's strong economic performance over the past 25 years. CESEE also improved in education and life expectancy. Eurostat data show that the difference in expected years of schooling between CESEE and the euro area is negligible (in both regions, expected years of schooling stand at around 17 years) and that as regards the highest levels of educational attainment, results for CESEE are rather favorable. Average life expectancy in CESEE went up from 74.4 years in 2006 to 77.1 years in 2016, and the number of healthy life years saw an even more substantial improvement (from 52.6 years to 60.3 years). Nevertheless, gaps vis-à-vis the euro area still persist in both indicators (around 5 years and around 3 years, respectively).

1 Catching-up process slowed down after 2008 financial crisis

Without doubt, CESEE progressed in a wide range of indicators since the start of transition. The crisis of 2008 and the subsequent years, however, put a brake on the previously very swift economic convergence. Real GDP growth in CESEE more than halved between the period from 2000 to 2008 and the period from 2009 to 2017 (from an average of 4.8% to an average of 1.9%), bringing CESEE's average growth differential vis-à-vis the euro area down from 3 percentage points to some 1.5 percentage points.

The crisis not only impacted CESEE headline GDP growth but also potential output growth. Potential output growth moderated mostly on the back of lower growth contributions from capital and total factor productivity. The chronically weak contribution of labor to potential output should not be neglected, however. In the following, we will address the status quo of production factors labor, capital and productivity and reflect on recent and potential developments.



Potential GDP growth and its components

1.1 Labor

As the blue columns in chart 1 show, labor input has traditionally been a weak and rather unimportant contributor to potential output growth in CESEE. Given the currently observed tightening of labor markets, a lack of labor could become an important obstacle for economic activity in the medium term, however.

CESEE suffers from a pronounced decline in working age population (persons aged 15 to 64). In 2017, the working age population in CESEE was already some 5% below its level of 1990. Long-term demographic projections show that this trend will become worse and extend well into the future. In the long term, CESEE's working age population will shrink substantially while the euro area's working age population will only decrease moderately. Even though such long-term projections are subject to considerable uncertainty, these trends are alarming.

Net migration can explain a substantial part of the difference between Eastern and Western Europe as regards working age population trends. Between 1990 and 2017, total net migration across all euro area countries added, on average, around 750,000 persons per annum to the euro area's working age population.³ Total net migration made a negative contribution (some –140,000 persons) to the change in working age population in CESEE. Eurostat projections expect this pattern to reverse by 2033. At some 40,000 persons per annum, however, net migration will not be able to balance population decreases related to natural change in CESEE.

Demographic pressures could in part be relieved by measures that allow for a better reconciliation of work and care commitments. Studies show that such policies could have an especially positive impact on fertility (see d'Addio and d'Ercole, 2005; Pronzato, 2017; and Sleebos, 2003) and could help raise CESEE fertility levels to euro area averages. A more widespread availability of formal child care could also have a positive impact on female employment in CESEE, which is currently substantially below the euro area average (by some 5 percentage points in 2017).

³ Total net migration is calculated as the difference between total population change and natural change (i.e. the difference between the number of live births and deaths during a given year) and contains statistical adjustments. Furthermore, total net migration across all euro area countries also covers migration between euro area countries and may hence be subject to double-counting.

Chart 2a



Chart 2b

CESEE: working age population



Chart 2c

Change in %, contributions in percentage points 1.5 1.0 0.5 0 -0.5 -1.0 -1.5 2030 2040 2050 2070 2080 1990 2000 2010 2020 2060 Net migration Natural change **—** EA-19 Source: Eurostat, authors' calculations.

Euro area: working age population

Apart from demographic considerations, labor market policies may promote the contribution of labor to potential output. Despite recent improvements, CESEE still lags behind in certain relevant dimensions. Both the activity rate (employment and unemployment in relation to working age population) and the employment rate (employment in relation to working age population) are substantially lower in CESEE than in the euro area. As noted above, this is in part related to lower female labor market activity. However, also male activity falls short of euro area levels, indicating notable unused economic potential. The latter is also obvious from the number of years a person is expected to be active in the labor market. The average working life of a person in CESEE is 31.1 years, compared with an average of 35.4 years for a person in the euro area. Unlike the duration of average working life, average weekly working hours in CESEE are already somewhat above the comparable euro area figures. Moreover, part-time employment is negligible in the CESEE EU Member States: At only 6%, it is far below the corresponding euro area figure (21.6%).

1.2 Capital

Besides total factor productivity, capital was the strongest contributor to potential growth throughout transition. The real capital stock in CESEE nearly doubled between 1995 and 2017 and currently stands at an average of some EUR 56,000 per person employed. However, this is still only around one-fourth of the corresponding euro area ratio (see chart 3).

The annual growth rate of capital formation was, on average, higher in CESEE than in the euro area between 2000 and 2017. This is especially true for the boom years prior to 2008, when investment growth spiked at a stellar 20% in 2007 per annum. Investment dynamics in CESEE have been somewhat more heterogeneous in recent years, with substantial contractions in 2009 and 2016.

Much of the differences between investment dynamics in CESEE and in the euro area relates to public investment. The share of public investment in total investment is substantially higher in CESEE (see chart 4). This is not a legacy from the past, but mainly mirrors the high importance of payments from EU structural and



investment funds. All CESEE EU Member States have been net recipients from the EU budget since they joined the EU, and EU funds are often channeled into public investment. Spikes in public investment can be observed in 2002 and 2003 (related to pre-accession EU assistance), in 2006 and 2007 (around the end of the multiannual programming period 2000–2006) as well as in 2014 and 2015 (around the end of the programming period 2007–2013.⁴ The contraction in capital formation observed in 2016 was also directly related to the EU funding cycle.

⁴ Applications for EU funding for projects can be submitted for up to two years after the end of a funding period.

Chart 4a



CESEE: investments by sector

Change in %, contributions in percentage points

Chart 4b



Chart 4c









Investments by asset type: difference between CESEE and euro area



A distinctive pattern also emerges when breaking down investment by asset type. CESEE countries have invested a much higher share of total investment in machinery and nonresidential construction than the euro area (see chart 5). On the one hand, this investment behavior reflects the need develop and/or upgrade CESEE countries' infrastructure and production capacities after transition. Moreover, it is also a consequence of the availability of EU funding. A comparatively small share of total investment was channeled into dwellings and other investments. Especially the latter might prove unfavorable in the future, as other investments mostly comprise intellectual property rights, which are key to technological progress (see e.g. Kotian et al., 2018). Furthermore, the trend in other investments is alarming: The gap vis-àvis the euro area was around five percentage points between 2000 and 2007 but increased notably after the crisis. By 2016, the share of investment directed into other investments in CESEE is some 12 percentage points below the comparable share in the euro area. Overall, investment in transport equipment (see orange section of bars in chart 5) reflects the importance of the automotive cluster, which is prevalent at least in some of the CESEE countries.

Strong investment dynamics in CESEE especially before the crisis contributed to a catching-up in capital stocks per person employed. Yet, the question remains whether investment was strong enough given CESEE's stage of economic development.

Chart 5c

Several pieces of evidence suggest that investment growth in CESEE was too low especially in the period after 2008, as can be seen e.g. when applying a simple accounting framework along the lines of EIB (2017), which relates GDP growth and capital depreciation to calculate the investment rates that would be sufficient to maintain a given capital-output ratio. For the CESEE region as whole, the gap between the actual investment rate and the investment rate sufficient to maintain the given capital-output ratio came to some 4% of GDP; particularly large gaps were observed in Latvia but also in the Czech Republic, Estonia and Slovenia (see chart 6). It also must be noted that this calculation should only be interpreted as a lower bound for optimal investment as it does not incorporate a rise in the capital-output ratio.

The finding that post-crisis investment in CESEE should have been higher is also supported by the IMF (2016). Using a historical benchmark and a golden rule (a model based steady state investment rate), the IMF assessed the adequacy of the speed of capital accumulation and found, for the post-crisis period, that in most CESEE economies actual investment was below its historical benchmarks and more in line with the golden rule rate. However, as the golden rule rate can also be interpreted as a lower bound for optimal investment, investment rates indeed tended to be rather low after the Great Recession.

In a comparison of investment developments in CESEE and peer countries, the EBRD (2015) finds that, while before the financial crisis countries in emerging Europe used to invest roughly the same amounts as their peers, they have

invested significantly less in the post-crisis period. The investment gap vis-à-vis other comparable emerging market economies is estimated to amount to some 3% to 4% of GDP, a result that is broadly in line with the calculations presented above.

Finally, the EIB (2017) used the historical experience of countries that caught up successfully as a benchmark, finding that over the last 20 years, most of CESEE reached the benchmark only for short periods of time.

This suggests that investment in CESEE should rise in order to renew and augment the capital stock. CESEE has traditionally relied on foreign capital inflows to finance investments (gross capital formation outpaced gross savings by a large margin throughout most of the past two decades; see chart 7a). One important component in this respect has already been mentioned: inflows of EU funds (which



Capital-output ratio preserving investment

Chart 6a





Chart 7a

Chart 7c







Source: National central banks, IMF, authors' calculations.

Note: Assets minus liabilities; negative (positive) values indicate net accumulation of assets smaller (larger) than net accumulation of liabilities (net inflow/outflow of capital).





are mostly recorded in the capital account). Throughout transition, however, other instruments played a more important role. This is especially true for foreign direct investment (FDI), which accounted for the majority of capital inflows up to the 2008 crisis (see chart 7b). FDI is concentrated in three sectors in particular: other services (comprising mainly trade, real estate activities and, to a lesser extent, information and communication services), manufacturing, and financial services (see chart 7c). Strong foreign investment in financial services is also reflected in the substantial increase of other investments (mainly comprising intra-group credit and direct cross-border credit).

In the past, foreign capital was, on the one hand, directed toward the buildup of production capacities (e.g. greenfield investments) and the integration of CESEE into international production networks (so-called global value chains). On the other hand, it was channeled into financial sector development and financial deepening. With the onset of the crisis, capital flows to CESEE decreased substantially, although the Vienna Initiative successfully prevented an unorderly withdrawal of international banks from the region (see Nitsche, 2010). Nevertheless, most of the decrease in capital flows was driven by lower inflows (and later outflows) of other investments as credit developments proved unsustainable. FDI moderated, too, but overall CESEE continued to attract FDI also throughout the last decade.

The financing of future investments should rely on models that proved sustainable in the past and avoid models that did not. Against this background, a reacceleration of FDI in CESEE should be aimed for. Means to do so include the development of a more business-friendly environment, investment in human capital and innovation, and measures to boost productivity. Another possibility of attracting further FDI is to widen the geographic focus of FDI host countries beyond Western industrialized countries, e.g. to China, other Asian countries or the Arab world. Some CESEE countries are quite hesitant in this respect, but the Western Balkan countries have started to explore this route, especially when it comes to financing public infrastructure (see IMF, 2018b).

Furthermore, investment should generally be put to its most efficient use. Bubbico et al. (2018, in this issue) identify the areas with the most urgent structural investment needs in CESEE by exploring a large set of strategic and competitiveness indicators.

At the same time, the refinancing structure of the CESEE banking sector should become more balanced. In fact, the region has already come a long way, as its banking sector has undergone a period of deleveraging, balance sheet clean-up and restructuring, and banks' refinancing structure has strongly shifted away from foreign funding to stable local deposits. Most CESEE countries reported an overhang of deposits over credits at end-2017.

To promote both domestic savings and foreign capital inflows, local capital markets (equity and debt) should be developed further. CESEE markets are extremely undercapitalized by international comparison. For example, equity market capitalization stands at 18.5% of GDP in CESEE compared with 65% of GDP in the euro area. The gap is even more pronounced in (nongovernment) bond markets: 12% of GDP vs. 82% of GDP. Achieving functioning capital markets would require reaching a new equilibrium, which in turn would require changes in legislative systems and pension systems, stronger incentives to save and bear

risks, as well as a general change in the attitude of households and enterprises toward capital markets. This very long list of necessary "to dos" explains why so many efforts into this direction have failed so far.

1.3 Productivity

Total factor productivity (TFP) was historically the most important driving force for the catching-up of income levels in the CESEE EU Member States. Over the past 20 years, TFP growth in CESEE outpaced the respective euro area figure by an average of 1.2 percentage points per year. TFP dynamics were especially vivid in the period before the crisis and started to accelerate recently after some years of subdued developments between 2008 and 2012 (see chart 8b). In general, the potential for further TFP increases should be substantial, as the gap in TFP between





the euro area and CESEE remains large even after 25 years of transition. Compared to the United States – the world's benchmark for technological development – the gap is even more pronounced (see chart 8a). CESEE also lags behind notably in terms of patent applications. The European Commission's European Innovation Scoreboard reports that in 2015 patent applications (per EUR billion of GDP) in CESEE were four times lower than the EU average.

Allocative efficiency – the extent to which available resources are allocated to their most productive use – was probably the most important driving factor of productivity in CESEE in the early stages of transition. In the process of creating modern market-based economies, labor was set free from sectors with low productivity (especially agriculture) and put to a more productive use elsewhere (especially industry).

When these benefits became increasingly exhausted, the reallocation of resources within sectors between tasks, firms and economic activities started to play a prominent role. In particular, resources shifted to foreignowned firms. There is strong evidence that foreign-controlled companies operate more closely to the global technological frontier and that foreign-controlled enterprises are more productive. Foreign-controlled enterprises in CESEE were responsible for nearly 40% of value added in 2015, while their share in capital stock and employment only amounted to some 25%. Against this background, FDI was not simply a means of providing financing for the region, it also promoted knowledge, managerial and technological spillovers. FDI also helped the integration of CESEE into global value chains. Participation in international production networks not only had positive impacts on competitiveness (see Ritzberger-Grünwald et al., 2017), it also acted as an additional channel for the diffusion of innovation. Knowledge is shared along the value chain (also with domestic suppliers) and domestic production benefits from high-quality tangible and intangible inputs.

A general observation is that TFP growth has slowed on a global level since the early 2000s. This is mirrored in a pronounced slowdown in the growth of patenting in the U.S.A., the U.K., Germany, France and Japan – the countries responsible for some three-quarters of all international patents since 1995. This implies that the technological frontier has essentially stalled. OECD research (see OECD, 2015) found that a slowdown in patenting is not observed for the most productive firms in the global economy. Productivity growth of the most productive firms in the global economy remained robust at an average annual rate of 3.5% in the manufacturing sector throughout the 2000s, compared to just 0.5% for non-frontier firms, while the gap is even more pronounced in the services sector. This suggests that the slowdown in aggregate productivity is not related to a general lack of technological progress; rather, it is a consequence of a disrupted diffusion of technological change from frontier to non-frontier firms and a weakened translation of innovation into productivity growth.

Recent research by the IMF (IMF, 2018a) shows that the diffusion of knowledge from countries at the technological frontiers to other advanced economies has indeed weakened since the beginning of the new millennium. However, knowledge diffusion to emerging economies has improved over the past 20 years: While advanced economies absorbed technological change from abroad roughly twice as efficiently as emerging economies in 1995, this gap declined to roughly one-third by 2014. In particular, the distance in technological development between emerging and advanced countries ceased to act as an impediment for knowledge flows, implying that the emerging economies, on average, managed to better meet the preconditions for the absorption of foreign knowledge (e.g. scientific, technical and organizational knowledge).

Measures aimed at a reacceleration of productivity growth should be based on these findings and best practices of the past. Today, the rate of technological progress is largely defined on a global level by the scientific output and innovations of the most productive research institutions and firms. While CESEE should definitely aim to play a bigger role in these processes in the long run, a more efficient participation in global innovation seems to be the most viable option in the short and medium term. This requires a strengthening of the main channels of knowledge diffusion (especially through FDI by highly productive international firms and the region's further integration into global value chains, but also through trade and the international mobility of skilled labor) and further improvements of the absorptive capacity for foreign innovations (mainly relating to human capital and R&D).

2 Conclusions

CESEE has profoundly benefited from transition and the deep and thorough integration into greater European political and economic structures. Economic growth has experienced a boost that has led to a remarkable convergence of CESEE living conditions with those in Western Europe. However, even after nearly 30 years of transition, a full harmonization of living standards has not been achieved yet. In fact, convergence has slowed since the financial and economic crisis of 2008. Potential output was affected by weaker productivity and too low investment rates. While strengthening GDP growth in the past few years alleviated some of these problems, tightening labor markets have shown that CESEE is vulnerable to adverse demographic developments. The pronounced decrease in working age population could become one of the major obstacles preventing successful future convergence. While there is certainly no "one-size-fits-all" solution, the CESEE countries should aim to keep their economies open to trade and FDI. Openness acts as a catalyst for innovation and technological progress, helps attract capital and people, and positively influences productivity and competitiveness. To reap the full benefits of international economic linkages, CESEE should aim to improve its institutional setup and governance (see Zuk et al., 2018). Strong institutions provide a stable environment for foreign capital, international trade flows and investment in education and research and should, in principle, positively influence all components of potential output. People tend to migrate when life dissatisfaction is high and when they are unhappy with certain aspects of public life (see Otrachshenko and Popova, 2012, and Van Mol, 2016). Improvements in governance, especially in the areas of corruption control and government effectiveness, could therefore have a positive impact not only on productivity and FDI, but also on migration.

References

- d'Addio, A. C. and M. M. d'Ercole. 2005. Trends and determinants of fertility rates in OECD countries: The role of policies. OECD Social, Employment and Migration Working Papers 27.
- Bubbico, R. L., M. Kollar and T. Slačík. 2018. Structural investment needs in CESEE and the use of EU funds. In: Focus on European Economic Integration Q3/18. Vienna: OeNB. 87–101.
- **European Bank for Reconstruction and Development (EBRD). 2015.** Rebalancing finance. Transition Report 2015-16.
- **European Bank for Reconstruction and Development (EBRD). 2016.** Transition for all: Equal opportunities in an unequal world. Transition Report 2016-17.
- **European Investment Bank (EIB). 2017.** Wind of change: Investment in Central, Eastern and South Eastern Europe.
- **International Monetary Fund (IMF). 2016.** Central, Eastern, and Southeastern Europe: How to Get Back on the Fast Track. Regional Economic Issues. May.
- **International Monetary Fund (IMF). 2018a.** Is productivity growth shared in a globalized economy? World Economic Outlook. April.
- **International Monetary Fund (IMF). 2018b.** Public Infrastructure in the Western Balkans: Opportunities and Challenges. Departmental Paper 18/02.
- Kotian, J., Z. Arokszallasi and K. Rzentarzewska. 2018. Digitalization and higher R&D readiness – a way to foster income convergence in CESEE. In: Focus on European Economic Integration Q3/18. Vienna: OeNB. 34–42.

- Nitsche, W. 2010. The Vienna Initiative/European Bank Coordination Initiative: Assessment and Outlook. BMF Working Paper 4/2010.
- **Organisation for Economic Co-operation and Development (OECD). 2015.** The future of productivity.
- **Otrachshenko, V. and O. Popova. 2012.** Life (Dis)Satisfaction and the Decision to Migrate: Evidence from Central and Eastern Europe. FEUNL Working Paper Series 570.
- Pronzato, C. 2017. Fertility decisions and alternative types of childcare. IZA World of Labor 2017: 382.
- **Ritzberger-Grünwald, D., J. Schreiner and J. Wörz. 2017.** Competitiveness of CESEE EU Member States: recent trends and prospects. In: Focus on European Economic Integration Q3/17. Vienna: OeNB. 31–41.
- **Sleebos, J. E. 2003.** Low Fertility Rates in OECD Countries: Facts and Policy Responses. OECD Social, Employment and Migration Working Papers 15.
- Van Mol, C. 2016. Migration aspirations of European youth in times of crisis. In: Journal of Youth Studies. 19 (10).
- Żuk, P., É. K. Polgár, L. Savelin, J. L. Diaz del Hoyo and P. König. 2018. Real convergence in central, eastern and south-eastern Europe. ECB Economic Bulletin Issue 3/2018.