

# FOCUS ON EUROPEAN ECONOMIC INTEGRATION

Europe 2030: challenges and opportunities for  
European integration and convergence

This publication presents economic analyses and outlooks as well as analytical studies on macroeconomic and macrofinancial issues with a regional focus on Central, Eastern and Southeastern Europe.

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*Opinions expressed by the authors of studies do not necessarily reflect  
the official viewpoint of the Oesterreichische Nationalbank or of the Eurosystem.*

# Editorial

*In its role as the central bank of the Republic of Austria and as an integral part of the European System of Central Banks, the OeNB is committed to the European project and actively supports the European integration process. As a central economic policymaking institution, we offer economic and financial expertise and support policymakers by providing high-quality analyses. Against this backdrop, the second half of 2018 represents an especially important period for our institution. As Austria takes over the presidency of the Council of the European Union for the third time after 1998 and 2006, our country assumes a central role in shaping and guiding European politics.*

*We want to use this opportunity to dedicate this special edition of our quarterly journal Focus on European Economic Integration to the main topics of Austria's EU presidency. Given the OeNB's longstanding and well-established research focus on Central, Eastern and Southeastern Europe (CESEE), the contributions collected in this edition will, in particular, deal with issues related to European integration, economic convergence within the EU as well as economic and political challenges in the CESEE region. We asked renowned experts to share their knowledge on these topics and to reflect on past achievements, current challenges and the future potential of CESEE and the European integration process. In addition, OeNB economists will present their expertise on selected issues.*

*The studies in this special issue are grouped around the following topics, which are closely aligned with the priorities of the Austrian presidency: (1) growth, convergence and inclusiveness, (2) E(M)U enlargement and EU neighborhood policy, (3) the EU budget and structural reform priorities, (4) labor markets and migration in CESEE as well as (5) financial sector development and stability.*

*Part I consists of three contributions on the topic of economic growth and convergence for the CESEE economies. In the first article, "Restarting real economic convergence in CESEE," Doris Ritzberger-Grünwald and Josef Schreiner reflect on the reasons for the slowdown in potential growth in the CESEE EU Member States after the global financial crisis. By discussing the developments of individual inputs into production – labor, capital and total factor productivity – they trace the evolution of potential output since 2008, identify shortcomings and gaps in each area and provide policy options for reaccelerating economic dynamics in the medium term.*

*In "Sustainable and equitable convergence and integration in Central, Eastern and Southeastern Europe" István P. Székely argues that the speed, sustainability and equity of future convergence in the CESEE region will crucially depend on renewed reform efforts. Reforms should focus on supporting innovation, selection and allocative efficiency to allow the CESEE region to fully benefit from the deepening of European integration.*

*In their contribution "Digitalization and higher R&D readiness – a way to foster income convergence in CESEE" Juraj Kotian, Zoltan Arokszallasi and Katarzyna Rzentarzewska argue that investments in information and communication technology (ICT) have a higher impact on total factor productivity growth than investments in infrastructure or machinery. They also find notable positive externalities of such ICT investments in the form of improved processes, reduced inefficiencies and increased transparency. CESEE countries could also benefit from higher R&D spending. For R&D investments to be fully effective, however, certain prerequisites have to be met, which is not yet fully the case in many countries of the CESEE region.*

*Part II deals with enlargement prospects for both the EU and the euro area and with the role of external players. Peter Backé and Sandra Dvorsky discuss the process of monetary integration in the euro area since 2009 in their study "Enlargement of the euro area toward CESEE: progress and perspectives." They address past enlargement steps, the current playing field as well as the impact of institutional changes within Economic and Monetary Union on future convergence assessments.*

*In their article "External actors and European integration in the Western Balkans" Wolfgang Petritsch and Philipp Freund introduce the major external players in the Western Balkans region as well as these players' interests and policy tools, with a focus on their significance for the European Union. The authors call for a consistent and committed approach to the integration of the Western Balkans into the EU.*

In “Sanctions and countersanctions — effects on economy, trade and finance” Iikka Korhonen, Heli Simola and Laura Solanko take a closer look at the sanctions imposed on Russian entities by the EU, the U.S. and others, as well as on Russia’s countersanctions. They find that sanctions have had a clearly negative effect on the Russian economy. The U.S. and EU sanctions have, for instance, restricted Russian banks’ access to capital. At the same time, EU countries’ trade with Russia and their market share in Russia has declined. Russia’s countersanctions have, for example, affected exports of foodstuffs from the EU, but macroeconomic effects on the EU are generally very small.

Part III addresses the topical issue of the EU’s Multiannual Financial Framework as well as structural reform priorities that should be considered during the negotiations for the upcoming funding period. In their study “The EU’s Multiannual Financial Framework and some implications for CESEE countries” Zsolt Darvas and Guntram Wolff examine potential changes to the EU budget as proposed by the European Commission on May 2, 2018, and identify room for efficiency gains to compensate for the Brexit-related shortfall in revenues. They advocate shifting spending commitments toward priorities which have gained in importance recently while reducing spending on agriculture (especially direct payments) and cohesion policies. To achieve the latter objective, they would recommend improved design, targeting and control.

In their paper “Structural investment needs in CESEE and the use of EU funds” Rocco L. Bubbico, Miroslav Kollar and Tomáš Slačik state that, while there is currently no cyclical quantitative investment gap in CESEE, significant structural investment needs can be identified in terms of quality. Their study identifies the exact thematic areas where structural investment needs persist and evaluates whether European Structural and Investment Funds were directed at those areas in the period 2007–2013.

Kurt Bayer and Andreas Breitenfellner reflect on “What is the appropriate role of structural reforms in E(M)U deepening” and discuss whether flexibility-enhancing structural reforms at the national level substitute or rather complement institutional reforms at the European level. They argue that the structural reform paradigm must be expanded to include productivity-enhancing instruments and that the success of reforms depends on their design, packaging and sequencing. Reform ownership based on a broad local consensus is essential, even if cross-border spillovers justify the involvement of the EU in structural reforms in the Member States.

Another topic of high policy relevance is addressed in part IV, namely migration and labor market developments in the CESEE region. The article “How did EU Eastern enlargement affect migrant labor supply in Austria?” by Julia Schmieder and Andrea Weber reviews Austria’s experience with the influx of workers from Central, Eastern and Southeastern Europe after the latest EU enlargement rounds. The authors find that the increase in migrant workers in Austria accelerated persistently after labor market access for citizens of CESEE EU Member States was liberalized. They also report a shift in the composition of the migrant workforce toward lower-qualified and younger workers and provide evidence of temporary migration as an important phenomenon.

In his contribution “Demographic decline does not necessarily condemn CESEE EU countries to a low growth future” Richard Grieveson elaborates on challenges posed by increasingly tight labor markets in CESEE in an environment of strong growth, emigration and demographic decline. He argues that lower future growth is not an inevitable consequence of labor shortages as there are important incentives for capital owners to keep production in CESEE countries (including geographical proximity, good infrastructure, etc.). Furthermore, recent rises in productivity and moves toward automation indicate a possible long-term solution to demographic challenges.

Part V focuses on financial sector developments and macrofinancial stability in the EU and, in particular, the CESEE economies. In their contribution, Francesco Mazzaferro and Frank Dierick present the European Systemic Risk Board (ESRB) and its role in the development of macroprudential policy in the EU (“The ESRB and macroprudential policy in the EU”). They discuss the establishment, mandate and workings of the ESRB, review the main ESRB recommendations that provide the basis for the macroprudential policy framework in EU Member States and investigate in greater detail how this framework is put into practice.

*In “Has private sector credit in CESEE approached levels justified by fundamentals? A post-crisis assessment” Mariarosaria Comunale, Markus Eller and Mathias Lahnsteiner calculate credit-to-GDP ratios that are in line with macroeconomic and financial fundamentals and compare them with actual credit-to-GDP levels. In doing so, they add cross-border credit to domestic bank credit, also considering global factors and cross-country spillovers. They find that credit-to-GDP ratios declined to levels which are more in line with the fundamentals observed in countries where they were too high before the crisis, and that credit-to-GDP ratios are often below fundamentally justified levels in countries that did not experience a bubble before the crisis.*

*I hope that the contributions put together for this special issue of Focus on European Economic Integration will provide useful analytical groundwork for Austria’s EU presidency. They will certainly offer food for thought and stimulate discussions among policymakers and a broader audience.*

A handwritten signature in black ink, appearing to read 'Ewald Nowotny', with a stylized, cursive script.

Ewald Nowotny, Governor





# Europe 2030: challenges and opportunities for European integration and convergence

# Restarting real economic convergence in CESEE

Doris Ritzberger-Grünwald,  
Josef Schreiner<sup>1</sup>

*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 States<sup>2</sup>, 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

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<sup>2</sup> 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.

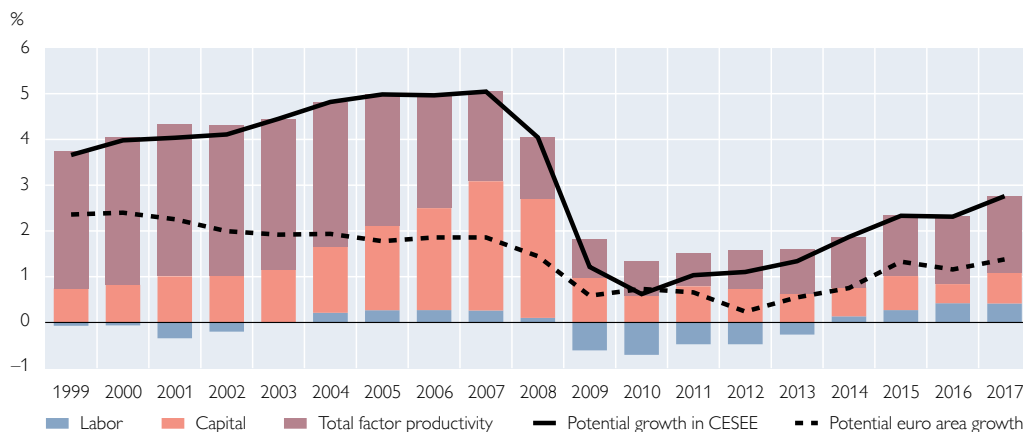
This progress was not only related to CESEE's strong economic performance over the past 25 years. CESEE also improved in education and life expectancy. Eurostat data show that the difference in expected years of schooling between CESEE and the euro area is negligible (in both regions, expected years 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.

Chart 1

**Potential GDP growth and its components**

Source: European Commission.

**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.<sup>3</sup> 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.

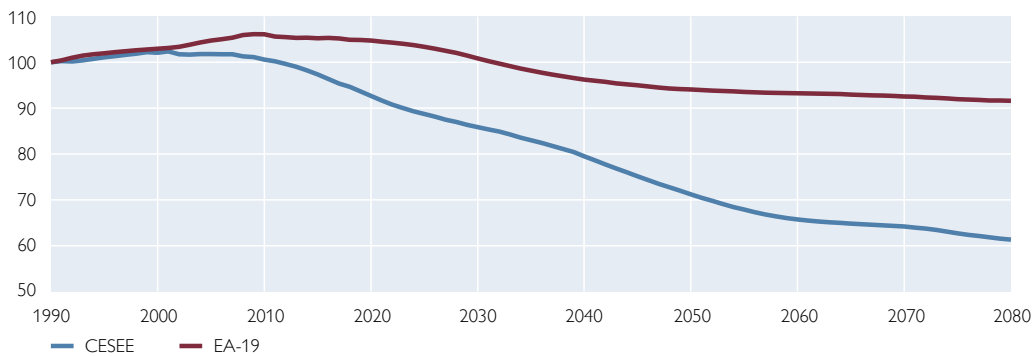
Demographic pressures could in part be relieved by measures that allow for a better reconciliation of work and care commitments. Studies show that such policies could have an especially positive impact on fertility (see d'Addio and d'Ercole, 2005; Pronzato, 2017; and Sleenbos, 2003) and could help raise 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).

<sup>3</sup> 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

### Working age population

Index: 1990=100

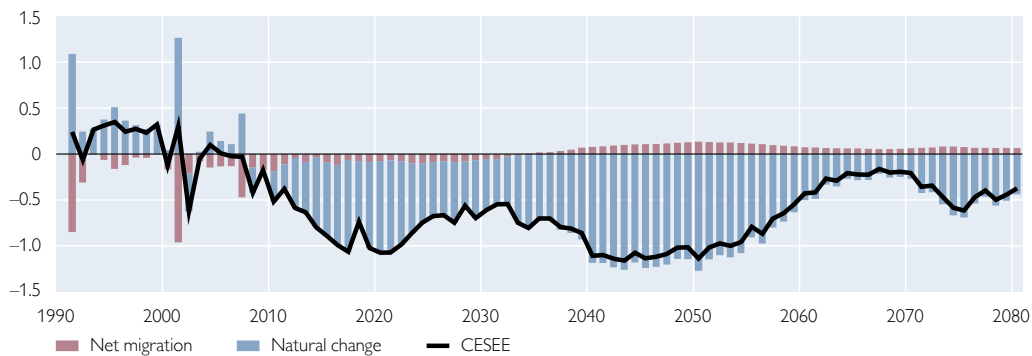


Source: Eurostat.

Chart 2b

### CESEE: working age population

Change in %, contributions in percentage points

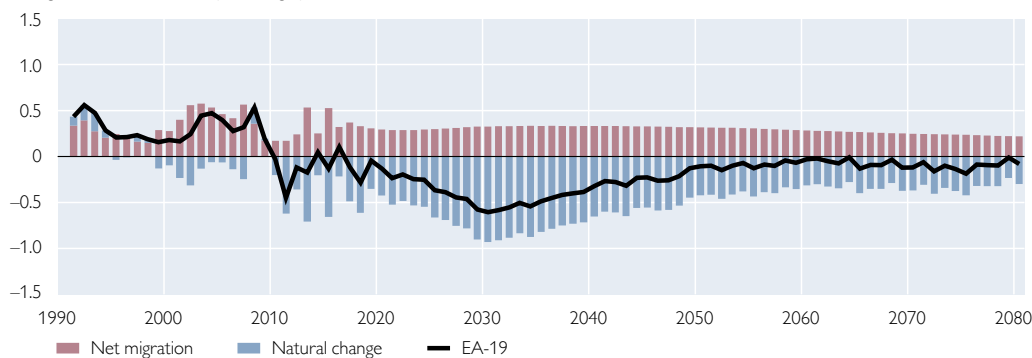


Source: Eurostat, authors' calculations.

Chart 2c

### Euro area: working age population

Change in %, contributions in percentage points



Source: Eurostat, authors' calculations.

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%).

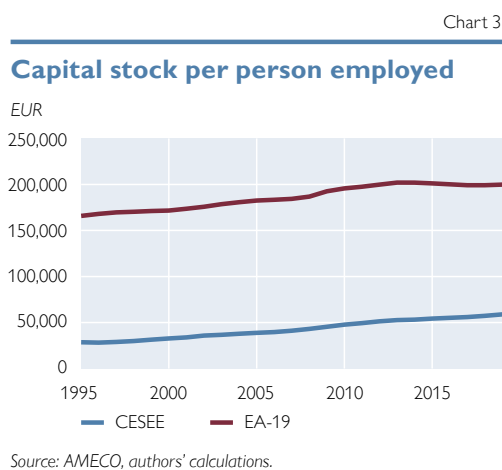
## 1.2 Capital

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).<sup>4</sup> The contraction in capital formation observed in 2016 was also directly related to the EU funding cycle.

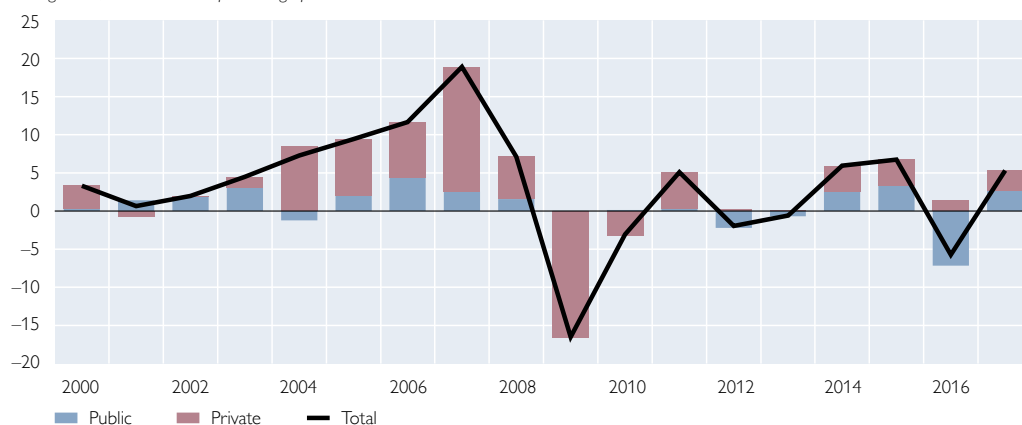


<sup>4</sup> Applications for EU funding for projects can be submitted for up to two years after the end of a funding period.

Chart 4a

**CESEE: investments by sector**

Change in %, contributions in percentage points

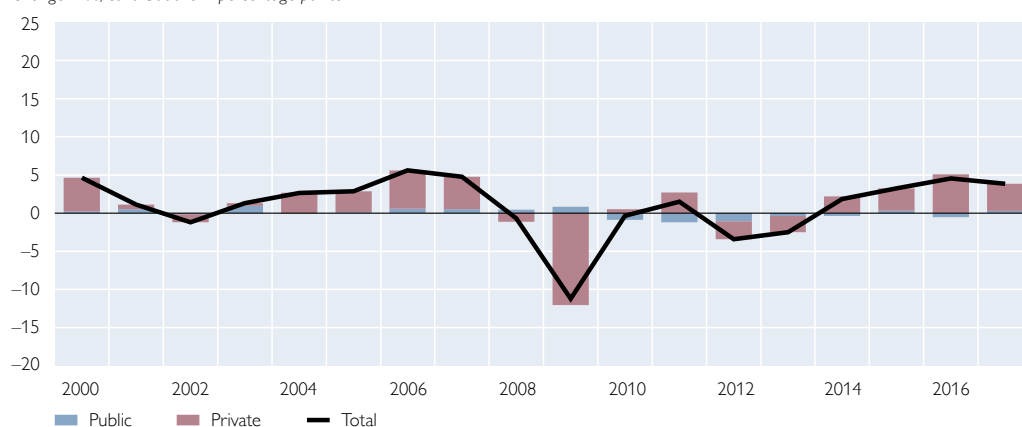


Source: AMECO, authors' calculations.

Chart 4b

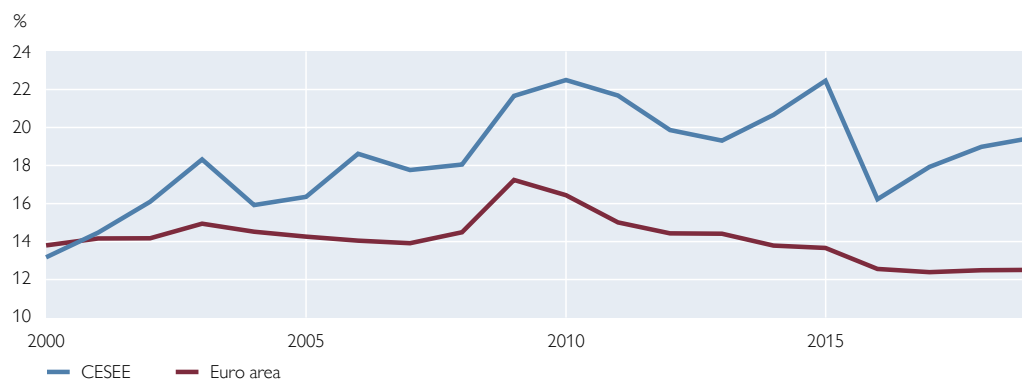
**Euro area: investments by sector**

Change in %, contributions in percentage points



Source: AMECO, authors' calculations.

Chart 4c

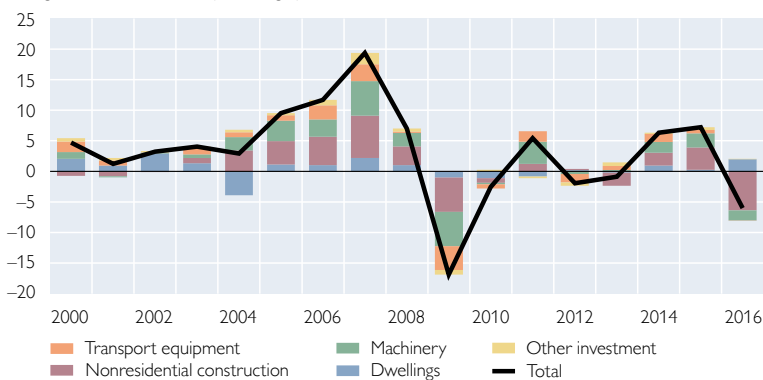
**Share of public investment in total investment**

Source: AMECO, authors' calculations.

Chart 5a

**CESEE: investments by asset type**

Change in %, contributions in percentage points

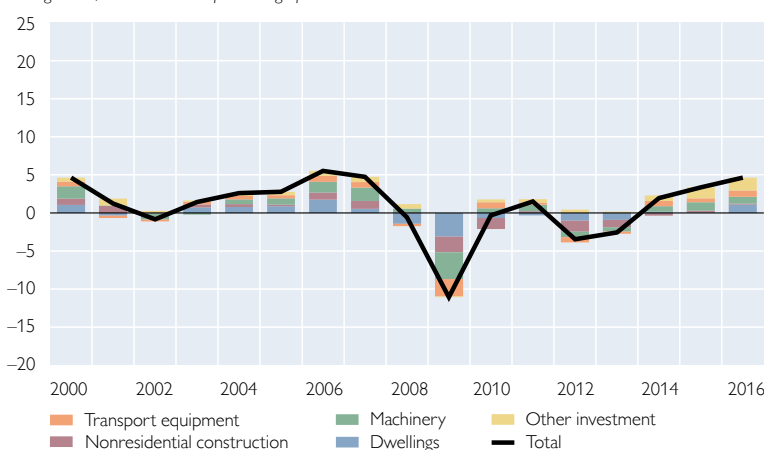


Source: AMECO, authors' calculations.

Chart 5b

**Euro area: investments by asset type**

Change in %, contributions in percentage points

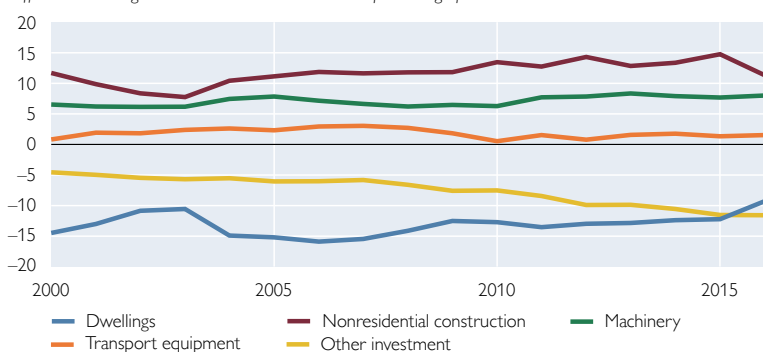


Source: AMECO, authors' calculations.

Chart 5c

**Investments by asset type: difference between CESEE and euro area**

Difference in categories' share in total investment in percentage points



Source: AMECO, authors' calculations.

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 to 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-à-vis 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.

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.

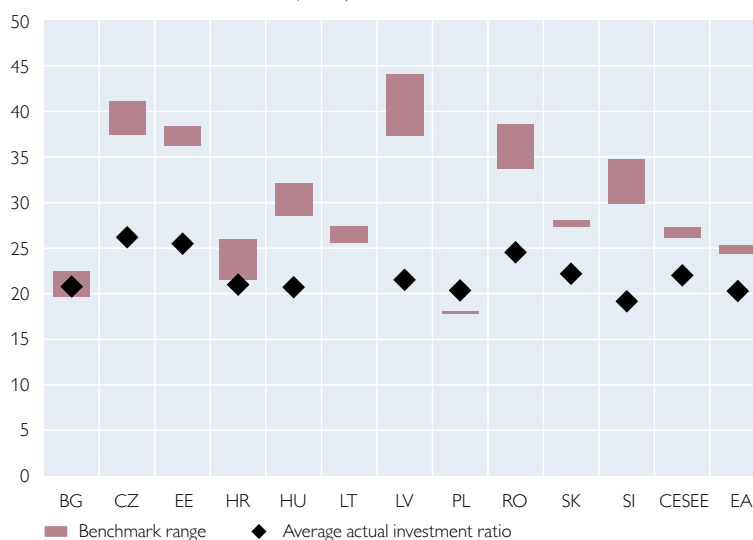
Finally, the EIB (2017) used the historical experience of countries that caught up successfully as a benchmark, finding that over the last 20 years, most of CESEE reached the benchmark only for short periods of time.

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

Chart 6a

### Capital-output ratio preserving investment

Benchmark and actual investment in % of GDP, post-2008

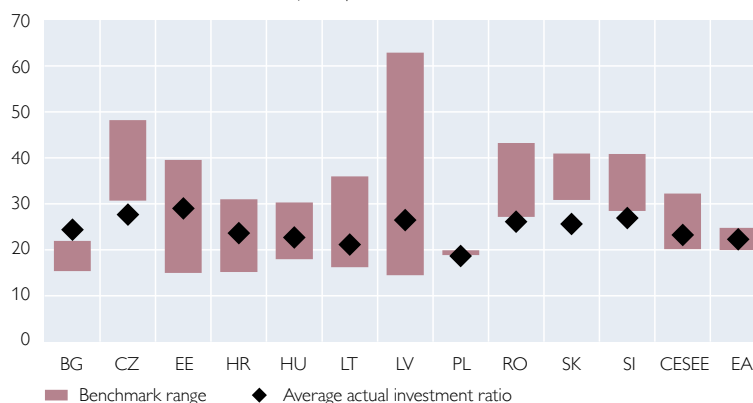


Source: Penn World Tables, AMECO, authors' calculations.

Chart 6b

### Capital-output ratio preserving investment

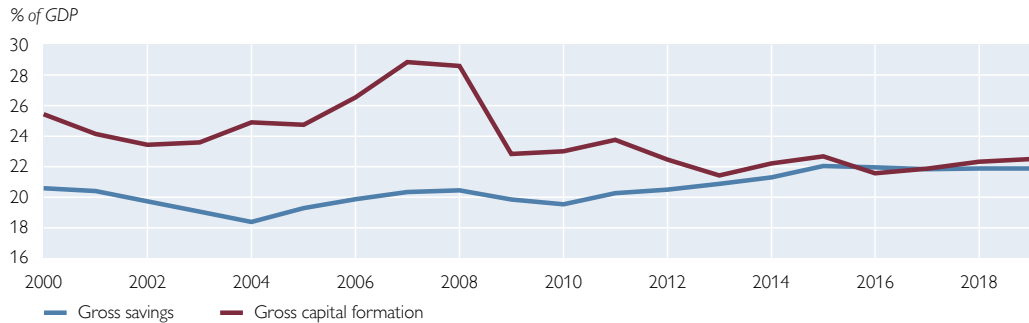
Benchmark and actual investment in % of GDP, pre-2008



Source: Penn World Tables, AMECO, authors' calculations.

Chart 7a

### Gross savings and gross capital formation



Source: AMECO.

Chart 7b

### Financial account

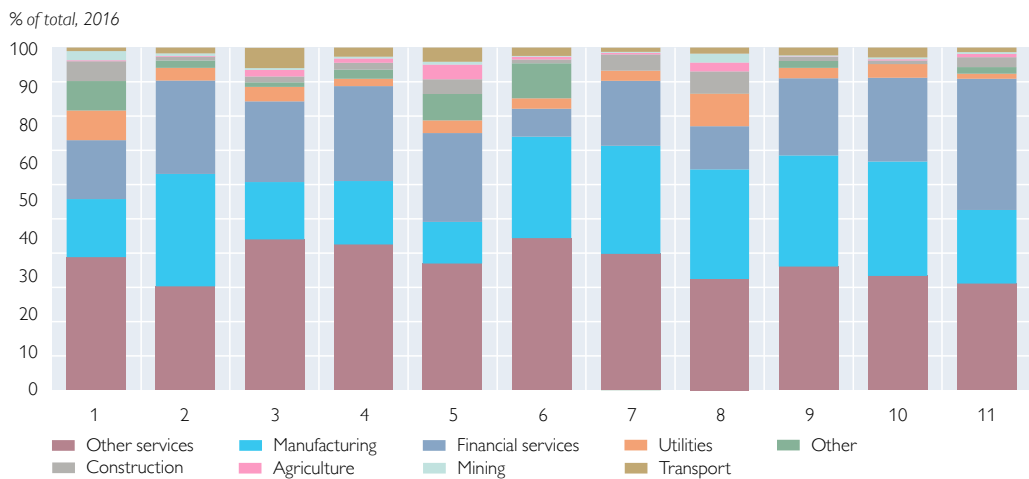


Source: National central banks, IMF, authors' calculations.

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

Chart 7c

### Foreign direct investment by sector



Source: wiw.

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 unordered 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.

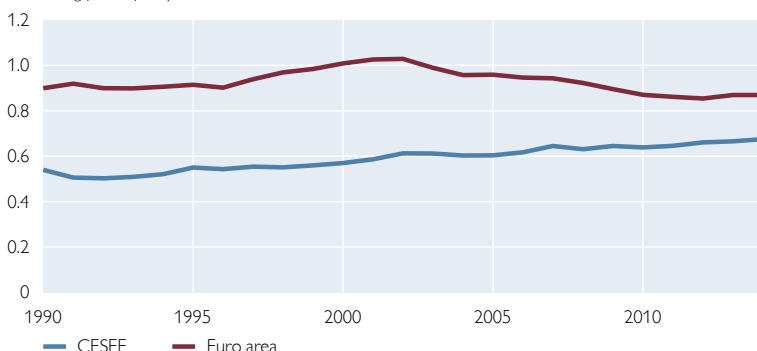
Allocative efficiency – the extent to which available resources are allocated to their most productive use – was probably the most important driving factor of productivity in CESEE in the early stages of transition. In the process of creating modern market-based economies, labor was set free from sectors 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 foreign-owned 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.

Chart 8a

#### Total factor productivity levels

Purchasing power parity; U.S.A.=1

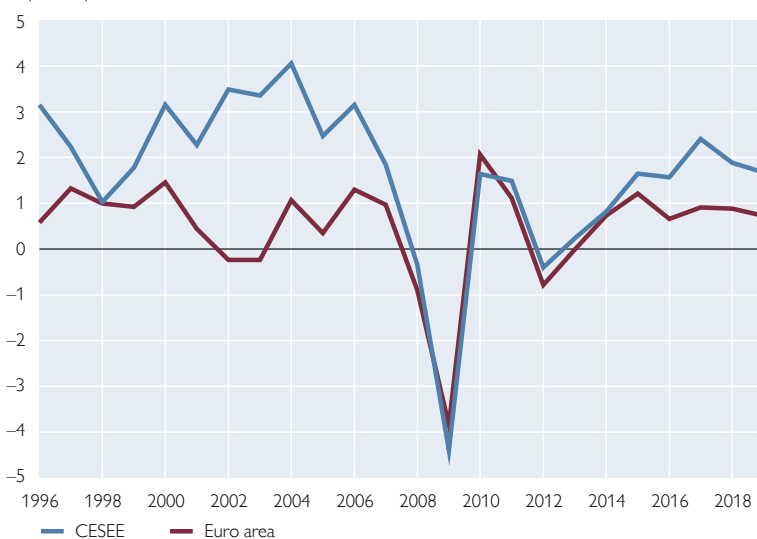


Source: Penn World Tables.

Chart 8b

#### Total factor productivity

%, year on year



Source: AMECO.

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 Žuk 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.

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# Sustainable and equitable convergence and integration in Central, Eastern and Southeastern Europe

István P. Székely<sup>1</sup>

*The transformation of Central, Eastern and Southeastern European (CESEE) economies from centrally planned toward open market economies has been inherently linked with their integration into the European Union. The widely held desire to join the EU was a major driver of economic reform. Such reforms not only improved the efficiency of resource allocation but also made EU membership a plausible outcome, which in turn attracted FDI and accelerated integration. EU accession crowned this process and unleashed historically unprecedented private and public capital flows. The positive climate that such rapid growth and convergence created temporarily masked the deep-seated problems that weak institutions and slow social learning had created, while the excessive capital inflow led to resource misallocation in the economy. The financial and economic crisis that hit the CESEE region in 2008 thus revealed deeply rooted problems, which these countries now need to face during their journey toward the frontier of development. Reform reversals have become widespread, in some cases touching the very foundations of a modern market economy. This article argues that the speed, sustainability and equity of future convergence in the region will crucially depend on renewed reform efforts. Reforms will also allow these countries to fully benefit from the continued deepening of European integration, further accelerating convergence.*

JEL classification: P3, F5, F6, O5

Keywords: EU integration, convergence, reform reversals

The transformation of Central, Eastern and Southeastern European (CESEE) economies from centrally planned toward open market economies has been inherently linked with their integration into the European Union. The widely held desire of these countries to join the EU was a major driver of economic reform from very early on in the process. Such reforms not only greatly improved the efficiency of domestic resource allocation but also made EU membership an increasingly plausible outcome. These developments in turn attracted foreign direct investment (FDI) and accelerated the pace of EU accession against the backdrop of a historically unique period of global stability and integration.

EU accession crowned the transformation process and unleashed historically unprecedented private and public capital flows. The positive climate that such rapid growth and convergence created temporarily masked the deep-seated problems that weak institutions and slow social learning had created, while the excessive inflow of capital led to a massive misallocation of resources in the economy.

The financial and economic crisis that hit the CESEE region in 2008 thus revealed deeply rooted problems, which these countries now need to face during their journey toward the frontier of development. Reform reversals have become widespread, in some cases touching the very foundations of a modern market

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economy and thus also bringing into question integration into the EU as the final destination (Székely and Ward-Warmedinger, 2018). The crisis also brought out the deeply rooted problems of the periphery economies and clearly demonstrated that convergence is not irreversible. Plummeting growth and escalating public debt quite quickly put unprecedented pressure on budgets and social support systems in an environment of high and rapidly growing unemployment.

This contribution argues that the speed, sustainability and equity of future convergence in the region will crucially depend on renewed reform efforts. Reforms will also allow these countries to fully benefit from the continued deepening of European integration, further accelerating convergence.

## 1 The convergence process

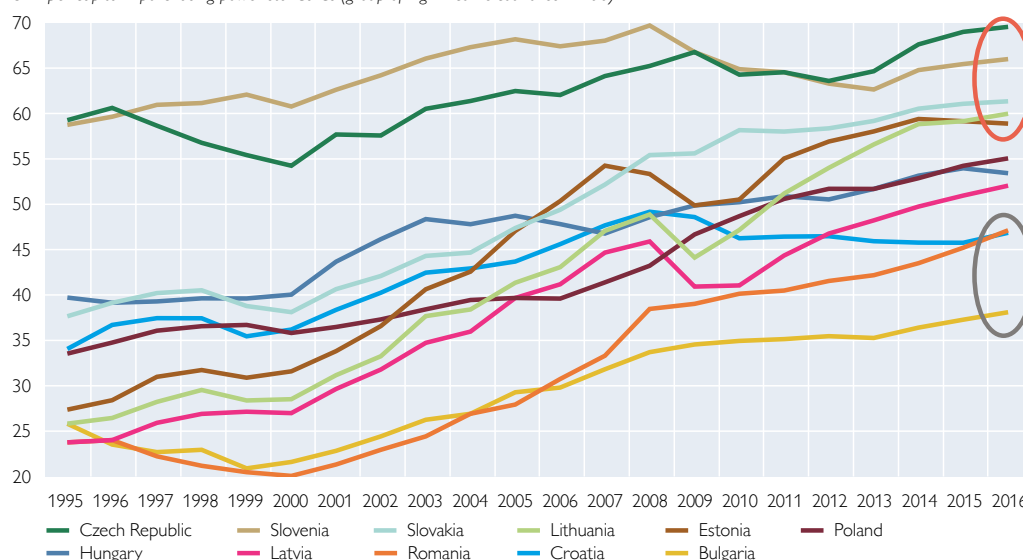
According to a growth model designed by Acemoglu et al. (2006), an economy's distance to frontier determines the relative importance of different reforms. In other words, the shape of future development in the region will inter alia dictate which structural and institutional reforms are critical to ensure rapid and sustainable convergence to the frontier. Over time, and depending on the success of the ongoing convergence process, the type of reforms that are crucial will change. And this change will be a continuous process.

Many of the CESEE countries are reaching the point where the role of selection and allocation, broad-based innovation, and the accumulation of appropriate human capital to support innovation become critical. Firm creation and the internal workings of firms also become critical, since the innovation that can directly boost growth takes place inside firms. Given the nature of innovation and rapid structural change, dealing with enterprise failure also becomes all the more important.

Chart 1

### Per capita GDP relative to frontier

GDP per capita in purchasing power standards (group of high-income countries = 100)



Source: Eurostat.

Note: The frontier (= 100) is defined as the average per capita income of the group of the highest-income small EU countries (Sweden, Denmark, the Netherlands and Austria), as most CESEE countries are small and open economies. This group of reference countries are not only among the highest-income countries in the world, but more broadly represent the global frontier of economic and social development.

As chart 1 shows, an increasing number of the EU countries in the CESEE region are getting relatively close to the frontier, and several others may soon join up with them. While EU countries at the frontier are typically innovation leaders, CESEE EU countries tend to be modest to moderate innovators (see European Innovation Scoreboard, 2017).

While continuous reforms are essential to maintain fast and sustainable convergence toward the frontier, and while reforms to support innovation may be particularly beneficial when countries are approaching the frontier, regretfully, not all countries implement reforms. In some countries, reforms have been neglected to such an extent that these countries continuously and significantly diverge from the frontier. Worse still, we now see countries in the region that reverse reforms, sometimes fundamental ones, such as the rule of law (Székely and Ward-Warmedinger, 2018). Unless they reverse the reversal, also these countries will start losing their relative income position and may not fulfil their potential.

The political economy literature has made important contributions on how to deal with time inconsistency and how to achieve reforms in democratic societies with uninformed voters or noncredible and myopic governments. But we currently have no model that can explain the kind of reform reversals we observe in the region. Moreover, the aggregation problem these models face has become bigger than we thought, making the distributional impacts more important than the models would predict.

## 2 Reforms and reversals

As Professor Aumann argued recently (Aumann, 2017), people need to want things. Without a want, incentives will not work, which limits the scope for economic policy and reforms. Sometimes, people do not want things that would be good for them (like a healthy diet) and typically they want things for reasons other than what they need those things for.

As Professor Aumann puts it, there is a need for “mechanism design design.” There should be broad motivating goals that people want to achieve, for whatever reason, rendering them willing to support reforms that are perceived as useful or necessary to achieve those goals. This would in turn create an environment where politicians want to embark on those reforms, and where public sentiment works in favor of reform and convergence, and not against it.

If we look back at the recent history of the CESEE region, we can trace this theme (Roland, 2001). With the collapse of the old political system and the newly acquired national sovereignty, it became possible to unwind the centrally planned economic system and create a market economy. People wanted this because they wanted the life they perceived people in the West to have. Very soon, they realized that the process of transition was much more complex and would come with often very negative short-run costs (Milanovic, 1998; Havrylyshyn et al., 2016). Hence came the disillusionment, and the political pendulum swung back the other way.

Following transition, EU membership became the next motivating goal. EU accession held the promise of joining the West in an institutional form. People wanted it because they wanted to live in a western country. So the mechanism design was geared to incentives. Populism worked toward supporting the reforms for joining the EU. Reform design, however, was not always careful enough. Some countries entered the EU but, particularly when the crisis hit the region, started

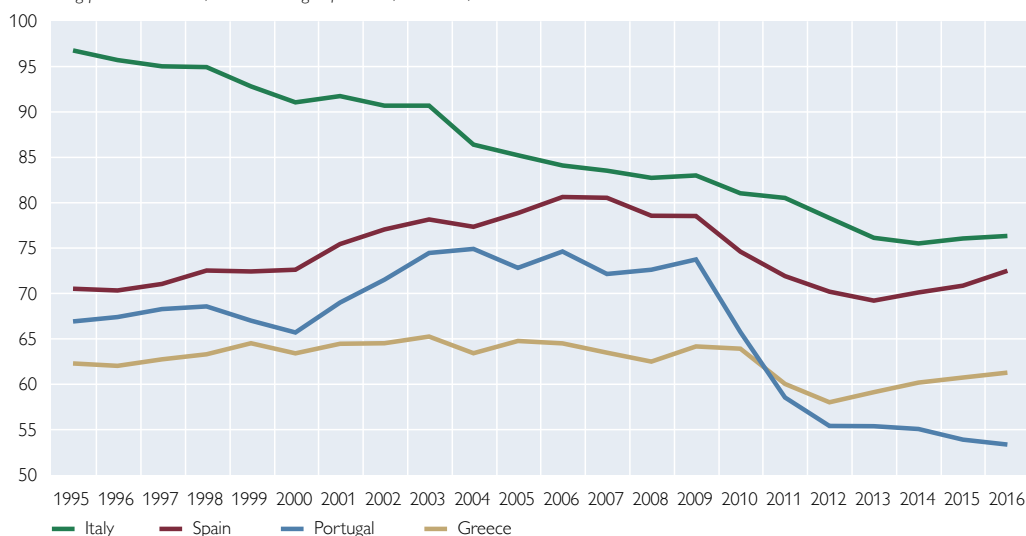
reversing reforms in many places and areas, ranging from fiscal systems and pension reforms to financial sector reforms (Székely and Ward-Warmedinger, 2018). In some cases, populism worked against reforms and convergence.

For those CESEE countries that have not yet joined the euro area, euro adoption could be the next motivating goal, but people will need to want the euro. EU and euro area membership has in many cases promoted fast and sustainable convergence. However, the experiences of some (not sufficiently reforming) existing euro area countries demonstrate that there is no guarantee (chart 2). Divergence from the frontier can occur, dominantly driven by the lack of reforms at the national level. Thus, euro area membership offers high rewards to reforming countries, but it may also deliver stronger punishments for countries that do not implement the necessary reforms.

Chart 2

### Per capita GDP relative to the EU frontier

Purchasing power standards, 100 = average of Sweden, Denmark, the Netherlands and Austria



Source: Eurostat.

Note: See chart 1 for a detailed definition of the frontier (= 100).

Reform reversals and major economic crises are forms of relatively rare, disruptive (tail) events. Yet the impact on convergence, in both directions, may be more important than we presently perceive. Poland's outstanding performance during the recent crisis is a positive case in point for the region. We need to understand better how reform reversals, and their negative impact on convergence, can be minimized, and how performance during crisis periods can be improved by better reform and institutional design.

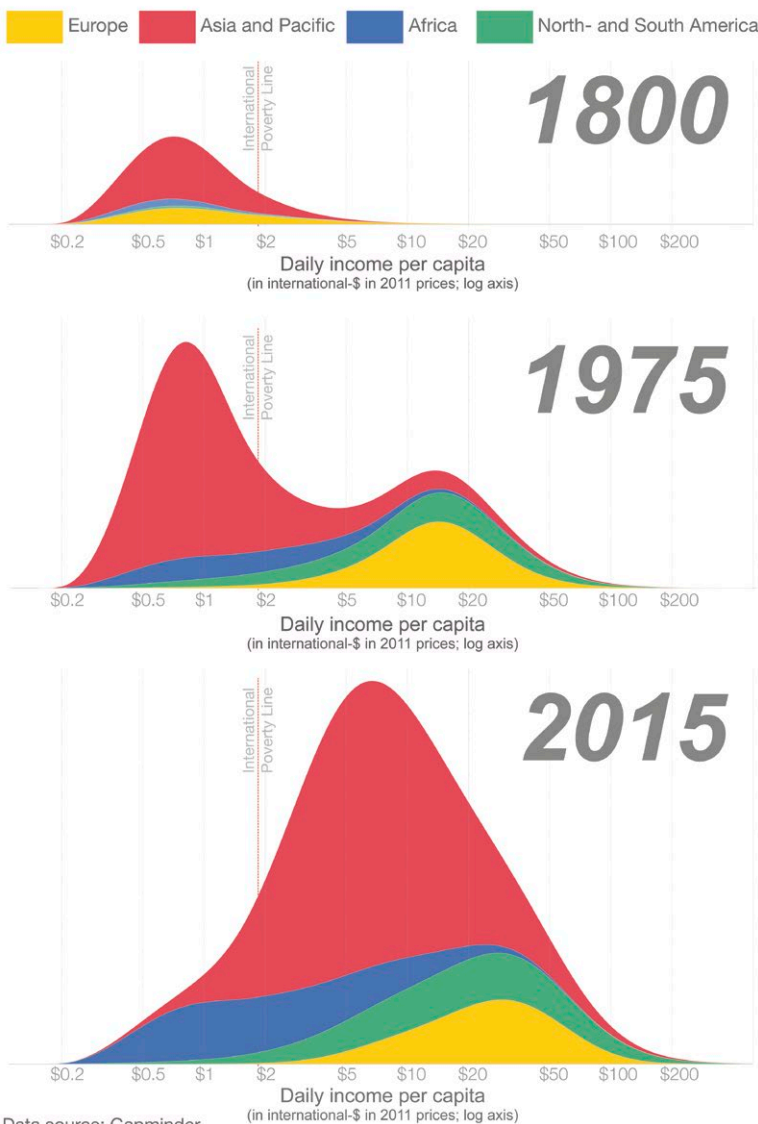
There is a growing awareness of the possible impacts of globalization and integration on income distribution, perceptions of fairness and on uncertainty surrounding individuals' situations. Distributional issues in a broader sense are also central to making convergence fast and sustainable. If human capital – particularly the type of human capital needed for innovation, firm creation, growth, and employment in dynamic firms – is accumulated only by a privileged few, or only in

small parts of a country, convergence to the frontier will be the privilege of only a few and certainly not sustainable for a country as a whole. Moreover, as the example of Italy clearly shows, if institutional quality widely differs among regions, the country as a whole will not be successful. Market forces tend to produce strong agglomeration effects, which are very good for the winners but, without mitigating public policies, can be devastating for the losers. This emphasizes the importance of ensuring good quality governance throughout a country and a reform design that pays attention to distributional effects in a broader sense.

Chart 3

### Global income distribution in 1800, 1975, and 2015

Income is measured by adjusting for price changes over time and for price differences between countries (purchasing power parity (PPP) adjustment). These estimates are based on reconstructed National Accounts and within-country inequality measures. Non-market income (e.g. through home production such as subsistence farming) is taken into account.



Source: Ortiz-Ospina, E. 2017. Is globalization an engine of economic development? Our World in Data (blog), August 1. <https://ourworldindata.org/is-globalization-an-engine-of-economic-development>.

So, looking ahead, why should these countries want reform? And what types of reforms should we hope that they want? Global convergence trends stand to hold major implications for progress in the region. As chart 3 shows, the share of the world population at the average income levels of the CESEE countries (below the European average in the chart) has increased dramatically over recent decades. Looking ahead, it will increase even faster. Reforms offer a chance to at least keep pace with worldwide developments.

The right composition of reforms is also necessary to make convergence fast and sustainable. Productivity-enhancing innovation inside a firm is a key element. This is also part of institutional design. Having highly educated people with the right skills, a relative strength of countries in the region (chart 4), is a necessary but not sufficient precondition for innovation, as empirical work clearly suggests (Villalba, 2007). It is always the bottleneck that can ultimately cap progress. This emphasizes the importance of a comprehensive approach.

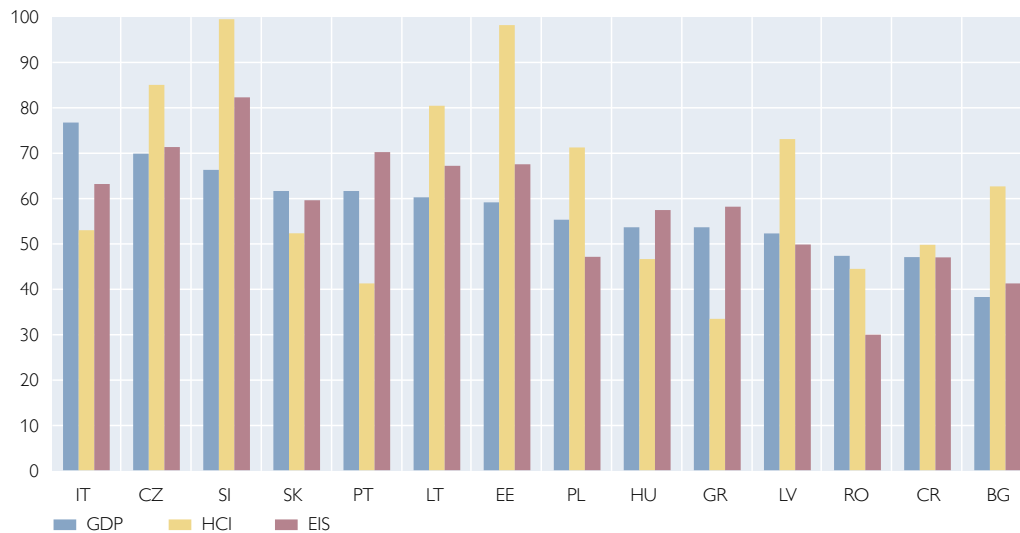
The reversal of long-standing or significant reforms risks unraveling hard-won progress as well as possibly stifling future reform momentum. Reform reversals are no doubt hindering convergence, but they will do so significantly more if the rest of the world is moving ahead fast with reforms. For example, allowing the quality of skills to deteriorate, as it seems to be happening in Hungary (chart 5), or leaving some groups in

society behind, as it is the case with Roma people in many countries in the region, puts these young people at a great disadvantage, as the world is moving ahead fast.

Chart 4

### Per capita GDP, human capital and innovation

100 = average of Sweden, Denmark, the Netherlands and Austria



Source: World Economic Forum and Eurostat.

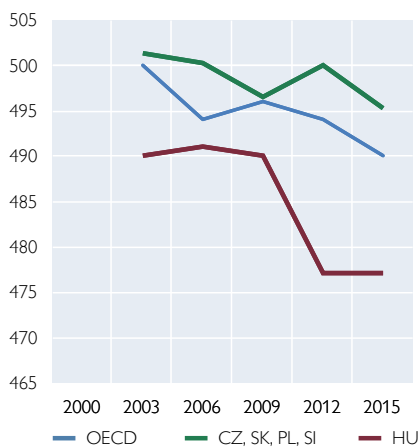
Note: The HCI (Human Capital Index) and the EIS (European Innovation Scoreboard) have been rescaled to have the same mean and standard deviation as GDP.

Chart 5

### PISA test results in Hungary

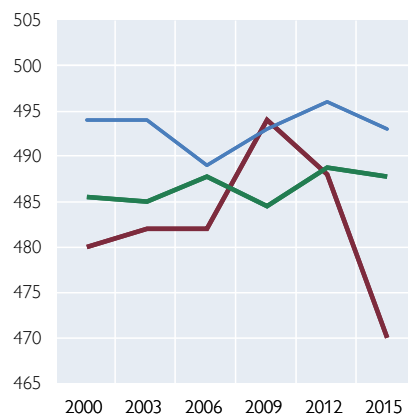
#### Mathematics

Mean scores



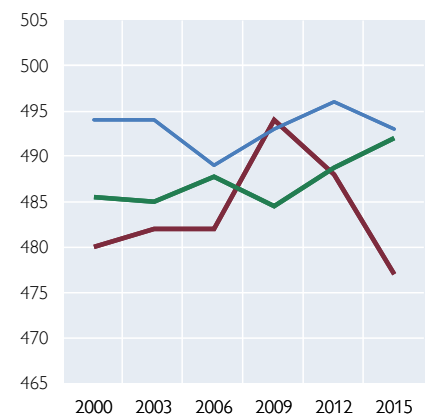
#### Reading

Mean scores



#### Science

Mean scores



Source: OECD.

### 3 Reforms at the EU and national levels

As a crisis response, the EU put forward major initiatives to promote the single market for services and the digital single market. Theory predicts that small, very open economies in the region stand to be major beneficiaries of such reforms, but firms must be well prepared. Furthermore, accompanying reforms at the national level may be essential to help firms to benefit from the opening of borders and the increase in competition, and to maintain public support for reforms designed at the EU level (frequently perceived by people in the region as being far away). National reforms that allow firms to enter the markets, minimize the short-term costs of reform, reabsorb displaced capital or labor and adequately support those who lose out, are critical in this regard. Exporting firms, new firms and particularly new innovating firms are best placed to benefit, but are also subject to a much higher risk of failure. Hence reforms to make firm creation and resolution easier and cheaper will be important.

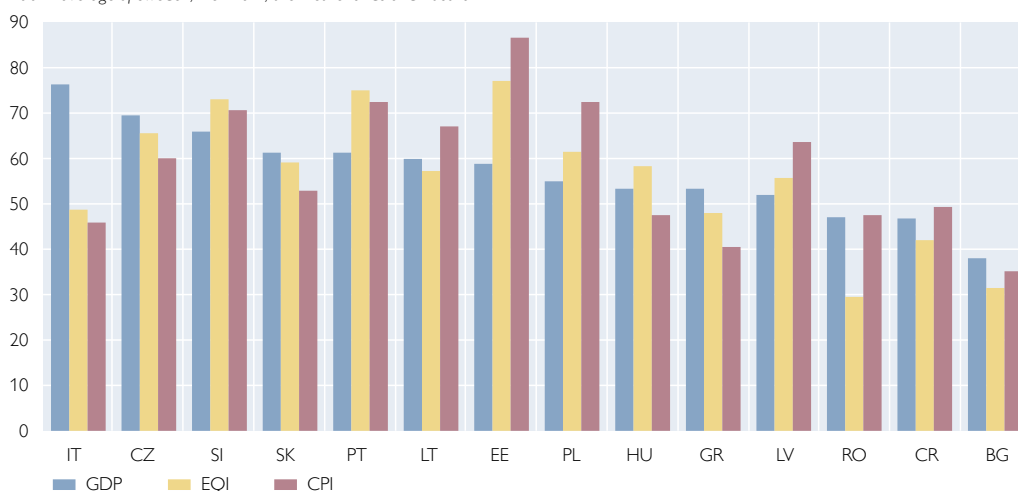
Capital markets union is another major area of EU-level reforms that can support convergence, particularly in countries closer to the frontier, where innovation becomes much more important. For small and medium-sized enterprises (SMEs) and new firms, innovation is an especially risky venture and equity is a much more adequate source of finance than loans. As equity finance is underdeveloped in the region, easy access to sources from abroad via the capital markets union can be a major help. Many of the most successful start-up firms in the region have relied on foreign sources of equity and the knowledge set that came with it. The European Fund for Strategic Investments (EFSI) is another example of particularly helpful EU-level reform in this regard, but countries in the region need to do more to better position their firms to benefit from this opportunity.

Quality of government and distance from the frontier are closely linked, with causality running in both directions. The closer a country gets to the frontier, the

Chart 6

#### Per capita GDP, quality of government and corruption perception

100 = average of Sweden, Denmark, the Netherlands and Austria



Source: Eurostat and The Quality of Government Institute, Gothenburg University.

Note: The EQI (European Quality of Government Index) and the CPI (Corruption Perception Index) have been rescaled to have the same mean and standard deviation as GDP.

more essential this factor becomes, given the key importance of government in education and in providing the legal and institutional framework for innovation and risky finance. As chart 6 shows, countries in the region are broadly where their income level would put them, with few countries well placed to move closer to the frontier without quality of government being a drag on convergence. In recent years, the country-specific European Semester recommendations have focused on this area for countries such as Bulgaria, Croatia and Romania, where a bottleneck for convergence exists, and also for countries such as the Czech Republic, where a bottleneck may arise in the future. Looking forward, for countries in the region to move closer to the frontier, increasing attention needs to be paid to this area of reforms.

Corruption in the public and private sectors is another factor that can increasingly inhibit convergence as a country gets closer to the frontier. Chart 6 shows that here, too, countries in the region stand broadly where their income level would put them, with only a few countries well placed to move closer to the frontier without corruption presenting a drag on the economy. In recent years, country-specific recommendations have increasingly focused on this area and countries, such as the Czech Republic, where this element may become a bottleneck for convergence. Looking forward, to move closer to the frontier, a major drive will be necessary to significantly reduce corruption in countries in the region and to ingrain a much stronger compliance culture.

As cross-border mobility of labor is rather high in the region, the task is not only to help accumulate human capital, but also to manage effectively the net migration of human capital to attract talent. The problem is not with the outward migration of skilled people, and consequently this is not what policy needs to try to curb. The issue is rather with the net flows. Countries in the region are particularly unsuccessful in attracting talent from abroad, including their own emigrated talent. While a lot depends on firms in this regard, governments can also help, including via taxation and provisioning of public services.

Countries in the region need a major drive to significantly improve their universities and turn them into innovation centres, supporting innovation in local firms and the creation of new innovative firms. Reforms that attract innovative firms will also become increasingly important. If we consider the relative positions of countries in the region, Slovenia seems well positioned to move closer to the frontier, while for Poland innovation may be a drag factor (chart 4). It is important to keep in mind that for countries further away from the frontier, such as Romania, a weak relative position, while not helpful, may not be such a decisive factor at least until the country gets closer to the frontier.

For many countries in the region, FDI, including reinvested earnings of foreign-owned firms, is the main source of investment in the export sector. It is also a main driver of productivity gains more broadly, including in the nontradable sector. R&D spending in the corporate sector is also heavily concentrated in foreign-owned firms. Reforms that can attract more FDI, most importantly by increasing the supply of skilled labor, are crucial. On the other hand, predatory taxation and distortionary regulatory measures targeting foreign firms are among the most harmful reform reversals in the region. Reforms also need to focus on increasing the positive externalities of FDI on local firms, an area where progress is limited (Bisztray, 2016)



Banks play a key role in providing financing for firms in the region and thus in capital allocation. This is particularly true for domestically owned SMEs, which are confined to financing from domestic banks and underdeveloped capital markets. The banking sector of the region fared relatively well during the crisis, although the experiences of Slovenia and Bulgaria call attention to the problems that reform reversals in this area, particularly weakened banking supervision can create. While the creation of the Single Supervisory Mechanism will certainly help in this regard, this may not necessarily extend to non-euro area countries.

#### 4 Conclusions

To sum up, the speed, sustainability and equity of convergence in the region will crucially depend on reform efforts. As these countries get closer to the frontier, reforms that support innovation, selection and allocative efficiency will become more important. The quality of government, corruption, education, firm creation and resolution, financing of innovation and innovative firms will be key areas for reform. The European Commission has recently made policy recommendations very much in line with these considerations.

Looking forward, the more focused on and adequate to a country's position relative to the frontier, the more useful policy and policy recommendations from outside will be to promote sustainable and equitable convergence. EU and euro area memberships serve as useful anchors for such reforms, but apparently this was mostly so before accession. Membership in itself does not guarantee sustainable convergence. Looking forward, euro adoption could serve as a motivating goal that further boosts and focuses reform efforts in the region, but for this factor to work, people in the countries concerned will have to want euro adoption. Finally, reform reversals deserve particular attention.

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# Digitalization and higher R&D readiness – a way to foster income convergence in CESEE

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*After the fall of socialism and a short transition period, Central, Eastern and Southeastern Europe (CESEE<sup>2</sup>) has been outperforming the growth of Western Europe and thus helped reduce the relative gap vis-à-vis the EU-15 in GDP per capita (purchasing power standard) by one-third. The Great Recession has visibly slowed down the pace of convergence, however. The current growth model, which is based mostly on capital accumulation, has thus been challenged, calling for CESEE economies to become more innovative and knowledge oriented. Focusing on returns from different types of investments on total factor productivity (TFP), our panel data analysis suggests that the same amount of money invested in the information and communication technology (ICT) sector tends to have a higher immediate spillover effect on TFP growth than investment in infrastructure or machineries. Although capital accumulation is likely to remain an important growth factor in CESEE in the years to come, a sufficient level of computer skills and Internet usage support knowledge-based investments, yielding relatively high returns. Thus, CESEE economies could potentially benefit from going digital and spending more on research and development (R&D), but on condition that complementary factors are in place.*

JEL classification: E22, O30

Keywords: income convergence, CESEE region, digital economy

The economic literature provides a wide array of evidence that Central, Eastern and Southeastern Europe (CESEE) has made enormous progress with convergence. Early studies such as Kočenda (2001) point to convergence in macroeconomic variables even before the year 2000. From the beginning of transition up until the financial crisis, CESEE countries mostly benefited from capital accumulation, high investment rates and FDI inflows (Bijsterbosch and Kolasa, 2009); however, the gains from improving the efficiency of production and productivity changes have also been substantial (Schadler et al., 2006). Rapacki and Próchniak (2009), on the other hand, focus on the role of EU enlargement and its significant contribution to economic growth in CESEE.

Despite CESEE's dynamic catching-up process, the gap between CESEE and the EU-15 in GDP per capita (in absolute terms, price level-adjusted), highway infrastructure and net capital stock per employee remains substantial. Dynamic investment growth was one of the pillars of convergence in CESEE and the underlying force of the catching-up process; the beginning of the Great Recession, however, was marked by plummeting investment activity. Slowing private investment and a reduction of foreign capital inflows became a global phenomenon. Lower investments also reduced total factor productivity (TFP) growth across the world, making the slowdown of CESEE convergence more apparent after the crisis.

Despite recent drawbacks, capital accumulation is likely to remain an important growth factor in CESEE in the years to come; yet, growing attention is being paid to reestablishing the growth drivers toward innovation and research in order

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<sup>2</sup> In this study, CESEE refers to a group of seven countries: Croatia, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia.

to sustain CESEE's long-term growth potential. International institutions such as The Vienna Institute for International Economic Studies (wiiw), the Organisation for Economic Co-operation and Development (OECD) (2013) or, more recently, the European Bank for Reconstruction and Development (EBRD) (2017) have suggested that there is a need for a new growth model for CESEE. The OECD (2013) suggests, for example, that more attention could be paid to knowledge-based capital. In many EU countries, investments in intangible assets have been growing steadily. Moreover, after the crisis, investments in information and communication technologies (ICT) have not dropped as strongly as non-ICT investments. We therefore focus on the factors that, along with ongoing investment in traditional forms of capital, would be positive for boosting TFP growth in CESEE, such as investment in ICT, digitalization or research and development (R&D). Especially, evidence shows<sup>3</sup> that in the long run, productivity improvements can account for half of GDP growth (Easterly and Levine, 2001), with the adoption of technologies making up a sizeable share.

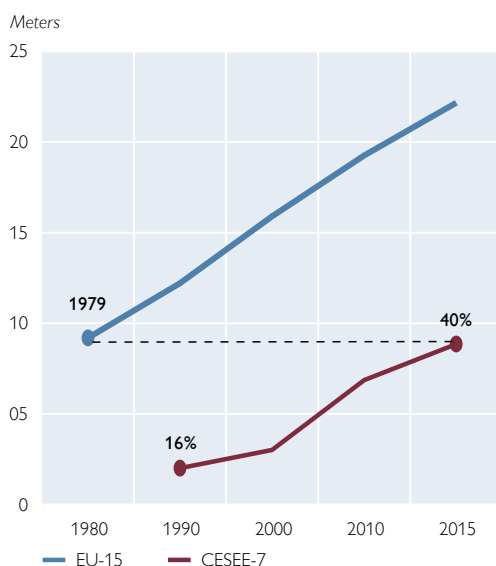
## 1 Convergence at different speeds

Although CESEE growth has been outperforming growth in Western Europe for the last two decades, the road infrastructure gap between the EU-15 and CESEE remains substantial. On the other hand, the digital infrastructure gap is relatively negligible. Huge differences persist, however, in the quality of road infrastructure, where CESEE countries, despite their recent efforts and access to EU funds, have only reached a highway density comparable to that of the EU-15 in 1979 (see chart 1, left-hand panel). Convergence in areas that require a lot of physical capital

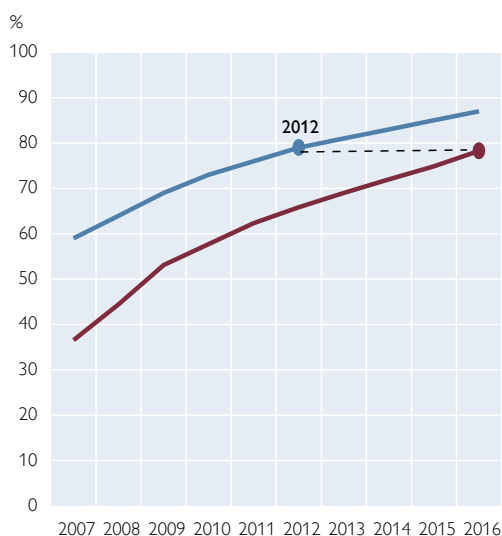
Chart 1

### Infrastructure gaps

#### Highway infrastructure (m of highways per km<sup>2</sup>)



#### Households with Internet access



Source: Eurostat, Erste Group Research.

<sup>3</sup> We use Penn World Table 5.6 capital stock data for 64 countries. Penn World Table 5.6 was released in January 1995 and contains data from as early as 1950 (the capital stock recorded in 1951 is given as initial or the earliest available figure).

seems to be a lengthy process and the low level of capital stock in these economies is one of the most striking legacy issues. In contrast, the digital infrastructure gap between the CESEE countries and the EU-15 is much narrower and the delay in catching-up is here measured in years rather than decades (see chart 1, right-hand panel). For example, with 79% of households having Internet access, the CESEE region is now lagging only four years behind the EU-15; for access to mobile broadband, the gap is only two years. This gap is mainly attributable to lower household Internet connectivity rates in rural areas in CESEE; there are hardly any differences between Western Europe and CESEE in urbanized areas in terms of Internet access. The digital infrastructure gap is thus far narrower than the 36-year lag in highway infrastructure density.

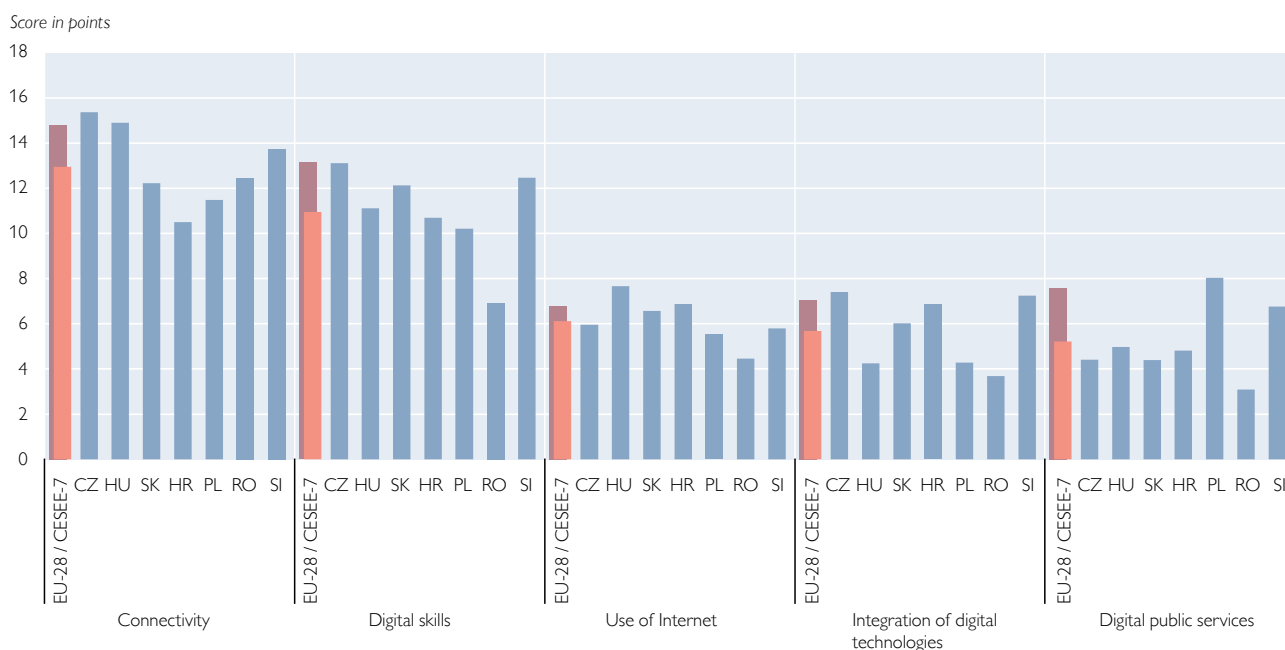
## 2 Digitalization as another way of fostering convergence

When it comes to CESEE's digital competitiveness, connectivity, Internet use and digital skills are not seen as the major challenges to the adoption and utilization of new technologies. According to the Digital Economy and Society Index (DESI)<sup>4</sup>, which measures the digital performance of EU Member States, the Czech Republic is already at par with the EU-28 average in most of the relevant categories, while Romania remains an outlier, drifting from the peers mainly in terms of digital skills and integration of new technologies (see chart 2).

The category in which the CESEE countries have been underperforming most visibly is providing digital public services. We see much room for improvement for CESEE countries in the area of e-government services, with a strong spillover effect into other areas of the economy that would potentially have an overall

Chart 2

### DESI indicators 2016



Source: European Commission, Digital Scoreboard, Erste Group Research.

<sup>4</sup> The DESI is for 2016.

positive effect on the region's prosperity (see discussion in box 1). For instance, a positive correlation between Internet usage in interacting with public officials and the perception of a country's corruption level<sup>5</sup> suggests that digitalization may be a positive factor supporting the level of transparency in government rules and policies and empowering legal equality among citizens. Digitalization can lead to more structured and faster processes, overall cost savings and thus a higher overall satisfaction in society. Going digital seems thus a must when it comes to helping maintain an affordable pace of economic convergence, in particular, and to being ready to scale up business.

Once the prerequisites, i.e. digital skills and/or connectivity, are in place, it seems there should be no major obstacles to stepping up investment in ITC. Increasing the share of investment in intangible assets related to the adoption of new technologies should be of growing importance to CESEE, where rising labor costs challenge the previous growth engine while demographic developments also face strong headwinds.

Box 1

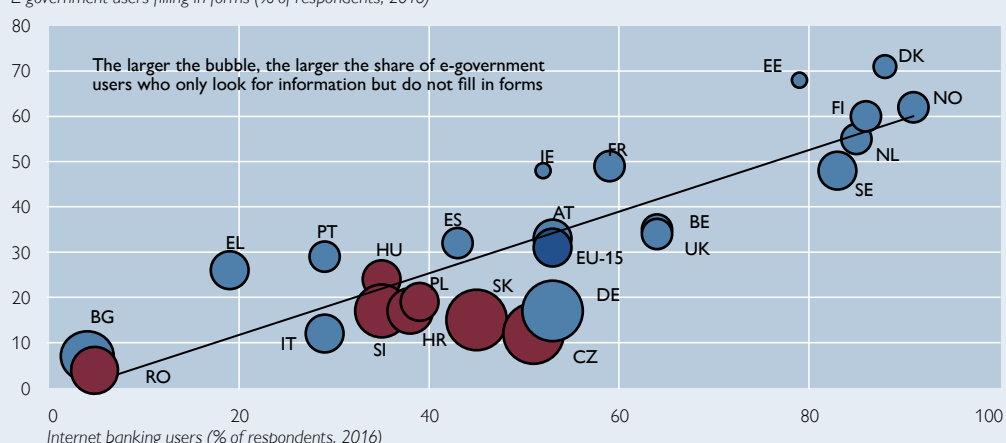
## E-government

*Most CESEE countries have declared digitalization one of their priorities and have strategies approved for the informatization of their government systems. However, the level of e-services implementation differs across the region. In most CESEE countries, the e-government system remains fragmented. Frequently, there are separate systems in place that require the re-entry of personal data any time citizens decide to use an e-service instead of providing a single entry portal following a once-only principle. In general, the share of individuals in CESEE whose digital interaction with government offices takes place only in a passive form (obtaining information or downloading forms) is relatively high.*

Chart 1

## E-government services below potential in many CESEE countries

E-government users filling in forms (% of respondents, 2016)



Source: Eurostat, Erste Group Research.

Note: CESEE-7 countries are depicted in red.

<sup>5</sup> We present evidence on the positive correlation between e-government usage and the Corruption Perceptions Index in Arokaszallasi et al. (2017).

*We tried to determine whether the low level of e-government in CESEE is attributable to a supply problem (like poor government services) or a demand problem (lack of digital skills in the population). From a comparison of Internet banking users across European countries, used as a proxy for digital skills, we found that – at least in the Czech Republic and Slovakia – the problem seems to be a supply problem as the share of people interacting with public authorities by filling in digital forms is very small relative to that of Internet banking users or that of users who only gather information or download forms from web pages of public institutions.*

*We do not think that the underdeveloped status of e-government in most CESEE countries is attributable to a lack of programming skills in the region. We see the lag in e-government as a problem of lacking transparency in public procurement, good governance and strategy. In contrast to Estonia, which is leading the digital change in CESEE, we see a lack of common strategy that would lead to the creation of a common platform to enable the secure exchange of information between decentralized systems.*

### 3 Boosting TFP growth through ICT investment

The key questions in this context are: Can CESEE accelerate economic convergence by focusing on innovation and research, or should their focus remain mostly on investment in tangibles, i.e. on closing the infrastructure gap? Is investment in new information and communication technologies a way to boost productivity and switch to a new, innovation-oriented growth model that would ensure further convergence?

Our estimation of the impact of different types of investments on TFP growth suggests that an increase of investments in ICT or R&D spending affects TFP growth the most. In particular, we look at the returns from “traditional” forms of investment (i.e. in infrastructure, machinery etc.) versus “innovative” types of investment (i.e. in ICT and R&D), which we consider important drivers of long-term productivity growth and efficiency improvements. Our analysis<sup>6</sup>, which draws from Gehringer et al. (2014), examines a panel of 14 EU countries<sup>7</sup> over the period from 1995 to 2014. As opposed to Gehringer et al. (2014), who look at sectoral TFP, we run an analysis at the country level. Our results confirm that investment in the ICT sector has a more significant impact on TFP growth than other types of investment (non-ICT residential and non-ICT nonresidential investment). The positive role of ICT in productivity growth is in line with the extensive economic literature on the topic (i.a. Dahl et al., 2011 (Europe); Oulton, 2002 (U.K. economy); Oliner and Sichel, 2000 (U.S. economy)).

The estimation results suggest that stepping up investments in the ICT sector (worth a one percentage point higher contribution to GDP growth) has about a four times higher spillover effect on TFP growth than other kinds of investments (see chart 3). Thus, boosting TFP growth via ICT investments is less capital-demanding than other investments. Although limited data availability does not allow us to study CESEE directly, we believe the positive relation between investment in knowledge-based capital and TFP growth would hold for the countries in

<sup>6</sup> In our analysis, we use panel data estimation techniques, in particular fixed-effects estimation.

<sup>7</sup> We include Austria, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Latvia, the Netherlands, Portugal, Slovenia, Spain and Sweden.

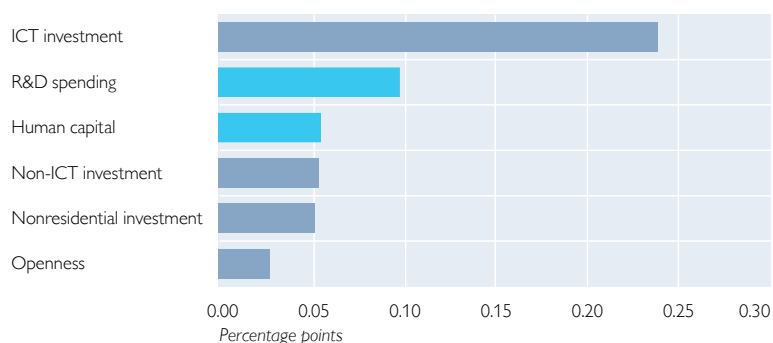
the region as well. We note that, given the low capital intensity in CESEE compared to the EU-15, traditional forms of investment could yield higher returns in a less developed region (CESEE) than in our analysis of the 14 EU countries above. On the other hand, evidence shows that “growth factors other than the traditional ones, variables related to the human capital and the high technology sector not only proved to be significantly related with GDP per capita growth, but their importance was increasing over time” (Grela et al., 2017). Although the spillover of investments to TFP might differ across CESEE at the moment, it should converge to our findings in the long run.

It is important, however, to notice that the effectiveness of investments in intangible assets is likely to be conditional on complementary factors such as human capital that assure the high level of return of such investments (e.g. Redding, 1996). Furthermore, the effectiveness of R&D spending may depend, for instance, on the nature of funding (private versus public spending; see e.g. Bengoa-Calvo and Pérez, 2011).

#### 4 Prerequisites for R&D spending to be effective

While it is important to focus on investing in intangible assets and not just “brick and mortar,” it cannot be taken for granted that higher spending in R&D automatically translates into stronger economic growth. Some prerequisites must be met. What is more, these prerequisites seem to be important for various other types of investments (including investments in ICT, but also more conventional investments). In a recent report, Cirera et al. (2017)<sup>8</sup> pointed out that, without the necessary complementary factors in place in the economy, R&D spending may not reap as strong (monetary) benefits as it may promise. We call the presence of these complementary factors “R&D readiness.” As the World Bank (Cirera and Maloney, 2017) proposes, returns from R&D will likely remain low in the absence of a “capital market that would ensure firms to buy the necessary accompanying machinery, managers who know how to take new ideas to market, higher-order human capital necessary to translate greater spending into good quality innovation, and capacity to ensure the investments are located well.”<sup>9</sup> Possible barriers, not just to knowledge accumulation, but also to the accumulation of physical and human capital (credit, market entry/exit barriers, the business and/or regulatory climate and the rule of law) are other explicit factors that need to be taken into account

Chart 3  
**Spillover of higher investments<sup>1</sup> to TFP growth**



Source: PWT version 9.0, EU KLEMS, Eurostat, Erste Group Research calculations.

<sup>1</sup> Contributing one percentage point to GDP growth.

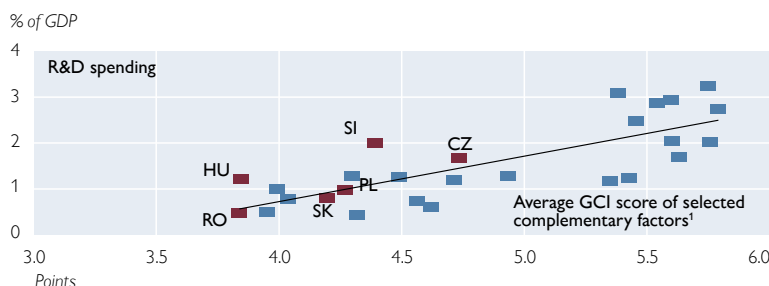
<sup>8</sup> “Benchmarking innovation or targeting levels of R&D requires taking into account the stock of available complementary factors. In their absence, more R&D is not necessarily better. Hence, while it is not unusual to find unfavourable comparisons of a particular country’s gross domestic expenditure on research and development relative to that of frontier countries, and, on that basis, argue that more resources should be directed in that direction, this is only the case if the country also has similar levels of accumulated human and physical capital.”

<sup>9</sup> See Cirera and Maloney (2017), p. 54.



Chart 4

### Average of complementary factors<sup>1</sup> and R&D-to-GDP ratio (2016)



Source: World Economic Forum GCI dataset (October 12, 2017).

<sup>1</sup> We analyzed the unweighted average of the following complementary factors from the GCI: “Institutions,” “Infrastructure,” “Higher education and training,” “Financial market development,” “Technological readiness,” “Business sophistication” and “Innovation,” as well as the “Reliance on professional management” subindex from “Labor market efficiency.”

Note: CESEE countries are depicted in red.

when promoting R&D or relegating innovation policy solely to a technology ministry. Overall, according to the R&D readiness theory, it is essential to have complementary factors in place before spending on R&D increases, as such complementary factors substantially raise R&D effectiveness.

So how is CESEE doing in a correlation of R&D readiness and (public and private) R&D spending? We take advantage of the World Economic Forum’s Global Competitiveness Index (GCI) database, which offers a wide variety of indicators that could qualify as complementary factors over a relatively long period of time (2007–2017)

and includes all CESEE and EU countries. Values of the different subindices are restricted between 0 and 6 points. Having defined complementary factors as above, we analyzed the pillars “Institutions,” “Infrastructure,” “Higher education and training,” “Financial market development,” “Technological readiness,” “Business sophistication” and “Innovation” as well as the “Reliance on professional management” subindex from “Labor market efficiency.” We chose a subset of indicators that were positively correlated with the R&D-to-GDP ratio and fulfilled the requirement of being complementary factors (unlike e.g. “Macroeconomic environment”), while they could also be influenced by the government (unlike “Market size”). Data range from 2007 to 2016.

Evidence shows that the CESEE region, on average, does not really spend less on R&D right now than what is warranted by complementary factors (see chart 4).<sup>10</sup> Hungary and Slovenia actually seem to spend too much on R&D, based on the simple model of regressing R&D spending on the average of the GCI subindices, while other CESEE countries seem to roughly spend the amount that is justified by their R&D readiness. Without the described improvement in complementary factors, ambitions to increase R&D spending could be ineffective.

Apart from “Higher education and training,” “Technological readiness” and “Infrastructure,” it is hard to pinpoint other areas in these complementary factors where improvements occurred in CESEE in the last ten years (see chart 5). “Innovation” (although containing a subindex for R&D spending itself) is particularly problematic, as CESEE witnessed a decline, while the average change in Europe was positive in this area. At the same time, we see that R&D spending, both public and private, as a percentage of GDP went up in almost all CESEE countries (apart from Romania). In addition to innovation, “Business sophistication” and “Reliance on professional management” also deteriorated substantially. Also somewhat

<sup>10</sup> Looking at the various factors separately, the best independent variable explaining the largest share of variance of R&D spending as a percentage of GDP in univariate models is “Higher education and training” (with an R-squared measure of 0.489), closely followed by “Business sophistication” (0.45). In multivariate regressions on pooled (not panel) data, and also in panel regressions, however, a significant amount of serial correlation and multicollinearity in explanatory variables makes it difficult to draw firm conclusions regarding the results.



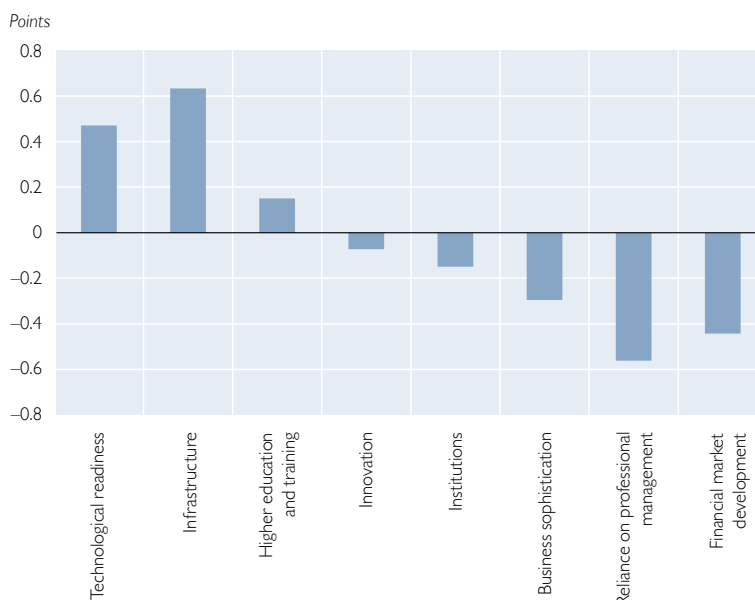
underpinning the message of our paper, the strongest increase of indicator values took place in the area of infrastructure, while during the same period, the convergence of income levels to the European average slowed down. This could also underpin the notion that focusing exclusively on tangible investments might be insufficient for speeding up the convergence of incomes to Western European levels.

## 5 Conclusions

The CESEE countries could accelerate economic convergence by going digital more aggressively and better utilizing digital infrastructures. By running a fixed-effects model on a panel of 14 European countries, we found that boosting total factor productivity (TFP) growth via information and communication technology (ICT) investments is less capital-demanding than other investments. Although the CESEE countries are doing well with regard to digital infrastructure and connectivity, they have been underperforming notably in providing digital public services. Therefore, we see a lot of room for improvement in this area, where a lack of a common strategy that would lead to the creation of a common platform to enable the secure exchange of information between decentralized systems still proves to be a stumbling block. The literature also suggests that R&D spending can only be effectively utilized if the necessary complementary factors (institutional framework, business environment, rule of law, human capital) are in place in an economy. We show that the CESEE countries, on average, would first need to improve these complementary factors for higher spending on R&D as a percentage of GDP to have a more sizeable impact on economic growth. While Poland, Romania and Slovakia may appear to stand ready to raise their R&D spending above current levels, thus reaping its potential benefits with their current setup of complementary factors, this rise would be from a relatively low level of R&D spending.

Chart 5

### Change in GCI score (2010–2016 vs. 2007–2009) in CESEE



Source: World Economic Forum GCI dataset (October 12, 2017).

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# Enlargement of the euro area toward CESEE: progress and perspectives

*This article reviews the enlargement of the euro area toward CESEE EU Member States since 2010. It covers the Baltic countries' accession to monetary union and summarizes the present state of convergence of non-euro area CESEE EU Member States, with a focus on the economic convergence criteria. Furthermore, it depicts the current views of these countries on future euro area accession. We show how convergence assessments have developed since the onset of the crisis and examine the impact of the deepening of Economic and Monetary Union on the monetary integration process. Looking ahead, the article argues for an even-handed application of the principle of equal treatment in an advancing environment, which combines continuity with a careful and well-grounded integration of the lessons from the past and the institutional reforms that have resulted as a consequence, for the mutual benefit of all stakeholders in the process.*

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The euro area will soon complete the second decade of its existence. In hindsight, the first years of monetary union may look like an “easy ride,” facilitated by the great moderation and the benevolent economic developments of the time. It was, however, during those years that large imbalances accumulated within the euro area. After a tranquil first decade, the situation changed fundamentally with the onset of the financial crisis. Certainly, these imbalances made it much more difficult to cope with the external shock that hit monetary union in 2008 and thus greatly added to the bumpiness of its ride in the second decade, including a sovereign debt crisis in some euro area countries. Eventually, the euro area weathered this perfect storm, not least thanks to painful adjustment, with the institutional deepening that ensued in response to the crisis still ongoing.

This article deals with the enlargement of the euro area to include CESEE EU Member States. Given the broader context, exploring this topic immediately raises obvious questions: What do the developments within the euro area mean for its enlargement? Put differently, how do the crisis and the resulting deepening impact on the widening of monetary union? Non-euro area EU Member States now face an Economic and Monetary Union (EMU) that is not only “deeper” than before the crisis but is also set to deepen further – a currency union that has been and is being augmented with a banking and capital markets union, with improved surveillance and policy coordination mechanisms and with a permanent firewall for euro area members in financial difficulties (European Stability Mechanism). Not only has the crisis transformed the thinking about the appropriate institutional setup of EMU, especially with a view to its resilience, but it has also sharpened policymakers' views on what it takes for individual countries to participate smoothly in a monetary union.

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The purpose of this paper is to update previous work on the monetary integration of CESEE EU Member States. The focus of this article is on the period since 2010,<sup>2</sup> specifically on economic developments. It should be noted, though, that apart from achieving a high degree of sustainable economic convergence, EU Member States also need to fulfill legal convergence requirements.<sup>3</sup> Convergence in both areas, economic and legal, is regularly assessed in the convergence reports of the European Central Bank (ECB) and the European Commission.

This paper is structured as follows: Section 1 reviews the development of euro area enlargement since 2010 and depicts the present state of convergence, with a focus on the Maastricht criteria.<sup>4</sup> In section 2, we summarize current views of non-euro area Member States on future euro area accession. Section 3 reviews the convergence assessments of the ECB and the European Commission in recent years. Section 4 sheds light on how EMU reform measures have been reflected in the convergence reports. Section 5 concludes.

## 1 Euro area enlargement from 2010 to 2018

### 1.1 Accessions to the euro area in the current decade

After two CESEE EU Member States had joined the euro area in the previous decade – Slovenia in 2007 and Slovakia in 2009<sup>5</sup> –, the enlargement of the euro area continued in the 2010s with the accession of the three Baltic countries: Estonia (2011), Latvia (2014) and Lithuania (2015).

The Baltic countries are very small and open economies, two of which – Estonia and Lithuania – had long-standing euro-based currency board arrangements in place before adopting the euro. Latvia, in contrast, followed a tight currency peg, initially to the SDR basket and since 2005 to the euro. After EU accession, they participated in the Exchange Rate Mechanism II (ERM II) while retaining their specific exchange rate arrangements (currency boards and very narrow exchange rate band, respectively) as unilateral commitments, for a period between 6½ years (Estonia) and 10½ years (Lithuania).<sup>6</sup> In all three cases, the exchange rate to the euro remained unchanged upon entry into and during participation in ERM II. This parity also became the conversion rate to the euro when the three countries joined the euro area.

<sup>2</sup> Developments until mid-2009 are summarized in Backé (2009).

<sup>3</sup> For a study on legal convergence in the area of central bank independence, see Dvorsky (2009).

<sup>4</sup> A broader review also capturing optimum currency area criteria, including their possible endogeneity, as well as the effectiveness of autonomous monetary and exchange rate policy as an adjustment tool is beyond the scope of this article. For a short review of these aspects, see Backé (2009). Over the last decade, labor and product market flexibility in non-euro area CESEE EU Member States has been rather steady (as measured e.g. by the Global Competitiveness Index of the World Economic Forum), while integration of non-euro area CESEE EU Member States with the euro area has tended to deepen and business cycles have become more synchronized (see e.g. Campos et al., 2017, and Ahlborn and Wortmann, 2018).

<sup>5</sup> For a short review of Slovenia's and Slovakia's euro area accession, see e.g. Backé (2009).

<sup>6</sup> According to the ECB (2003), countries that operate a euro-based currency board deemed to be sustainable might not be required to go through a double regime shift, i.e. floating the currency within ERM II only to re-peg it to the euro at a later stage. Such countries may therefore participate in ERM II with a currency board as a unilateral commitment, enhancing the discipline within ERM II. However, the ECB has stressed that such arrangements will be assessed on a case-by-case basis and that a common accord on the central parity against the euro will have to be reached.

Inflation convergence in the Baltics was more gradual, which slowed their compliance with the convergence criteria. It took Latvia and Lithuania<sup>7</sup> somewhat longer than Estonia to get up to par in this respect.

It is noteworthy that Estonia managed to fulfill the convergence criteria at the height of the financial crisis. It was the only CESEE EU Member State in 2009 that kept its budget deficit well below 3% of GDP.<sup>8</sup> A year later, the country returned to the balanced budget policy it had followed since long before the crisis. Latvia and Lithuania needed somewhat more time to rebalance their fiscal position,<sup>9</sup> while their general government gross debt ratios stabilized at about 40% of GDP after the crisis.

For Estonia, long-term interest rate convergence, which is normally measured based on ten-year government bond yields, was assessed using several other indicators, as the country had virtually no long-term public debt outstanding. In Latvia and Lithuania, interest rate convergence was well advanced by 2011/12, with long-term rates moderating further before euro area accession.

Moreover, all three Baltic countries displayed a remarkable degree of labor and product market flexibility and, more generally, economic adjustment capabilities for many years, as evidenced by their adapting to the shock experienced in 2008/09, when the financial crisis hit.<sup>10</sup>

## 1.2 Economic performance of euro area CESEE Member States in the 2010s

How have the five CESEE economies that are members of the euro area fared in the current decade? More specifically, have the benefits from euro area participation unfolded as expected in these countries, accelerating their catching-up? It is still too early for a rigorous quantitative analysis of this matter given that their accessions to the euro area took place between three and eleven years ago.<sup>11</sup>

Yet, a purely visual inspection of key macroeconomic variables shows that Slovakia and the Baltics have displayed solid growth alongside subdued inflation since 2010. While it is open to question to what extent membership in the euro area has contributed to this performance, the track record of these four countries suggests that in all likelihood their participation in the euro has not had a dampening effect. The Baltic countries' economic adjustment to the crisis was frontloaded and comprehensive, including a massive internal devaluation, which resulted in a V-shaped recovery after a particularly deep recession in GDP in 2008/09. In Slovakia, the contraction in 2009 was less pronounced, followed by a fast return to high growth in 2010, a more measured expansion until 2013 and another acceleration of GDP growth thereafter.

<sup>7</sup> Lithuania first aimed to join the euro area as early as 2007, together with Slovenia, but missed the numerical fulfillment of the inflation criterion by a small margin in the 2006 convergence assessment (with some concerns about the sustainability of low inflation prevailing at the time).

<sup>8</sup> More importantly, Estonia is the only CESEE EU Member State (and one of the three EU Member States overall) that never had an excessive deficit procedure (EDP).

<sup>9</sup> Latvia reduced the general government budget deficit to below 3% of GDP in 2012, Lithuania a year later.

<sup>10</sup> For a concise survey of convergence in the Baltic states, see Diaz del Hoyo et al. (2017, box 5).

<sup>11</sup> A starting point for empirical analysis could be to compare actual convergence, e.g. of per capita income, with the convergence to be expected given the state of economic development. Conducting such a comparative analysis, the Centre for European Policy Studies (CEPS, 2018) reports that the CESEE euro area countries have been converging at a slightly faster rate than one would have expected given their starting levels of income per capita. Likewise, Žúdel and Melioris (2016) find that euro adoption was net positive for Slovakia over the medium term.

Slovenia, in turn, went through a more extended boom-bust cycle, with a second recession in 2012/13, before embarking on a dynamic growth path more recently.<sup>12</sup> This difference in performance can be attributed to a number of factors. Slovenia had seen a comparatively large reduction in interest rates before and upon euro area accession, which had added to the boom. Moreover, some structural weaknesses (e.g. governance problems in the banking and nonfinancial corporations sectors) and delays in forging a comprehensive policy response to address these frailties exacerbated the subsequent bust in this country. Nevertheless, Slovenia managed to overcome the crisis without recourse to international financial assistance. Moreover, it is far from clear how Slovenia would have weathered the crisis outside rather than within monetary union. In fact, participation in the euro area eliminated the risk of a currency crisis, and access to ECB liquidity during the financial crisis helped the Slovenian banking sector stay afloat.<sup>13</sup>

At the same time, some CESEE countries that had retained their national currencies also performed comparatively or even exceptionally well during the past decade, namely the Czech Republic and Poland – the latter being the only EU Member State that sailed through the financial crisis without experiencing a recession.

### 1.3 Nominal convergence – state of play

While the 2010 convergence reports of the ECB and the European Commission had clearly shown the fallout from the financial crisis, not least in terms of fiscal developments and long-term interest rates, subsequent convergence reports have documented notable progress of non-euro area EU Member States with respect to nominal convergence. Inflation convergence improved, especially from 2014 onward. Long-term interest rate convergence advanced as well.<sup>14</sup> Moreover, fiscal positions have strengthened, and, since 2017, none of the countries have been subject to an excessive deficit procedure.<sup>15</sup> As a consequence of prior accessions to the euro area, participation in ERM II, a precondition for euro area accession, has been down to one country since 2015, namely Denmark (which, however, has an opt-out from joining the euro area). Thus, no further non-euro area EU Member State has been in the position to meet this element of the convergence criteria since then. In recent years, non-euro area CESEE EU Member States have continued operating diverse exchange rate regimes, encompassing a currency board (Bulgaria), a tightly managed float (Croatia) and more flexible, though not always fully freely floating exchange rate regimes (Czech Republic, Hungary, Poland, Romania). Accordingly, exchange rate trends and volatility have been diverse.

<sup>12</sup> For an overview on catching-up and convergence in the EU, see e.g. Ridao-Cano and Bodewig (2018).

<sup>13</sup> The Slovenian banking sector was mostly domestically owned at the time. Thus, access to parent bank funding (which was stabilized under the Vienna Initiative 1.0 in the year 2009) was limited to a few smaller banks. Hence, ECB refinancing was all the more important during the crisis years.

<sup>14</sup> In spite of the progress in overall terms, compliance with the reference values of inflation and long-term interest rates was somewhat less comprehensive in 2018 compared with 2016. In 2018, inflation was – moderately – above the reference value in two countries (2016: one country), and two countries did not meet the interest rate reference value, one of them by a small margin (compared to none in 2016).

<sup>15</sup> However, Romania's fiscal position has worsened in recent years, despite buoyant GDP growth, and since mid-2017, the country has been subject to a significant deviation procedure under the preventive arm of the Stability and Growth Pact. In June 2018 (and thus after the release of the 2018 convergence reports), such a procedure was also opened for Hungary.



Table 1 provides an overview as to the performance of non-euro area CESEE EU Member States regarding the convergence criteria as of spring 2018 (i.e. based on the data underlying the most recent ECB and European Commission convergence assessments).

Table 1

### The convergence criteria and the CESEE EU Member States in the 2018 Convergence Reports

	HICP	Long-term interest rates	EDP going on	Fiscal balance		Public debt		ERM II participation
	April 2017 to March 2018 vs. April 2016 to March 2017	April 2017 to March 2018		2016	2017	2016	2017	
	%	%		% of GDP		% of GDP		
Reference value	1.9	3.2		-3.0	-3.0	60.0	60.0	
Bulgaria	<b>1.4</b>	<b>1.4</b>	no	0.2	0.9	29.0	25.4	no
Croatia	<b>1.3</b>	<b>2.6</b>	no	-0.9	0.8	80.6	78.0	no
Czech Republic	2.2	<b>1.3</b>	no	0.7	1.6	36.8	34.6	no
Hungary	2.2	<b>2.7</b>	no	-1.7	-2.0	76.0	73.6	no
Poland	<b>1.4</b>	3.3	no	-2.3	-1.7	54.2	50.6	no
Romania	<b>1.9</b>	4.1	no	-3.0	-2.9	37.4	35.0	no
Memo items:								
Euro area	1.4	1.1		-1.5	-0.9	89.0	86.7	

Source: Eurostat.

Note: Bold letters indicate that the criterion was numerically met at the given time. The table does not capture sustainability issues, the full spectrum of exchange rate stability or aspects of legal convergence.

The Treaty on European Union requires a high degree of sustainable economic convergence as a precondition for euro area entry. In other words, countries must meet the convergence criteria on a lasting basis. Therefore, achievements in the area of nominal convergence need to be adequately underpinned by real and institutional conditions as well as by policies that ensure a smooth participation in a currency union.<sup>16</sup>

In its convergence reports, the ECB in particular reviews the sustainability of inflation convergence over the longer term as well as fiscal sustainability risks, the latter based on the European Commission's Debt Sustainability Monitor. In a nutshell, the 2018 report finds risk to inflation convergence to be most pronounced in Bulgaria and Romania,<sup>17</sup> while fiscal sustainability risks are seen to be diverse across countries.

The next enlargement of the euro area is at least a few years away based on current (non)participation in ERM II and the sequence that is implied by the convergence criteria. To achieve a positive convergence assessment, a country must participate in ERM II for at least two years without any devaluation against the euro and without severe tensions. Though not subject to formal preconditions, apart from the need to agree on a central rate of the joining currency vis-à-vis the

<sup>16</sup> Thus, the economic convergence assessment extends far beyond nominal convergence. For details see ECB (2018), p. 46 and, relatedly, pp. 51ff (section 3.5 on "Other relevant factors").

<sup>17</sup> The report notes that the catching-up process is likely to result in positive inflation differentials vis-à-vis the euro area, unless this is counteracted by an appreciation of the nominal exchange rate.

euro, ERM II entry is preceded by a consensus-building process of all stakeholders involved to ensure that subsequent participation in the mechanism is smooth.<sup>18</sup> To this end, major policy adjustments need to be undertaken prior to ERM II entry and fiscal policy has to be on a credible consolidation path. Participation in ERM II must be compatible with other elements of the overall policy framework, in particular with monetary, fiscal and structural policies.<sup>19</sup>

Also, the fulfillment of the inflation criterion might become more challenging again in the future. While CESEE EU Member States recorded low and sometimes even negative inflation rates in the last few years, the sustained upswing and increasing energy prices have recently led to a pickup in inflation. Should growth stay buoyant in CESEE EU Member States,<sup>20</sup> with output gaps becoming (more) positive, it remains to be seen how inflation will develop, in particular relative to EU peers and thus relative to the reference value for inflation in the convergence assessment.

## 2 Views of non-euro area CESEE Member States on euro area accession

In the following, we roughly outline the approaches the authorities in non-euro area CESEE EU Member States have recently taken to future euro area accession. Overall, a rather heterogeneous picture emerges.

Bulgaria and Croatia have expressed their intention to advance toward closer monetary integration with the euro area and ultimately full participation in monetary union. The Bulgarian authorities have declared their firm intention to apply for ERM II entry by July 2019. The ERM II stakeholders, in July 2018, outlined the process that is to lead to Bulgaria's future joining of the exchange rate mechanism (see section 4).<sup>21</sup> The Croatian National Bank, in turn, has presented a euro adoption strategy approved by the government in May 2018.<sup>22</sup> It is noteworthy that the strategy does not include a target date for Croatia's ERM II accession or adoption of the euro. The country's minister of economic affairs stated in May 2018 that the process leading to euro area accession might take five to seven years. Romanian authorities remain committed to joining the euro area at some future point in time, "but the setting of a firm [target] date ... implies the realization of in-depth analyses, especially with regard to real, structural and institutional convergence, fields in which important progress is necessary," alongside sustainable fulfillment of the nominal convergence criteria.<sup>23</sup>

The Czech Republic, Hungary and Poland are currently not eager to embark on a closer monetary integration with the euro area. The authorities hold that their countries are, for the time being, well served by monetary autonomy and exchange rate flexibility. The Czech Republic applies an annual review process in which the finance ministry and the central bank jointly assess the country's readiness to join the euro area. According to the most recent review released in late 2017,

<sup>18</sup> See the European Council (1997).

<sup>19</sup> ECB (2003).

<sup>20</sup> All major forecasts currently project growth in CESEE EU Member States to remain dynamic, albeit with increasing downside risks (see e.g. the OeNB-BOFIT forecast in Focus on European Economic Integration Q2/2018).

<sup>21</sup> Council of the European Union – Eurogroup (2018).

<sup>22</sup> Government of the Republic of Croatia and Croatian National Bank (2018).

<sup>23</sup> Government of Romania (2018).



the preparedness of the Czech Republic “to adopt the euro has improved further compared to previous years, although some shortcomings persist, especially as regards incomplete real convergence.” At the same time, the document holds that “the economic situation in the euro area cannot be assessed as sufficiently stabilized. Economic alignment across the euro area economies is not adequate either, despite having increased in comparison to last year. Debt and structural problems remain unresolved in a number of countries, regardless of problematic observance and enforceability of the fiscal rules. Another problem facing the EU and the euro area is the increasing uncertainty about their future institutional setup.”<sup>24</sup>

Both incomplete “real” convergence at home and unresolved issues in the euro area have also been cited by Hungarian and Polish policymakers, when addressing the issue of euro area accession of their countries.<sup>25</sup> The Hungarian authorities, in particular, have stressed that they regard far-reaching income per capita convergence as well as further progress in other economic areas as preconditions for a smooth participation in the single currency area.<sup>26</sup> Polish authorities have emphasized that they will consider adopting the euro only once euro area reforms have been completed. Moreover, in their view, strong economic arguments – e.g. substantial further advances with “real” convergence of the Polish economy – must support such a decision.<sup>27</sup>

### 3 How the crisis impacted on convergence assessments

The onset of the financial crisis brought about a number of major and unprecedented developments. As of 2010, new elements were consequently included in the convergence reports. On the one hand, some of the CESEE EU members subject to the convergence reports had to take recourse to IMF or joint EU-IMF balance of payments support facilities and/or some forms of precautionary assistance. On the other hand, practically all EU Member States faced exceptional economic circumstances due to the crisis, which had an impact on the calculation of some reference values. As a case in point, a number of EU Member States recorded negative inflation rates, which produced historically low reference values for the price stability criterion.<sup>28</sup> Against this background, the definition of “outliers” for the

<sup>24</sup> See the Ministry of Finance of the Czech Republic and Czech National Bank (2017). This position is repeated in the Czech Republic’s 2018 Convergence Programme, which also states that against this background the government will not seek to enter ERM II in 2018 (Ministry of Finance Czech Republic, 2018).

<sup>25</sup> See e.g. Republic of Poland (2018).

<sup>26</sup> See e.g. the interview with MNB Governor Matolcsy in the *Frankfurter Allgemeine Zeitung*, November 9, 2016, who reckons that full per capita income convergence of Hungary to the euro area average could take 15 to 20 years, linking this explicitly to the timeline for Hungary to join the euro area. Apart from income per capita, Hungarian authorities see wage levels, labor market conditions, productivity, financial integration, business cycle synchronization and the competitive position to be of key relevance for a smooth participation in monetary union. Moreover, they hold that the fiscal position should be stronger than prescribed by the respective convergence criteria (see the speech of MNB Vice Governor Nagy, *Budapest Business Journal*, September 7, 2017, [https://bbj.hu/economy/hungary-needs-new-euro-criteria-says-mnb-deputy-gov\\_138341](https://bbj.hu/economy/hungary-needs-new-euro-criteria-says-mnb-deputy-gov_138341)).

<sup>27</sup> See e.g. Central European Financial Observer, January 4, 2018 (<https://financialobserver.eu/recent-news/polands-pm-morawiecki-says-euro-adoption-is-not-under-consideration/>) or *Emerging Europe*, October 13, 2017 (<http://emerging-europe.com/in-brief/poland-stays-cool-euro-adoption/>). Riedel (2017) notes that official views in Poland on euro adoption have become much more hesitant over time and relates this shift mainly to changes in public opinion about the EU and monetary integration since the crisis.

<sup>28</sup> For an overview of inflation reference values in all convergence reports from 1998 to 2018, see European Commission (2018, p. 29).

calculation of reference values – which originally had been designed for very few exceptional cases – had to be applied more often during the crisis years.<sup>29</sup>

### **3.1 Balance of payments support and other support measures as reflected in the convergence reports**

In its Convergence Report 2010, the ECB for the first time analyzed, under the exchange rate criterion, whether a country had benefitted from balance of payments support or central bank liquidity assistance, and whether this support had helped reduce exchange rate pressures.<sup>30</sup> In this context, a rather comprehensive approach was applied, as all forms of support – bilateral loans and loans from international institutions, and both actual and precautionary assistance – were taken into account, thus including access to precautionary financing, such as the IMF's Flexible Credit Line. In a similar vein, the European Commission took note of balance of payment support programs mentioning them under “additional factors” in the country chapters of its Convergence Report 2010.<sup>31</sup>

In particular, at the time of the 2010 convergence assessment, Hungary, Latvia and Romania had received financial balance of payments support, inter alia, from the IMF and the EU. Hungary, Latvia and Poland had benefitted from different forms of central bank liquidity assistance. Consequently, each country chapter of the ECB Convergence Report 2010 referred to these support programs in the context of the examination of the exchange rate criterion, in particular of the existence of severe tensions.<sup>32</sup>

### **3.2 Numerical development of reference values and definition of outliers during the crisis**

A number of EU Member States registered very low and even negative inflation rates during the crisis, which resulted in historically low reference values for convergence assessments. As a case in point, in 2010, the three best performers in terms of price stability<sup>33</sup> were countries with negative inflation rates. In line with the price stability criterion defined in Article 140(1) of the TFEU, this translated into an unprecedentedly low reference value for HICP inflation. The convergence reports of 2010 and 2016 applied very low reference values for price stability, even though a few outliers had been excluded from the calculation<sup>34</sup>.

At the same time, the definition of outliers for calculating the price stability criterion gained a new dimension. In pre-crisis years, namely in 2004, Lithuania

<sup>29</sup> According to the ECB's convergence reports, an outlier country is defined as follows: “first, its 12-month average inflation rate is significantly below the comparable rates in other Member States and, second, its price developments have been strongly affected by exceptional factors” (ECB, 2010, p. 9).

<sup>30</sup> ECB (2010, p. 13).

<sup>31</sup> European Commission (2010), e.g. on Latvia (p. 17), on Romania (p. 27), on Hungary (p. 145).

<sup>32</sup> For details on Hungary, see ECB (2010), country summary (p. 48) and detailed country chapter (p. 154). On Latvia, see ECB (2010), country summary (p. 45) and detailed country chapter (p. 116). On Romania, see ECB (2010), country summary (p. 51) and detailed country chapter (p. 189) and ECB (2012), country summary (p. 62) and detailed country chapter (p. 182), ECB (2016, p. 128). For Poland, see ECB (2010), country summary (p. 50) and detailed country chapter (p. 171).

<sup>33</sup> Clarifying Art. 140(1) of the TFEU (Treaty on the Functioning of the European Union), Protocol No 13 stipulates that “[...] a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1½ percentage points that of, at most, the three best performing Member States in terms of price stability.”

<sup>34</sup> See the overview table in European Commission (2018, p. 29).

was the only Member State whose inflation rate was identified as an outlier “due to the accumulation of specific factors.” The Lithuanian inflation rate was therefore excluded from the calculation of the reference value for price stability, as “it might otherwise have [...] reduced the usefulness of the reference value as an economically meaningful benchmark.”<sup>35</sup> By contrast, after the start of crisis, almost every convergence report identified outliers for the calculation of the reference value for price stability.<sup>36</sup>

Outliers were also identified for calculating the criterion of long-term interest rates<sup>37</sup>.

#### 4 EMU reform measures as reflected in the convergence reports

In response to the financial crisis, the EU took a wide range of measures to address weaknesses in the EU’s economic governance that had been revealed by the crisis with a view to becoming more resilient. In particular, a legislative package to strengthen the Stability and Growth Pact, known as the “Six Pack,” entered into force in December 2011. Furthermore, the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG), formally concluded on March 2, 2012, became applicable on January 1, 2013. These legislative measures strengthened fiscal surveillance for all EU Member States and established a macroeconomic imbalance procedure (MIP).

##### 4.1 Strengthened economic governance in the EU as reflected in the convergence reports

As these strengthened rules were applied to all EU members in the context of the European Semester, they also found their reflection in subsequent convergence reports. Consequently, as of 2012, the ECB as well as the European Commission’s Convergence Reports extended their analysis of public finances to these new fiscal rules.<sup>38</sup>

The ECB Convergence Report 2012 for the first time included a presentation of the MIP for all countries covered under “other relevant factors,” thereby “ensuring the provision of all available information relevant to the detection of macroeconomic imbalances that may be hampering the achievement of a high degree of sustainable convergence as stipulated by Article 140(1) of the Treaty.”<sup>39</sup> The same report also clarified the implications of the MIP for the fulfillment of the convergence criteria: “[...] EU Member States with a derogation that are subject to an excessive imbalance procedure can hardly be considered as having achieved a high degree of sustainable convergence as stipulated by Article 140(1) of the Treaty.”<sup>40</sup> This sentence has been repeated in all subsequent ECB Convergence Reports. Similarly, the European Commission’s Convergence Report 2012 outlined the key

<sup>35</sup> ECB (2004, p. 8).

<sup>36</sup> Outliers were defined as follows: 2004: Lithuania, 2010: Ireland, 2013: Greece, 2014: Greece, Bulgaria, Cyprus, 2016: Cyprus, Romania.

<sup>37</sup> In 2010, Estonia, while being among the three best-performing Member States in terms of price stability, was excluded from the calculation of the interest rate criterion because of the absence of a harmonized long-term interest rate. This was, however, not related to the crisis (see section 1 and ECB, 2010, p. 14). In 2012, Ireland was identified as an outlier for the interest rate criterion for crisis-related reasons.

<sup>38</sup> ECB (2012, p. 11ff.) or, for instance, European Commission (2016, p. 30).

<sup>39</sup> ECB (2012, p. 18).

<sup>40</sup> ECB (2012, p. 18).

features and results of the then newly established MIP,<sup>41</sup> presenting the individual country results under “additional factors” at the end of the respective country chapters. The European Commission has taken this approach also in its subsequent convergence reports.<sup>42</sup>

#### 4.2 The establishment of the banking union and its reflection in the convergence reports

Another very important response to the financial crisis, and in particular to the euro area sovereign debt crisis, was the creation of the banking union. Its first pillar, the Single Supervisory Mechanism (SSM), entered into force on November 4, 2014, for all euro area countries. As a consequence of the establishment of the SSM, euro area entry has got an additional dimension: New entrants into the euro area automatically become full members of the SSM, with all rights and obligations.<sup>43</sup>

Under the SSM, the ECB, together with the national competent authorities (NCAs), directly supervises all credit institutions classified as significant, around 120 banking groups across the euro area. While Joint Supervisory Teams comprising staff from the respective NCAs and the ECB are responsible for the ongoing supervision of significant institutions, the NCAs continue to directly supervise less significant institutions. Joining the SSM implies thorough preparation and thus considerable lead time both for the national supervisory authorities and for the supervised entities. As a case in point, before the SSM became fully operational, all banks initially identified as significant were subject to a comprehensive assessment by the ECB with close involvement of the national supervisory authorities. This mandatory assessment was conducted for all euro area members from November 2013 to October 2014 and comprised an asset quality review based on year-end 2013 data and a stress test covering the years 2014 to 2016<sup>44</sup>.

Consequently, the ECB Convergence Report 2014, and the subsequent 2016 and 2018 reports, emphasize that “It is, therefore, of utmost importance that the necessary preparations are made. In particular, the banking system of any Member State joining the euro area, and therefore the SSM, will be subject to a comprehensive assessment.”<sup>45</sup> This was already the case with Lithuania before it joined the euro area. Furthermore, under “other relevant factors,” the ECB Convergence Reports 2016 and 2018 state that “financial sector policies should be aimed at ensuring that the financial sector makes a sound contribution to economic growth and price stability in the countries under review, and supervisory policies should be geared towards stabilizing the supervisory framework, which is a precondition for joining the SSM.”<sup>46</sup>

<sup>41</sup> European Commission (2012, p. 41).

<sup>42</sup> European Commission (2014, p. 39), European Commission (2016, p. 34) and European Commission (2018, p. 34). The excessive imbalance procedure is an enhanced surveillance mechanism to ensure compliance with the MIP. It can be activated for countries for which excessive imbalances have been identified.

<sup>43</sup> Furthermore, Bulgaria will also participate in the Single Resolution Mechanism (SRM), the second pillar of the banking union, upon entry into force of SSM close cooperation (see Council of the European Union – Eurogroup, 2018). The same will eventually also be the case for the European Deposit Insurance Scheme (EDIS).

<sup>44</sup> OeNB (2014, p. 31).

<sup>45</sup> ECB (2018, p. 4), ECB (2016, p. 4) and, similarly, ECB (2014b, p. 5). In this context, an important distinction has to be made between (1) references to the SSM made in the convergence reports, which are published under Art. 140 TFEU, and (2) the formal process to enter ERM II, which is not based on the Treaty, but on the Resolution of the European Council of 16 June 1997.

<sup>46</sup> ECB (2018, p. 54), and ECB (2016, p. 53).

While SSM membership per se is not a formal criterion for euro adoption, this is simply due to the fact that the SSM had not been in place at the time when the Maastricht criteria were designed. Establishing participation in the SSM requires careful preparations in three dimensions: (1) adopting the relevant legal framework, (2) providing for convergence of supervisory approaches and (3) ensuring that banks are sound by undertaking a comprehensive assessment of the sector. Article 7 of the SSM Regulation provides for the possibility of close cooperation of non-euro area Member States with the SSM. This stepping stone to full SSM membership is the most appropriate framework for a country to timely and comprehensively prepare for full participation in the SSM upon euro adoption. Detailed provisions on the SSM close cooperation are laid down in a decision by the ECB (2014a).

Responding to Bulgaria's intention to join the exchange rate mechanism, which would be the first ERM II entry after the crisis and the ensuing deepening of EMU, the ERM II stakeholders made it more specific in their public statement of July 12, 2018, how ERM II participation and close cooperation interrelate.<sup>47</sup> In particular, they spelled out that a positive assessment on ERM II entry is linked to a positive ECB decision on close cooperation with the SSM. This implies that Bulgaria applies in due time for SSM close cooperation with a view to entering into this cooperation when it starts participating in ERM II. This is to ensure that Bulgaria, including its financial sector and its supervisory authorities, are adequately prepared for full membership in the SSM by the time the country adopts the euro.

The Bulgarian authorities have moreover committed to fulfilling other policy measures before simultaneously entering ERM II and banking union. Apart from close supervisory cooperation with the ECB, these commitments also include strengthening the macroprudential and insolvency frameworks as well as nonbanking supervision, and specific measures to fight money laundering and improve the governance of state-owned enterprises. Improvements are likewise expected in the anti-corruption and judiciary spheres, as part of the Schengen process. Moreover, once it joins ERM II, Bulgaria is expected to take additional commitments aimed at ensuring sustainable economic convergence by the time the country will adopt the euro.

As to the envisaged timeline, the statement of July 12, 2018, reads as follows: "The ECB could be expected to conclude its comprehensive assessment within approximately one year after Bulgaria's formal application for close cooperation, and its decision may make the start date of close cooperation conditional on Bulgaria's progress in implementing the possible measures required in relation to the results of the comprehensive assessment."<sup>48</sup> In other words, should the comprehensive assessment indicate that Bulgaria needs to take follow-up measures, such measures would need to be implemented after completion of the comprehensive assessment and reviewed as well. Only then can a positive decision on Bulgaria's close cooperation with the SSM, and hence also on its participation in ERM II, be taken.

This approach to Bulgaria which was mutually agreed upon by the ERM II stakeholders provides clear guidance for future cases of non euro-area EU Member States intending to enter the exchange rate mechanism and subsequently the euro

<sup>47</sup> Council of the European Union – Eurogroup (2018).

<sup>48</sup> Council of the European Union – Eurogroup (2018). For further reference, see ECB (2014a).

area: “In the future, we expect to follow a similar approach to Member States wishing to join ERM II, in line with the principle of equal treatment.” On the one hand, this approach fully accounts for the relevance of the banking union for future euro area entrants. On the other hand, it considerably improves the prospects for a smooth participation in ERM II, as it minimizes financial stability risks in participating countries early on.

## 5 Conclusions and outlook

The setting in which monetary integration of CESEE EU Member States is taking place has changed profoundly in the current decade. Experience from the crisis has sharpened policymakers’ views in both the incumbent euro area and non-euro area Member States on what it takes for individual countries to participate smoothly in a monetary union. At the same time, lessons drawn from the crisis have substantially transformed the institutional setup of EMU itself, which has affected the euro area accession process and will continue to do so.

A credible and sustainable fulfillment of the economic convergence criteria is crucial for future euro area enlargements. Beyond compliance with the numerical Maastricht criteria, strong emphasis is also put on the “other relevant factors” set out explicitly in the Treaty. Important further aspects are policy discipline, quality of institutions, governance, alignment (both cyclical and structural) and an economy’s adjustment capabilities as they support the sustainability of convergence and economic performance in a monetary union. Institutional reform of EMU, in particular the creation of the SSM, has added a new dimension to the euro area enlargement process. Since November 2014, a country’s euro adoption automatically implies full membership in the SSM, with all rights and obligations, a step that needs to be thoroughly prepared by all stakeholders and which therefore has considerable lead times.

Looking ahead, the next enlargement of the euro area is at least a few years away given current (non-)participation in ERM II and the sequence implied by the convergence criteria. Moreover, prospective euro area members are subject to new preparatory requirements for participation in the SSM.

Against this background, it will remain key to strike a balance between, on the one hand, lessons drawn from the crisis and, on the other hand, the principle of equal treatment, which applies during the entire process of monetary integration,<sup>49</sup> as was done by the ERM II stakeholders on July 12, 2018. Given that EMU is dynamic in nature, as set out, for example, in Article 3.4 of the Treaty on European Union, the principle of equal treatment needs to take into account the stage of institutional development of EMU at any point in time. The name of the game in an advancing environment is an even-handed application of this principle, which combines continuity with a careful and well-grounded integration of the lessons from the past and the institutional reforms that have resulted as a consequence, for the mutual benefit of all stakeholders in the process.

<sup>49</sup> ECB (2003).



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# External actors and European integration in the Western Balkans

*The Western Balkans region has returned to the center of European policymakers' attention amidst increased concerns over geopolitical competition and inherent instability. The present study examines the major external players and their goals and policy tools in the region and – in spite of the EU's less than stellar performance at the Sofia Summit of May 2018 – calls for a consistent and committed approach to the integration of the Western Balkans into the EU.*

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At a time when concerns over geopolitical competition and power politics are on the rise in Brussels and various European capitals, policymakers' attention has returned to the Western Balkans. After more than a decade of neglect, the EU has awakened to the possibility of the region once again becoming a hotbed of instability on the continent, with external actors fomenting divisions and exploiting simmering political, economic and ethno-religious discontent, or simply taking advantage of poorly regulated and corrupt investment markets. The aim of this paper is to introduce the major external players in the region as well as their interests and the policy tools they employ, with a focus on their significance for the EU. An introduction of the concept of geopolitics and the context of its present topicality is followed by sections devoted to each of the significant external players in the Western Balkans: the EU, Russia, China, Turkey and the Gulf monarchies. The study concludes with considerations on Europe's interests and some recommendations for action in the region.

## 1 Geopolitics and the current context

### 1.1 The concept of geopolitics

The concept of geopolitics, which has seen a revival in public debate in recent years, is historically charged in the German-speaking world. There, it connotes imperialist and racist ideologies, while in the Anglo-Saxon tradition, it is used in a value-free way for the structure of global relations between competing world powers. This latter understanding of the term informs the present observations.

For most of its history, the project of European integration progressed without the need for geopolitical considerations: In the post-war order – defined in Yalta in 1945 and dominant until 1989 – the U.S.-led NATO was the guarantor of Western European security, while the six founding members of the European Communities could focus on their soft power role and economic integration. This project was aimed at both surmounting war in Europe and integrating Western Europe into the transatlantic order.

The Yugoslav wars of secession in the 1990s – the first military conflict on European soil since 1945 – put Europe to a serious test. But even then, great power competition seemed to have given way to international cooperation. Moscow cooperated politically and militarily with the West, for example in the Balkan

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Contact Group. During the U.S.-led peace negotiations in Dayton, Ohio, Russia endeavored to facilitate a settlement between the parties in Bosnia and Herzegovina.

Even though Moscow denied legality to the 1999 NATO-led Kosovo intervention against Slobodan Milošević's Yugoslavia with its veto in the U.N. Security Council, it was Russian President Boris Yeltsin's Prime Minister, Viktor Chernomyrdin, who convinced Milošević to give up Kosovo<sup>2</sup> after 78 days of unsuccessful NATO bombings. Thus helping the Western cause, Moscow saved the Western alliance from an embarrassing humiliation. In retrospect, this turned out to be the last instance of Russian support for Western intervention policy.

The EU Security Strategy of 2003 perfectly encapsulates the prevailing optimism of its time: *"Europe has never been so prosperous, so secure nor so free,"* the introduction reads (European External Action Service, 2003, p. 2).

## 1.2 Ukraine – the turning point

Russia's 2014 annexation of Crimea unquestionably constitutes a turning point in Europe's security and defense policy. Ever since, the struggle over the fundamental rules of global order and spheres of influence has returned in full force. Balance of power politics backed by military force have eroded the significance of multilateral organizations oriented toward peace politics such as the United Nations and the OSCE.

The U.S.A.'s retreat from its traditional role as guarantor of international order and European security – starting already under President Barack Obama – has become state doctrine in Donald Trump's "America First" policy. The current U.S. President's transactionalist approach to foreign policy – viewing the U.S.A. as having made a number of deals with other countries which can be challenged and renegotiated as the needs of the moment require instead of emphasizing the complex network of relationships with traditional friends and allies or long-time enemies and rivals – further accentuated the need for Europeans to develop an independent geopolitical strategy. A multitude of new initiatives for a common security and defense policy, such as the recently approved PESCO (Permanent Structured Cooperation), bear witness to this realization.

The latest European Security Strategy of 2016 reflects the fundamental shift in Europe's geopolitical condition: *"Our Union is under threat. [...] To the east, the European security order has been violated, while terrorism and violence plague North Africa and the Middle East, as well as Europe itself"* (European External Action Service, 2016, p. 7).

Already in 2015, the EU's High Representative for Foreign Affairs and Security Policy, Federica Mogherini, published a plain-talking document titled Strategic Review: *"Since the 2003 Security Strategy, the EU's strategic environment has changed radically [...] today an arc of instability surrounds the Union,"* it states (European External Action Service, 2015, p. 1).

## 1.3 Europeanization of the Balkans

The Balkan region, which was a flashpoint of European history already in 1914 and 1991, is once more the focus of competing geopolitical interests. While Bulgaria, Croatia, Greece, Romania and Slovenia are members of the EU, the so-called *Western Balkan Six* – Albania, Bosnia and Herzegovina, Kosovo, the Former Yugoslav

<sup>2</sup> The designation "Kosovo" is used in this paper without prejudice to positions on status and in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

Republic of Macedonia (FYR Macedonia), Montenegro and Serbia – are yet to join. These aspiring EU members especially are the focus of a geopolitical struggle for political, economic and cultural influence. Admittedly, the interests of the different external actors in this game differ substantially.

The traditional partners – the U.S.A. and the EU – have been pursuing the transatlantic integration of the entire region to a varying degree. The goal is to complete the liberal-democratic transformation processes toward NATO and EU membership. This is a matter of overcoming structural political, economic and security challenges and ensuring the stability of this region often misunderstood as Europe's periphery.

The EU leans on the promise of membership to induce reforms and has built a dense network of regional agencies to support the process. Brussels thus acts mainly via conditionalities and financial inducements while the U.S.A., in contrast, prefers to use tougher means to put pressure on local leaders. This carrot-and-stick method was successful in FYR Macedonia, where the resignation of the corrupt former Prime Minister, who had been involved in a wiretapping scandal of unprecedented proportions, would probably not have happened without the EU's leveraged consistency and Washington's hands-on approach. U.S. sanctions against the President of the Bosnian Republika Srpska, however, have thus far not shown the desired result. This is perhaps also a consequence of Europe's disunity on how to handle the Moscow-backed secessionist leader.

The U.S.A., as one of the early players, still carries considerable military, economic and diplomatic clout in the region. Contrary to concerns, the U.S.A. has so far somehow retained parts of this influence during the first year of the Trump presidency. However, as a consequence of the evisceration of the State Department's funding and staff, the current American approach to the region seems to be driven mostly by past achievements and institutional continuity rather than an active foreign policy. In line with the overall militarization of its foreign policy, funding for diplomatic engagement has dropped sharply (under the fiscal year 2018 appropriations and budget request, foreign assistance funding levels for Europe and Eurasia have dropped 60% over fiscal year 2017) (Epstein et al., 2018, p. 13). At the same time, U.S. spending on military-to-military cooperation is set to rise under the National Defense Authorization Act for the fiscal year of 2019 (U.S. Government Publishing Office, 2018, p. 665ff).

The concerns over growing Russian, Chinese, Turkish and Arab influence notwithstanding, the EU remains by far the most important player in the Western Balkans, even though the EU has lost some of its appeal in recent years. Europe's dominant position becomes most obvious when looking at trade: The EU was responsible for 67% of imports to and 84% of exports from the Western Balkans in 2017 (European Commission Directorate-General for Trade, 2018, p. 8). The picture is similar when it comes to foreign direct investments in the region, where EU Member States are leading by far (Dabrowski and Myachenkova, 2018).

The Western Balkans is further closely linked to the EU via instruments such as the CEFTA free trade agreement and the Energy Union; these continually deepen the economic integration within the region and between the region and the EU while ensuring the adherence to European rules and norms. The so-called *Berlin Process*, started by Germany's Chancellor Angela Merkel in 2014, aims to promote judicial and public service reform connectivity, and the settlement of

bilateral and internal conflicts in the region with the involvement of governments as well as civil society – albeit with admittedly mixed results so far.

European financial institutions such as the EIB and the ERBD as well as the important Instrument for Pre-Accession Assistance (IPA) contribute much-needed funds to support reform efforts. However, the disbursement of these funds is consistently conditional upon adherence to European rules and regulations, not always in line with local elites' vested interests. Still, the EU has retained the most influence by far amongst external actors in the Western Balkans – be it in the economic, political or regulatory and legal spheres.

## 2 The big foreign players

### 2.1 Russia

The aim of Russia's activities in the Western Balkans is to defer the Euro-Atlantic integration of the region – ideally at low cost. While Russia has acquiesced to the region's eventual EU integration, it vehemently opposes further NATO enlargement.

Even though the Western Balkans is only of secondary strategic importance to Russia, it is part of its historic sphere of influence. Apart from continual cooperation in the fields of economy, energy, technical cooperation and – more recently – the media, Moscow builds on its Slavic-Orthodox ties to Serbia and the Bosnian Republika Srpska.

Moscow wields the largest influence in Serbia, the Republika Srpska and – until recently – in Montenegro and FYR Macedonia. Serbia, for example, has not joined the Western sanctions against Russia. Still, Moscow is on the defensive. In Montenegro, it was allegedly behind a failed coup attempt in the fall of 2016, which the Kremlin denies. Since the country's NATO accession in 2017, bilateral relations have cooled markedly despite significant Russian private investments in hotels and property along the coast. The recent democratic change in FYR Macedonia has substantially diminished Moscow's influence in this volatile state for the time being. The pending solution of the name issue with Greece – FYROM is set to become the Republic of North Macedonia – has paved the way to NATO membership and should eliminate the last roadblocks for the opening of accession negotiations with the EU.

#### 2.1.1 Russia's economic influence

Moscow's economic influence in the region is highly circumscribed: While Russia was the largest trading partner of the Western Balkan Six at the turn of the century, the latter now import thirteen times as many goods from the EU and export nearly twenty times more to the EU (figures for 2017) (European Commission Directorate-General for Trade, 2018, p. 8). This is partly a consequence of the Western sanctions: Russia's real economic output shrank considerably in 2015 and 2016 and recovered only slowly in 2017 (*ibid.*). However, Russian-Serbian trade grew 12% in nominal terms in 2017 (compared to 2016), posting its first increase since 2014 (*ibid.*). This was mainly due to an increase in Serbian exports. According to wiiw data for 2016, they amount to one-third of total trade, pointing to substitution effects, allegedly also due to the EU sanctions against Russia, which Serbia has not joined.

Only in the energy sector does the Kremlin have considerable influence in Serbia, Bosnia and Herzegovina and FYR Macedonia, which are highly dependent on Russian gas (Vladimirov et al., 2018). And Russia does not allow for Slavic

solidarity: FYR Macedonia pays one of the highest gas prices in Europe. Serbia, for its part, has sold majority stakes in its state-owned oil and gas industries to Russian state-owned enterprises in 2007–2008 – reportedly far below market value. This is widely regarded as a favor in return for Russia’s support for Serbia’s position on Kosovo in the U.N. Security Council (*ibid.*, p. 22ff). The South Stream Pipeline project, which would have brought Serbia much-needed revenue from transit fees, was cancelled after Russia’s annexation of Crimea in 2014.

### 2.1.2 Russia’s special relationship with Serbia and the Bosnian Republika Srpska

The relatively modest economic interactions notwithstanding, the Kremlin is skillfully marketing itself as the generous Slavic-Orthodox brother and positioning itself as a spoiler of Euro-Atlantic integration. For Belgrade, Moscow’s support in the Kosovo issue is of the utmost importance; Serbia’s foreign policy strategy is thus geared toward keeping Russia happy while advancing its relations with both NATO and the EU. However, Serbia emphatically rules out NATO membership and tries to position itself as a neutral state in the tradition of the non-aligned movement. (This policy is certainly also a consequence of the NATO intervention in 1999, which led to Kosovo’s unilateral declaration of independence in 2008.) Serbia’s refusal to participate in the sanctions against Russia is undoubtedly straining the EU accession negotiations.

The Kremlin is skillfully orchestrating its frequent official visits and relatively marginal military aid to Serbia for maximum media attention. Not least for this reason, Russia is seen as the most important partner and supporter by a majority of the Serbian population, while the far larger EU support programs are hardly recognized by the public – due, in equal part, to Brussels’ traditionally weak self-promotion and a lack of presentation by the Belgrade government.

Furthermore, the Kremlin is fueling political tensions in the region via diplomatic gestures such as the ostentatious support for a referendum on the state holiday in Republika Srpska. The intended date of the state holiday commemorates the declaration of independence of Bosnia’s Serbs, a decisive trigger of the Yugoslav wars of the 1990s. It is telling that not even Belgrade was ready to support the referendum, which was declared unacceptable by the international community and unconstitutional by Bosnia and Herzegovina’s Constitutional Court. The U.S. State Department responded to the actions of Republika Srpska’s President Milorad Dodik by putting him on the sanctions list in January 2017. Russia’s President Vladimir Putin, however, regularly pays court to the President of the small Serb entity, whom he received four times in 2016 alone. With much fanfare, Russia promised EUR 500 million to the near-bankrupt Bosnian statelet in 2014, none of which was paid out however (Higgins, 2018). In the meantime, the IMF had to step in to ensure the payment of state pensions and other public expenditures.

Overall, Russia’s influence in the region rests mainly on a skilled politics of symbols and the reinforcement of preexisting ethnic tensions. That said, if the EU managed to adequately communicate its substantial financial engagement in the region, Moscow could probably do little to compete with it.

## 2.2 China’s interests in the Western Balkans

While Moscow is actively trying to undermine the region’s Euro-Atlantic integration, China views a successful EU accession of the Western Balkan Six as serving its

strategic goal of easy access to the central European EU members. On the issue of NATO membership, Beijing seems to entertain an agnostic view. However, like Serbia, Russia and five EU Member States, China does not recognize the independence of Kosovo. China's engagement in the region is based in geo-economics and is part of two larger geopolitical initiatives:

- the *Belt and Road Initiative* (BRI), which aims at constructing a network of energy, trade and transport infrastructure connecting Asia, Africa and Europe, and
- the *16+1 format* through which China is seeking to assure policy coordination for its massive financial engagement in Eastern and Southeastern Europe. The 16+1 format is designed as a regional initiative; by transgressing established boundaries – the 16 include both EU members and candidate countries – China tries to forge a new political geography in the region to safeguard the implementation of the European part of the BRI.

The Western Balkans is an important transit route for Chinese goods arriving in Europe at the Greek port of Piraeus – the largest Chinese investment on the continent in the context of the BRI initiative to date and currently the fastest-growing container port in the world. Furthermore, the region presents Chinese companies with an opportunity to make initial investments and develop references in a part of Europe not yet fully aligned with the strict rules and regulations of the EU but with the prospect of joining the block in the foreseeable future.

### 2.2.1 China's significance for the Balkan Region

In the Western Balkans, China's engagement has been met with both approval and skepticism: The 16+1 format, initiated in 2012, as well as the BRI present opportunities to attract much-needed investment in infrastructure and the economy. Publicized Chinese construction projects as part of the BRI amount to roughly EUR 12.2 billion in loans for 16 Central and Southeastern European countries between 2007 and 2017 (Grieverson et al., 2018). Within these projects, the Western Balkan countries accounted for the majority of funds: 29.4% alone was earmarked for projects in Serbia, 20.7% for Bosnia and Herzegovina and 7.4% for Montenegro (ibid., p. 17). Most of the projects are in either energy or transport.

Infrastructure loans under the BRI often come with long maturities (20 years) at low interest (2%) and are not tied to political or human rights conditionalities, which are typical for EU funding (Tonchev, 2017, p. 4).

Serbia is China's key partner in the Western Balkans and profits the most from Chinese loans and direct investment. More than EUR 5.5 billion, mostly in the form of concessionary loans, have been approved for infrastructure and energy projects (B92, 2017) such as the Sino-Serbian Friendship Bridge in Belgrade (EUR 170 million) (Hollinshead, 2015), the expansion and renovation of the Belgrade-Budapest railway or the Kostolac thermal power station. But also in Montenegro, Albania and Bosnia and Herzegovina, highways and railways are constructed and upgraded with Chinese loans (Tonchev, 2017, p. 2ff).

Critics complain that the desired knock-on effects of Chinese investments for the local economy often remain marginal; infrastructure projects have mostly been realized by Chinese companies and with Chinese materials imported free of duties and tariffs under special agreements. In some cases, such as in the Sino-Serbian Friendship Bridge project, state-owned enterprises awarded with contracts are obliged to employ Chinese workers. Furthermore, corruption, rising sovereign debt



and political dependencies connected to Chinese loans are the subject of concerns (ibid., p. 2). China's "debt trap policy" is cause for concern as evidenced in parts of Asia and Africa.

### 2.2.2 China on the fast track in the Balkans

Chinese engagement in the Western Balkans has elicited uneven reactions from the EU as well. While it is often consistent with professed EU goals and needs, it simultaneously has the potential to undercut European norms and regulations and to undermine European unity.

Thus, Chinese investments in transport infrastructure are largely in line with EU goals formulated since 2014 under the Connectivity Agenda of the Berlin Process; at the same time, the skirting of EU public procurement rules and environmental law in many of these projects raise concerns. Currently, there is a suit pending against the awarding of the Pelješac Bridge in Croatia to a Chinese consortium allegedly offering state-backed dumping prices; tellingly, 85% of the funding for the bridge is provided through EU funds (European Commission, 2017). This example is paradigmatic for the kinds of issues arising when a highly regulated, liberal economic zone interacts with state-directed enterprises operating in a political fashion.

If the EU succeeds in aligning BRI projects – not only in the Balkans – with its own rules and in coordinating them with its infrastructure plans, the synergies could be significant. Hence, charting the right course in its overall relations with China stands amongst the greatest geopolitical challenges for the EU.

## 2.3 Neo-Ottoman Turkey

While the Western Balkans does not play a preeminent role in Turkey's foreign policy, the country's neo-Ottoman involvement in the region is on the rise. The Western Balkans holds threefold significance for Turkey: in security policy, for its proximity and potential instability, economically, due to its large growth potential and, in socio-cultural terms, thanks to its shared history and cultural affinity dating back to the 500 years of Ottoman domination of the region.

In the 1990s, NATO ally Turkey played an important role in the stabilization of the region. As a representative of the Organization of Islamic Cooperation (OIC) in Bosnia and Herzegovina, Ankara was a constructive partner of the West. Since 2000, Turkey has facilitated trilateral meetings with Bosnia and Herzegovina and Serbia, acting as an important contributor to the process of reconciliation of the former adversaries.

Today, Turkey exercises its influence in the region primarily through soft power means, such as development aid (EUR 128 million in 2015) (Yildiz et al., 2015) and cultural and education programs in countries with substantial Muslim communities. Trade relations are growing slowly but steadily. While the EU remains the most important trading partner and investor for all Western Balkan states (the total trade volume between the EU and the Western Balkans is 17 times higher than between Turkey and the region) (European Commission Directorate-General for Trade, 2018, p. 8), the stalling accession negotiations have encouraged Turkey to intensify its initiatives in the region. Trade between Turkey and the Western Balkans grew eightfold between 2002 and 2017 in nominal terms.<sup>3</sup>

<sup>3</sup> COMTRADE.

Turkey's economic and political relations in the region focus mainly on Muslim states such as Albania (where, in Tirana, the largest mosque in the Balkans, funded by Ankara, has recently been inaugurated by the President of Turkey), Bosnia and Herzegovina and Kosovo. Turkish development aid has a strong emphasis on the preservation of the Ottoman cultural heritage and education. The conflict between President Recep Tayyip Erdoğan and the Gülen movement has created spillover effects since many of the Turkish schools in the region were Gülen-affiliated.

Beyond the region's Muslim realm Ankara has been trying to improve its relationship to Serbia as the strategically most significant state in the region.

### 2.3.1 Turkey as an alternative?

In anti-Western and Muslim circles, Ankara is seen as a counterweight to the EU and the U.S.A. During the 2017 visit of the Turkish President in Sarajevo, a number of pro-Erdoğan and anti-EU protests sprang up in Sarajevo. In the run-up to the 2018 elections in Turkey, Sarajevo was the only European location where President Erdoğan was able to address his European electorate. There are concerns in the EU that the authoritarian and illiberal style of the Turkish leader could become a model for Muslim (and other) politicians in the Balkans. However, the model effect of authoritarian governments *inside* the EU seems more problematic for the Europeanization of the region. Orbán-style governance would easily fit into the regional traditions of authoritarian rule and could – upon joining the EU – arguably reinforce the illiberal camp in the EU.

Turkey plays an important role for the security of the region through its control over migration flows toward Europe; another migration crisis could severely undermine the security of the Western Balkans.

Overall, Turkey's influence on the Western Balkans varies between countries and should not be overdramatized. In a way, Turkey's activities in the region are contingent upon Brussels. The future role of Ankara depends to a large degree on its relations with the EU and Europe's standing in the Arab world.

Contrary to Russia, however, Turkey is not necessarily in opposition to European interests in the Western Balkans.

## 2.4 The Gulf monarchies – business and Islam

The Gulf monarchies, above all Saudi Arabia, were important actors during the Yugoslav wars of secession, supporting Muslims in Bosnia and Herzegovina through various channels. Allegedly, the Saudi royal family alone spent hundreds of millions of dollars on humanitarian aid and arms as well as on mobilizing Muslim fighters (Burg and Shoup, 1999, p. 339).

Since then, Saudi Arabia has propagated the ultra-conservative Wahhabi interpretation of Islam in the Western Balkans. In Bosnia and Kosovo, Islam schools, mosques, and local NGOs partially assume state functions such as education and social security for the poorest parts of the population. Saudi Arabia's religious influence is often associated with the large numbers of foreign fighters from the region that have travelled to the warzones of Syria and Iraq. According to Europol, between 800 and 900 people from the Western Balkans have joined the Islamic State, and Kosovo and Bosnia and Herzegovina head the European list of foreign fighters per capita, with Albania in fourth place (Beslin and Ignjatijević, 2017).



Meanwhile, the UAE – specifically Dubai and Abu Dhabi – have made headlines with spectacular investment projects. Be it Buroj Ozone City, a resort town for up to 40,000 inhabitants in Bosnia and Herzegovina estimated to cost upwards of EUR 4 billion (Brunnwasser, 2016), or the highly controversial Belgrade Waterfront project – the Gulf States have discovered the Western Balkans as an investment opportunity.

Apart from real estate, infrastructure and defense projects, investments in agriculture play a significant role. Etihad Airlines invested over USD 100 million in credit in Air Serbia (Insajder, 2018) and the UAE has invested heavily in the Serbian arms industry, for example in the development of state-of-the-art missiles (Dahlan, 2014). Kuwait is investing heavily in tourism and other Gulf States are putting large sums into the region's agricultural sector to ensure the security of food supplies.

In contrast to Saudi money, these investments are not about spreading religious ideology or cultural influence but long-term return on equity. However, even these investments are not uncontroversial since they are often accompanied by massive corruption, as the numerous scandals surrounding the Belgrade Waterfront project demonstrate.

### 3 Summary

In spite of the less-than-optimal outcome of the EU-Western Balkans Summit in Sofia in May 2018, Brussels and some EU Member States are showing increasing much-needed interest in the Western Balkans. One can only hope that the region will be getting the attention it deserves. However, focusing on the above-mentioned external actors, who certainly pose a challenge for the region's stability, seems all too convenient. After all, it was to a large degree the negligence of the EU that has enabled them to gain a foothold there and exploit the vacuum left by crisis-ridden Brussels.

In the wake of the financial, euro and banking crises as well as Brexit, an EU entirely consumed by its internal problems has lost sight of the Western Balkans. At the same time, socio-economic conditions have worsened in many states of the region in the wake of the financial crisis. A large trade deficit with the EU and unsound fiscal policies have contributed to growing public debt while liberalization measures and reforms undertaken in the framework of EU convergence are responsible for the loss of many jobs in the formerly protected public and state enterprise sectors. Meanwhile, access to funds from the European structural adjustment programs and the Strategic Investment Fund that could cushion the repercussions of necessary reforms remains closed to the candidate countries. A comprehensive pre-accession strategy remains absent: Bulgaria and Romania, but also Croatia, should serve as cautionary examples. Above all, however, the EU must reform its own institutions before taking on enlargement. A purely additive-technocratic enlargement cannot succeed; on the contrary, it would only damage the European project.

Undoubtedly, the EU's increased appreciation of the problem is related to the fast-paced Chinese investment drive and heightened concerns about Russian influence. Sensitive issues like radicalization, terrorism and unregulated migration also play a role. However, the silent exodus of hundreds of thousands of young people who have run out of patience has remained widely unacknowledged. For example, over 56% of people originating from Bosnia and Herzegovina currently

live abroad (Kovacevic, 2017). Emigration is aggravating the political and economic stagnation of the EU candidate countries and in turn reinforces the ethno-nationalist discourse in their home countries. This is a vicious circle that needs to be broken.

The Juncker Commission has finally awakened and is launching initiatives; furthermore, the EU presidencies of Bulgaria, Austria and, subsequently, Romania ensure that the region will remain on the agenda until at least mid-2019.

2018 could have been the European year of the Balkans – if, that is, proposed strategies, plans and concepts had been resolutely acted upon. In February, the Commission presented a new Western Balkans Strategy giving Serbia and Montenegro indicative accession dates provided they fulfill their reform commitments. Albania and FYR Macedonia – under its new name of the Republic of North Macedonia – were set to be invited for accession negotiations. These and other regional issues were discussed at the first EU-Western Balkans summit in 15 years in Sofia. Overshadowed by the U.S. exit from the Iran nuclear deal, the message of the summit was anything but clear. Due to the ongoing controversy regarding the status of Kosovo, the Western Balkan Six (WB6) were categorized as “partners,” which many viewed as a downgrade of sorts, owing to Spain’s opposition to treating Kosovo as an equal in the WB6 group. In addition to Madrid, France and the Netherlands reiterated their long-standing skepticism toward enlargement in general.

As a result of the Sofia summit, the requisite political re-commitment, expressed in the Commission Strategy for the EU to retake its natural place as the Western Balkans most important partner and logical destination has again been called into question. The Sofia legacy is anything but encouraging. Instead of a stronger coordination of the manifold, fragmented and at times politically questionable European initiatives – ranging from the Berlin Process to the Regional Cooperation Council to the Energy Union – a consistent approach vis-à-vis the emerging external actors in this geopolitically sensitive region seems to be even further away. Especially in light of the illiberal, authoritarian tendencies in certain Member States, an opportunity was missed to complement the Franco-German reform plans for the euro area with stronger commitments to the rules of liberal democracy and social market economy in order to lay the foundations for welcoming the Western Balkan Six into an institutionally streamlined and politically strengthened Union.

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# Sanctions and countersanctions – effects on economy, trade and finance

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*In this paper we review the history and current state of sanctions imposed on Russian entities by the EU, the U.S.A. and others, as well as Russia's countersanctions. We try to assess what kind of economic effects these measures have had, although any such analysis is bound to be confounded by the large drop in the price of oil that occurred in 2014 and 2015. We find that sanctions have had a clear, negative effect on the Russian economy, although the decline in the price of oil affected Russian GDP much more strongly in 2014–2016. The U.S. and EU sanctions have worked e.g. by restricting Russian banks' access to capital. EU countries' trade with Russia and their market share in Russia have declined, but this is partly a continuation of a long-term trend. Russia's countersanctions have e.g. affected exports of foodstuffs from the EU, but macroeconomic effects in the EU are very small.*

*JEL classification: F51*

*Keywords: Russia, sanctions*

We review various economic effects of the sanctions and countersanctions introduced by the U.S.A., EU, Russia and other countries following Russia's illegal annexation of the Crimean Peninsula and Russia's actions in destabilizing the situation in eastern Ukraine. The restrictive measures of various parties in the conflict have been very asymmetrical: The U.S.A. and EU have mostly limited some Russian entities' access to market finance as well as exports of some technologies, while Russia has banned imports of agricultural goods from various countries. One can also see Russia's import bans as part of its self-proclaimed "import substitution" policy.

It is difficult to isolate the impact of the sanctions, but their role in the recent downturn of the Russian economy seems to be notably smaller than that of the oil price decline. While, generally speaking, the impact of sanctions has been relatively limited on the aggregate level, they have had more noticeable effects on directly affected companies and individuals. In the case of the EU, the aggregate impact of sanctions is also limited, but certain individual sectors and companies have been hit harder. Obviously, the food sector suffered from the effects of Russia's sanctions, at least in 2014 and 2015, even if most subsectors have been able to reorient their extra-EU exports elsewhere.

It should be noted, however, that our conclusions are not evaluations of the effectiveness of the sanctions imposed on Russia, e.g. by the EU. The goal of the economic sanctions imposed by the EU is not to make the Russian economy collapse or to impoverish the Russian people, which is also reflected in the relatively narrow targeting of the sanctions. They are meant to influence policy, e.g. promote the implementation of the Minsk agreements. It is beyond the scope of this paper to assess how much effect the sanctions have had on policies, but the reader should remember that, in the absence of sanctions, Russia's policies could have been quite different and taken an undesired direction.

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This article is structured as follows. In the first section, we describe sanctions imposed by different countries. The second section tries to assess the macroeconomic effects of sanctions on Russia. In the third section, we offer evidence on various sanctions' effects on international trade and capital movements. The fourth section concludes.

## 1 Sanctions and countersanctions

### 1.1 Rationale for and design of sanctions<sup>2</sup>

After the illegal annexation of Crimea and the start of military operations in eastern Ukraine, many Russian entities and persons were subjected to different economic and financial sanctions by the EU, the U.S.A. as well as other countries such as Canada, Australia and Norway. Initially, sanctions were relatively mild.<sup>3</sup> Typically, different political and economic acts were deemed to be “undermining Ukraine’s territorial integrity,” and persons and institutions involved in such acts were added to the sanctions list. The sanctions related to the annexation of Crimea are legally separate from the later sanctions.

The downing of Malaysian Airlines flight MH-17A caused a clear tightening of sanctions. While some of the response measures taken by the EU and U.S.A. differed in terms of timing, generally their measures have been very synchronized. Many institutions as well as many individuals were added to the EU sanctions list on July 30, 2014.

Sanctions were adopted in many sectors. In the trade sector, the export and import of arms was forbidden, as was the export of dual-use goods for military use. In addition, exports of certain types of goods related to oil exploration and production were banned.

Perhaps even more significantly, the long-term financing of several Russian companies was curtailed, even if they had no direct involvement with the fighting in the Donetsk and Luhans'k regions. Investors in the EU were forbidden to provide long-term financing to Sberbank, VTB, Gazprombank, Rosselkhozbank (Russian Agricultural Bank) and VEB (Russian state-owned development bank). The long-term financing ban also affects the oil giant Rosneft, the oil pipeline company Transneft and Gazprom Neft as well as certain companies operating in the military sector.

### 1.2 Russia’s rationale for countersanctions

The groundwork for Russia’s countersanctions was laid in the late 2000’s, well before the events in 2014. The food security doctrine, a framework policy paper outlining Russia’s goals in agricultural policies, was signed in conjunction with the new national security concept in January 2010. Russia’s food security policy reflects a worldview according to which dependence on imports is dangerous. This differs from most other countries, where food security tends to be defined in terms of securing access to adequate and affordable food intake for the population (Wegren and Nikulin, 2016). The Russian doctrine establishes minimum targets for domestic production of basic foodstuffs such as potatoes, dairy products, grain

<sup>2</sup> This section draws heavily on Korhonen (2018). For an insightful assessment of various criteria for designing sanctions against Russian entities, see Christie (2016).

<sup>3</sup> For a comprehensive and up-to-date listing of the EU’s restrictive measures, see [https://europa.eu/newsroom/highlights/special-coverage/eu-sanctions-against-russia-over-ukraine-crisis\\_en](https://europa.eu/newsroom/highlights/special-coverage/eu-sanctions-against-russia-over-ukraine-crisis_en).

as well as meat and meat products. The general guidelines of the food security doctrine were later formulated into an action plan that was approved in 2012 (Development Program for Agriculture 2013–2020).

Import substitution is, however, not limited to the agriculture and food industry sectors. A very broad policy document setting out the “Government Program on Industries and Competitiveness” was approved in April 2014<sup>4</sup>. This document outlines detailed plans on almost all industries; it was prepared to increase domestic production and R & D with the help of e.g. budget money and localization requirements. The document has also been dubbed the “import substitution program” of the Russian government.

All these policy programs reflect the broadly held view in Russian administration that import substitution is important in fostering economic growth. Restricting imports of selected food products from countries imposing sanctions on Russia in July 2014 was a logical continuation of these policies.

Restrictions on imports from the EU, the U.S.A. and Turkey, a devaluation of the Russian ruble and various state support programs have indeed helped boost domestic production especially in agriculture. However, in several sectors these positive trends for Russia predate countersanctions by a wide margin. Favorable weather conditions partly explain the extremely good harvests in 2016 and 2017, but fruit and vegetable crop yields have been increasing steadily since 2010.

One could possibly imagine Russia lifting some import restrictions if political tensions were to ease markedly. However, even if outright bans were to be lifted, there is always the possibility of misusing various nontariff barriers such as phytosanitary inspections.

## 2 Macroeconomic and trade effects of sanctions

### 2.1 Effects on Russia

In this subsection we will review some evidence on the macroeconomic effects of the sanctions on Russia. At the outset it should be noted that trying to estimate the effects of sanctions is fraught with difficulties, especially in a situation where the price of energy, Russia’s most important export product, has also collapsed.

Russia’s GDP growth started to clearly decelerate already in late 2012, and in 2013 GDP increased only by 1.8%. During 2014, quarterly growth rates turned negative. All in all, Russia’s GDP declined by approximately 3% between 2014 and 2016. In 2017, slow growth resumed, and GDP increased by 1.5%. For 2018, most forecasts see relatively slow growth continuing.

Despite the aforementioned difficulties in separating the effects of the sanctions from all other factors influencing Russia’s GDP growth, some attempts have been made. The International Monetary Fund (2015) reports that the sanctions against Russia and (Russia’s) countersanctions could initially reduce Russia’s real GDP by 1% to 1½%. In the medium term, Russia’s cumulative output loss could be as high as 9%. It should be noted that such a large loss in the level of GDP presupposes lower levels of investment and productivity growth (as Russia’s own inward-looking policies lead to a lower level of competition).

Gurvich and Prilepskiy (2015) gauge the effects of financial sanctions on the availability of finance for Russian companies. Looking forward, Gurvich and

<sup>4</sup> <http://government.ru/docs/11912/>.



Prilepskiy formulate four different scenarios for different combinations of sanction regimes and oil price. They find that the cumulative effect of sanctions on Russian GDP from 2014 to 2017 is 2.4 percentage points. However, the negative effects of low oil prices are three times larger than this.

As for the effects of Russia's food embargo on Russians themselves, Volchkova (2018) reports that the average Russian has had to decrease consumption of the embargoed foodstuffs by 2,000 rubles per year. The average monthly wage in 2017 was 39,150 rubles.

## 2.2 Effects on Russia's foreign trade

Fritz et al. (2017) look at Russia's imports from different countries and find that all sanctions (both Russian and Western) have reduced EU exports to Russia by 11%. Obviously, different EU countries are being affected differently, with Germany bearing the largest absolute loss of exports, while relative losses were large e.g. in Poland, Hungary, the United Kingdom and Greece. From these trade loss estimates, Fritz et al. (2017) also calculate that the EU has lost less than 0.2% of its value added and employment because of the sanctions.

Crozet and Hinz (2017) estimate global trade losses stemming from EU and Russian sanctions introduced in 2014. They find that global lost trade amounts to USD 4.8 billion per month<sup>5</sup>, with USD 1.8 billion being borne by sanctioning Western countries, mostly the EU. This drop consists mostly of goods that are not directly embargoed.

## 3 Effects on goods and services trade and capital flows

### 3.1 Russian goods imports declined across the board

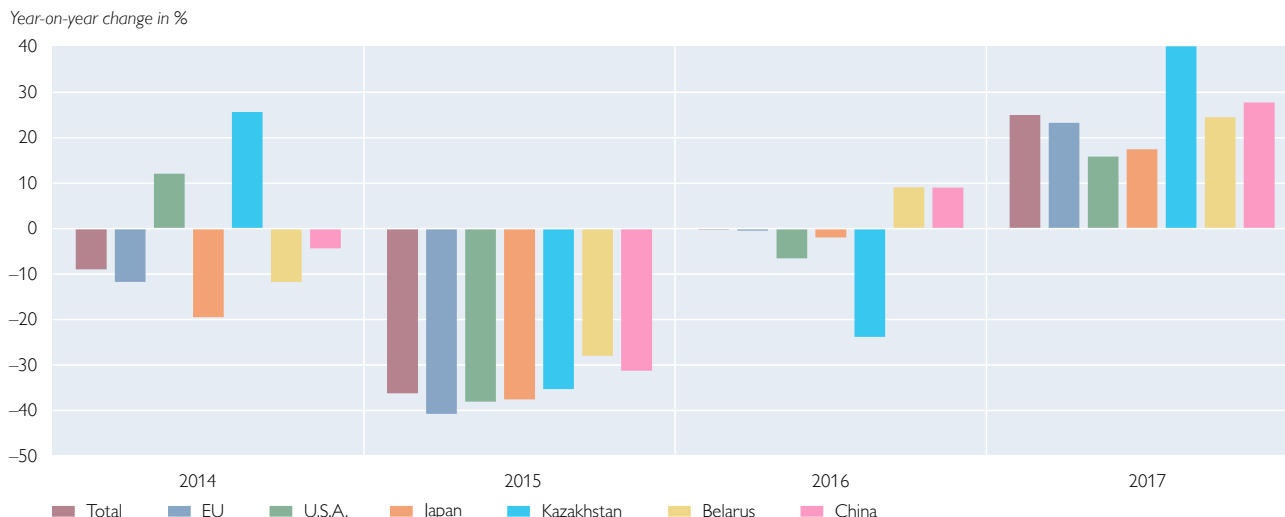
Russian imports are mainly determined by the demand of companies and households as well as the ruble exchange rate. During the recent crisis, fixed investment in Russia fell by 13% in real terms, from peak to trough, and household consumption by 12%. The ruble's average annual exchange rate depreciated by over 40% against the euro and by over 50% against the USD in 2014–2016. Due to declining demand and the sharp depreciation of the ruble, Russian imports from all countries notably declined after 2013 (chart 1). Correspondingly, in 2017, as the economy started to recover and the ruble strengthened, Russian imports from all countries increased again.

In the past years, the EU has lost market share in Russia, especially to China, but mainly for reasons other than sanctions. The loss in market share reflects the continuation of a longer-term and geographically wider trend, as China has been rising as the largest exporter in the world. While the average share of the EU-28 in Russian imports fell from 46% in 2006–2009 to 39% in 2014–2017, the average share of China increased from 13% to 20%. The growth of China's market share in Russia has actually slowed down slightly in the most recent years compared to faster gains in previous years.

<sup>5</sup> However, data do not include Russian imports from China or Korea.

Chart 1

### Change in the USD value of Russian goods imports by country, 2014–2017



Source: CEIC, Russian customs data.

Note: According to U.S. data, the value of U.S. exports to Russia declined by 3.5% in 2014 instead of increasing by 12% as indicated by Russian data. For 2015 and 2016 the changes are similar in both statistics.

### 3.2 EU export restrictions focus on a few products

The export restrictions imposed by the EU target a quite narrow assortment of products and therefore their impact on the total exports of the EU countries is in most cases limited. The EU has banned exports of the following goods to Russia: arms, dual-use products for military use and certain products related to deep-water, Arctic offshore and shale oil exploration and production. It is difficult to assess the magnitude of restricted exports due to data limitations, but it seems to be relatively modest in most cases.

According to the arms trade figures published by the EU, the combined value of arms exports to Russia recorded by the 12 countries reporting the figures was about EUR 90 million in 2013. There might be considerable variation by country and year, however. Exports of dual-use goods for military end use cannot be separated from public trade statistics and therefore it is difficult to estimate their value. The EU-28's total exports of oil exploration and production technologies subject to restrictions were about EUR 350 million in 2013 (0.02% of total extra-EU exports), but as noted above, only a part of this export aggregate is subject to export bans. Summing up, these figures suggest that the overall impact of EU export restrictions is quite limited.

### 3.3 Russian import restrictions have affected food trade significantly – but the weak ruble has also played a role

In August 2014, Russia banned several foodstuff imports from certain countries, including the EU. These bans practically ceased Russian imports of these products from these countries. However, imports of all foodstuffs were also hit hard by declining demand and especially the depreciation of the ruble in 2013–2016 (chart 2). The import bans and ruble depreciation to some extent supported domestic production, which replaced some imports. Some of the banned imports



Chart 2

**Change in the value of Russian imports of certain foodstuffs, 2013–2016**

Source: UN Comtrade.

Note: Pink bars depict products subject to import restrictions, blue bars show products that are not subject to any restrictions.

were substituted with imports from other countries, resulting in a heavy geographical concentration of Russian imports in many of the products subject to import restrictions. For example, Belarus accounted for over 80% of Russian dairy product imports in 2016.

From the EU's point of view, the overall economic impact of the import bans has been limited, as the share of the affected products in EU exports to Russia had been relatively small even before the restrictions. In 2013, the total value of the EU-28's exports of (now) banned food products to Russia was EUR 5.2 billion, accounting for 0.3% of the EU-28's total external exports. Cessation of the exports of food products banned by Russia accounted for about one-third of the loss in the EU's market share in Russia between 2013–2016.

The value of banned food exports varied quite much across EU countries from a mere EUR 1 million in Romania to over EUR 900 million in Lithuania<sup>6</sup>. In relative terms, the banned products on average accounted for 0.9% of the extra-EU exports of the individual EU countries. But in certain countries (e.g. the Baltic countries and Finland) the negative impact on certain individual sectors and companies has been notable, as Russia is among the most important export markets for these countries.

Despite some media reports, a circumvention of Russian import bans by exporting goods through Belarus does not seem to be a major issue in the case of EU exports. The value of food products banned by Russia that the EU-28 exports to Belarus increased by a mere EUR 70 million in 2014–2015, whereas in 2016–2017 it declined and fell below the level of 2013.

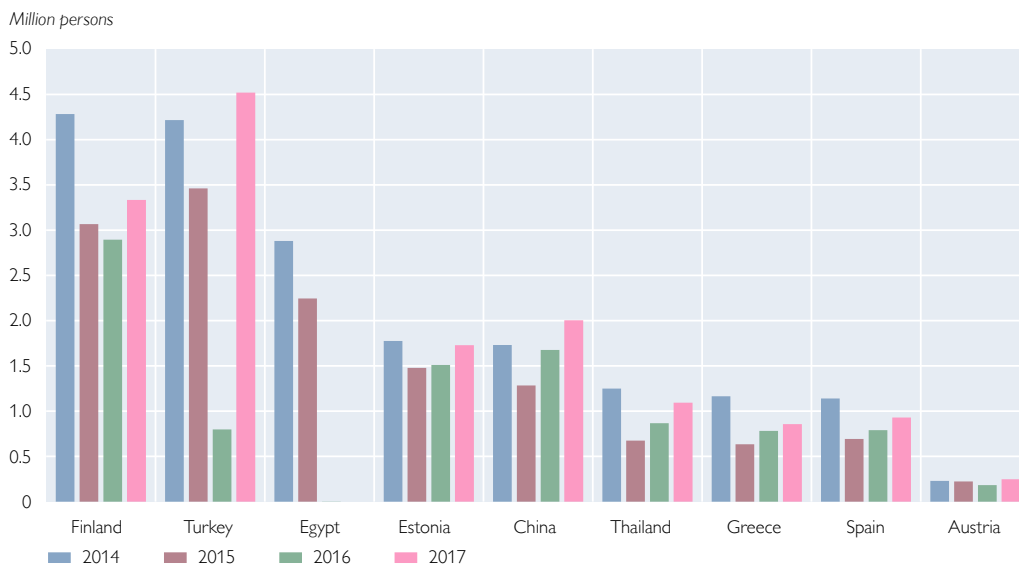
### 3.4 Services trade not much restricted by sanctions

The virtually only sanctions imposed on trade in services between the EU and Russia are the restrictions imposed by the EU on exports of certain services related to oil exploration. These particular services cannot be extracted from overall statistics, but it is obvious that the direct impact of sanctions on trade in services is

<sup>6</sup> A large part of Lithuanian exports are, however, actually re-exports.

Chart 3

### Russian tourist flows to certain countries



Source: CEIC.

very limited. This is again reflected in the fact that Russian imports of services have contracted across most countries, irrespective of mutual sanctions. The USD value of Russian service imports from the EU-28 decreased by 36% in 2014–2016 compared to a fall of 47% in the aggregate of all other countries. Last year, the service imports from the EU recovered nearly at the same pace as those from other countries.

As an example of service trade, we can take tourism. Due to declining income and a sharp depreciation of the ruble, the average monthly revenue of Russian households nearly halved in USD terms in 2014–2016, weighing heavily on tourist flows abroad. There are practically no sanctions imposed on mutual trade in tourist services by the EU or Russia, but Russia has lately implemented travel restrictions on Turkey and Egypt<sup>7</sup>, which has indeed had a notable effect on Russian tourism to these destinations (chart 3).

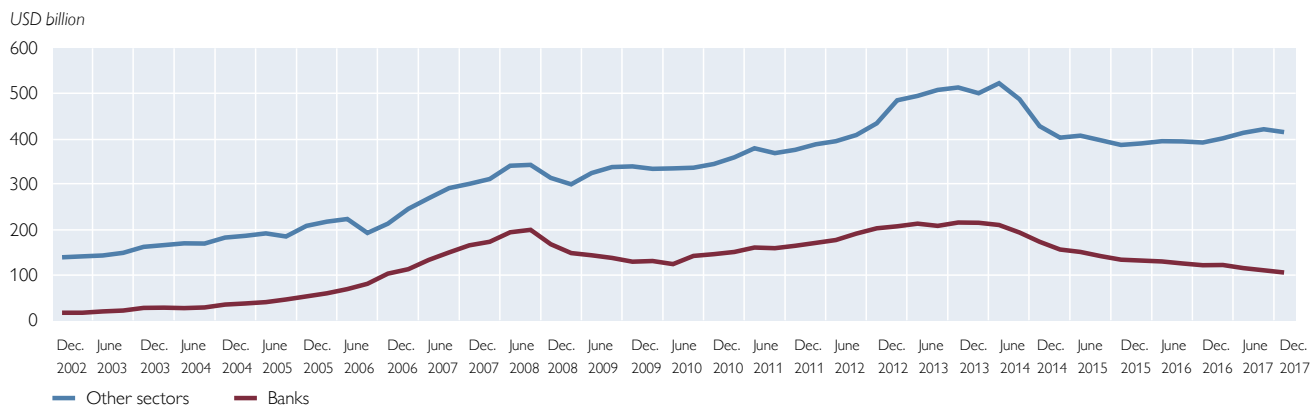
### 3.5 Capital flows and sanctions

For many Russian companies, access to external finance from the U.S.A. and EU has been limited since the third quarter of 2014. Private sector net capital outflow increased rapidly, especially in the fourth quarter of 2014, nearly tripling in 2014 to a record level of USD 152 billion. The annual net outflow has remained negative ever since.

Many Russian companies and especially banks found it difficult to refinance their foreign loans falling due in 2014 and 2015. Chart 4 shows the foreign debt of Russian commercial banks and other sectors. We can see that gross foreign debt

<sup>7</sup> Russia banned charter flights to Turkey at end-2015 as part of its sanctions against Turkey due to the downing of a Russian fighter plane. The ban was lifted in autumn 2016. Flights to Egypt were suspended after a plane with Russian tourists was crashed in Egypt in late 2015 due to a terrorist attack. The flights to Egyptian tourist destinations are expected to resume in autumn 2018.

Chart 4

**Foreign debt of Russia's banks and other sectors**

decreased by some USD 210 billion from end-2013 to end-2017. Especially banks' foreign debt has decreased, and here sanctions must play a role, as the largest Russian banks are subject to financial sanctions. The foreign debt of banks has gone back to a level last observed in 2006.

According to consolidated data on cross-border bank lending compiled by the Bank for International Settlements<sup>8</sup>, foreign banks' claims on Russian entities were USD 122.4 billion, down slightly more than 50% from end-2013. This illustrates how foreign banks have drastically decreased their exposure to Russia.

During the period from 2014 to 2016 inward foreign direct investment into Russia also declined. Between 2010 and 2013 the average FDI net inflow was USD 54.5 billion per year, while it declined to USD 22 billion in 2014 and further to USD 7 billion in 2015. After this, FDI started to increase again, although FDI net inflow is still far below the pre-crisis and pre-sanctions level.<sup>9</sup>

#### 4 Concluding remarks

In this article we have reviewed sanctions imposed by the EU, the U.S.A. and Russia in the aftermath of Russia's illegal annexation of Crimea and its military presence in eastern Ukraine, and have examined the economic effects of these sanctions. Previous literature reveals that sanctions have had a negative effect on the Russian economy, although all available evidence suggests that between 2014 and 2016 the decline in the price of oil had a much larger effect on the Russian economy. At the same time, it is possible that if sanctions remain in place for an extended period, and especially if Russia intensifies its import substitution policy, Russia's long-term growth potential may be diminished.

Exports to Russia from the EU, the U.S.A. and other countries applying sanctions have declined in past years. We show that the direct effect of sanctions on

<sup>8</sup> <https://www.bis.org/statistics/rppb1804.htm>.

<sup>9</sup> By far the largest sender of FDI into Russia is Cyprus, with 32% of total inward FDI stock – USD 499.7 billion – at the end of September 2017. It is generally agreed that this is mostly Russian money round-tripping via Cyprus. Other large offshore centers/tax havens sending FDI into Russia are e.g. Luxembourg (10.3% of total), the Bahamas (6.5%), Bermuda (4.3%), the British Virgin Islands (2.7%) and Jersey (2.2%). Germany accounts for 3.8% of inward FDI stock, the U.K. for 3.7%, France for 3.1%, Austria for 0.9% and Finland for 0.8%.

this decline in exports was limited; the main factors behind the decline were contracting demand in Russia and a substantial depreciation of the ruble. Bans on long-term financing have affected Russian banks' access to financing.

Many EU sanctions are linked to the Minsk peace process and its implementation, which currently seems quite distant. At the same time, Russia's food import bans seem to have become part of its overall import substitution policy. These two facts alone imply that various sanctions on bilateral economic activities between the EU, the U.S.A. and other countries, on one side, and Russia on the other, will remain in place for a good while.

On April 6, 2018, the U.S.A. introduced additional sanctions against various Russian individuals and corporations "in response to worldwide malign activity." This provoked sharp market reactions in the following days. The ruble lost around 10% of its external value, and the share price of Rusal, one of world's largest aluminum producers and one target of the sanctions, dropped by more than 50%. These developments suggest that further rounds of sanctions are also possible.

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# The EU's Multiannual Financial Framework and some implications for CESEE countries

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*The European Union's budget – which is fundamentally different from the budgets of federal countries and amounts to only about 1% of the EU's gross national income – continues to be heavy on agricultural and cohesion spending. The literature shows that the EU's common agricultural policy (accounting for 38% of EU spending from the current budget) provides good income support, especially for richer farmers, but is less effective for greening and biodiversity and is unevenly distributed. The EU's cohesion policy (accounting for 34% of current EU spending) contributes to convergence, but it is unclear how strong and long-lasting the effects are. Spending on new priorities such as border control could require additional funds of at least EUR 100 billion in the 2021–2027 period, but there will be a EUR 94 billion Brexit-related hole in the EU budget for 2021–2027 if the EU loses the United Kingdom's share of contributions and the EU's work program as a share of gross national income remains unchanged. The European Commission's May 2, 2018, proposal for the 2021–2027 budget makes several welcome steps in reforming the EU budget, e.g. by reorganizing spending commitments toward priorities which have gained more importance recently, while reducing the share of spending on agriculture and cohesion policies. But many details remain quite fuzzy and need to be spelled out further before a critical appraisal can be made. Moreover, the new draft budget for agriculture foresees larger cuts for rural development support – important for environment and biodiversity goals – than for direct subsidies to farmers. Also, we would argue that the European Commission needs to make a significantly stronger attempt at measuring the actual “European value added” of the various proposed initiatives. Therefore, while we regard the European Commission's proposal a good basis for subsequent negotiations, we propose a number of significant changes.*

*JEL classification: E60, H11, H41*

*Keywords: multi-annual EU budget, common agricultural policy, cohesion policy*

A fundamental rethink of the EU budget is called for in the context of the changing global environment with increased security risks, turmoil in the EU's neighborhood, heightened immigration pressures, the wavering U.S. commitment to NATO, stronger global economic competition, and questions over the effectiveness of a large share of EU spending. After all, the EU budget ultimately reflects the priorities of the European Union.

At the same time, the EU's budget is of a peculiar nature because the EU unites a group of developed states with significant and large government sectors in a single market. Unlike federal states, the EU countries have retained the provision of crucial government functions such as social security, healthcare and defense, while foreign aid and research support are provided by both the EU and member countries. Any further functions are thus delegated to the EU only to the extent members are ready to give up sovereignty.

In such a setting, the key questions are: Which functions can be delivered more effectively jointly? And how should the EU budget and corresponding action best complement what countries already do at the national level? This requires careful thinking about European public goods and how best to provide them.

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Moreover, in a federation, stabilization policy is typically conducted at the federal level, thus being intrinsically linked to the allocative function of public finance or redistribution between individuals. But in Europe, the welfare state is large and basically national. The EU budget could at best support national stabilization efforts by providing insurance.

Finally, Brexit will leave a large hole in the EU budget: According to calculations made by Darvas and Wolff (2018), the EU budget revenues for 2021–2027 would be EUR 94 billion smaller than expenditures if the EU loses the United Kingdom's share of contributions but leaves its work program as a share of gross national income unchanged. While the U.K. might contribute to post-2020 EU budgets if an exit deal is signed and if the U.K. will continue to participate in certain EU programs and/or get a certain degree of preferential access to EU markets, in all likelihood such contributions will compensate only a small part of the Brexit gap. EU countries might be reluctant to increase contributions to fill this gap while having to fund new spending priorities. As outlined by Darvas and Wolff (2018), freezing agriculture and cohesion spending in nominal terms – thus cutting in real terms – would not just fill the Brexit-related budget hole, but would generate enough to cover most of the new priorities.

Against this backdrop, section 1 analyzes the current 2014–2020 Multiannual Financial Framework (MFF) of the European Union, with a focus on the two largest spending categories, the common agricultural policy (CAP) and cohesion policy (CP), which have major relevance for Central, Eastern and Southeastern European (CESEE) countries. In section 2 we scrutinize the May 2, 2018, proposal of the European Commission for the next 2021–2027 MFF. Section 3 concludes.

## 1 The current EU budget

The EU budget is financed by member countries' contributions, which are primarily related to gross national income and value added taxes. The EU also receives 80% of customs duties on imports from outside the EU and sugar levies, while member countries keep 20% to cover collection costs. Some additional revenues arise from fines imposed by the EU. The overall budget is about 1% of the EU's gross national income and must be balanced.

The largest spending category is the common agricultural policy (CAP) with EUR 408 billion in terms of commitment appropriations<sup>2</sup> for 2014–2020, or 38% of the total EU budget. Structural and Cohesion Funds with EUR 367 billion account for another 34% of EU spending commitments. The third-biggest component (EUR 143 billion) relates to “Competitiveness for growth and jobs” programs, which include several well-known elements such as the Horizon 2020 research program and Erasmus+. EUR 70 billion have been set aside to cover the costs of operating the EU institutions and EUR 66 billion have been earmarked for the EU's “Global Europe” policy, which includes foreign policy instruments – notably aid, neighborhood policies and other external actions. Finally, the EU is committed to spend EUR 18 billion on “Security and citizenship” issues (covering domestic

<sup>2</sup> Expenditure committed in any given year (which might be spent in subsequent years). EU budget commitments exceed payments by about EUR 10 billion a year, leading to an ever-rising volume of outstanding commitments, known as *reste à liquider* (RAL). RAL is expected to exceed EUR 250 billion by 2020. EU budgets set ceilings for both total commitments and payments, but only commitment ceilings are set for individual items of the budget, which is why we report those.

issues such as health, consumption, justice and asylum) and EUR 11 billion on “Sustainable growth: natural resources” (covering mostly maritime affairs and fisheries). We focus on the two largest spending categories, which are especially important for the CESEE countries.

### 1.1 The common agricultural policy

Total net public spending (CAP and national spending) on agriculture in the EU is larger than in the U.S. as a share of GDP, but is in the middle range of OECD countries (chart 1), suggesting that the total volume of agricultural support in the EU is not excessive. Yet the EU's approach differs from that of our countries when it comes to the composition of such spending as will be shown below, where we also offer a number of critical observations about the CAP.

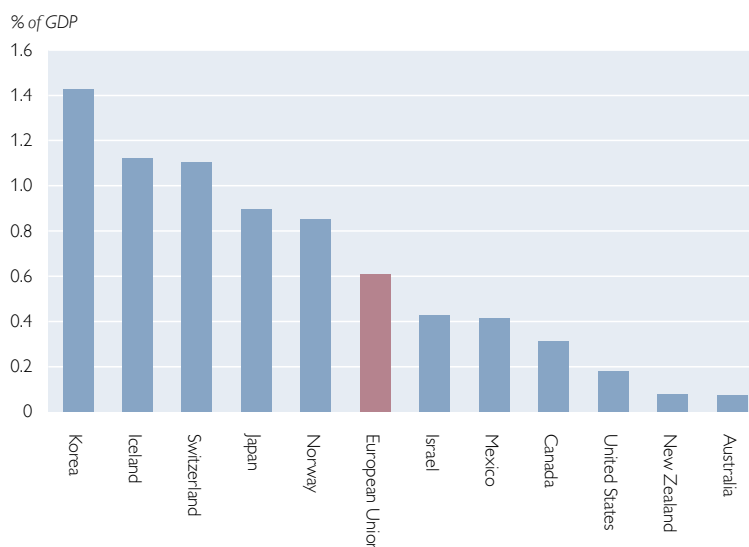
Principally, CAP spending aims to achieve five objectives: greater agricultural productivity, a fair standard of living for the agricultural community, market stabilization, food security and reasonable prices for consumers. As further objectives, the EU regulation on financing the CAP (Regulation (EU) No 1306/2013) specifies viable food production, sustainable management of natural resources, climate action and balanced territorial development. Through “greening” and “cross-compliance” conditions on subsidies, the CAP attempts to incentivize environment and animal welfare best practices.

Of the total commitment of EUR 408 billion for 2014–2020, Pillar 1 spending (direct payments to farmers and market support) is capped at EUR 313 billion. Thereof, 94% (EUR 294 billion) may be used as income support for farmers, whereas EUR 18 billion have been earmarked for market interventions in case of agricultural shocks. Such support payments are fully EU financed. The remaining commitments of EUR 96 billion relate to rural development (Pillar 2), to be topped up by national cofinancing, ranging from 25% to 75% depending on the region and measure. Pillar 2 programs essentially serve to protect the environment, mitigate climate change and support the modernization of farms, risk management and research.

However, there is no uniform allocation key for the distribution of CAP payments to EU countries. For older EU members, payment entitlements are calculated on the basis of payments received by individual farmers during a reference period (“historical model”), resulting in different aid levels per hectare. In contrast, support for more recent EU members is based on the so-called regional model, where all payments received in a region are divided by the number of eligible

Chart 1

### Net support to agricultural producers in selected OECD economies (2016)



Source: OECD Agricultural Policies database.

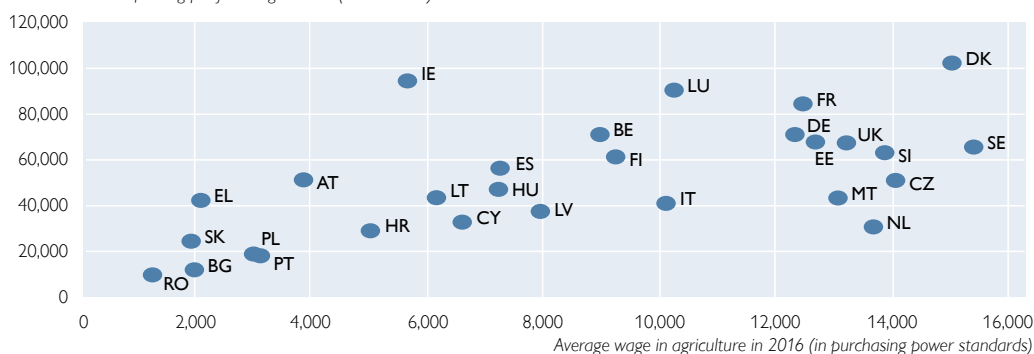
Note: Producer Support Estimate (PSE): the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. It includes market price support, budgetary payments and budget revenue foregone, i.e. gross transfers from consumers and taxpayers to agricultural producers arising from policy measures based on current output, input use, area planted/animal numbers/receipts/incomes (current, noncurrent) and noncommodity criteria.



Chart 2

### Relation between CAP funding and wages in agriculture

Predallocated CAP funding per job in agriculture (2014–2020)



Source: Bruegel calculation using Eurostat data.

Note: Since the purchasing power of EUR 1 differs across member countries, we express income in purchasing power standards.

hectares, resulting in a flat rate – and much lower average amounts than under the historical model. As a result, different countries receive different levels of CAP funding.

In fact, richer countries where wages are higher receive more CAP funding per agricultural worker (chart 2), when common sense would suggest that the largest income subsidies should go to the countries with the lowest agricultural incomes.<sup>3</sup>

According to the European Commission (2018a), 80% of direct payments go to 20% of farmers, which raises further questions about the fair distribution of CAP allocations.

To our knowledge, no independent evaluation encompassing all aspects of the CAP has been carried out in recent years. Alliance Environnement (2017) suggested inefficiencies in managing environmental impacts, while Pe'er et al. (2014) concluded that the new environmental prescriptions are so diluted they are unlikely to benefit biodiversity. The studies often point to the need to collect more data and to make CAP evaluations more systematic. The European Court of Auditors (2017) found the CAP's "greening" policies to be likely ineffective in reducing the climate impact on agriculture in Europe. ECORYS et al. (2016) raised serious concerns about the national implementation of the CAP and the policy's overall impact. Hoelgaard (2018) argued for direct payments to be phased out or – if such support is considered important for political reasons – for the introduction of national cofinancing of direct payments, to compensate for lower European support. National cofinancing could also increase the ownership of such spending. Hoelgaard also proposed to focus on real public goods, such as environment, biodiversity, ecosystems, mitigation and adaptation to climate change, and moreover called for insuring against large risks such as earthquakes and animal disease epidemics, as is done in the United States. And he made a case for providing support for less favored areas with natural handicaps, such as areas which face the risk of depopulation but are important for environmental protection.

<sup>3</sup> The CAP does not subsidize wages of agricultural workers, but subsidizes incomes of farmers (who could then use the money to pay higher wages). Still, since one of the main goals of the CAP is to provide a fair standard of living for the agricultural community, and agricultural workers account for the bulk of this community and most of the CAP is used for income support, chart 1 is helpful in illustrating a possible misallocation of CAP spending.



## 1.2 Cohesion policy

Another key EU objective is to strengthen economic, social and territorial cohesion by tackling disparities between the levels of development of the various regions and by reducing the backwardness of the least favored regions.

To support regional policy, the EU made commitment appropriations in the amount of EUR 367 billion for 2014–2020. The bulk of this sum (55%) has been allocated to the European Regional Development Fund (ERDF), with the European Social Fund (ESF, 23%) and the Cohesion Fund (20%) accounting for most of the remainder. Sometimes the Youth Employment Initiative (1%) is also included here. These funds have been designed to cofinance regional economic development projects. Projects must demonstrate how they contribute to progress toward a broad range of objectives, from research and development activities and small and medium-sized enterprises to public administration and social inclusion.

In order to stimulate convergence, there are separate ERDF and ESF budgets for different regions in different GDP per capita ranges. For 2014–2020, EUR 185 billion have been set aside for “less developed regions” (with GDP per capita of less than 75% of the EU average). “Transition regions” (with GDP per capita between 75% and 90% of the EU average) will receive EUR 36 billion, and “more developed regions” (with GDP per capita above 90% of the EU average) EUR 56 billion.

While there is no consensus in the literature, the predominant empirical evidence suggests that, while depending on the prevailing circumstances, the impact of cohesion policy is often rather ineffective. A comprehensive literature survey by Marzinotto (2012) concluded that the impact assessments of regional fund spending depend on the methodology used. While macroeconomic model simulations conclude that such funds have a positive impact, the results of empirical studies are more mixed. Marzinotto concludes that by and large, the available literature finds investments in infrastructure and education to be the most growth-enhancing investments, but studies reaching such conclusions typically abstract from the actual allocation of EU funds across themes of intervention and sectors. More direct empirical tests sometimes find a positive, even if often small, impact of EU funds on growth convergence. In particular, investment in human capital and R&D generates positive long-term effects on growth convergence, while other spending, such as infrastructure spending, might deliver only a short-term effect. Yet there is no consensus in the literature, and other studies do not find that the rate of convergence has been higher in funded regions than in non-EU-funded regions.

More recent papers arrive at similarly mixed results. For example, Pinho et al. (2015) and Fratesi and Perucca (2014) report rather negative results, Pellegrini et al. (2013) and Crescenzi and Giua (2017) find a positive growth impact of EU regional policy, while Becker et al. (2017) conclude that regional policy has a positive, but short-lived effect on growth: The loss of eligibility in fact comes with a negative effect that offsets previous positive effects. In a European Commission report Pienkowski and Berkowitz (2015) conduct a comprehensive literature survey and conclude that most studies find a positive but small impact, especially in less developed regions. Some studies find no significant impact or even a negative impact.

Overall, various surveys as well as our overview of more recent works suggest that EU funds have a growth potential, but may not always deliver in practice because they are either poorly managed or used for the wrong types of investment.

## 2 The future EU budget

It is unfortunate that the debate about the EU budget frequently focuses on the balance between payments into the EU budget and EU spending in a particular country. Such an approach is rather reductive. Countries receiving more from the EU budget than they pay in (central, eastern and some southern European countries) might not benefit to the extent the numbers suggest because of ineffective program design, but might receive funding as part of the political deal when they entered the Single Market. Net contributors (most western and northern European countries) should not look at their contribution to the EU budget as a loss to domestic taxpayers, because the indirect benefits might offset the direct financial contribution. While some estimates aimed at quantifying these indirect benefits exist, we see some issues with the calculations, so let us just mention some key channels without quoting actual estimates. If these funds improve the economic outlook of cohesion countries (even in the short term, since the literature review concluded that long-term benefits are questionable), the implication is a larger European market benefiting all countries. Companies based in net payer countries can benefit from projects financed by cohesion funds. Cohesion funds might boost imports by the countries where those funds are spent. Finally, cohesion funding also contributes to completing the Single Market, which is a key growth driver for the EU as a whole.

### 2.1 Fundamentally rethinking EU spending

The first priority in the EU spending debate should be to assess which spending areas constitute European public goods and how best to provide these goods, also in light of the significant budgets of member countries and competences stipulated in the EU treaty. EU spending should focus on functions with clear pan-European implications and can be delivered more effectively jointly. Areas like border protection, defense, security, migration have clear pan-European implications. For example, the way Greek and Italian borders are protected has an impact on the arrival of illegal migrants in Denmark or the Netherlands. As regards border protection, the key task is precise program design so that European border protection services act as a true support for the national border guards that have the prime responsibility of ensuring border protection. Details matter when border protection services are to be increased significantly at the EU level – not least as such programs touch on delicate issues of sovereignty. There are also major synergies in pan-European projects in research, for example. Some project would perhaps be infeasible at the national level, like the EU's satellite program.

The second key issue is to increase the efficiency and effectiveness of current programs. Our literature review suggests that it is rather questionable whether the CAP and cohesion policy achieve their goals. Since a radical change to long-established EU policies is rarely an option, improved targeting should be a priority. In particular, as the European Commission (2018a) has suggested, cutting spending on industrial farming while maintaining support for small-scale farmers could limit the political costs while improving the greening of farming policy. Since organizing income support for one particular economic sector at the European level has little rationale, such support could be moved to member countries, at least gradually, by introducing and gradually increasing national cofinancing. Similarly, better targeting, stronger action against corruption and focusing the Cohesion

Fund and structural funds on those regions truly in need of catching up, or that are truly poor, should deliver the best growth dividends. Since a number of spending priorities gained importance in recent years, such as border control, migration, security, defense, research, digital transformation and youth mobility, the reorganization of CAP and CP spending would provide the financial means, even if the United Kingdom will not contribute to the next MFF and national contributions as a share of gross national income of the EU-27 are not increased.

The third important issue is whether there is a need for a specific euro area fiscal stabilization instrument, such as some form of insurance system to assist countries suffering from country-specific shocks (Claeys and Wolff, 2018), and if so, whether such an instrument should be within the EU budget or outside it. This question is all the more important because after Brexit the euro area's weight within the EU will increase.

Provided a political decision is reached on the establishment of a euro area fiscal stabilization instrument, having it within the EU budget would bring several advantages (Wolff, 2017). A euro area budget line within the EU budget would avoid creating a new ad hoc (probably intergovernmental) institution and would avoid an additional political and financial wedge between euro and non-euro area countries. But there is a more important political economy argument. Creating new budgetary resources for the euro area faces fierce resistance because insurance is more useful for fiscally weaker countries than for stronger countries, and because there is a perception that existing EU resources are poorly used. Politically, better use of existing EU resources therefore seems to be an important precondition for mobilizing new resources. Creating a euro area budget line within the EU budget institutionalizes this need to reform the budget.

However, there would also be significant obstacles. The EU budget is based on a rather complicated set of treaty rules, allowing for limited flexibility and essentially no borrowing capacity (beyond financial assistance programs).

## 2.2 The May 2018 MFF proposal

The May 2, 2018, proposal by the European Commission (2018b) for the broad outline of the 2021–2027 Multiannual Financial Framework (MFF) provides the basis for subsequent negotiations between EU member countries and various European institutions. We evaluate this proposal in light of the principles and empirical evidence we discussed so far and we recommend repeating this exercise once the next MFF has been approved (which is expected to happen before end-2020, when the current MFF expires).

Overall, in our view the European Commission's proposal provides a good basis for subsequent negotiations and includes a number of bold suggestions, like a stronger focus on European public goods, a new rule of law procedure and a reform of budget revenues. But it has a number of deficiencies related to the structure and transparency of the budget, lack of cofinancing of direct farmer transfers and timid external action, while the proposed tools for euro area stabilization and euro adoption are conceptually weak, as we also argued in Claeys and Darvas (2018). We focus on the broad design of the proposal and again on the two largest EU spending categories, cohesion policy and the CAP, which have great relevance for the CESEE countries (CESEE countries are the biggest beneficiaries of the EU's cohesion policy, and the EU's CAP is also considered important by

CESEE policymakers). We do not offer a detailed discussion of the euro area stabilization tool (see Claey's, 2018), the euro adoption tool and the structural reform support tool (Claey's and Darvas, 2018).

A positive element of the proposal is that increased spending was proposed in a number of spending categories which really constitute European public goods: huge increases in border control and defense spending; significant increases in research/innovation/digital spending; some increases in migration spending. These spending categories have a truly pan-European rationale, as we argued earlier.

Of course, one always needs to discuss the various modalities, but the direction and the boldness of some of the proposals are clearly welcome.

Rather surprisingly, the European Commission (2018b) did not quantify the impact of the proposed cuts in spending in the two main spending areas (CAP and cohesion) which supposedly suffer from cuts; it only quantified the current price changes in those spending items which are proposed to be increased. Having quantified the proposed changes both in nominal and real terms for agricultural and cohesion spending, Darvas and Moës (2018) conclude that cohesion spending commitments are planned to be increased by 6% – but with inflation eroding the real value, the proposed changes would actually lead to a reduction of 7% in real terms (if inflation will be 2% per year, as the MFF calculations assume). The CAP would be subject to a 4% cut – which corresponds to a reduction of 15% in real terms based on the assumption of a 2% inflation rate.

Thus, by leaving broadly unchanged the combined spending for these two policies in nominal terms, the proposed changes would indeed provide financial resources for other spending priorities, as proposed by Darvas and Wolff (2017). The relatively larger cuts in CAP spending compared with cohesion spending are also in line with our earlier argument, highlighting that we see little value added in European income subsidies to one particular economic sector (agriculture), while there is a European rationale for cohesion policy – but there is a need for better implementation.

We also welcome the proposal for the increased national cofinancing of cohesion and CAP Pillar 2 spending. Larger national contributions might improve ownership and result in more careful management of the funds. However, a drawback of the proposal is that there are no plans to implement national cofinancing of direct payments to farmers. Moreover, the proposal envisages rural development (Pillar 2) to be cut more heavily than direct transfers (Pillar 1). We suggest to increase the share of Pillar 2 relative to Pillar 1 in subsequent negotiations. Moreover, we suggest that CAP spending should be linked to biodiversity and environmental goals. Beyond changes in commitment allocations, the European Commission promised to present a deep reform of the CAP, the details of which were yet to be published at the time of writing.

Another aspect is the proposed rule of law procedure. In fact, Demertzis (2018) and Demertzis and Goncalves Raposo (2018) have proposed a systematic evaluation of governance and institutional quality developments in the EU, including the rule of law. Rule of law is a fundamental value of the EU and it has a clear connection to the EU budget: rule of law deficiencies could hinder the proper implementation of the EU budget. A rule of law procedure is therefore worthwhile considering and the details of the proposal should be studied carefully.

### 3 Summary

The EU budget is, and will remain, far from what public finance theory or experience of fiscal federations suggest in terms of spending priorities. The key direction of spending reform should be to focus on true European public goods that are more efficiently provided jointly than by the member countries separately. To this end, more independent evaluations of various EU programs, as well as the overall allocation of EU resources, should be conducted.

Our review of CAP and cohesion funding suggests that there is scope for efficiency gains, which would allow some of the Brexit-related hole in the MFF to be filled. We do not see a case for European subsidies to top up farmer incomes, but there is a case for correcting market failures and promoting public goods, such as environment and biodiversity, and for insuring against large risks such as earthquakes and animal disease epidemics, as is done in the United States. There is also a European rationale for cohesion policy, but at the same time the framework needs better design, targeting and control. Furthermore, some of the other existing spending areas, such as research and youth mobility, migration and defense, also require increased resources in our view.

The European Commission's May 2, 2018, MFF proposal made several welcome steps in these directions, e.g. by reorganizing spending commitments toward priorities which have gained more importance recently, while reducing the share of spending on agriculture and cohesion policies. But many details remain quite fuzzy and need to be spelled out further before a critical appraisal can be made. And not all cuts undertaken in the CAP go in the right direction, as rural development resources that are critical for environment, biodiversity and climate change mitigation are subject to larger cuts than the harder-to-justify subsidies to farmers. More generally, we would argue that the European Commission needs to make a significantly stronger attempt at measuring the actual "European value added" of the various proposed initiatives. Therefore, while we regard its MFF proposal a good basis for subsequent negotiations, we have made the case for some significant changes.

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# Structural investment needs in CESEE and the use of EU funds

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*Investment recovery in Central, Eastern and Southeastern Europe (CESEE) as well as in Europe as a whole is gaining steam. Hence, despite measurement challenges, there seems to be a broad consensus that there is currently no cyclical quantitative investment gap that would need to be addressed. However, there is tangible evidence suggesting that there are significant structural investment needs, particularly with regard to the quality of capital. Against this background, the aim of the present paper is twofold. First, we shed some light on the thematic areas in which structural investment needs persist by collecting and exploring a large set of strategic indicators. Second, we compare these structural investment needs with the structure of the European Structural and Investment Funds (ESIF) in the 2007–2013 programming period. This gives us some insights into whether the ESIF were directed to areas with the greatest investment needs and offers some tentative suggestions regarding the impact the ESIF had on the respective structural areas and as to the efficient use of the ESIF.*

JEL classification: F33, F36, F42, F45, F55, O11

Keywords: European Structural and Investment Funds, investment gap, structural investment needs

Investment recovery in Europe is gaining steam. To a large extent, this holds also true for Central, Eastern and Southeastern Europe (CESEE), where gross fixed capital formation is broadening and strengthening, even though it has not yet recovered to pre-crisis levels (EIB, 2017a). In this context, the question arises whether recovering investment activity is still below, at or even above the levels it should be. In other words: Is the CESEE region still facing an investment gap? Providing a comprehensive answer to this question is not an easy task as any quantitative analysis is subject to a high uncertainty with respect to data, measurement and methodology (Bubbico et al., 2017). Moreover, assessing the investment gap is dependent on cyclical conditions: In light of recent economic developments, there is a prevailing consensus that there is no urgent need to stimulate investment for countercyclical reasons (EIB, 2017a).

While quantifying the investment gap is a challenging task, there is some tangible evidence suggesting that there are significant structural investment needs<sup>2</sup> with regard to the quality of capital. The EIB Investment Survey (EIB, 2017b, and EIB, 2017c) unveils, for example, that EU firms do not necessarily report an investment gap regarding capacity utilization, but rather regarding outdated machinery, equipment and information and communications technology (ICT), which they largely do not perceive to be state-of-the-art. Addressing structural investment gaps is essential for the CESEE countries in particular. The CESEE region has attained middle-income status mostly by exploiting obvious advantages, such as relatively low labor costs. However, all the low-hanging fruit has been picked so that most of the CESEE countries now require a new growth model based on

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<sup>2</sup> By structural investment needs we particularly mean investments that foster job-rich economic growth, address environmental challenges, tackle gaps in human capital endowment, help fight poverty and social exclusion, and improve the quality of enabling infrastructure.



higher value added, innovation and skills (EBRD, 2017). The success of the new economic concept will largely hinge on the provision of skilled labor together with the countries' quality of infrastructure and the endowment with state-of-the-art capital.

The public sector should play a key role in addressing the structural backlogs in CESEE, which tend to result from market failures, the absence of key enabling infrastructure and insufficient provision of other public goods. Moreover, as most countries of the CESEE region register substantial income, infrastructure and competitiveness gaps<sup>3</sup> from a single market perspective (European Commission, 2017a), the process of tackling structural weaknesses is likely to rely heavily on the European Structural and Investment Funds (ESIF), which are aimed, in particular, at promoting the harmonious growth of European regions by reducing disparities in levels of development. While the ESIF have been able to mitigate pressures on public investment<sup>4</sup> and the ESIF's policy cycle is strongly linked to the investment cycle in CESEE, these funds have not been able to entirely offset the decline in public investment in the wake of the crisis (IMF, 2015)<sup>5</sup>. Furthermore, even with the support of the ESIF, the level of public investment has been well below thresholds defined in the relevant literature as one of the necessary, but not sufficient conditions for a successful transition from middle- to high-income status (see Bubbico et al., 2017, and Commission on Growth and Development, 2008).

Against this background, the present paper is structured as follows: In section 1, we first set the stage by looking at corporate investment trends in the EU and by providing some anecdotal evidence about qualitative investment gaps through the lens of a unique EIB Investment Survey. Section 2 sheds light on the thematic areas in which structural investment needs persist by collecting and exploring a large set of strategic and competitiveness indicators. In section 3, we then compare these structural investment needs with the structure of ESIF flows in the 2007–2013 programming period, which were specifically aimed at helping CESEE countries catch up with the rest of the EU. This comparison provides some insights into whether the ESIF were directed to areas with the greatest investment needs and gives some tentative suggestions on the impact the ESIF had on the structural area in question as well as on the efficient use of the ESIF.

## 1 Gaps in capital quality in CESEE through the EIBIS lens

To analyze the investment trends of firms, we use the EIB Group Survey on Investment and Investment Finance (EIBIS), a unique EU-wide survey conducted annually among a panel of more than 12,000 firms. EIBIS collects data on firm characteristics and performance, past investment activities and future plans, sources of finance, financing issues and other challenges that businesses face. Using a stratified sampling methodology, the survey is designed to be representative across all

<sup>3</sup> Despite the significant support provided by the European Structural and Investment Funds (ESIF), the volume of EU-funded public investment has not been fully additional to domestically sourced gross fixed capital formation, also because requirements for compliance with additionality were not ambitious (OECD, 2016).

<sup>4</sup> In national accounts, public investment data usually comprise the general government. However, off-budget entities, which may undertake a large part of public investment, are not (or only partially) taken into account.

<sup>5</sup> ESIF's contribution to public investment in CESEE remains about 1.5 percentage points of GDP lower than the pre-crisis level (EIB, 2017a).

28 Member States of the EU as well as all firm size classes (from micro to large) and four main sectors (manufacturing, services, construction and infrastructure).<sup>6</sup> In CESEE EU Member States, the survey involved interviews with 4,881 firms. In its 2017 EIBIS edition, the EIB furthermore interviewed more than 550 municipalities across the EU (and 200 in CESEE) to assess their investment activities, needs, constraints and financing, providing a unique snapshot of municipal investment trends.

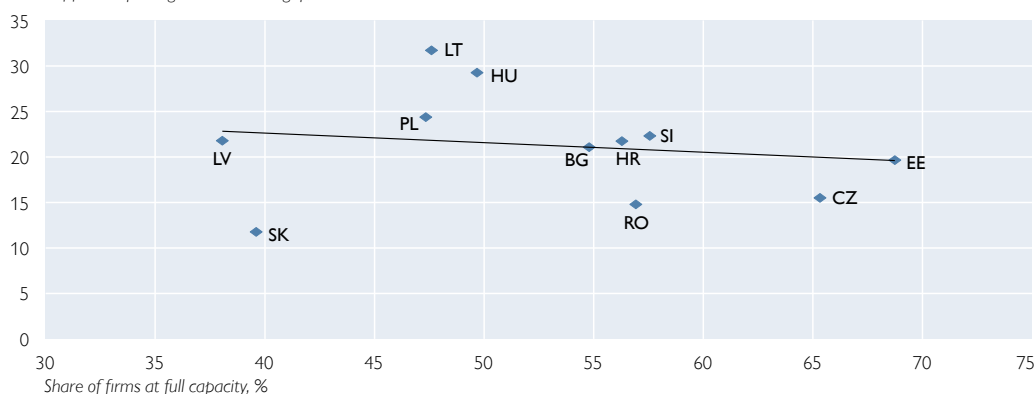
According to the 2017 EIBIS edition, about 21% of CESEE firms report that they have invested too little over the last three years to ensure the success of their business going forward (this can be interpreted as the firms' own perception of an "investment gap"<sup>7</sup>). In comparison, an investment gap is reported by about 15% of firms throughout the EU. In both the CESEE region and the EU, about 52% of firms say that they operate at or above full capacity attainable under normal conditions<sup>8</sup>.

There is, however, little evidence indicating a link between firms reporting investment gaps and capacity constraints.<sup>9</sup> One might conjecture a positive correlation as firms that have reportedly invested too little do not have sufficient production capacity. However, as shown in chart 1, there is hardly any correlation and, if any, rather a negative one. Surprisingly, many of the CESEE countries with the largest investment gap also record low shares of firms operating at or above full capacity. This suggests that lack of sufficient production capacity (i.e. the quantity of capital) is most likely not at the core of firms' concerns when they report too little investment over the last three years.

Chart 1

### Capacity utilization and investment gap in CESEE

Share of firms reporting an investment gap, %



Source: EIB.

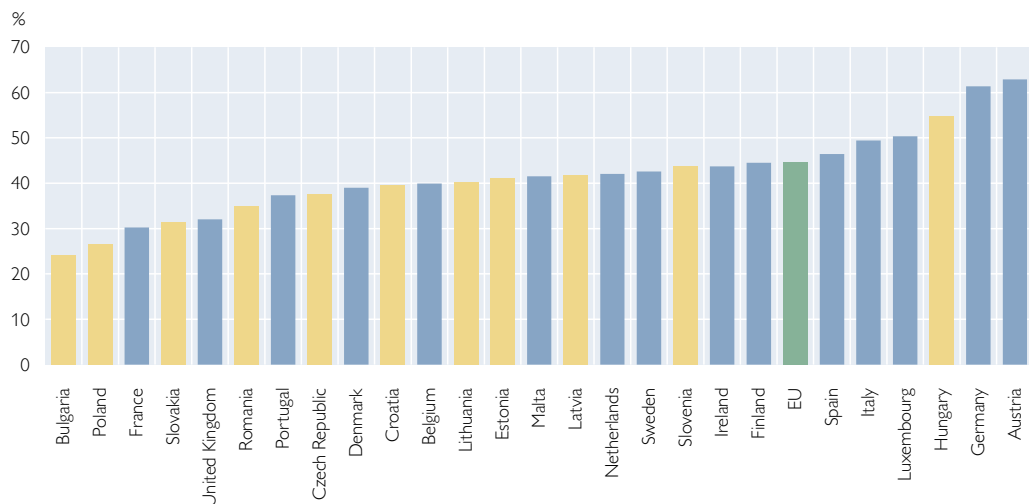
<sup>6</sup> The data are weighted by value added to better reflect the contribution of different firms to economic output. All firms that participated in the first 2016 wave of the survey were re-interviewed in the following survey waves. To compensate for panel attrition and to ensure cross-sectional representativeness, panel firms are complemented in each wave with a refresher sample of new survey firms.

<sup>7</sup> There are, of course, many different ways to define and measure investment gaps (see e.g. Bubbico et al., 2017, for a discussion). The question asked in EIBIS was: "Looking back at your investment over the last three years, was it too much, too little, or about the right amount to ensure the success of your business going forward?"

<sup>8</sup> See EIB, 2017b, and EIB, 2017c.

<sup>9</sup> See EIB, 2017b, also for econometric evidence.

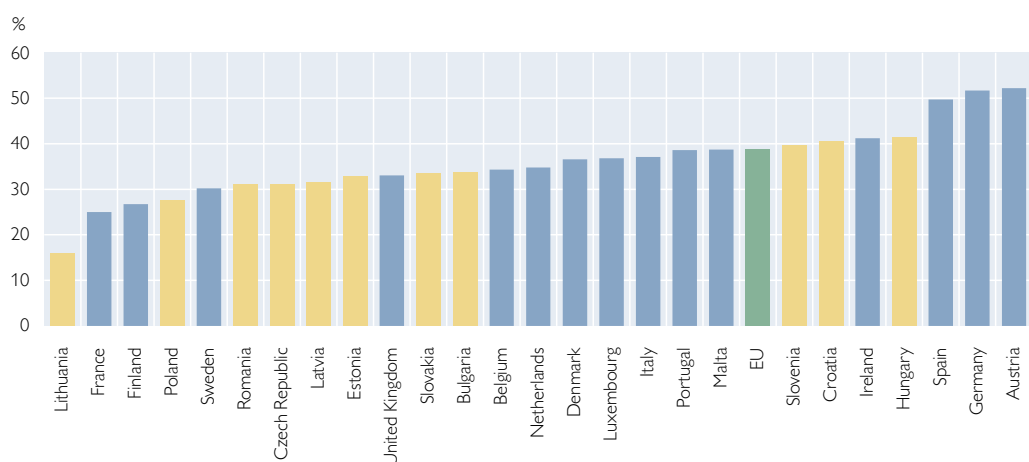
Chart 2a

**State-of-the-art machinery and equipment**

Source: EIB.

Instead, there are signs of underinvestment in the quality of firms' capital stock. EIBIS aims to approximate the quality of firms' capital stock by asking firms to state the share of their machinery and equipment that they consider to be state-of-the-art<sup>10</sup> and to report the portion of their commercial building stock that satisfies high or the highest energy efficiency standards. As can be seen in the two panels of chart 2 below, the answers to both of these questions indicate that the quality of capital in the CESEE countries, as self-reported by firms, is below the EU average in most cases.

Chart 2b

**Share of building stock that meets high energy efficiency standards**

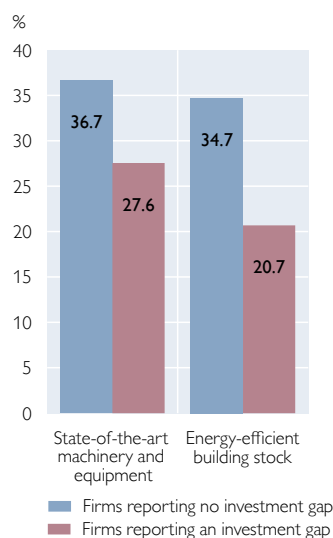
Source: EIB.

<sup>10</sup> This is further specified as referring to "cutting-edge" or "developed from the most recent ideas or methods."

Combining the findings about investment gaps and capital quality unveils that firms in CESEE that report an investment gap are also more likely to report a lower quality of their capital stock (see chart 3). The share of machinery and equipment described as state-of-the-art by firms that report an investment gap is 9 percentage points lower than for firms that do not report an investment gap (28% versus 37%). In terms of building stock that satisfies high or the highest energy efficiency standards, we find a difference of 14 percentage points (21% versus 35%) for the two groups. This substantiates the view that the quality of capital in the CESEE region is at least as much (if not more) of a pressing issue as is the quantity of capital stock.

Chart 3

### Investment gap by quality of capital stock in CESEE



Source: EIB.

## 2 Capital quality and flow of EU funds to CESEE

### 2.1 Structural indicators

To substantiate the hypothesis about qualitative investment gaps, we developed a set of structural indicators across five thematic areas for each CESEE country<sup>11</sup>: (1) human capital, (2) R&D and innovation, (3) environment protection, (4) transport and energy infrastructure as well as (5) ICT. As will be explained below, these five clusters correspond to our categorization of the disbursement areas of the ESIF for the 2007–2013 programming period in CESEE. Each of these areas comprises a number of structural variables collected from various sources (see annex for details), each of which is standardized to calculate the distance from the EU average in standard deviations. The composite area indicator is built as an arithmetic average of the standardized indicators in a given category. Similarly, the aggregate for the CESEE region for a given area is formed as a simple average of the country scores across all countries.<sup>12</sup>

Table 1 shows the standardized gaps for each thematic area compared to the EU average at the beginning of the 2007–2013 programming period. This perspective allows us to gain some insight into the most pressing structural needs in the CESEE region and to see how the CESEE countries fare in terms of capital quality compared to the EU average. For better readability, the values in each of the five categories are marked with a color ranging from red (indicating the country that fares worst compared to the EU average) to green (indicating the country

<sup>11</sup> Croatia is not included because of its later entry into the EU.

<sup>12</sup> We opted for a simple average to obtain an aggregate indicator that assigns the same weight to each country irrespective of its size. We chose this approach as we are interested in measuring the capital quality gap (and convergence) for each individual country. Therefore, also the CESEE aggregate needs to reflect the individual country scores with the same weight. A (GDP- or population-)weighted average would be more appropriate if we looked at the CESEE region as one homogeneous block.

Table 1

### Structural gap vis-à-vis the EU average at the beginning of the 2007–2013 programming period

	Human capital	R&D and innovation	Environment protection	Transport and energy infrastructure	ICT	Average across all categories
<i>Average standard deviations from the EU average</i>						
BG	–1.1	–1.0	–0.5	–1.0	–1.1	–0.9
CZ	0.3	–0.1	0.1	0.8	–0.2	0.2
EE	–0.1	–0.2	–0.0	–0.2	0.4	–0.0
HU	–0.4	0.2	–0.1	0.0	–0.4	–0.2
LV	–0.7	–0.9	0.2	–0.7	–0.7	–0.6
LT	–0.2	–0.8	0.6	–0.7	0.1	–0.2
PL	–0.3	–0.9	–0.5	–0.1	–0.9	–0.5
RO	–1.1	–1.1	–0.4	–0.5	–1.3	–0.9
SI	0.0	–0.1	0.0	0.1	–0.5	–0.1
SK	–0.2	–0.7	0.1	–0.1	–0.5	–0.3
<b>CESEE average</b>	<b>–0.4</b>	<b>–0.6</b>	<b>–0.1</b>	<b>–0.3</b>	<b>–0.5</b>	<b>–0.3</b>

Source: Eurostat, OECD, World Bank, WEF, authors' calculations.

Note: The values in each of the categories are marked with a color ranging from red (indicating the country that fares worst among the CESEE EU Member States compared to the EU average) to green (indicating the country with the best score compared to the EU average).

with the best score compared to the EU average). Moreover, table 1 also shows the average distance from the EU average in standard deviations across all CESEE countries as well as the average distance from the EU average across all five categories for a given CESEE country.

At the beginning of the 2007–2013 ESIF programming period, the CESEE region lagged behind the EU, on average, in all five structural categories under study. The greatest gaps in the CESEE region were recorded in the areas of R&D and innovation as well as ICT. In contrast, the CESEE region was nearly on a par with the EU average in the area of environment protection. A comparison across all CESEE countries revealed that the Czech Republic and Estonia had the best quality of capital vis-à-vis the EU average, with the Czech Republic scoring even slightly better than the EU average. The Czech Republic stands out among the CESEE countries in particular due to its relatively high quality of human capital as well as transport and energy infrastructure. In contrast, Bulgaria and Romania performed worst and recorded some of the biggest structural gaps in nearly all categories vis-à-vis the EU average.

When assessing how the indicators changed over the 2007–2013 programming period, we take two different perspectives. First, we look at how the respective aggregate indicators changed by adopting a relative convergence perspective. This means that we compute – in the same way as described above – the indicators' distance from the EU average at the end of the programming period, thus also taking into account the improvement of the EU average. Ideally, the countries' structural gap vis-à-vis the EU average should narrow over time as the countries in the CESEE region converge in real terms toward the richer EU Member States. However, this relative perspective does not provide any information about how the structural fitness of the CESEE countries evolved in absolute terms. Therefore, second, we look at the absolute improvement of the indicators by keeping the EU average constant at its 2007 level.

Table 2

**Structural gap changes in CESEE (regional average) over the 2007–2013 programming period**

	Human capital	R&D and innovation	Environment protection	Transport and energy infrastructure	ICT	Average across all indicators
<i>Average standard deviations from the EU average</i>						
Change against EU average (gauging convergence)	–0.07	0.05	0.01	0.03	0.10	0.02
Absolute change (keeping the EU average constant)	0.13	0.27	0.24	0.26	3.87	0.96

Source: Eurostat, OECD, World Bank, WEF, authors' calculations.

Note: The average standard deviation is computed across all indicators in a given category and across the CESEE countries.

Table 2 shows that the CESEE countries did not significantly improve their quality of capital relative to the EU average as there was virtually no improvement, on average, across the five thematic areas. It was only in the area of ICT that the CESEE region could somewhat catch up with the EU benchmark. However, the convergence observed in this area contrasts with the diverging human capital. Developments in the other categories were positive, yet close to negligible.

In absolute terms, i.e. eliminating indicator changes from the impact of the EU average, the CESEE countries enhanced their quality of capital in all five thematic areas. The largest improvements were recorded in the areas of ICT and network infrastructure in transport and energy. In contrast, the smallest absolute improvement was reported with regard to the quality of human capital.

Overall, we can therefore conclude from table 2 that the CESEE countries did improve capital quality in absolute terms in all categories over the programming period. However, since other EU countries improved as well, and did so even more significantly, the distance between the CESEE region vis-à-vis the EU average increased even more in most instances.

## 2.2 Thematic classification of EU funds

Following the EU enlargement rounds of 2004 and 2007, the countries joining the EU became eligible for European support in the form of the ESIF, which aim at reinforcing economic, social and territorial cohesion. The main EU instruments within the ESIF promoting cohesion include the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF). In the context of the EU's Multiannual Financial Framework for 2007–2013, the ERDF and ESF provided support to all European countries and regions, lending stronger financial support to “convergence regions.”<sup>13</sup> Almost all of the CESEE EU Member States were classified as convergence regions, with only three regions having a GDP per capita above the EU average. The CF was allocated to Member States whose gross national income (GNI) per capita was below 90% of the EU average. All CESEE countries were eligible for this fund (European Commission, 2007).

Cohesion Policy, with a budget of EUR 350 billion, represented the largest item in the 2007–2013 EU budget. As Cohesion Policy (and its financial support)

<sup>13</sup> In other words: less developed regions with a GDP per capita below 75% of the EU average.

placed a particular emphasis on helping less developed areas, significant country and per capita allocations were assigned to newer Member States. These resources were allocated over seven years, and capped at a certain percentage of GDP depending on the income gap of each country with regard to the EU average, which resulted in significant variations of per capita aid intensity in monetary terms across the CESEE region<sup>14</sup>. Newer Member States could receive related payments up to three years after their yearly allocation. For this reason, the 2007–2013 resources could be used in CESEE up to 2016, overlapping with resources of the following programming period (2014–2020). The latter, however, suffered from a very slow start, with only 9% of total resources having been paid to CESEE EU Member States by end-2016 (European Commission, 2017b). Over the time period analyzed, Cohesion Policy contributed greatly to sustaining total public investment in CESEE (IMF, 2015). This was especially the case in the post-crisis years when the component of public investment financed by domestic sources in CESEE decreased significantly, before experiencing a rebound in 2014 (Bubbico et al., 2017). Table 3 provides an overview of the ESIF spent in CESEE countries in per capita terms during the 2007–2013 programming period, reporting the distribution of ESIF across five main categories. This categorization is based on data that are collected and published by the Directorate-General for Regional Policy<sup>15</sup> and that provide information on EU funding per Member State by aggregating allocations to different thematic areas within the various funding programs. For consistency purposes, these thematic areas have been regrouped into the following five categories<sup>16</sup>:

- human capital (including culture, human capital development, social inclusion, social infrastructure, labor market)
- research and innovation (including innovation, research and technological development, business support)
- ICT (IT services and IT infrastructure)
- network infrastructure in transport and energy (including energy, road transport, rail transport and other means of transport, urban development)
- low-carbon economy (environment)

Table 3 below reports the expenditure in euro per capita estimated for each thematic category by applying the national absorption rate observed at the end of the programming period to initial allocations<sup>17</sup>.

<sup>14</sup> According to Council Regulation (EC) No 1083/2006, aid intensity was capped at 3.78% of GDP for Member States with a GNI under 40% of the EU average; lower caps were applied to countries with higher levels of GNI.

<sup>15</sup> For details on the data, see [cohesiondata.ec.europa.eu](http://cohesiondata.ec.europa.eu).

<sup>16</sup> Technical assistance and capacity building have been excluded from this broad categorization.

<sup>17</sup> By end-2016, national absorption rates ranged between 90% of initial allocations (Romania) and 98% (Poland) compared to an EU average of 96%.



Table 3

**2007–2013 European Structural and Investment Funds**

	Human capital	R&D and innovation	Environment protection	Transport and energy infrastructure	ICT	Sum
<i>EUR per capita</i>						
BG	167.5	105.1	187.9	324.3	8.2	793.0
CZ	523.1	445.2	375.4	927.5	80.5	2,351.6
EE	676.4	572.6	552.4	529.5	53.8	2,384.7
HU	579.8	430.6	433.4	749.3	65.1	2,258.3
LV	489.2	398.8	374.6	723.6	89.5	2,075.7
LT	541.7	397.7	312.9	749.2	77.4	2,078.9
PL	323.0	331.7	174.0	741.9	93.5	1,664.1
RO	178.5	105.0	209.3	312.7	20.3	825.9
SI	319.5	537.1	369.4	539.7	72.1	1,837.9
SK	483.4	273.1	325.3	685.1	176.9	1,943.8
<b>CESEE average</b>	<b>428.2</b>	<b>359.7</b>	<b>331.5</b>	<b>628.3</b>	<b>73.7</b>	<b>1,821.4</b>

Source: European Commission, authors' calculations.

Note: The values in each of the categories are marked with a color ranging from red (indicating the country that fares worst among the CESEE EU Member States compared to the EU average) to green (indicating the country with the best score compared to the EU average).

Based on the CESEE average, most of the ESIF in per capita terms went to network infrastructure, followed by human capital during the 2007–2013 programming period. The least amount of EU funds was spent on ICT capacity. However, allocations were widely heterogeneous across countries. For instance, in R&D and innovation, the Czech Republic was allocated twice as much funds per capita as Slovakia. The opposite could be observed in the ICT category.

### 3 Does the ESIF structure match structural investment needs?

After having discussed structural investment needs in the previous section, we now turn to the relationship between the structural gaps identified in table 1 and the flow of EU funds along the following three dimensions:

1. During the 2007–2013 programming period, were EU funds allocated to those areas that could be identified, at the beginning of the programming period, as the weakest compared to the EU average?
2. Did the flow of EU funds commensurate with the improvement in capital quality gaps vis-à-vis the EU average during the 2007–2013 programming period? This second perspective also encompasses the dimension of convergence, i.e. whether the quality of capital in the CESEE region improved relative to the EU as a whole.
3. Did the flow of EU funds commensurate with the absolute improvement in the quality of capital during the 2007–2013 programming period?

Table 4

**Correlation between the ESIF and the (change in) structural quality indicators**

	Human capital	R&D and innovation	Environment protection	Transport and energy infrastructure	ICT
<i>Correlation coefficient</i>					
ESIF (EUR/capita) and indicators at the beginning of the programming period	0.63	0.74	0.49	0.60	0.26
ESIF (EUR/capita) and indicator changes over the programming period (relative to the EU average)	0.01	0.26	-0.16	-0.18	-0.06
ESIF (EUR/capita) and indicator changes over the programming period (absolute)	-0.12	0.03	-0.11	-0.49	-0.53

Source: Authors' calculations.

Table 4 explores these three dimensions by showing the correlation between the flow of EU funds in individual CESEE countries and the respective quality indicator changes<sup>18</sup>.

With regard to the first dimension, the desired correlation between the ESIF and structural quality indicators would be negative, i.e. the lower the indicator of capital quality was at the beginning of the programming period, the more EU funds should have subsequently been directed to the related thematic area during the programming period. However, this is not confirmed by the data. On the contrary, the correlation was positive in all five categories, for which there are a number of possible explanations that are not mutually exclusive. One possible reason is that the CESEE countries tried to pick the low-hanging fruit first, i.e. they were using EU funds to further improve areas in which they did not perform so poorly vis-à-vis the EU. This allowed faster and easier absorption of EU funds and reinforced their relative competitive advantages both in the CESEE region and the EU. Another reason might be related to weak identification of areas with the largest structural gaps.

As far as the second and third dimension are concerned, the desired correlation would be positive, i.e. the flow of EU funds during the programming period would be positively correlated with the relative and absolute improvements in the respective areas<sup>19</sup>. Regarding the relative improvements (second line in table 4), "R&D and innovation" was the only area in which the flow of EU funds considerably positively correlated with some convergence toward the EU benchmark. No strong correlation could be observed in the areas of human capital and ICT. In contrast, the areas of transport and energy infrastructure as well as environment protection showed a negative correlation, suggesting a divergence in the quality of capital compared to the EU average. This is, to some extent, worrisome and

<sup>18</sup> Such correlations provide, of course, only a preliminary indication of a relationship but no ultimate evidence of causality. To obtain the latter, a deeper analysis would be required, which would go beyond the scope of this paper.

<sup>19</sup> This is subject to the proviso that the flow of EU funds to a particular area was certainly not the sole determinant of improvement in that area. Hence, looking at the correlation alone does not allow any conclusions on causality.

Table 5

**ESIF resources spent for one-standard-deviation improvement in structural quality**

Human capital	R&D and innovation	Environment protection	Transport and energy infrastructure	ICT
<i>EUR/capita</i>				
3188	1327	1365	2373	19

Source: Authors' calculations.

surprising as transport and energy network infrastructure was the thematic area that received the highest average per capita amount from the ESIF.<sup>20</sup>

Looking at absolute changes (third line in table 4), the correlation coefficient is, to our surprise, negative in all areas, except for R&D and innovation, for which no strong correlation could be observed. This suggests that the absolute improvement of capital quality in the CESEE region over the programming period did not rise with higher per capita amounts flowing in from the ESIF. In addition, it is particularly striking that the second largest negative correlation existed between the flow of EU funds and changes in transport and energy infrastructure – the area that received the highest EU funding in per capita terms.

To shed further light on how efficient the use of EU funds was, table 5 reports, for the different thematic areas, the CESEE-wide average per capita amount of EU funds divided by the absolute changes in the quality of the respective indicators. The resulting figure thus illustrates how much a one-standard-deviation improvement in the quality of capital costs in terms of EU funds in euro per capita. In the area of ICT, a one-standard-deviation improvement was achieved with the least amount of EU funds spent. Interestingly, ICT was also the area that achieved both the largest absolute and relative improvement vis-à-vis the EU average. In contrast, the quality improvements in human capital as well as transport and energy infrastructure turned out to be the most costly ones.<sup>21</sup>

The results of our analysis as described above are supported by the 2017 EIBIS findings. The latter showed, inter alia, that skill mismatches seem to be an increasingly growing concern for firms in the CESEE region. As their main long-term obstacle to investment, 83% of CESEE firms mentioned availability of staff with the right skills, which is 72% above the EU average.

According to the EIBIS findings, about 41% of municipalities in the CESEE region furthermore reported that their past investment led to an underprovision of urban transport infrastructure, and they assessed the quality of their infrastructure to be weakest in urban transport and housing.

<sup>20</sup> However, it has to be borne in mind that the investment costs in infrastructure and ICT and, accordingly, the marginal impact of equal-sized investments in the respective area differ significantly and may explain the finding above. While our results may indicate inefficiencies, poor targeting or even corruption in certain areas, as could be observed in other contexts (see e.g. Chvalkovska et al., 2013), they do not allow such conclusions without further evidence.

<sup>21</sup> It is possible that measurable improvements in the area of human capital will only materialize with a longer lag.

#### 4 Conclusions

While it is rather difficult to quantify what the ideal investment level should be, gross fixed capital formation has lately been recovering vigorously in the CESEE region. There seems to be a broad consensus that there is currently no urgent need to boost investment due to cyclical underinvestment. However, noteworthy evidence suggests substantial investment gaps in terms of capital quality despite significant EU resources being allocated for the purpose of broadening and deepening the capital stock of the CESEE region. According to the EIB Investment Survey, firms in the CESEE region are more concerned about the quality of their capital stock than they are about its quantity. As could be demonstrated, the quality of capital in the CESEE countries is largely below the EU average.

The CESEE region witnessed a considerable convergence trend toward the rest of the EU with regard to income (Alcidi et al., 2018). However, regarding the quality of capital in CESEE, our analysis indicates that convergence toward the EU average has been negligible over the last decade, except in ICT. Moreover, the CESEE countries diverged slightly from the EU average with regard to the quality of human capital.

This lack of convergence in terms of capital quality is predominantly due to the progress made in other European countries. After all, the quality of capital improved in all areas in the CESEE region in absolute terms, even though not in every single country. The largest absolute improvements were in ICT as well as transport and energy network infrastructure, while the smallest absolute improvement was in the quality of human capital.

Contrary to what one would expect, higher amounts received from the Cohesion Policy's budget did not correlate positively with more significant capital quality improvements in almost all areas under study. Moreover, transport and energy infrastructure – the area that was allocated the highest amount of EU funds by far – experienced a comparatively large negative correlation between the absolute change in the quality of capital and the flow of EU funds during the 2007–2013 programming period.

In the area of ICT, improvements were achieved with the least EU funding per capita. ICT was also the area that achieved both the largest absolute and relative improvement vis-à-vis the EU average during the 2007–2013 programming period. The quality improvements in human capital as well as transport and energy infrastructure were the most costly ones.

The EIB Investment Survey underpins our findings regarding the insufficient convergence in terms of the quality of (human) capital and infrastructure in CESEE toward the EU. Currently, CESEE firms perceive skill mismatches as the main obstacle to investment. In addition, CESEE municipalities report significant investment gaps, particularly in urban transport infrastructure and housing infrastructure. These findings are crucial as they provide guidance for policy action and public investment decisions in the light of large availabilities of still unused financial resources in the current ESIF cycle. The European Commission's proposal for the 2021–2027 Multiannual Financial Framework indicates a reduction of resources directed toward Cohesion Policy, significantly downsizing allocations to a number of CESEE countries (in particular to the Czech Republic, Estonia,

Hungary, Poland and Slovakia). The proposal also envisages a stronger linkage between allocated resources and structural reforms, and an increase in national co-financing rates to overcome the issue of insufficient additionality. The overall strategy is based on stronger support to innovation and the transition to a low-carbon economy – areas in which the CESEE region registers substantial gaps vis-à-vis the rest of the EU. Consequently, it is crucial for CESEE countries to make the best use of current and future resources by better targeting investment gaps, focusing on the quality of projects, orienting public policy choices toward growth-enhancing expenditure, and building alternatives to grant financing, such as the promotion of financial instruments.

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## Annex

For each of the five thematic areas we collected a representative selection of indicators from various sources for the two points in time under study, i.e. for the beginning and the end of the 2007–2013 ESIF programming period, respectively. As the beginning of the programming period, we thus chose the year 2007 or, if no data were available, the year closest to 2007. As the end of the programming period, we opted for the year 2016, as money could be tapped from the ESIF within the 2007–2013 programming period until the end of 2016. The table below reports and describes all the indicators, and lists the years for which they were available, the sources they were drawn from as well as the unit they were specified in before converting them into standard deviations from the EU average.

Table A1

**Underlying structural indicators**

Aggregate	Indicator	Description	Original unit of indicator	Source	Reference years
<b>Human capital</b>	Secondary education	Upper secondary and post-secondary nontertiary education	% of population aged 15–64	Eurostat	2007; 2016
	Tertiary education		% of population aged 15–64	Eurostat	2007; 2016
	Early leavers	Early leavers from education and training	% of population aged 18–24	Eurostat	2007; 2016
	Pisa score	Average score of mathematics, science and reading	Scale from 1 to 1,000	OECD	2006; 2015
	Quality of education		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
	Health expenditure		Health expenditure per capita, PPP (constant 2011 international \$)	World Bank	2007; 2014
	Life expectancy		Years	WEF	2007; 2017
	On-the-job training		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
	Availability of scientists and engineers		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
<b>Research and innovation capacity</b>	R&D	Overall R&D expenditures	% of GDP	Eurostat	2007; 2017
	University-industry collaboration in R&D		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
	High-tech employment	Employment in technology and knowledge-intensive sectors	% of total employment	Eurostat	2008; 2016
	High-tech exports		% of total exports	Eurostat	2007; 2015
	Quality of scientific research institutions		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
	High-tech patent applications		Per million inhabitants	Eurostat	2007; 2013
<b>Low-carbon economy/energy efficiency</b>	CO <sub>2</sub> emissions		kg per 2011 PPP \$ of GDP	World Bank	2007; 2014
	Electric power transmission and distribution losses		% of output	World Bank	2007; 2014
	Greenhouse gas emissions compared to 1990		% of 1990 levels	Eurostat	2007; 2015
	Greenhouse gas emissions from transportation		Thousand tons per 100,000 inhabitants	Eurostat	2007; 2015
	Renewable energy consumption		% of total final energy consumption	World Bank	2007; 2014
<b>Network infrastructure in transport and energy</b>	Rail density		Rail lines in km/1,000 km <sup>2</sup>	World Bank	2007; 2016
	Logistics performance index: quality of trade and transport-related infrastructure		Scale from 1 (worst) to 5 (best)	World Bank	2007; 2016
	Energy dependence	Net energy imports	% of energy use	World Bank	2007; 2014
	Quality of electricity supply		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
<b>Information and communication technology/technological readiness</b>	Access to broadband internet		Fixed broadband subscriptions per 100 people	World Bank	2007; 2016
	Mobile subscriptions		Mobile cellular subscriptions per 100 people	World Bank	2007; 2016
	Internet bandwidth		kb/s per user	WEF	2011; 2017
	Availability of latest technologies		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
	Firm-level technology absorption		Scale from 1 (worst) to 7 (best)	WEF	2007; 2017
<b>Environment protection and resource efficiency</b>	Waste recycling		Share of recyclable waste in total waste	Eurostat	2006; 2014
	Air pollution	Urban population exposed to PM10 concentrations exceeding the daily limit value (50 µg/m <sup>3</sup> on more than 35 days in a year)	% of total population	Eurostat	2007; 2015
	Environment protection expenditure		% of GDP	Eurostat	2007; 2016



# What is the appropriate role of structural reforms in E(M)U deepening?

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Andreas Breitenfellner<sup>1</sup>

*Can flexibility-enhancing “structural” reforms at the national level substitute institutional reforms at the EU level, or are they rather complementary? In this article, we first look at more broadly defined structural reforms of both institutions and product and factor markets through the lens of economic theory – and also review empirical evidence. In particular, we discuss if and how reforms depend on macroeconomic conditions and policies. We then analyze the role that reforms play for the proper functioning of Economic and Monetary Union (EMU) and for fostering the well-being of EU citizens. In a nutshell, there is no one-size policy framework that fits all. The optimal set of structural policies for an economy depends on the quality of its institutions as well as its factor endowment, level of development and/or geographical location. We argue for extending the structural reform paradigm beyond “defensive” (flexibility-enhancing) toward “upgrading” (productivity-enhancing) instruments. Design, packaging, timing and sequencing will make or break such reforms. In general, reform ownership based on broad consensus is essential at the national level. EU involvement, however, would only be justified in the case of cross-border spillovers.*

JEL classification: E24, F45, O43

Keywords: structural reform, economic growth, institutional reform, Economic and Monetary Union, European Union

This article explores the following questions: First, in what way are structural reforms necessary for the functioning of the European Union (EU) and its Economic and Monetary Union (EMU)? Second, should traditional, mainly flexibility-enhancing reforms aimed at making prices and wages more reactive to shocks be complemented by reforms that enhance growth and well-being more directly? Third, should structural reforms originate from the EU or the national level?

Structural reform is one of the buzzwords in the EU’s jargon. Reforms that “tackle obstacles to the fundamental drivers of growth” (European Commission, 2018a) figure importantly in the EU’s regular country-specific recommendations presented to each EU country during the so-called European Semester. More tangibly, they form part of the strict conditionality of official financial assistance made available to stressed euro area countries monitored by European institutions and the IMF. The Commission’s roadmap for completing Europe’s Economic and Monetary Union holds that structural reforms strengthen the resilience of the euro area (European Commission, 2017a), a view shared by many economists, e.g. in a recent joint French-German paper (Bénassy-Quéré et al., 2018). Already back in 1958, however, the Austrian economist Fritz Machlup (1958) denounced the pervasively arbitrary use of the terms “structure” and “structural change” as “weasel words,” maintaining that everyone was applying these terms to fit their predilection. Taking up Machlup’s criticism, in what follows we define more clearly what we mean by structural reforms, while paying attention to their appropriateness, functioning and context.

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Typically, in economics one contrasts cyclical developments with structural ones. Structural policies target the fundamental supply side of an economy with a view to producing long-term effects<sup>2</sup>. In that sense, “structure” comprises many elements of the policy framework of an economy, including the rule of law, the level of technological development and capabilities, factor endowments, sectoral composition, employment and wage bargaining institutions, competition policy framework, education, welfare state institutions or infrastructure. Structural reforms are hence intended to change one or some of these elements.<sup>3</sup> Depending on one’s objectives, one could distinguish between flexibility-enhancing and well-being-enhancing reforms. The latter foster inclusiveness and sustainability and boost economic potential and productivity. Quite comprehensively, the recent European Commission’s Structural Reform Support Programme (SRSP) lists 34 areas of potential intervention, grouped into five sectors: (1) governance and public administration, (2) tax revenue and public financial management, (3) growth and business environment, (4) labor market, health and social services, and (5) financial sector and access to finance.<sup>4</sup> Still, some well-being-enhancing areas are underrepresented there, such as innovation policy, industrial policy, infrastructure or income and wealth distribution.

In section 1 of this article, we analyze varying theoretical views and evidence on structural reforms. Section 2 deals with the interaction of structural and macro-economic policies. In section 3, we describe structural reforms as they pertain to the functioning of the European Union and of Economic and Monetary Union. We conclude in section 4, trying to answer the question whether and to what extent the EU needs to be involved in individual Member States’ “structural reforms.”

## 1 Shifts in the meaning of structural reforms and related evidence

The meaning of structural reforms has been subject to ever-changing interpretations. Before the global financial crisis that started in 2008, the term structural reform was mainly used to describe free market policies, such as cost cutting, deregulation, liberalization and privatization. In connection with advanced economies, it has been associated in particular with supply-side strategies to overcome stagflation and the Keynesian consensus of the post-war period (Klein, 2007). The OECD and the IMF were major international institutions propagating and imposing such policies (see e.g. Lall, 1995). Applied to emerging and developing economies, these policies constituted the Washington Consensus that guided the structural adjustment programs incorporating export-led development strategies (Rodrik, 2016).

Descriptive evidence shows that some structural convergence (European Commission, 2018b) within the EU and the euro area has been taking place<sup>5</sup>. Many EU Member States, particularly those heavily affected by the financial crisis

<sup>2</sup> These supply-side conditions interact with demand conditions to form the overall performance of an economy.

<sup>3</sup> In the 1950s, the IMF and the World Bank introduced the term “structural adjustments” as preconditions for emergency loans, to denote measures like liberalizing trade, balancing budgets (which rather belongs to the realm of macroeconomic policies), removing price controls, encouraging foreign direct investment (FDI) and fighting corruption.

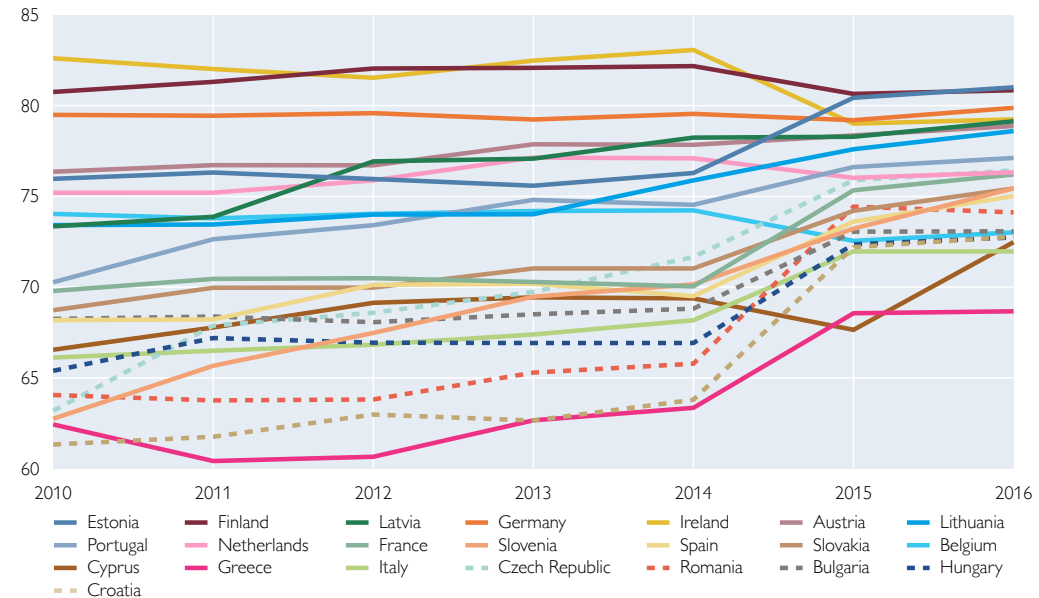
<sup>4</sup> See [https://ec.europa.eu/info/sites/info/files/srsp-policy-areas\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/srsp-policy-areas_en_0.pdf).

<sup>5</sup> By “structural convergence,” we mean greater similarity with respect to regulatory and institutional conditions; this may result in more cyclical alignment and even in more similar compositions of output.

Chart 1

### Doing Business indicator – distance to frontier, for selected euro area and EU countries (2010–2016)

Distance to frontier score<sup>1</sup>



Source: World Bank.

<sup>1</sup> The "distance to frontier" score measures the distance of each economy to the best performance observed for each of the regulatory environment indicators across all economies in the Doing Business sample on a scale from 0 (lowest performance) to 100 (the frontier).

and the subsequent sovereign debt crisis, have registered an improvement. This is reflected by indicators developed by the OECD, such as the Product Market Regulation (PMR) index and Employment Protection Legislation (EPL) index (Fischer and Stiglbauer, 2018). Indices developed by the European Commission (2018b) on labor market reforms and by the World Bank on the ease of Doing Business (chart 1) give a similar account of reform activities. Analysis built on these data suggests that both the euro area and the EU as a whole have achieved progress with (i.e. convergence in) business regulation and institutional quality over recent years, even though substantial differences remain (Canton and Petrucci, 2017).

There is good reason to assume that the structural convergence observed among the euro area countries will lead to business cycle convergence, which in turn facilitates conducting a common monetary policy for the euro area (Lukmanova and Tondl, 2016). Economic activity in EU countries has, indeed, become increasingly synchronized, particularly among euro area countries (Campos et al., 2017). In terms of per capita income levels, however, the post-crisis period has shown real divergence among the "old" EU Member States (EU-15), most of which are part of the euro area, despite substantial EU transfers via regional and structural funds (Janekalne, 2016). Meanwhile, the "new" Member States (EU-12) continued to successfully converge to the EU-15 group – with generally higher per capita income levels –, albeit at a slower pace than before the global financial crisis (Astrov et al., 2017).

## 2 The link between structural and macroeconomic policies

The financial crisis brought about a major shift in the policy prescription of international institutions. Most prominently, the OECD – a key advocate of structural reforms, and motivated by a self-reflective initiative called New Approaches to Economic Challenges (NAEC) – started to zero in on inequality and well-being (OECD, 2015). Going beyond the narrow concept of economic growth, the latter encompasses material conditions, quality of life and sustainability. The IMF has recently highlighted the importance of supportive macroeconomic conditions and policies, the careful prioritization and sequencing of reforms, targeting inclusive growth and even accepting a reversal of market-oriented pension system reforms or compromising on capital market liberalization. The European Commission (2017b), for its part, has elevated egalitarian considerations to the same level as efficiency and acknowledged the need for supporting macro policies.

The debate about the interaction of structural and macroeconomic policies ties in with the very origins of macroeconomic theory. The most commonly used approach is the so-called New Keynesian Model. This workhorse of micro-founded macroeconomics is actually a neoclassical model that incorporates imperfect competition in labor and product markets, which hampers wages and prices from swiftly adjusting to shocks. Only those rigidities justify countercyclical stabilization as conducted by fiscal authorities and central banks. Ideally, those institutions would complement their macroeconomic policies with structural reforms to strengthen the economy's long-run growth potential.

More recent analyses based on New Keynesian dynamic stochastic general equilibrium (DSGE) models reveal, however, that the issue is more complex, particularly in a monetary union and during a recession. Following the intuition of these models, reforms that boost competition in product and labor markets lead to a reduction of markups. While this implies an initially deflationary impact, the expansionary effects fade in only gradually via reallocated resources, at least in good times or given sufficient fiscal or monetary policy space. Galí (2012) challenges the widespread appraisal of the virtues of reform-induced wage flexibility in individual countries of a monetary union. Given constrained monetary policy, flexible wages cannot fulfill their assigned role of offsetting the negative impact of an adverse aggregate shock on employment and output. In a similar vein, Eggertsson et al. (2014) show that structural reforms, which the authors left unspecified, can even be contractionary in the short run amid economic slack that limits the monetary policy interest rate to its zero lower bound (ZLB). Using larger euro area models, Vogel (2014) finds only small and short-lived deflationary effects, while Fernández Villaverde et al. (2014) suggest a wealth effect even boosting consumption and labor supply. Cacciatore et al. (2017) reject the proposition that a binding ZLB generally matters. Empirical evidence in OECD countries from 1980 onward, however, substantiates the uncertainty about whether monetary policy can improve the growth impact of labor market reforms when the economy is in a recession or close to the ZLB, especially in the case of a euro area country (McAdam and Stracca, 2015).

In the policy-oriented debate on macrostructural interdependence, the focus, erstwhile on price stability and fiscal sustainability, has shifted to an explicit endorsement of a “two-handed” approach where monetary and fiscal policies accommodate structural reforms. Before the global financial crisis, Van Riet (2006)

stressed that structural reforms render the conduct of monetary policy more effective and efficient by dampening the medium-term outlook for inflation and smoothing the monetary transmission mechanism, respectively. In turn, stability-oriented monetary policy generates price transparency revealing the need for, as well as the welfare-enhancing benefits of, pro-competitive reforms. In the course of the crisis, however, the task of monetary policy was extended to “support economic activity,” and policy makers are urged to raise the effectiveness of monetary accommodation by swiftly implementing structural reforms (Draghi, 2017).

Similarly, before the crisis, fiscal policy makers were keen on stabilizing public finances. This was seen both as a precondition for successful growth-enhancing reforms and as a financial stabilization instrument in itself. According to the OECD (2006), for instance, limited scope for fiscal expansion would leave only structural reforms to exert beneficial effects on employment and potential output. Beetsma and Debrun (2004), however, demonstrate that fiscal rules erode incentives for structural reforms requiring temporary fiscal deficits, thereby sacrificing future growth for present stability. Conversely, Buti et al. (2009) point out that structural reforms and fiscal discipline may either complement or substitute each other, depending on the short-term costs of the reform at hand – as demand might shrink due to labor shedding and income losses – and the time horizon of the respective government.

As the crisis progressed, though, emphasis shifted to an explicitly supportive role of fiscal expansion to help revive the economy while remaining in compliance with the EU’s fiscal rules (Draghi, 2017). Additionally, in the context of the endeavors to deepen EMU, it was recently proposed to use EU budget funds to support structural reform efforts (European Commission, 2017a).

On balance, the economic policy literature recognizes the need for carefully designed, packaged and sequenced structural reforms coupled with complementary macroeconomic policies that mitigate transitory adjustment costs (IMF, 2016). However, analysis of the political economy of structural reforms reveals that governments tend to carry out reforms in dire economic times, exactly when fiscal space is lacking (Masuch et al., 2018). Furthermore, governments frequently restrict themselves to reforms for which they have political and public backing, even if the latter no longer reflect their more ambitious initial intentions.

### 3 Structural reform and E(M)U reform

How do national structural reforms relate to institutional reforms in terms of improving the functioning of the EU and EMU<sup>6</sup>? Here, we want to consider three views, according to which the two levels substitute, complement or even reinforce each other. First, to paraphrase an “ordoliberal” view widely held by German academics (see survey of De Ville and Berckvens, 2015), it suffices that every country does its “homework” in following principles and rules. As reforms at the country level substitute those at the EU level, the latter becomes superfluous. Second, implying a complementary role for both levels, in contrast, EU institutions tend to hold a “Brussels-Frankfurt consensus” view, according to which E(M)U deepening is useful and feasible only when the country-specific homework

<sup>6</sup> In line with Article 3 of the Treaty of Lisbon, the ultimate aim of both EMU and the EU as a whole is to enhance the well-being of the EU’s citizens.

is completed (Cœuré, 2016). Third, many economists claim that EMU institutional reform is itself the most important structural reform; it is the precondition for local reforms to succeed (Baldwin and Giavazzi, 2016). In line with this “integral” view, a successful currency union requires a unified state or state-like political framework.

It is easy to detect which principal EU policy actors champion which view. At one end of the spectrum, the northern, core and Baltic Member States prioritize structural reforms and fiscal responsibility at the national level (Government of Sweden, 2018). By contrast, the French position attests to greater European solidarity rather than more responsibility – a view essentially shared by most southern Member States (Macron, 2017). To be sure, different interests do not rule out compromise, as exemplified by the French-German roadmap for the euro area, which – while not explicitly mentioning structural reforms – stresses the need for economic coordination and integration in a currency union (German Federal Government, 2018).

The theoretical discussion of the role of structural reforms in contributing to resilience in a currency union harks back to the theory of the optimal currency area (OCA) pioneered by Mundell, Kenen and McKinnon in the 1960s. According to this approach, in the case of an asymmetric shock, flexible costs and prices would replace the no longer available exchange rate mechanism. However, the postulated flexibility does not necessarily imply a decentralized structure, as in the case of bargaining systems. For instance, both employment growth and wage restraint in the wake of the Great Recession were higher in centralized and multi-level collective bargaining systems than in countries with firm-level or individual bargaining (OECD, 2017). This is because workers’ and employers’ umbrella organizations assume sector- or nation-wide responsibility – as opposed to small special interest groups in critical industries that free ride by excessively exploiting their bargaining power. Furthermore, the consensual practice of social partnership extends beyond wage bargaining and provides the ownership needed for balanced and sustainable structural reforms. Moreover, labor market regimes with very little employment protection tend to promote less long-run accumulation of firm-specific knowledge. Yet, corporate investment in human capital is vital for productivity-enhancing innovation. This may be why Nordic and Central European high-wage economies with rather rigid labor market regimes were more successful in securing the survival of their industrial sectors than several Anglo-Saxon economies that tend to emphasize individualism in their industrial relations (Kleinknecht et al., 2014).

The significant Five Presidents’ Report on completing EMU (Juncker et al., 2015) states that “the ultimate aim is to achieve similarly resilient economic structures throughout the euro area” (p. 7) and “convergence towards similarly resilient national economic structures would be a condition to access (...)” proposed fiscal capacities for the euro area (p. 21). Providing further specifications, the European Commission’s Roadmap (2017a) holds that reform-related funds should be included in the post-2021 Multiannual Financial Framework (i.e. the EU’s long-term budget plan). Concretely, the European Commission proposed a new Reform Support Programme with an overall budget of EUR 25 billion (with a duration of seven years). This program is intended to provide financial and technical support for



reforms in Member States identified in the context of the European Semester, or in preparation for euro area membership (European Commission, 2018c).<sup>7</sup>

This raises several questions: Why incentivize something that should be in the Member States' own interest anyway? What justifies extending the EU's competences into domains of national sovereignty? Do asserted spillovers calling for EU involvement exist in areas other than capital markets, product market competition and tax policy? Will the funds provided suffice to mitigate the short-term costs of structural reforms? We maintain that EU involvement in national structural reforms is defensible if (1) excessive external or internal imbalances – mainly in current account and fiscal positions – create negative spillovers to other Member States, (2) reforms create positive externalities for productivity growth but possibly also negative ones for the competitiveness of other Member States, (3) they improve the functioning of the Single Market, (4) they prevent regulatory arbitrage (“race to the bottom”), and (5) they promote risk sharing (solidarity).

Proposals for reordering EU economic policies must take into consideration that many policy instruments are already in place, although they may deliver inadequate results (see e.g. Müller et al., 2015).<sup>8</sup> The main tool for encouraging EU and euro area members to carry out structural reforms is the European Semester. To be sure, it tends to prioritize budget consolidation over structural reforms, given binding procedures. After all, the purpose of compensating for the short-term costs of structural reforms is embedded in the Commission's changes to the way it applies the Stability and Growth Pact (“structural reform clause”). Apart from the above-mentioned proposals for positive reform incentives from the EU budget, another idea is to promote reforms through EU budget conditionality, i.e. to tie reflows of structural and cohesion funds to the respect of the rule of law (Halmai, 2018). Unanimity requirements in EU decision making, however, cast doubt on the feasibility of this proposal.

A couple of issues deserve further discussion: First, policies could focus more on citizens' overall socioeconomic well-being through upgrading structural reforms. This would imply a correction of the EU's policy recommendations in which it tended to lean toward budget consolidation and internal devaluation during the euro area crisis. Upgrading reforms include revenue-securing tax coordination, productivity-oriented collective bargaining, skills upgrading, industrial policy promoting research and innovation, effective anti-monopoly policy, as well as strategies fostering decarbonization and inclusiveness and limiting financialization. On a positive note, the current Commission under President Juncker has acknowledged the centrifugal threat stemming from income divergence within the euro area, and consequently changed the structural reform agenda. One result was the Proclamation on the Pillar of Social Rights (Council of the European Union, 2017) that, albeit not binding, has considerably influenced the country-specific recommendations in the latest European Semester.

<sup>7</sup> Additionally, a European Investment Stabilisation Function would complement efforts to absorb large asymmetric macroeconomic shocks in the euro area and its (potential) members, guaranteeing back-to-back loans of up to EUR 30 billion. Such loans would be available to Member States with “sound fiscal and macroeconomic policies”; no explicit reference is made to any structural conditionality.

<sup>8</sup> One could go even further and argue that business-friendly reforms over the last decades led to declining labor shares and rising returns on investment in many OECD countries – without triggering higher investment (Janssen, 2018).



Second, the relationship between macroeconomic imbalances and structural reforms is unclear (Gros, 2016). For instance, is Germany's current account surplus the result of its restrained budget and wage policies, or does it rather result from a structurally determined lack of German demand? While the first explanation entails mere quantitative adjustment, the latter implies a blurred line between demand-side and supply-side issues. The European Commission (2018d, p. 16) recommends both "fiscal and structural policies to support potential growth and domestic demand." How contradictory this strategy is becomes visible when we compare the emphasis to "boost competition in the service sector" (ibid., p. 12) with the statement that "service sector wages are the lowest in the EU relative to manufacturing wages" (ibid., p. 28).

Third, one could ask what the "optimal level of rigidity" of a market economy should be. The optimality of minimal or even zero rigidity implied by EU policy recommendations would require structural convergence to a "one-size-fits-all" model. Of course, the country-specific recommendations in the European Semester do not adhere to such a model, although the EU has advised completely diverse countries to carry out the same type of reforms, e.g. in the service sector, to solve either their supply or demand problem. More essentially, in a managed market economy some "rigidities" are justifiable on economic grounds – creating a level playing field that constitutes markets – and by noneconomic factors: cultural, social, historical, territorial identity traits (e.g. customs and citizens' preferences) which safeguard the public's support for policy measures. In other words, some degree of market imperfection might be well warranted by political economy considerations – conditioning the very existence of the market itself.

Fourth, should the EU apply rather "restrictive" instruments, such as negative sanctions in the Stability and Growth Pact, or rather "positive and enabling incentives," as proposed in the new Reform Support Programme? Insights from modern pedagogy seem to support the European Commission in pursuing the latter approach.

Finally, we would like to briefly touch on the principle of subsidiarity in EU law, according to which political issues should be dealt with at the most local level consistent with their resolution: What is the optimal division of labor between E(M)U institutions and Member States with regard to national reforms? One approach could be that the EU level should be responsible for diagnostics, macro objectives and safeguarding the functioning of EMU, while the Member States should be responsible for implementing their own path toward these objectives. Nevertheless, subsidiarity may even imply centralization of critical tasks and sharing sovereignty beyond loose and slow policy coordination – a concept that is, in fact, reflected in the institutional reform envisaged in the Five Presidents' report to accomplish a genuine EMU.

#### 4 Concluding remarks

There is consensus in the literature that macroeconomic policy effectiveness interacts with structural conditions and vice versa. The latter are vaguely defined as the fundamental institutions and regulations of an economy and society, having evolved over time. There is also widespread agreement that structural reforms, while on balance positive for medium-term growth and employment, may cause short-term costs to society, the economy and the environment. Public acceptance will depend on how governments manage these costs. Governments may either ignore the costs

altogether, compensate the losers, and/or engage in a mix of compensation and proactive policies in order to lessen the negative impacts of reform. Conventional economic policy advice mostly centers on “defensive” structural reforms. In other words, labor market and product market rigidities are considered to be mainly cost factors that influence competitiveness negatively (and hence reforming them away leads to internal devaluation<sup>9</sup>). In contrast, a number of “upgrading” structural reforms, which enable the economy to progress toward the technological frontier, still attract less attention. There are, however, signs of the European Semester procedure moving in this direction.

National preferences (e.g. for more ecology-oriented production and consumption or for publicly provided health care) will determine the “optimal” structural conditions for each country or each region. Not all such preferences are “rigidities” to be reformed away, but rather help create markets and/or safeguard political and social cohesion. Thus, there is no single optimal policy framework across all Member States and societies, but a variety of appropriate sets of policies based on historical, social and cultural diversities. Whether structural reforms may contribute to sustainable and inclusive growth depends on their actual design and timing. While international institutions are prone to recommend comprehensive packages that combine, for instance, carefully sequenced product and labor market reforms with macroeconomic incentives, other policy advisors suggest that merely the most binding constraints to prosperity be fixed (Rodrik, 2016). At the same time, several institutional conditions must exist for market economies to flourish: the rule of law, property rights, effective tax collection and budgeting, regulation of industries, level playing field competition, adequate education, social security, regard for the environment and social cohesion, and freedom of firms entering and leaving the product market.

In line with the subsidiarity principle, we conclude that most of these policies should be implemented at the Member State level, not least to meet diverse national preferences. However, where (negative and positive) spillovers exist, and where the smooth functioning of the Single Market and of Europe’s monetary union is at stake, the initiative for devising appropriate structural reforms should come from the EU and be supported by local consensus building.

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<sup>9</sup> *With regard to the controversial debate about internal devaluation and its extent and conditions, e.g. Wyplosz and Sgherri (2016) show that internal devaluation strategies might have failed in the past, for instance, due to underestimated fiscal and external multipliers.*

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# How did EU Eastern enlargement affect migrant labor supply in Austria?

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*In this paper, we study the employment of workers from Central, Eastern and Southeastern European (CESEE) EU Member States in Austria after the Eastern enlargement of the European Union. To prevent a sudden rush of immigrants into the labor market, Austria opted for a transition period during which immigration remained restricted. We will show that these restrictions had the anticipated effect; while the stock of workers from the new CESEE Member States increased slowly in Austria during the transition period, the trend became markedly steeper after the introduction of free labor market access. Between 2003 and 2016, the stock of workers from CESEE EU Member States in Austria increased fourfold by about 185,000 individuals. The largest immigrant groups are from Hungary, Romania and Poland. A large share of migrant workers are employed in seasonal industries and in border regions closest to their home countries.*

*JEL classification: J61, O52*

*Keywords: EU Eastern enlargement, free movement of labor, Austria*

The impact of the Eastern enlargement of the European Union on the Austrian labor market was already widely discussed before the first Central, Eastern and (later) Southeastern European (CESEE) countries joined the EU in 2004.<sup>2</sup> Substantial wage differentials between East and West and the geographic proximity to the new Member States raised concerns that opening the labor markets could lead to a sudden labor supply shock. To alleviate the shock, Austria and Germany introduced a seven-year transition period with controlled immigration rules. The aim was to divert the anticipated migration flow to other countries that do not share a common border with CESEE EU Member States and to benefit from an economic adjustment process that should reduce the income differential over time. But nevertheless, common estimates predicted that, over a ten-year period, about 200,000 additional workers from new member countries would enter the Austrian labor market (Prettner and Stiglbauer, 2007). In recent years, rising numbers of immigrants from Eastern European countries have returned to public attention.

In particular, their role in explaining historically high unemployment rates has been widely discussed and the topic was debated during the Austrian legislative elections in 2017 (Schnauder, 2017).

In this paper, we study the development of labor supply from CESEE EU Member States in the Austrian labor market, defining labor supply as the stock of employed workers from these countries. Our analysis focuses on two waves of immigration. The first wave consisted of workers from eight countries – the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia (CESEE-8) – that joined the EU in 2004 and gained free access to the Austrian labor market in 2011. In a second wave, Bulgaria and Romania (CESEE-2) joined the EU in 2007 and gained free labor market access in Austria in 2014. Workers from Croatia, which joined the EU in 2013, still have restricted labor market access and can serve as an untreated counterfactual.

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<sup>2</sup> See e.g. Walterskirchen and Dietz (1998), Huber and Brücker (2003).

We are interested in the effect that CESEE countries' EU entry and their citizens' free labor market access has had on the change in the stock of migrant workers in Austria. The *ex ante* prediction was that the number of immigrant workers would gradually increase in the years after EU enlargement due to the controlled entry of mostly high-skilled workers. With full access, workers who had formerly been subject to restrictions might rush into the labor market. To verify these predictions *ex post*, we first examine changes in time trends of immigrant stocks broken down by new member country groups. Second, we explore how the composition of immigrant workers changed following the date of full labor market access.

Austria's geographic proximity to the CESEE EU member countries implies that, in addition to permanent relocation, temporary and circular forms of migration as well as cross-border commuting are attractive options of participating in the Austrian labor market. As a consequence, migrant stocks, representing net measures of mobility, may hide large gross flows. To examine the dynamics of migration behavior, we analyze the duration of employment periods of migrant workers from CESEE EU member countries in Austria.

Our results show, that the early forecasts were relatively precise. Over the period from 2003 to 2016, the stock of employed workers from CESEE EU member countries increased by roughly 185,000, which means it grew by a factor of 4. The patterns of migration over time reveal that the transition period was effective in restricting labor market access. The growth in migrant workers from CESEE member countries accelerated persistently after the labor market opened completely. With free access, we also see a shift in the composition of migrant workers toward lower-qualified and younger groups. Further, we provide evidence that temporary migration is an important phenomenon. A large share of migrant workers are employed in seasonal industries and in border regions closest to their home countries.

This paper is structured as follows: Section 1 introduces the institutional framework and legal regulations governing the mobility of workers before and after the EU's Eastern enlargement. In section 2, we describe the data used for our analysis. Sections 3 to 5 present our empirical results, and section 6 discusses our findings and conclusions.

## 1 EU enlargement and labor market access

In May 2004, eight Central and Eastern European countries (CESEE-8) – the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia – joined the EU. Bulgaria and Romania (CESEE-2) followed in January 2007, and Croatia in July 2013. By entering the EU, the new member countries obtained the right of free movement of goods, capital, workers, establishment and services. However, the national governments of the earlier Member States had the option to restrict labor market access for workers from new member countries during a transition period of up to seven years. The Austrian and German governments opted for this restriction and the maximum transition period. In addition, the free movement of services involving the posting of workers was restricted for a limited number of sectors.<sup>3</sup> The right to establish a business and thus to work in a self-employed capacity was not affected by these restrictions.

<sup>3</sup> [http://europa.eu/rapid/press-release\\_MEMO-11-259\\_en.htm](http://europa.eu/rapid/press-release_MEMO-11-259_en.htm) (last access: April 2018).



Before EU accession, citizens from the CESEE EU Member States could take up employment in Austria if they obtained a work permit for which the prospective employer had to apply. Permits were granted if the Public Employment Service confirmed that no equally qualified Austrian worker was available. Simplified application procedures were in place for highly qualified workers (“key workers”), skilled workers in certain occupations, qualified health care personnel, individuals graduating from Austrian institutions of higher education, and seasonal workers in tourism and agriculture.<sup>4</sup> During the transition period, the Austrian labor market was gradually opened for highly qualified workers.<sup>5</sup> Work permits were still required for low-skilled workers, but individuals from new member countries were given priority over workers from non-EU countries.<sup>6</sup>

With the end of the transition periods in May 2011 and January 2014, individuals from the CESEE-8 and CESEE-2 countries, respectively, gained unrestricted access to the Austrian labor market in line with the fundamental principle of free movement of workers in the EU. Based on this principle, any EU citizen is entitled to look for a job in Austria (or any other EU country), work and reside there without a work permit, stay there after employment has finished, and enjoy equal treatment with nationals in access to employment, working conditions and all other social and tax advantages.<sup>7</sup>

## 2 Data

Our empirical analysis is based on Austrian social security data, which covers private sector employment, that is workers who pay contributions to the social security system in Austria (Zweimüller et al., 2009). Self-employed persons and workers posted in Austria on a temporary basis by an employer from another EU Member State are not included in the data. The data provide information on employment periods, earnings and various characteristics of the workers and their jobs. We have information on employers (industry affiliation, location and workforce composition) and on individual demographic characteristics such as date of birth, gender and citizenship.

From the raw data, we construct a quarterly panel at the individual worker level that spans the period from January 2003 to July 2017. We define a worker as employed in a specific quarter if the individual holds a blue- or white-collar job for more than 20 days in this period.

Our measure of the stock of workers from CESEE EU Member States is thus the sum of employed workers per quarter. Note that our measure does not allow us to distinguish between workers who reside in Austria and cross-country commuters, as we only observe the place of work but not the place of residence. Furthermore, we can only consider migrants from CESEE EU Member States who are employed in Austria with a regular private sector contract. We do not observe migrants who reside in Austria and do not work, are self-employed or work in the black market. We argue that from a labor market perspective, this is the most relevant population.

<sup>4</sup> <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10008365> (last access: April 2018).

<sup>5</sup> [http://www.ams.at/\\_docs/001\\_Fachkraefte-Zulassungen\\_08.pdf](http://www.ams.at/_docs/001_Fachkraefte-Zulassungen_08.pdf) (last access: April 2018), <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005577> (last access: April 2018).

<sup>6</sup> <http://ec.europa.eu/social/main.jsp?catId=466&langId=en> (last access: April 2018).

<sup>7</sup> <http://ec.europa.eu/social/main.jsp?catId=457&langId=en> (last access: April 2018).



### 3 Employees from CESEE EU Member States over time

Chart 1 shows the quarterly stock of migrants from CESEE-8 and CESEE-2 countries as well as Croatia over time: before these countries' EU accession, during the transition period set by Austria, and after free labor market access was established.

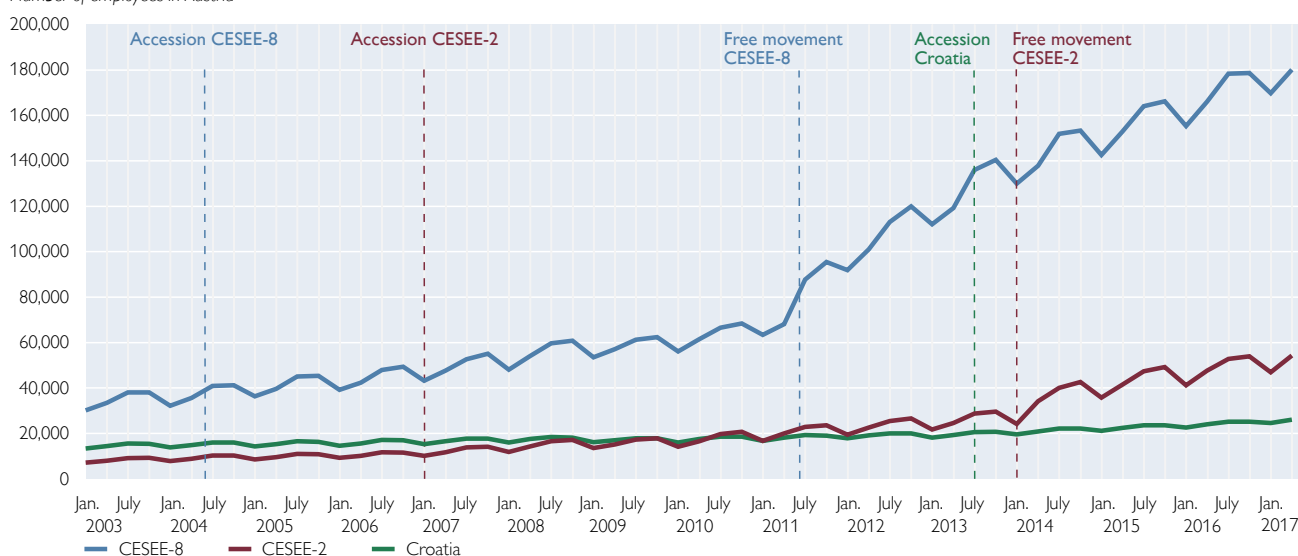
The stock of migrant workers from CESEE-8 countries grew moderately before these countries' EU accession and during the Austrian transition period, but with free labor market access the trend changed markedly. Still, contrary to some predictions, we do not see a sudden rush in immigration that would have resulted in an upward jump in stocks. But growth in the stock of migrants picked up persistently, and has only been flattening out, if at all, in the most recent years. The end of the transition period for the CESEE-8 countries occurred close to the end of the Great Recession; thus, the patterns we observe might also reflect the post-recession recovery of the Austrian labor market. It is therefore interesting to compare the CESEE-8 with the CESEE-2 countries, for which free labor market access was delayed until 2014. Interestingly, the pattern is very similar. Growth in the stock of migrant workers in Austria from Bulgaria and Romania does not change much between the pre- and post-accession period, but it strongly increases with free labor market access. Croatia, on the other hand, shows stable growth throughout the whole period. It should be borne in mind, however, that labor market access is still restricted for Croatian workers. The average annual employment of workers from all CESEE EU Member States increased fourfold from 61,610 in 2003 to 246,789 in 2016. By 2016, this figure represented 8% of employment in Austria and 34% of employment among non-Austrian citizens. By then, Hungarians were the largest immigration group from the CESEE EU Member States, followed by Romanians and Poles.

We thus conclude that the transition period achieved the goal of controlling the arrival of workers from CESEE EU Member States. Furthermore, we find that

Chart 1

#### Number of employees in Austria from CESEE-8 and CESEE-2 countries and Croatia, 2003–2017

Number of employees in Austria



Source: Austrian social security data. Authors' own illustration.

the later free labor market access had a significant impact on their inflow into the regular labor market of workers registered with the social security system.

#### 4 How did free labor market access change the composition of the migrant workforce?

During the transition period, labor market access was not equally restrictive for all workers from the CESEE EU Member States. In the phase of controlled entry, authorities granting work permits gave priority to workers with high qualifications. This implies that the composition of migrant workers should have changed with free labor market access, as more low-qualified workers were allowed to enter the Austrian labor market.

Table 1

#### Descriptive characteristics of CESEE-8 and Austrian employees, before and after free movement of labor

	CESEE-8 employees			Austrian employees		
	2008–2011	2011–2014	Difference	2008–2011	2011–2014	Difference
<b>I Demographics &amp; job characteristics</b>						
	%: age in years					
Women	38.3	38.1	–0.2	47.0	47.5	0.6
Age in years	39.16	38.14	–1.03	39.33	40.15	0.83
Blue-collar workers	73.8	77.6	3.8	36.7	35.0	–1.7
Employment during three-year time period	72.3	67.6	–4.7	87.5	88.0	0.5
<b>II Real daily earnings</b>						
	EUR (year 2000 prices)					
Mean	56.64	52.88	–3.76	71.19	71.32	0.13
10 <sup>th</sup> percentile	27.58	24.95	–2.63	30.92	30.80	–0.12
50 <sup>th</sup> percentile	54.02	50.57	–3.45	67.23	67.43	0.20
90 <sup>th</sup> percentile	87.69	80.13	–7.55	124.67	124.77	0.10
<b>III Industry</b>						
	Share of employees in %					
Agriculture & mining	7.4	4.9	–2.5	0.6	0.6	–0.0
Manufacturing	15.3	13.9	–1.4	19.7	19.6	–0.1
Construction	13.3	13.5	0.2	7.1	6.8	–0.3
Trade	12.5	12.2	–0.3	16.9	16.8	–0.1
Hotels & restaurants	18.8	21.4	2.6	4.5	4.3	–0.2
Transport	5.1	5.5	0.3	4.9	4.7	–0.2
Services	27.6	28.7	1.1	46.3	47.2	0.8
<b>IV Average firm characteristics</b>						
Firm age in years	16.37	16.01	–0.35	20.93	22.43	1.50
Firm younger than three years, %	16.8	17.7	0.9	10.1	8.2	–1.9
Number of blue- and white-collar workers at firm	583	472	–111	1,047	1,104	57
Non-Austrian workers at firm, %	45.0	51.2	6.1	13.9	15.0	1.2
Workers with same nationality at firm, %	24.2	26.9	2.6	84.3	83.7	–0.7
Non-Austrian workers with same nationality at firm, %	42.8	43.6	0.8	.	.	.
Mean monthly real earnings at firm (EUR, year 2000 prices)	1,532.10	1,464.39	–67.71	1,811.71	1,809.12	–2.59
Median monthly real earnings at firm (EUR, year 2000 prices)	1,490.38	1,420.36	–70.03	1,776.77	1,775.25	–1.52
<b>V Location</b>						
	Share of employees in %					
Vienna	28.7	29.3	0.6	27.7	28.2	0.5
Eastern Austria	32.9	30.1	–2.8	18.7	18.4	–0.4
Southern Austria	18.1	18.0	–0.2	20.2	20.2	–0.0
Western Austria	20.3	22.6	2.3	33.3	33.3	–0.0
<b>Mean number of workers</b>	61,556	115,403	53,847	2,264,319	2,326,263	61,944

Source: Authors' compilation. The statistics refer to the mean of the corresponding variable over all quarters in the three years before/after May 1, 2011. Manufacturing comprises the NACE 08 rev. 2 sections D–E; services comprise sections J–U.

To provide a more detailed picture of compositional shifts among migrant workers and to compare them with the Austrian workforce, table 1 reports average worker characteristics in the three years before and after May 2011 for CESEE-8 workers in the left columns and Austrian workers on the right. Comparing CESEE-8 workers in the period before and after they obtained free labor market access, panels I and II confirm that their composition changed toward lower qualified workers with free access to the Austrian labor market. After May 2011, the average CESEE-8 worker was one year younger, four percentage points more likely to work in a blue-collar occupation and earned EUR 4 less per day than before. This drop in labor earnings is especially pronounced in the upper part of the wage distribution.

In contrast, the composition of Austrian blue- and white-collar workers remained stable over the same time period. Compared to CESEE-8 workers, there are more women in the native Austrian workforce and the proportion of blue-collar employees is only half as large. Wages are higher both on average and at different points of the wage distributions.

In panel I of table 1, we also report the average share of days each worker was employed during the three-year periods before and after May 1, 2011. This measure gives us an indication about how permanently CESEE-8 migrant workers are employed in the Austrian labor market as compared to Austrian citizens. We can see that native workers are more strongly connected to the labor market. On average, they are employed on about 88% of the days in each three-year period, which is about one-fifth more than CESEE-8 migrants. This suggests that a substantial part of migrants come to Austria on a temporary basis. In addition, we observe that, for CESEE-8 migrants, the average share of days employed during the total three-year-period drops from roughly 72% to 68% between the pre- and the post-2011 period, which suggests that temporary migration becomes more prevalent with free labor market access.

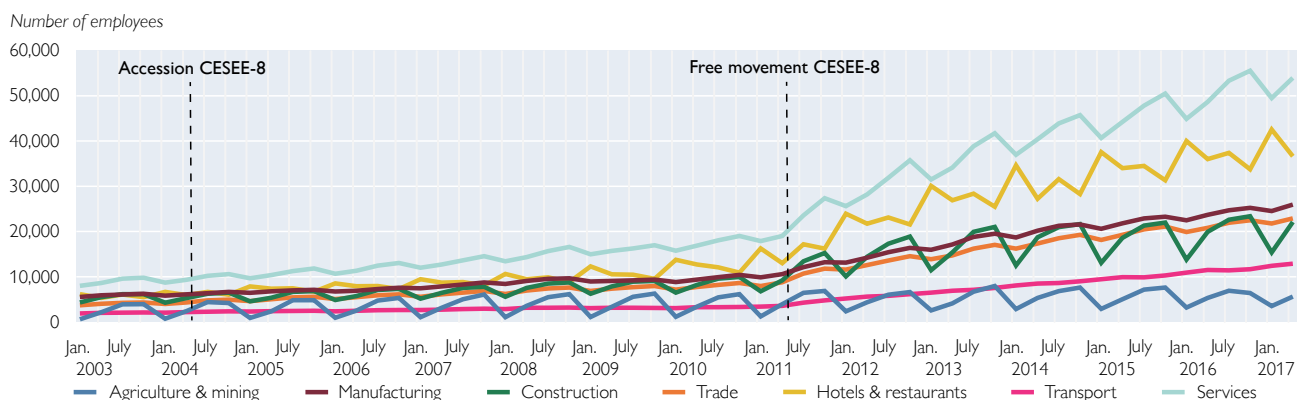
## **5 Distribution of CESEE EU employees across industries, firms and locations**

The distribution of workers across industries, reported in panel III of table 1, also differs between workers with Austrian citizenship and CESEE-8 workers. Migrants are far more likely to be employed in seasonal sectors, such as agriculture, construction and particularly tourism (hotels and restaurants) than Austrian nationals. On the other hand, they are underrepresented in manufacturing, trade and services. The largest share of both the Austrian and the CESEE-8 migrant population work in the service sector. But note that roughly 25% of the CESEE-8 migrants in the service sector are employed either by temporary employment agencies or in janitorial services. Table 1 also shows that the sectoral concentration among CESEE-8 immigrant workers in Austria slightly increased with free labor market access as the shares of those working in tourism and services have increased, while the shares of those working in manufacturing and agriculture have declined.

Chart 2 presents the quarterly time profiles of CESEE-8 employment broken down by industry groups. We see that with free labor market access, the employment of CESEE-8 migrants in Austria accelerated in all industries except agriculture. Chart 2 further illustrates how employment levels vary substantially over the course of the calendar year, for all industries except for manufacturing, trade and

Chart 2

### Number of employees in Austria from CESEE-8 countries by industry, 2003–2017



Source: Austrian social security data for January 2003 to July 2017. Authors' own illustration. Manufacturing: NACE 08 rev. 2 sections D-E; services: sections J-U.

transport. This is driven by seasonal demand fluctuations for labor in different sectors: employment in hotels and restaurants peaks in the first quarter of each year and shows a second, smaller peak in the third quarter, reflecting winter and summer seasons in tourism. In contrast, labor demand in agriculture, construction and services is relatively low in the first quarter of each year and then increases over the course of the year. The high share of CESEE-8 migrants employed in seasonal industries again suggests the importance of temporary or seasonal migration patterns, where immigrants work in Austria during the season and return to their home countries during the off-season.

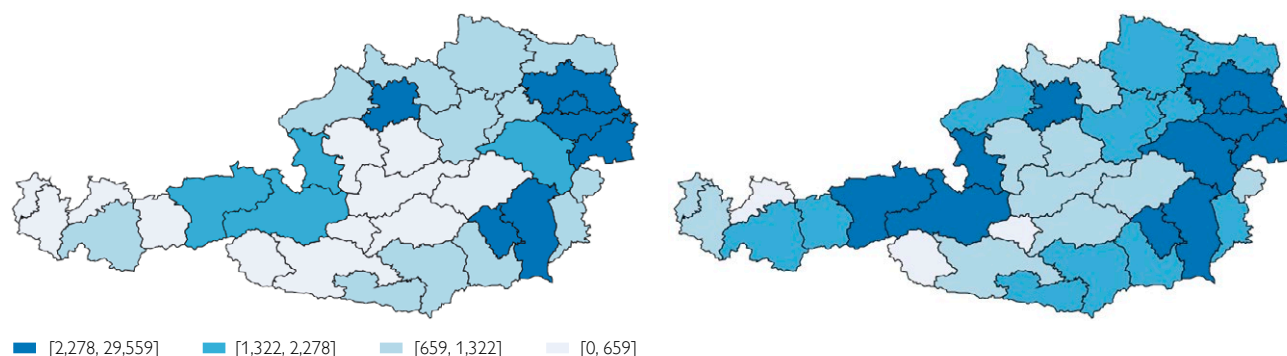
The employment patterns of Austrian and CESEE-8 workers not only differ in terms of industries but also in terms of firm types. This is shown in panel IV of table 1. Migrant workers are employed in smaller and younger firms, which pay lower wages to their average workers. There is also evidence of concentration of CESEE-8 migrants in certain firms. While Austrian employees worked at establishments that had, on average, 14% non-Austrian employees, the establishments where CESEE-8 were employed, had a share of 45% foreign workers before May 2011 and an even higher share of 51% thereafter. Likewise, the percentage of coworkers that share the same migrant nationality has increased over time. This indicates strong firm-level clustering of immigrant workers by nationality.

Last, we examine the regional distribution of migrant workers from CESEE EU member countries in Austria. Panel V of table 1 shows that CESEE-8 migrants are more likely to work in Vienna or the east of the country than in other parts. This makes sense given geographic proximity. However, we also see that, with free labor market access, a shift of CESEE-8 workers from east to west occurred, which is consistent with the rising share of workers in the tourism sector. Chart 3 plots the regional distribution of CESEE-8 migrants before and after May 2011 at the finer level of NUTS 3 regions. Darker areas on the Austrian map indicate a higher concentration of migrants. The chart shows how the concentration of CESEE-8 immigrants has increased along Austria's border with CESEE EU Member States. In addition, the number of immigrants has increased in the western tourism regions of the country. Throughout the entire period under review, the concentration of CESEE-8 workers was highest in the economically successful urban regions around Vienna, Linz and Graz.

### Number of employees in Austria from CESEE-8 countries by NUTS 3 region

Before May 2011

After May 2011



Source: Austrian social security data. Authors' own illustration.

Note: These maps illustrate the mean number of employees from CESEE-8 countries in the five years before and after May 1, 2011, the date at which free movement of workers was established, across NUTS 3 regions. The cutoffs for the categories are the 25<sup>th</sup> (659), 50<sup>th</sup> (1,322) and 75<sup>th</sup> percentile (2,278) of the mean number of employees across NUTS 3 regions and time periods

A more detailed analysis of the regional distribution of workers by their country of origin indicates that workers from the four CESEE-8 neighbor countries – the Czech Republic in the northeast, Slovakia and Hungary in the east and Slovenia in the south – are concentrated in the regions in Austria with which these countries share a border. This suggests that many workers commute from these countries to work in Austria. Huber and Böhs (2012) support this assumption and show that a large share of CESEE-8 workers who entered new jobs in Austrian districts close to the border in the year following free labor market access were commuters.<sup>8</sup>

## 6 Conclusions

In this article, we examine how the accession of Central, Eastern and Southeastern European Member States to the European Union changed the labor supply of immigrant workers from these countries in Austria. The Austrian labor market was not fully opened directly after these countries' accession; the government decided on a seven-year transition period during which immigration was controlled. We show that free labor market access significantly changed the trends in the stock of migrant workers from CESEE EU member countries in Austria. With the end of the transition period, the growth in migrant stocks accelerated persistently. This phenomenon is consistently observed for two rounds of EU enlargement, during which eight new Member States were admitted in 2004 and two in 2007. We also observe that, with the increased inflow of immigrants, the composition of workers from CESEE EU Member States changed toward lower-qualified and younger individuals, who have less stable employment careers.

Workers from CESEE EU Member States are highly concentrated in seasonal industries and many of them work in the border regions closest to their home countries. This suggests that a high share of these workers are cross-country commuters or stay in Austria only temporarily.

<sup>8</sup> The share of commuters among CESEE-8 migrants who came to work in Austria for the first time in the period from May 2011 to May 2012 was 91% in Burgenland, 65% in Styria, 43% in Upper Austria, 38% in Vienna, 12% in Lower Austria and 9% in Carinthia (Huber and Böhs, 2012).

While our study only documents the development of migrant labor supply in Austria, further interesting questions would be (1) the impact of opening access to the Austrian labor market for the CESEE EU Member States on Austrian workers' wages and employment, (2) the impact of immigrants on the social security system, and (3) the effect of immigration induced by the EU's Eastern enlargement on macro-aggregates, as measured by economic growth and the unemployment rate.

Up to now, there is no consensus among economists on the impact of immigrants on domestic populations' labor market outcomes. For Austria, Huber and Böhs (2012) review studies of immigration during the 1990s, finding moderate effects on Austrian citizens' employment and wages. Huber and Böhs (2012) also descriptively show that CESEE-8 workers who entered the labor market soon after May 2011 had a small impact on Austrians' labor market prospects. Regarding the fiscal impact, Dustmann et al. (2010) and Dustmann and Frattini (2014) show that, after 2004, CESEE-8 immigrants in the U.K. were less likely to receive state benefits and to live in social housing than comparable U.K. citizens. Regardless, these immigrants made a strong, positive contribution to the public finances thanks to higher labor force participation.

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# Demographic decline does not necessarily condemn CESEE EU countries to a low growth future

Richard Grieveson<sup>1</sup>

*Labor markets in many EU countries in Central, Eastern and Southeastern Europe (CESEE EU) are increasingly tight, reflecting strong growth, emigration and demographic decline. This situation will only get worse in the coming years, and represents an increasingly significant challenge to economic growth.*

*Immigration from Ukraine is a partial short-term fix, but not a long-term solution. Significant returns of workers to the region after Brexit seem to be unlikely. For political reasons, large-scale immigration from outside Europe is impossible to imagine. As a result, there is a risk that – faced by persistent labor shortages and higher wage demands – firms will move production away from the region, and that the CESEE EU countries will be condemned to a low growth future.*

*However, this is not inevitable. First, there are big incentives for capital owners to keep production in CESEE EU countries despite strong wage increases, including proximity to Western markets and the quality of governance, institutions and infrastructure relative to other European or nearby emerging economies. Second, recent rises in productivity, and moves toward automation, indicate a possible long-term solution to demographic challenges.*

JEL classification: E24, J11, J21, J23, J24, J31, J61, O30, O40

Keywords: demographics, productivity, automation, labor markets, migration

Labor market tightness has been evident in CESEE EU countries for some time, but has grown increasingly acute in certain countries and sectors in the last few years. Firms are struggling to fill open positions, and with demographic trends only likely to deteriorate from here, there are fears that the region is condemned to a low or zero growth future.

This article addresses this topic in six parts. Section 1 will look at the increases of labor market tightness in the region in the past decade and at the underlying reasons. Section 2 will look at three factors that could help to relieve labor shortages in CESEE EU countries in the near term. Section 3 will examine whether these solutions are likely to prove durable. Section 4 will address the problems that labor shortages imply for medium and long-term growth. Section 5 will look at more lasting solutions to demographic challenges. Section 6 concludes.

## 1 Labor markets have become tighter in CESEE EU countries

Reports of labor shortages in CESEE EU countries are not new, but labor markets in most CESEE EU countries have become much tighter recently. One very visible indicator of this is the vacancy rate compiled by Eurostat (chart 1). Seven of the ten CESEE EU countries recorded increases between Q4 2008 and Q4 2017.

There are three reasons why labor markets in CESEE EU countries have tightened. First, the strength of economic growth in the region, which is increasing demand for labor. Aggregate real GDP growth for CESEE EU countries reached 4.7% in 2017 according to wiiw data, easily the highest level since 2007. This has

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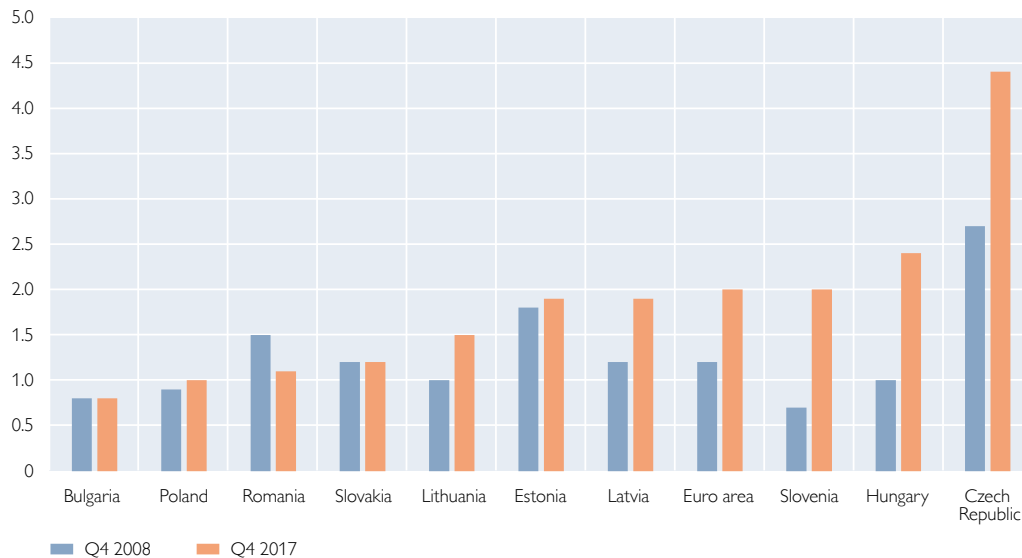
had a clear impact on labor demand. Unemployment rates have fallen considerably everywhere (chart 2).

The second factor causing a tightening of labor markets is outward migration. Summing up the five years to 2016 (latest available data), six countries in the

Chart 1

### Job vacancy data for industry, construction and services

Vacancies in % of all occupied and vacant jobs

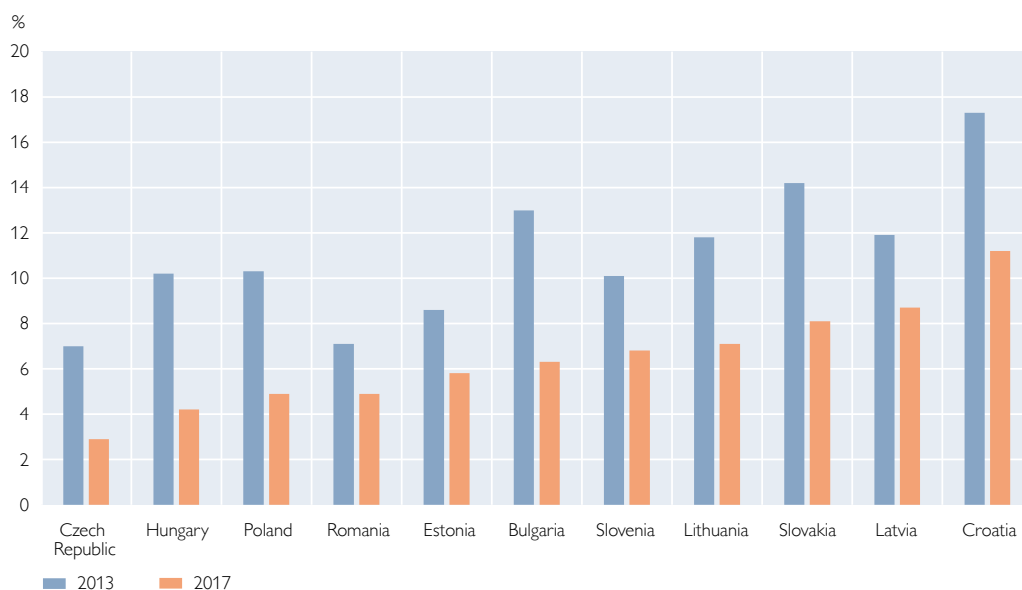


Source: Eurostat, wiw.

Note: The data for services exclude services of households as employers and extra-territorial organizations and bodies. Croatia is excluded as no data were available for 2008.

Chart 2

### Unemployment rate

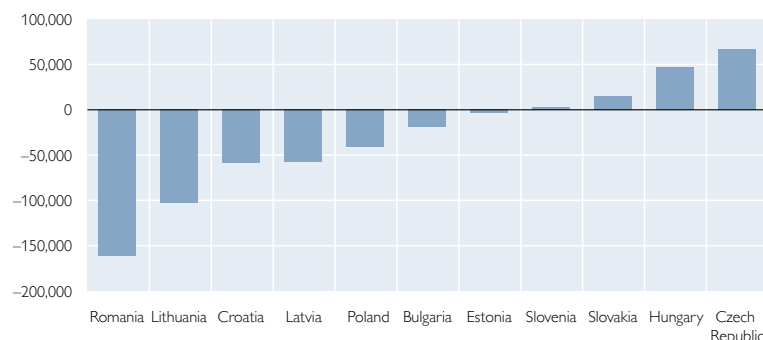


Source: wiw, national statistics offices.

Chart 3

## Net migration

Sum of flows 2012–2016



Source: Eurostat, wiiw.

CESEE area saw net outward migration according to Eurostat: Romania, Lithuania, Croatia, Latvia, Poland and Bulgaria. Estonia and Slovenia recorded negligible net inflows (chart 3). Only Slovakia, Hungary and the Czech Republic saw net inflows of more than 4,000 people. In 2016, net outward migration from the ten CESEE EU countries reached almost 97,000, the highest figure since 2010.

Third, and linked to the second point, is the decline in the share of the working-age population in CESEE EU countries. Between 2008 and 2017, the

dependency ratio (people aged under 15 and over 65 as a share of the population aged 15–65, Eurostat data) rose by 11.8 percentage points in the Czech Republic, 8.7 percentage points in Latvia, 8.6 percentage points in Bulgaria, 7.8 percentage points in Slovenia, and 7.5 percentage points in Estonia – which is likely to have contributed to a reduction in available labor in the domestic economy.

## 2 Three possible solutions

There are three factors that could help relieve labor shortages in CESEE EU countries in the near term.

First, immigration from other parts of Central, Eastern and Southeastern Europe, and especially Ukraine. Ukrainian immigration into CESEE EU countries has risen notably in the last few years. For 2017, the UN estimates that there were

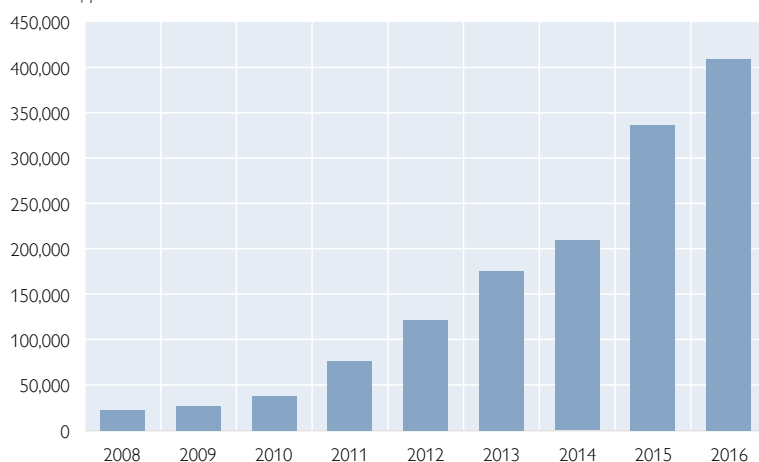
over 200,000 Ukrainian migrants in Poland, 130,000 in the Czech Republic, and 50,000 in Hungary. However, these data likely significantly underestimate the true figure. Unofficial estimates and expert assessments indicate that the real number of Ukrainians just in Poland could be 1.5 million (Mara, 2018).

The second possible source of relief for tighter labor markets in CESEE EU countries is the return of workers from Western Europe, for example owing to Brexit. There are some signs that people are leaving the U.K. as a result of Brexit. In the year to September 2017 (which essentially covers the first full year after the Brexit vote), outward migration of CESEE-10 nationals<sup>2</sup> from the U.K. was 59,000 (in the year to

Chart 4

## Residence permits granted to Ukrainians in Poland

Number of permits



Source: Eurostat, wiiw.

<sup>2</sup> CESEE-10 = CESEE EU countries excluding Croatia.

June 2016, essentially the year leading up to the Brexit vote, the equivalent figure was 40,000).<sup>3</sup>

A third option for CESEE EU countries to address labor shortages is to attract migrants from other parts of the world. Given the divergence in demographic patterns between CESEE EU countries and regions such as Africa and the Middle East, on one level this makes sense (Mara, 2016). High migration flows toward Europe in recent years suggest that there is a large supply of willing workers.

### 3 None of these are lasting solutions

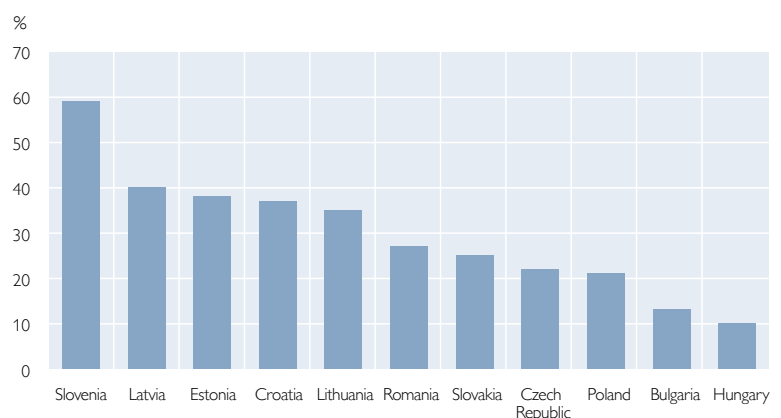
On their own, Ukrainian immigrants will not be decisive in addressing labor shortages in CESEE EU countries in the medium and long term. Even at the moment, it is not clear whether Ukrainian workers are able to fill the gaps in sectors requiring higher skills in particular. According to Podkaminer (2018), Polish demand for foreign workers, and specifically for Ukrainians, far outstrips supply. Ukrainian demographics are probably even worse than those for CESEE EU countries, reflecting even lower life expectancy. As a result, the pool of available Ukrainian labor will fall (and so a decline in Ukrainian immigration in CESEE is likely over the long run). Between 2015 and 2030, the UN expects a decline in the Ukrainian working age population of 14%, higher than all but four EU countries in the region.

Brexit, or a more general return of migrants from the EU-15 to CESEE EU countries is also unlikely to help significantly to alleviate labor shortages in CESEE EU countries. Net immigration to the U.K. from the CESEE-10 in the year to September 2017 was still clearly positive at 46,000 (albeit down from 104,000 in the year to June 2016). Moreover, it may well be the case that workers who otherwise might have gone to the U.K. will just go to other wealthier countries such as Germany, where labor shortages are also visible. Despite growth in earnings, the gap between the big Western European labor markets and the labor markets of most CESEE EU countries remains vast. Adjusted for local costs, only Slovenia has a wage level above 60% of that of Austria.

Finally, the idea that large-scale immigration from the Middle East and Africa can offset labor shortages in CESEE is politically not very realistic. Opposition to non-European immigration in many parts of CESEE is very high. One example is a recent Eurobarometer survey (chart 5), which showed that citizens in CESEE EU countries are not very comfortable with immigration. In a separate survey by Chatham House in 2017, 71% of Poles

Chart 5

#### Share of population “totally comfortable” having an immigrant as a friend



Source: Eurobarometer, wiiw.

Note: Information as provided in the most recent Eurobarometer at the time of writing, published April 2018.

<sup>3</sup> Data from the U.K. Office for National Statistics.

and 64% of Hungarians agreed that “all further migration from mainly Muslim countries should be stopped.”<sup>4</sup>

#### 4 Why is this such a problem for growth?

Vacancy rates for some countries point to substantial unmet labor demand, but it is not clear whether on a net basis labor shortages are currently harming growth. wiiw hypothesized in late 2016, for example, that at least in the short run labor shortages were driving growth (Astrov, 2016), by helping (along with increases in the minimum wage) to push up real earnings and by forcing firms to improve productivity (see section 5 below).

However, it is undeniable that labor shortages, combined with negative long-term demographic trends, represent a clear and significant risk to these countries’ medium and long-term growth prospects (Fotakis and Peschner, 2015). There are two basic reasons why this is the case.

First, the labor contribution to growth will fall in the future, particularly as the working age population (i.e. the active and the inactive population) is set to decline faster than the population as a whole. The decline in the working age population implies a decline in the active population (i.e. those employed or unemployed but seeking work) (Stehrer, 2018). While this could be offset by a higher participation rate, this is not a lasting solution. Assuming employment growth at 0.5% annually from 2016 (a very cautious assumption in the recent context), and using European Commission baseline demographic projections (according to which the EU countries will reach a participation rate of 75% by 2020), labor demand will exceed the active population by 2023 in CESEE EU countries.

Second, faced with a shortage of workers and higher wage demands from those they can find, there is a clear risk that firms will move production away from the region. This would be very negative for the region’s economies. Many CESEE EU countries have benefited a lot from FDI into the tradeable sector. Building of export capacity, moving up the value chain, and raising productivity has translated into higher living standards. Judging from data for 2016 (or latest), countries in the EU, and especially the Visegrád countries, have tended to both receive a larger amount of FDI into the manufacturing sector (relative to GDP), and for merchandise exports to then represent a higher share of GDP than in the rest of CESEE. As chart 6 shows, unsurprisingly, the relationship between inward FDI stock in the manufacturing sector and merchandise exports as a share of GDP holds across most of the region.

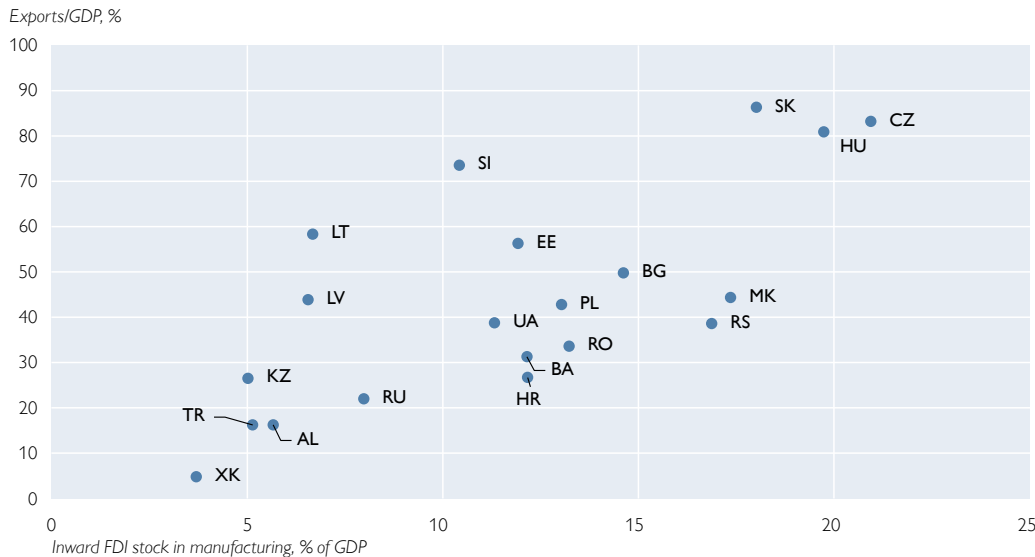
Now, with labor shortages and rising wages, the Visegrád countries could be vulnerable to foreign firms moving production further east. However, we are not convinced about how significant this danger to CESEE EU countries is, for three main reasons.

First, the quality of institutions in CESEE EU countries is markedly different from institutional quality in other parts of CESEE. We looked at the four relevant World Bank governance indicators for institutional quality: government effectiveness, regulatory quality, rule of law and control of corruption. We averaged for the following country groups: the Baltics, Visegrád plus Slovenia, the more recent EU joiners (Bulgaria, Croatia, Romania), and the 10 non-EU CESEE countries

<sup>4</sup> <https://www.chathamhouse.org/expert/comment/what-do-europeans-think-about-muslim-immigration>.

Chart 6

### Relationship between trade openness and inward FDI stock in manufacturing



Source: Eurostat, national central banks, national statistics offices, wiiw.

Note: Based on data for 2017 or latest available year.

covered by wiiw. As can be seen in chart 7, there is a clear hierarchy for each indicator: the Baltics perform best, followed by the Visegrád states and Slovenia. There is then a large gap to the more recent EU joiners, and a further significant gap to the non-EU CESEE countries.

A second advantage of the CESEE EU members is that their infrastructure is generally much better than in other nearby emerging economies. This matters a lot to foreign investors in manufacturing, who need to move goods quickly and reliably, and particularly in the age of complex cross-border supply chains and “just in time” manufacturing. Using the World Bank’s Logistics Performance Index (LPI), we ranked the countries in CESEE. The LPI is measured on a range of 1–5, and includes six categories: efficiency of customs and border clearance, quality of trade and transport infrastructure, ease of arranging competitively priced shipments, competence and quality of logistics services, ability to track and trace consignments, and the frequency with which shipments reach consignees within scheduled or expected delivery times. The EU countries clearly perform better

Chart 7

### World Bank governance indicators for institutional quality



Source: World Bank, wiiw.

Note: Indicators range from approximately -2.5 (weak) to 2.5 (strong) governance performance; the data are for 2016.

than their non-EU counterparts in the region (with Turkey being an interesting exception), among which the Visegrád countries, Slovenia and the Baltics generally performed best.

A third advantage is simply proximity to big Western markets. As a proxy for this, we looked at distances in kilometers between the capital cities of countries in CESEE and Berlin. Here the relationship is also fairly clear: countries closer to Germany tend to have a higher share of inward FDI into manufacturing as a share of GDP.

## 5 More lasting solutions to demographic challenges

It is an inescapable truth that demographic trends in the region are negative, and that they represent a very significant challenge for economic growth over the medium term (not to mention currently in some places). However, these demographic trends do not automatically condemn the region to a low/zero growth future, and there are even reasons to expect per capita income convergence with Western Europe over the medium and long term.

### 5.1 Higher productivity

The most important dynamic that can drive further per capita income convergence, even in the context of the challenges described above, is higher productivity. With the “productivity dividend” – the reallocation of human resources from agriculture to higher productivity manufacturing services – largely exhausted in CESEE EU countries, this will require a greater focus on knowledge-intensive, higher value added economic activities, based on capital deepening, innovation, better organization and management techniques, and more investment in education and skills (Fotakis and Peschner, 2015). We have already seen notable increases in the educational level of the workforce in CESEE EU countries in recent years (Holzner, 2017). However, in general these are areas where CESEE EU countries still have considerable scope for improvements versus Western Europe. Moreover, the need to pay higher wages – combined with significant reasons not to move production away, as outlined above – can act as a powerful incentive for firms to invest in improving productivity. This is something that is already happening in the region and offers an interesting insight into how the situation could develop in the future.

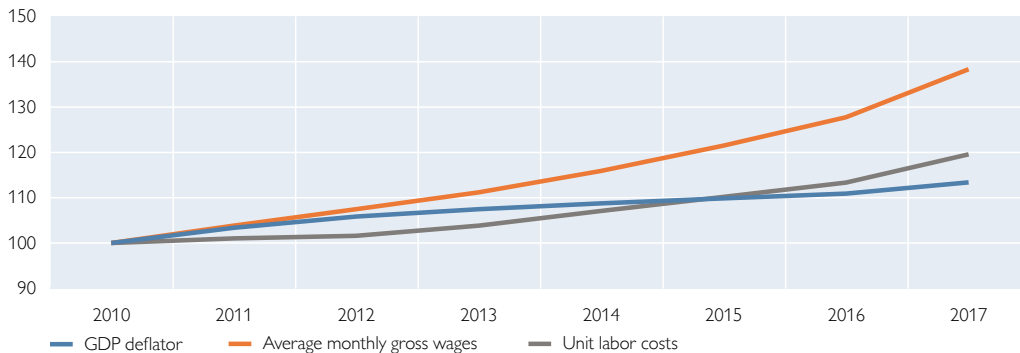
Since 2010, productivity growth in CESEE EU has been fairly subdued. Nevertheless, an improvement in productivity across the region has been evident. One way to measure this is via the relationship between wages, unit labor costs and inflation. Wages themselves have risen very quickly since 2010 (Astrov et al., 2018). For an unweighted average of CESEE EU countries, the increase in 2010–2017 was 38% (chart 8). Yet over the same period, unit labor costs rose by less than 20%, just over half of the wage increase, indicating some improvements in productivity. As a result, the GDP deflator rose by just 13% over the period – barely a third of the rise in wages. In all countries except two, wages rose by at least 10 percentage points more than unit labor costs between 2010 and 2017.

Moreover, there is little sign that this is harming external competitiveness (in fact the opposite appears to be the case). In general, current accounts in the region moved from deficit in 2010–2012 to surpluses in 2017. Along with increases in productivity, we also observe improvements in non-price competitiveness, notably improvements in quality of products (Astrov, 2016), as well as in some cases help

Chart 8

## Productivity indicators

Unweighted average of CESEE EU countries (2010 = 100)



Source: Eurostat, wiiw.

from weaker exchange rates. In fact, wiiw research shows that wages in manufacturing – the sector most exposed to international competition – have grown considerably faster than for the economy as a whole since 2011 across CESEE EU countries (Astrov, 2018).

## 5.2 The central role of automation

These improvements in productivity imply an important role for robotics and automation in CESEE EU countries. There are reasons to think that this will accelerate further in the region in the future. This is particularly the case given that the sectors where CESEE EU countries have tended to specialize – manufacturing, and specifically automotives – are set to move toward automation particularly quickly (although this does of course not apply to all sectors in the region). A recent OECD study found that along with agriculture, manufacturing was the industry most exposed to automation (Nedelkoska and Quintini, 2018). According to IFR World Robotics, across the global economy, industrial robots are used more heavily in the automotive sector than in any other industry. This is a sector where CESEE EU countries, and especially the Visegrád countries and Romania, specialize.

The CESEE EU region, along with Southern Europe, has a higher share of jobs at “high risk” of automation than the OECD average (Nedelkoska and Quintini, 2018), but this risk may actually be an advantage in the context of demographic decline and labor shortages. According to the OECD study, the median worker in Slovakia has a 62% chance of being automated, with Lithuania being the runner-up (57%) and the OECD aggregate totaling 48%.

Recent trends in robotics appear to confirm indications from the productivity improvements noted above, in suggesting that automation is proceeding at quite a rapid pace in CESEE EU countries. Shipments of multipurpose industrial robots to Central and Eastern Europe rose by 28% in 2017 according to IFR World Robotics,<sup>5</sup>

<sup>5</sup> [https://ifr.org/downloads/press/Executive\\_Summary\\_WR\\_2017\\_Industrial\\_Robots.pdf](https://ifr.org/downloads/press/Executive_Summary_WR_2017_Industrial_Robots.pdf).



compared with 9% for Europe as a whole and 5% for Germany.<sup>6</sup> IFR World Robotics expects a compound annual growth rate of multipurpose industrial robot shipments of 21% in 2018–2020 for CESEE EU countries, compared with 11% for Europe as a whole.

## 6 Conclusions

The scale of demographic decline likely in CESEE EU countries in the coming decades represents an enormous challenge to growth. Yet as this article has argued, the idea that this automatically means an end to per capita income convergence with Western Europe is without foundation. Higher productivity via automation represents the most obvious and viable solution, and recent gains in this regard are highly encouraging. Moreover, particularly for the Visegrád countries and Romania, the region's industrial structure actually makes automation more likely than is the case for most economies. In order to ensure that capital owners make productivity-enhancing investments rather than moving production out of the region, policy-makers should do their utmost to provide high-quality infrastructure, governance and institutions, to ensure that the CESEE EU countries retain their advantage in this regard versus potential competitors.

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<sup>6</sup> Base effects play a role here, at least in relation to Germany. IFR World Robotics estimates annual shipments of multipurpose industrial robots to Central and Eastern Europe at around 12,000 in 2018. This is only a bit more than half of the 21,500 estimate for Germany, although well ahead of France (4,500), the U.K. (2,000) and Italy (7,000).

# The ESRB and macroprudential policy in the EU

*Since its establishment, the European Systemic Risk Board (ESRB) has undertaken important work in fostering a coherent macroprudential framework for the EU and in helping make it operational. The groundwork for such a framework was laid by setting up national macroprudential authorities in all EU Member States and spelling out their mandate and tasks. The next step consisted in making the concept of macroprudential supervision more precise by identifying intermediate objectives of macroprudential policy and designating macroprudential instruments. Initially, the ESRB focused on the banking sector but, over the past few years, considerable work has also been undertaken on nonbank financial sectors. One of the very first areas the ESRB dealt with was systemic risk resulting from lending in foreign currencies, an area particularly relevant for countries in Central, Eastern and Southeastern Europe (CESEE). Some CESEE Member States have also been most active in implementing macroprudential policies in the EU.*

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JEL classification: G18, G28

Keywords: European Systemic Risk Board, financial stability, macroprudential policy

This article presents the European Systemic Risk Board (ESRB) and its role in the development of macroprudential policy in the EU. The article is structured as follows: Section 1 discusses the establishment, mandate and workings of the ESRB. Section 2 reviews the main ESRB recommendations that provide the basis for the macroprudential policy framework in the EU. Section 3 investigates in more detail how the policy framework is put into practice for the major categories of macroprudential instruments, showing that some Central, Eastern and South-eastern European (CESEE) countries have been particularly active in adopting macroprudential measures. Section 4 concludes.

## 1 The ESRB and its mandate

In response to the financial crisis that had erupted in 2008, the EU established the ESRB<sup>2</sup> that started its operation in January 2011. The ESRB is an independent body responsible for the macroprudential oversight of the EU's financial system. Its aim is to identify and mitigate risks that may threaten the stability of the financial system and could damage the real economy. The ESRB has a broad remit covering banks, insurers, asset managers, shadow banks, financial market infrastructures and other financial institutions and markets.

The ESRB brings together all the central banks and financial supervisors of the European Economic Area (EEA), the European Commission and the Economic and Financial Committee (EFC) as well as the three European Supervisory Authorities (ESAs)<sup>3</sup> involved in financial regulation and supervision. This makes it a unique forum for discussing financial stability issues in an EU-wide context.

As a response to potential systemic risks, the ESRB may issue warnings and recommendations on how to mitigate systemic risks to financial stability in the EU. It can address such communications to the EU as a whole or individual EU Member

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<sup>2</sup> Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board.

<sup>3</sup> The European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA).

States, the ESAs or national authorities. Although ESRB recommendations are not legally binding, the addressees are subject to an “act or explain” mechanism.

## 2 Developing the macroprudential policy framework

Soon after its establishment, the ESRB adopted two recommendations that laid the groundwork for the macroprudential policy framework in the EU. The recommendation on the macroprudential mandate of national authorities<sup>4</sup> calls upon EU Member States to designate an authority to conduct macroprudential policy in their legislation, with the aim of safeguarding financial stability. This authority should have sufficient powers to pursue macroprudential policy and the necessary independence to fulfill its tasks. The central bank should play a leading role in macroprudential policy. A national authority with a well-defined, clear mandate is a necessary precondition for ensuring effective macroprudential policy, especially since the ESRB does not have the power to implement macroprudential instruments directly and can only issue nonbinding warnings and recommendations.

The next milestone was the adoption of a recommendation on intermediate objectives and instruments of macroprudential policy<sup>5</sup>. This recommendation elucidated the relatively new concept of macroprudential supervision by identifying intermediate objectives of macroprudential policy and designating macroprudential instruments. The intermediate policy objectives are an operational specification of macroprudential policy’s ultimate objective of safeguarding financial stability. The five intermediate objectives relate to addressing (1) excessive credit growth and leverage, (2) excessive maturity mismatch and market illiquidity, (3) exposure concentration, (4) the systemic impact of misaligned incentives with a view to reducing moral hazard, and to (5) strengthening the resilience of financial infrastructures. The next step was to select instruments that can be used to pursue these intermediate objectives on the basis of their effectiveness (the degree to which objectives can be achieved) and efficiency (the achievement of objectives at minimum cost). The recommendation includes an indicative list of macroprudential instruments according to the five intermediate objectives.

## 3 Operationalizing the macroprudential policy framework

Once the broad elements of the macroprudential policy framework were in place, attention shifted toward implementing it. While initially this work was very much focused on the banking sector, more recently the ESRB has also undertaken policy work on other financial sectors, such as asset management, insurance companies and financial infrastructures.

### 3.1 ESRB work

The new prudential rules for banks in the EU (CRD IV<sup>6</sup>/CRR<sup>7</sup>), which entered into force on January 1, 2014, gave authorities in the EU a new set of legal instruments

<sup>4</sup> Recommendation of 22 December 2011 on the macro-prudential mandate of national authorities (ESRB/2011/3).

<sup>5</sup> Recommendation of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy (ESRB/2013/1).

<sup>6</sup> Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (“CRD IV”).

<sup>7</sup> Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (“CRR”).

for conducting policies to safeguard financial stability, which are commonly referred to as “macroprudential policy tools.” To assist the authorities in using these instruments, the ESRB published a flagship report and a handbook on macroprudential policy in the banking sector. While the flagship report (ESRB, 2014a) gives a first overview of the new macroprudential policy framework, the handbook (ESRB, 2014b) provides further details on individual instruments and a number of cross-cutting topics (e.g. the selection of instruments, the role of guided discretion, communication, cross-border issues).

One of the key macroprudential instruments introduced by the new prudential rules for banks was the countercyclical capital buffer (CCyB) designed to help counter some of the procyclicality in the financial system. The EU rules give the ESRB a mandate to provide guidance to macroprudential authorities on setting CCyB rates. To this end, the ESRB adopted a recommendation to ensure that authorities pursue a sound approach to relevant financial cycles and to promote sound and consistent decision making across Member States<sup>8</sup>. This was followed by a recommendation on recognizing and setting CCyB rates for exposures to third (i.e. non-EEA) countries to ensure a coherent approach and avoid regulatory arbitrage<sup>9</sup>. When a third country has not set a CCyB, or the CCyB is deemed insufficient to address the risk of excessive credit growth in that country, national authorities have the right to set a CCyB rate that domestic banks must apply with regard to the respective exposures in such third country. Moreover, the ESRB may recommend setting a CCyB rate for such third country.

Finally, in order to enhance public knowledge about macroprudential policy, the ESRB publishes, and regularly updates, information about macroprudential measures adopted by the national authorities in Europe<sup>10</sup>. This includes, for example, detailed information on the quarterly setting of the CCyB rate for all EEA countries.

### 3.2 The countercyclical capital buffer

The CCyB is the macroprudential tool provided for by the CRD IV/CRR to address cyclical systemic risks resulting from general credit developments. Six Member States (the Czech Republic, Denmark, Lithuania, Slovakia, Sweden and the United Kingdom), as well as Iceland and Norway, maintained or introduced a positive buffer rate between 0.5% and 2% in the course of 2017 and the first quarter of 2018. With the exception of Denmark, Lithuania and the United Kingdom, the positive rate in these eight countries came into effect in 2017 (see chart 1).

The credit-to-GDP gap is the reference indicator for setting the CCyB rate. According to the guidance by the Basel Committee on Banking Supervision (BCBS), a positive CCyB rate should be set when the gap is more than 2 percentage points.<sup>11</sup> However, on average, the ratio of credit to GDP is still highly negative (although becoming less so over time) for EEA countries, even for the Member States that introduced a positive buffer rate.

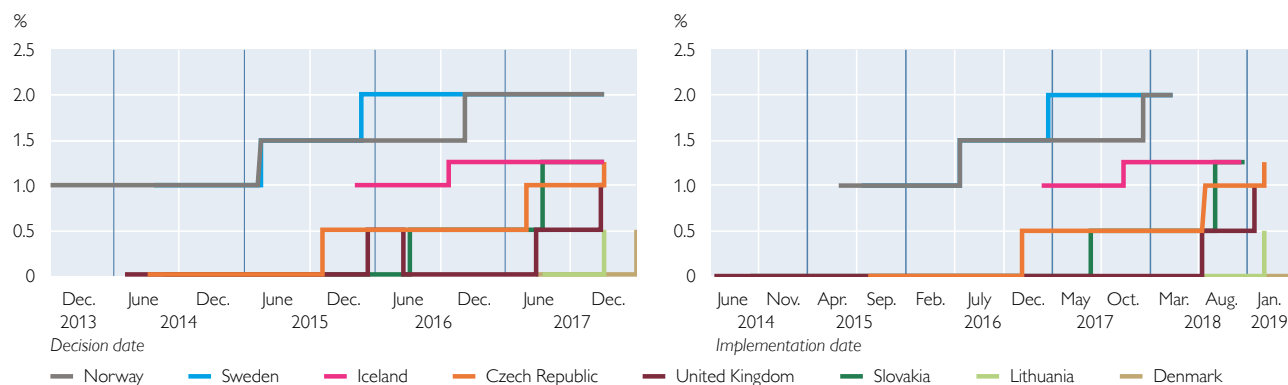
<sup>8</sup> Recommendation of 18 June 2014 on guidance for setting countercyclical buffer rates (ESRB/2014/1).

<sup>9</sup> Recommendation of 11 December 2015 on recognising and setting countercyclical buffer rates for exposures to third countries (ESRB/2015/1).

<sup>10</sup> See [http://www.esrb.europa.eu/national\\_policy/html/index.en.html](http://www.esrb.europa.eu/national_policy/html/index.en.html).

<sup>11</sup> Basel Committee on Banking Supervision (2010): Guidance for national authorities operating the countercyclical capital buffer, December.

Chart 1

**Countercyclical capital buffer rates – decision and implementation**

Source: ESRB.

Note: The United Kingdom decided to increase the buffer rate to 0.5% in March 2016, but reduced it to 0% in June 2016, before the earlier decision was due to take effect.

This illustrates the limitations of this particular metric and also the risk of over-reliance on a single reference indicator for macroprudential policy making. Indeed, the indicator has a number of well-known undesirable statistical properties. The long-run trend on which the indicator is based gives undue weight to the period before the financial crisis and might therefore be biased downward; the opposite situation of an upward bias might occur for developing economies like some of the countries in CESEE (Lang and Welz, 2017). This is why countries often use other indicators in addition to the credit-to-GDP gap to reflect country specificities. The ESRB's recommendation allows this practice, which is also in line with the principle of "guided discretion" that governs the use of this instrument.

### 3.3 Real estate measures

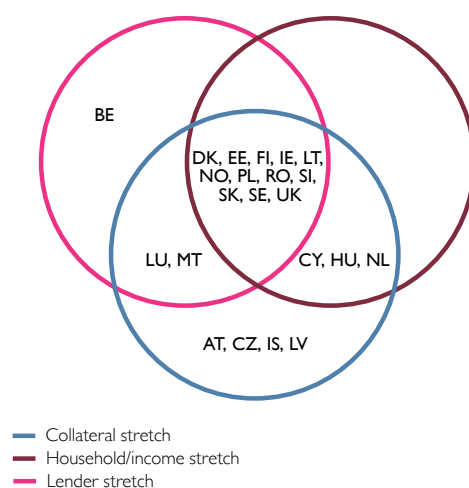
The real estate sector is an important area of macroprudential policy making, not least because risks and vulnerabilities in this sector have often been the cause of banking crises. Around 70% of the EU Member States have at least one measure in place that targets the residential real estate sector; for the commercial real estate sector, the corresponding figure is less than 40%. From its very beginning, the ESRB has devoted a lot of attention to the real estate sector. Initiatives include a separate chapter on the use of real estate instruments in the Handbook on Macroprudential Policy in the Banking Sector (ESRB, 2014b), the publication of two reports on residential and commercial real estate and financial stability in the EU (ESRB, 2015), a recommendation on closing real estate data gaps<sup>12</sup> and warnings addressed to eight EU Member States on medium-term vulnerabilities resulting from the residential real estate sector<sup>13</sup>. The very first recommendation the ESRB adopted related to lending in foreign currencies, which often takes the form of mortgage loans (see section 3.6).

<sup>12</sup> Recommendation of 31 October 2016 on closing real estate data gaps (ESRB/2016/14).

<sup>13</sup> The ESRB addressed these warnings to Austria, Belgium, Denmark, Finland, Luxembourg, the Netherlands, Sweden and the United Kingdom and supported them by an analytical report entitled "Vulnerabilities in the EU residential real estate sector," which it published in November 2016.

A helpful methodology for grouping real estate instruments is the classification into a household stretch (e.g. limits on loan-to-income, debt-to-income and debt service-to-income ratios), a collateral stretch (e.g. limits on loan-to-value ratios) and a lender stretch (e.g. risk weights). Most Member States that address vulnerabilities originating from the residential real estate sector have a combination of instruments in place (see chart 2). Different stretches cover different risk channels and combining instruments may make them more effective. In practice, there may be situations when instruments are used for macroprudential, microprudential and/or consumer protection reasons, and it is not always easy to distinguish between these motivations. The Member States that have activated these instruments are located primarily in northern and central Europe.

Chart 2  
**Use of residential real estate instruments according to the stretches typology**



Source: ESRB.

Note: The chart refers to instruments active in 2018 but they may have been implemented earlier. Amortization requirements are included in both the household/income stretch and the collateral stretch.

### 3.4 The buffer for systemically important institutions

There are around 200 systemically important institutions in the EEA. Of these, 12 have been identified as global systemically important institutions (G-SIIs). Other systemically important institutions (O-SIIs) are identified at the national level. 77 of them are part of larger cross-border banking groups, where the controlling entity is an O-SII or a G-SII located in another Member State (see chart 3). We identified 26 such cross-border O-SII or G-SII groups. UniCredit, Raiffeisen, Erste, KBC and Société Générale are among the groups with a particularly strong cross-border presence, controlling many SIIs in particular in CESEE Member States.

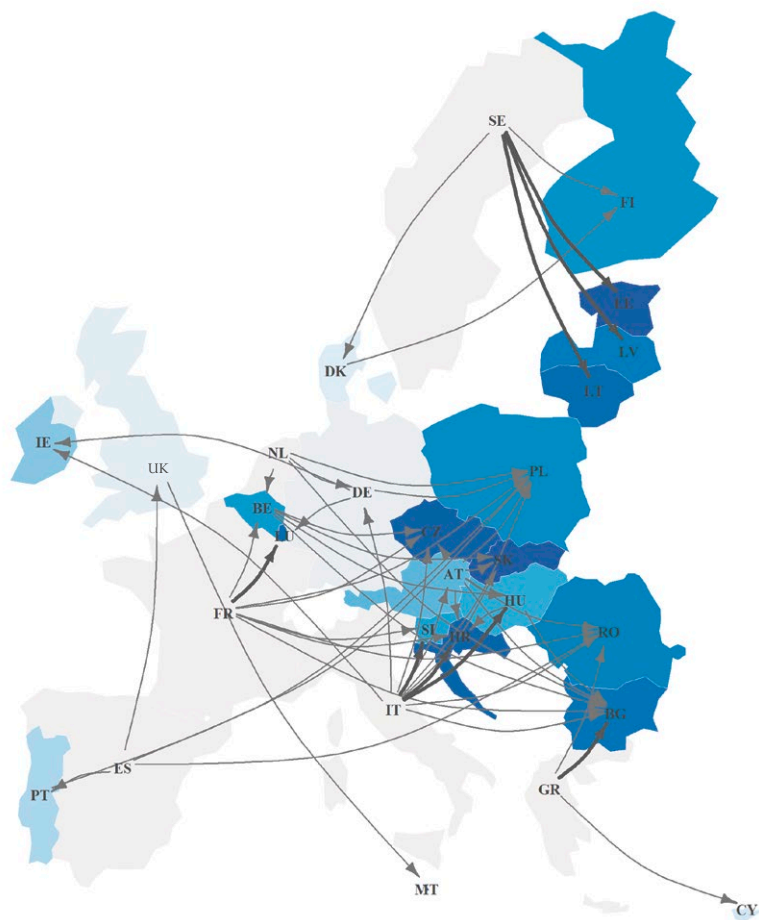
SIIs are subject to O-SII and G-SII capital buffers, which are capped under Union law. The O-SII buffer is subject to a 2% cap. Moreover, the O-SII buffer rate for subsidiaries of EU G-SIIs or O-SIIs (at the ultimate EU parent level) is subject to an additional cap. Their O-SII buffer rate cap is the higher of either 1% or the G-SII or O-SII buffer rate applicable to the group at the highest EU consolidated level. Some countries perceive the O-SII buffer caps as being too low to mitigate the risk some SIIs pose to their financial system and have therefore used the systemic risk buffer as alternative to the O-SII buffer or to “top up” the O-SII buffer (see section 3.5).

The option to exercise supervisory judgment and the lack of detailed guidance on O-SII buffer calibration have led to large differences in national approaches. However, no matter which approach a country adopts, the buffers for O-SIIs need to be commensurate with the systemic risk they pose. Actual differences in buffer levels and the use of alternative instruments instead, or on top of the O-SII buffer



Chart 3

### Cross-border links between Member States through the presence of SII



Source: ESRB and SNL (ownership and total assets).

Note: An arrow between two countries indicates the link between the home country of SII and another country (host country) in which they control SII. The thickness of the arrow is proportionate to the number of such links. The color of a country reflects the share of its banking market controlled by foreign-owned SII (the darker the color, the larger the share based on total assets).

suggest that this may not always be the case. It is also important to prevent unequal treatment of O-SIIs across the EU as this could jeopardize both financial stability and a level playing field.

### 3.5 The systemic risk buffer

The systemic risk buffer is the macroprudential tool provided for by the CRD IV/CRR to address long-term noncyclical systemic risks. It is one of the most frequently used macroprudential instruments in Europe, in particular in some CESEE countries, not least because of its great flexibility. There are now 12 EU Member States plus Norway, Iceland and Liechtenstein that have a systemic risk buffer in place (see chart 4). Considerable differences across countries exist regarding the level, range and calculation basis of the buffer. This divergence reflects the wide variation in noncyclical risks that national authorities can address with this tool. The buffer has, for instance, been applied to mitigate risks originating from structural features of domestic economic and financial systems as diverse as external dependency, interconnectedness, sectoral concentration and the role of systemically important institutions.

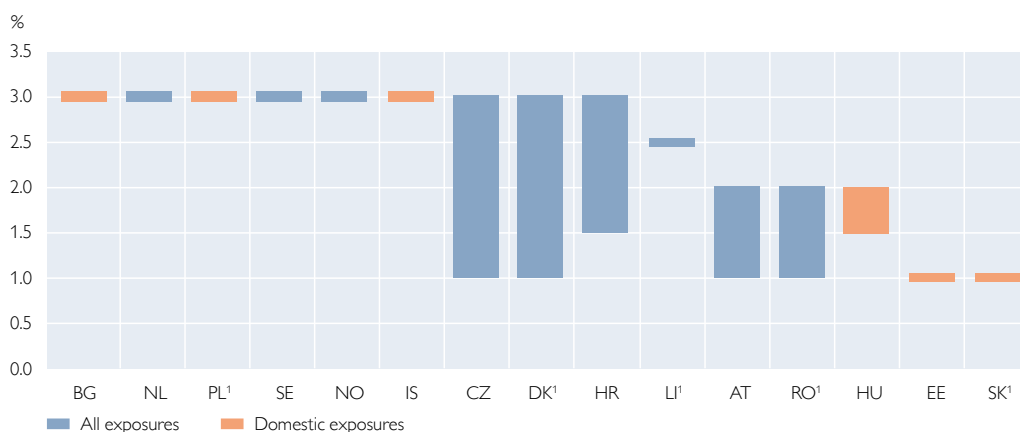
As mentioned earlier, the CRD IV/CRR puts quantitative limits (caps) on the buffers for systemically important institutions. Some EU Member States therefore resort to using the systemic

risk buffer to target risks stemming from O-SIIs. In these countries, the O-SII buffer is often perceived as being too low to mitigate the risk some institutions pose to the domestic financial system. The ESRB (2017a) is of the view that the two types of structural buffers should be delineated and clearly separated. This is only possible if the policy purpose of both instruments is clear and if they are sufficiently flexible to fully address the underlying systemic risks. To this end, the ESRB proposed to change the present framework of structural buffers.



Chart 4

### Main features of the systemic risk buffer in the EU and EEA (including decisions approved until end-2017; level refers to fully phased-in buffers)



Source: ESRB.

<sup>1</sup> Refers to new or changed systemic risk buffers, including changes to the methodology. A range of buffer levels is represented, where applicable, by a bar although in practice only certain values within the bar apply (i.e. there is only a limited number of discrete buffer levels). For countries in which the systemic risk buffer is applied to all banks, but subject to meeting a certain minimum threshold, a 0% default rate may be applicable.

Note: Refers to the fully phased-in buffer rate according to the most recent notification.

### 3.6 Foreign currency loans

The very first recommendation the ESRB adopted dealt with lending in foreign currencies<sup>14</sup>. Foreign currency lending, often in Swiss francs or euro, has been most prevalent in some CESEE countries. High levels of such lending may entail systemic risks, which could trigger negative cross-border spillover effects. In some cases, foreign currency lending has contributed to amplifying credit cycles, potentially affecting asset prices. For unhedged borrowers, credit risk includes market risk, as installments increase because of exchange rate depreciation. Moreover, dependence on parent banks for funding and reliance on foreign currency swap markets constitute an additional layer of liquidity and refinancing risk, with the high level of integration between financial groups creating another channel for cross-border contagion.

The ESRB's recommendations cover new foreign currency loans. To tackle credit risk, the ESRB recommends, among other things, increasing borrowers' awareness of risks embedded in such lending and ensuring that new foreign currency loans are extended only to borrowers that are creditworthy and capable of withstanding severe shocks to the exchange rate. In this respect, the use of debt-to-income and loan-to-value ratios is encouraged. To tackle the mispricing of risks associated with foreign currency lending, authorities should require institutions to fully incorporate these risks into their internal risk pricing and capital allocation, and to hold adequate capital. Furthermore, authorities should closely monitor – and, if necessary, consider imposing limits on – funding and liquidity risks associated with foreign currency lending.

While the recommendations were successful in stemming the flow of new foreign currency loans, a number of countries continued to have sizeable stocks of outstanding foreign currency loans, in particular in Swiss francs. Several of these

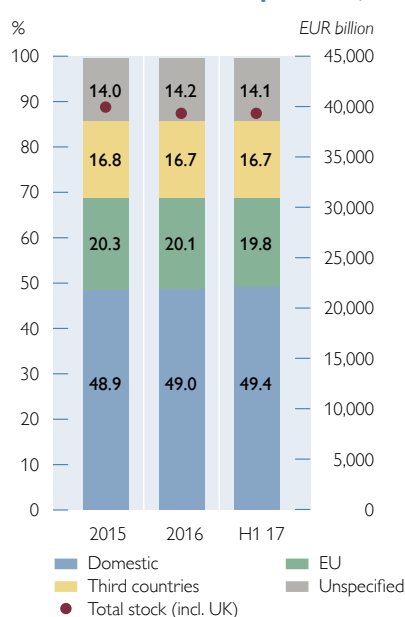
<sup>14</sup> Recommendation of 21 September 2011 on lending in foreign currencies (ESRB/2011/1).

countries took measures targeting the stock problem, especially following the decision of the Swiss National Bank in January 2015 to unpeg the Swiss franc from the euro. One set of initiatives aimed at enabling the conversion of foreign currency loans into local currency; another set of measures related to stricter capital and/or risk management requirements for banks holding such loans.

### 3.7 Cross-border banking and reciprocity

Cross-border lending is important for the originating EU Member States: half of the exposures of EU banks are on average held outside the originating Member State (see chart 5). In other words, originating banks, i.e. domestic banks and subsidiaries of foreign banks, hold about 49% of their exposures in the Member State in which they reside (“domestic exposures”), whereas 20% are exposures to other Member States and 17% to third countries. These shares have been quite stable over the last three years.

Chart 5  
**Average geographical breakdown of EU banks’ credit exposures, 2015–2017**



Source: ECB Consolidated Banking Data, ESRB calculations.

Note: The data include total original exposures for credit, counterparty credit and dilution risks, equity exposures and free deliverables. The data are reported at the highest level of consolidation in the EU for the absolute figures at the top of the bars and at the level of Member States for the shares indicated within the bars. This chart shows the shares of bank exposures to (1) the Member State in which the bank resides (“domestic”), (2) any other EU Member States (“EU”), (3) countries outside the EU (“third countries”), and (4) an unspecified residual, as a percentage of total exposures of EU banks.

These EU figures mask great heterogeneity across originating Member States. Foreign exposures range from as low as (almost) 0% in Romania and Poland to as high as about 50% in Spain and Sweden, and 63% in Luxembourg. Banks incorporated in eight Member States hold close to or more than 40% of their exposures abroad. These exposures are mostly held in other Member States. The overall exposure of EU banks is concentrated in a few third countries<sup>15</sup>, although banks in individual Member States are exposed to a multitude of third countries. In light of the ESRB’s responsibilities in the area of setting CCyB rates for third countries (see section 3.1), an agreement has been reached between the ESRB, Member States and the ECB on sharing the responsibility for identifying and monitoring material third countries<sup>16</sup>.

Given the importance of cross-border lending in the EU, reciprocity is important to ensure that national macroprudential policies targeted at certain exposures are effective. Macroprudential measures taken by EU Member States generally apply only to domestic

<sup>15</sup> Third countries that are material for the EU banking sector according to a methodology established by the ESRB include the United States, Hong Kong, Singapore, Switzerland, China, Brazil, Turkey, and Russia in descending order of exposures for the EU banking sector.

<sup>16</sup> Decision ESRB/2015/3 on the assessment of materiality of third countries for the Union’s banking system in relation to the recognition and setting of countercyclical buffer rates.

banks and subsidiaries of foreign banks but not to branches of foreign banks or to services that are provided directly across borders. As a result, the same risk exposure in a particular country may be subject to different (macro)prudential requirements. Reciprocity may address this regulatory loophole, which means that a Member State applies the same or an equivalent macroprudential measure that has been set by another Member State to its own institutions. Reciprocity thereby extends the application of measures in one Member State to branches of foreign banks and banks providing services directly across borders.

As the EU legal framework relies mostly on voluntary reciprocity, the ESRB adopted a framework in December 2015 to promote greater use of reciprocation<sup>17</sup>. This framework foresees the reciprocation of exposure-based measures taken by Member States and covers both banking and nonbanking measures within the EU. At the request of the Member State that activates a macroprudential measure, the ESRB recommends the measure for reciprocation to all other 27 Member States if deemed justified<sup>18</sup>. These Member States then reciprocate ideally with the same measure, or if this is not possible, with an equivalent measure, or they explain their inaction under the general “act or explain” mechanism. Member States have the option to exempt an individual financial service provider if the latter has no material exposures to the Member State requesting reciprocation (“de minimis principle”).

In 2017, the ESRB amended its reciprocity framework to further harmonize the application of materiality thresholds under the de minimis principle<sup>19</sup>. At the same time, the ESRB’s existing mandate in the area of reciprocity was broadened with the new task of validating the materiality threshold. This, still fairly new, framework might evolve further as more experience with its practical use is gained.

#### 4 Summary and conclusions

The ESRB has been successful in contributing to safeguarding EU financial stability and developing the EU macroprudential framework, as for example reflected in the high compliance rate for its recommendations. Proposals made recently by the European Commission for creating a stronger and more integrated European financial supervision likewise attest to the ESRB’s impressive track record. With regard to the ESRB, these proposals include only targeted adjustments to its composition and organization, and its coordination with EU bodies and institutions following recent institutional developments, such as the establishment of a banking union and efforts to build a capital markets union<sup>20</sup>. The ESRB’s achievements so far are remarkable, given that it does not have any hard legal powers but has to rely on soft powers instead, such as the “act or explain” mechanism, moral suasion, the quality of its work and external communication. Major steps have also been taken at the national level. However, significant differences across countries are evident

<sup>17</sup> Recommendation of 15 December 2015 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2015/2).

<sup>18</sup> Up to now, the ESRB has recommended the reciprocation of three national measures (from Belgium, Estonia and Finland).

<sup>19</sup> Recommendation of 20 October 2017 amending Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2017/4).

<sup>20</sup> European Commission, Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 1092/2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board, COM(2017) 538 final, 20 September 2017.

in terms of the use of macroprudential instruments. This article shows that some CESEE countries have been particularly active in this respect. National differences might be due, *inter alia*, to divergent views on the role of macroprudential policy and to the fact that countries are in different phases of the financial cycle.

Since the European economy is still very much bank based, the ESRB's initial work focused on the banking sector, as illustrated in this article. The financial system is constantly evolving, however, with the nonbank financial sector playing an increasingly important role. In 2014, total financial assets of the EU nonbank sector for the first time exceeded those of the EU banking sector. Over the past few years, the ESRB has therefore also undertaken considerable work on nonbank financial sectors. Examples include the development, and annual publication, of an EU shadow banking monitor, the adoption of a recommendation on liquidity and leverage risks of investment funds<sup>21</sup>, an investigation into the macroprudential use of margins and haircuts (ESRB, 2017b) and the development of a macroprudential perspective on recovery and resolution for the EU insurance sector (ESRB, 2017c). An important ongoing work stream relates to the use of data on derivatives contracts for macroprudential purposes that have become available to the ESRB under the European Market Infrastructure Regulation (EMIR).

Work on the banking sector likewise continues, with two recent work streams relating to cross-border banking and nonperforming loans. As a number of large cross-border banking groups have decided to transform some of their subsidiaries into branches, the ESRB will continue to support further work on how to effectively conduct macroprudential policy in a more branch-based environment. The ESRB (2017d) already conducted work on nonperforming loans, but has been requested by the ECOFIN Council to develop, by the end of 2018, macroprudential approaches to preventing the emergence of system-wide NPL problems (ECOFIN Council, 2017).

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# Has private sector credit in CESEE approached levels justified by fundamentals? A post-crisis assessment

*We analyze private sector credit developments in CESEE EU countries by calculating the credit-to-GDP ratios that are in line with macroeconomic and financial fundamentals and by comparing them with actual levels. In contrast to previous work in this area, we add cross-border credit to domestic bank credit and take care of global factors and cross-country spillovers. We derive three main findings from our analysis: First, countries featuring positive credit gaps at the start of the global financial crisis (GFC) have managed to adjust their credit ratios downward toward levels justified by fundamentals, but the adjustment is apparently not yet complete in all countries. Second, in most countries characterized by credit levels close to or below the “fundamental” levels of credit at the start of the GFC, negative credit gaps have emerged or widened. Third, the inclusion of cross-border credit matters considerably for credit gap assessments as it results in larger gaps in most cases. As part of the policy discussion, we also relate our findings to recent efforts in setting countercyclical capital buffers depending on credit gaps.*

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JEL classification: C33, E44, E51, G01, G21, O16

Keywords: private sector credit, fundamental level of credit, bank lending, global financial crisis, financial developments

Before the 2008–2009 global financial crisis (GFC), the question whether rapidly rising credit levels in most Central, Eastern and Southeastern European (CESEE) countries reflected the emergence of credit bubbles rather than representing convergence-related financial deepening was addressed in a number of papers (Boissay et al., 2005; Duenwald et al., 2005; Égert et al., 2006; Kiss et al., 2006 – to name only a few). With the benefit of hindsight, a consensus has emerged that pre-crisis private sector credit development was on an excessive path at the time in several CESEE countries (see for instance the discussion in IMF, 2015a). In the wake of the GFC, the volume of nonperforming loans increased in CESEE, but to very different extents across countries. Moreover, credit growth slowed down remarkably in some countries while turning negative in others (before recovering or accelerating again more recently). Certainly, it should also be kept in mind that some CESEE countries entered the GFC with private sector credit levels that were assessed to be below levels justified by fundamentals – a finding our analysis confirms. Against this backdrop, our paper addresses the question whether private sector credit levels (measured in relation to GDP, i.e. credit-to-GDP ratios) have since approached levels that are indeed justified by macroeconomic and financial fundamentals or whether under- or overshooting tendencies continue to be an issue.

Our study thus complements a series of papers that have applied an (behavioral) equilibrium approach to the analysis of credit in CESEE, thereby studying the

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deviation of observed credit levels from long-run equilibrium levels. The latter are usually calculated based on estimates of so-called fundamental credit determinants. While earlier work relied on out-of-sample approaches to account for undershooting in the initial years of transition (e.g. Égert et al., 2006; Geršl and Seidler, 2015), more recent work – thanks to longer available time series – switched to in-sample approaches (Stojanović and Stojanović, 2015; Jovanovic et al., 2017). In terms of the applied econometric methodology, both static and dynamic panel data models (addressing either credit levels or credit growth rates) have been applied.

There are several areas where our paper can add value to the existing literature in our opinion. First, while previous work focused only on domestic bank credit to the private sector, we adopt a more comprehensive definition of credit that includes both domestic and cross-border credit, since cross-border credit is an important source of (corporate) financing in CESEE. In the remainder of this study, we will refer to the aggregate of these two debt components as “total credit,” although this term differs from the even wider definition of total credit introduced by the BIS (for more detailed information see BIS, 2018). Second, the role of foreign credit determinants has so far been disregarded. Given the strong openness of the region in terms of trade and banking and given the potential role of global “supply push” factors in determining credit (Bruno and Shin, 2015), we add foreign variables to our set of credit determinants. Third, while there are several candidate models for estimating fundamental credit levels, a truly convincing attempt to account for panel heterogeneity has not been made so far. We rely on the comparison of different estimation approaches in Comunale et al. (2018) and implement a static panel model accounting for heterogeneous coefficients, cross-sectional dependence, nonstationarity and cointegration.

The remainder of the paper is structured as follows: Section 1 discusses private sector credit developments in CESEE since the start of the GFC, emphasizing the importance of cross-border credit. In section 2 we introduce the benchmark econometric framework to come up with credit levels determined by fundamentals. Section 3 presents the estimation results and the gaps between actual and fundamental credit levels. Section 4 concludes and raises policy-relevant issues.

## 1 Credit developments since 2008 and the role of cross-border credit

The start of the GFC in 2008 marked a turning point in credit developments in CESEE EU countries. The slowdown, stabilization or contraction of credit levels that emerged in the years after the collapse of Lehman Brothers went hand in hand with a slowdown or contraction in economic activity in CESEE economies. Ensuing economic recoveries or growth accelerations turned out to be creditless or accompanied by only modest credit growth, at least until recently.

A more detailed assessment of changes in domestic banks’ credit to the resident nonbank private sector over three-year intervals in individual CESEE countries<sup>2</sup> reveals the following (see chart 1): The three years before the GFC were completely different from the post-GFC years for all CESEE countries. Up to the watershed

<sup>2</sup> We focus on the 11 CESEE countries that have joined the EU, i.e. Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia (referred to as CESEE-11 below). Data series for (potential) EU candidate countries as well as for Russia and Ukraine were also accessed but found to be insufficiently complete in most cases.



year of 2008, domestic credit growth rates ranged from elevated (in Croatia, the Czech Republic, Hungary and Slovakia) or high (in Estonia, Latvia, Lithuania, Poland and Slovenia) to very high (in Bulgaria and Romania). In the wake of the GFC, most countries in the region experienced periods of declines in the domestic private sector credit stock, albeit to different extents. Thereafter, the sovereign debt crisis in some euro area countries seems to have entailed a further downward adjustment in the subperiod of 2011–2014. Moreover, a banking crisis emerged in Slovenia in this period that inter alia entailed the transfer of assets from banks to an asset management company, which explains part of the considerable decline in the domestic credit stock (see IMF, 2015b).

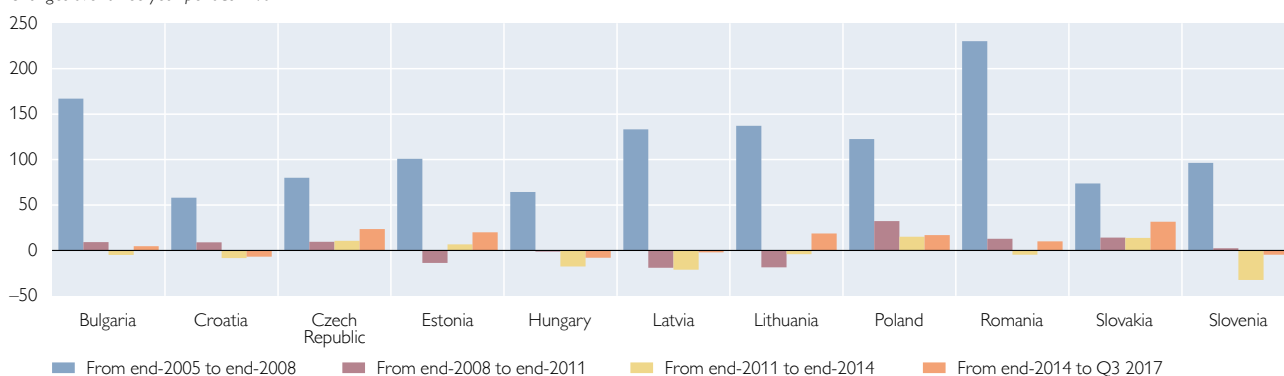
In contrast, there are only three countries (the Czech Republic, Poland and Slovakia) that witnessed a gradual increase of domestic credit stocks – albeit at a much slower pace than before the GFC – from end-2008 until the end of the observation period (Q3 2017). These three countries had entered the GFC with comparably moderate credit levels, which might explain the divergence of credit developments after 2008. Moreover, the Czech Republic and Slovakia had faced banking crises in the late 1990s and early 2000s, which entailed bank restructuring and transfers of assets to bad banks, resulting in a downward level shift already some years before the GFC. More recently, domestic credit growth has been picking up across the region (see OeNB, 2017).

Domestic credit stocks were influenced by sales of nonperforming loans to nonbank investors and write-offs in several CESEE countries. Since we consider both sales and write-offs to be part of the toolbox for (downward) adjusting credit stocks, it makes sense to leave this information in the data. Furthermore, credit levels were also affected by exchange rate valuation effects as the foreign currency component increased due to depreciation of local currencies vis-à-vis the currencies in which foreign currency loans had been granted (mainly EUR and CHF). Exchange rate developments caused domestic credit stocks to rise particularly in Hungary, Poland and Romania. These effects cannot be seen as purely statistical as they de facto raised repayment volumes measured in local currency. In turn, our data were also affected by policy measures with regard to foreign currency loans (see box 1 in Beckmann, 2017). To summarize, we deal with the given credit

Chart 1

### Changes in domestic private sector credit stocks

Changes over three-year periods in %



Source: National central banks.



levels at each point in time, irrespective of whether the level changed due to exchange rate valuation effects, policy measures or credit transactions.

To some extent, domestic credit also reflects external funding intermediated by domestic banks, thus providing a channel for spillovers from abroad. In the same vein, spillover effects may occur through credit that borrowers obtain directly from foreign creditors. Direct cross-border credit has emerged as an important (corporate) funding source in CESEE and constitutes a close substitute for domestic bank credit,<sup>3</sup> which is why we included corresponding data in our calculations. We approximate cross-border credit using international investment position data, more specifically data on the external debt of the nonbank private sector, excluding intercompany loans and trade credits.<sup>4</sup> Taking most recent observations, about one-fifth of the total private sector credit stock consists of direct cross-border credit across the CESEE-11 on average, ranging from just 7% in Lithuania to more than 30% in Bulgaria and Croatia (see also chart 3). Chart 2 shows the development of direct cross-border credit over time. Besides the two countries that experienced very high domestic credit growth rates prior to the GFC – Bulgaria and Romania – also Croatia, Latvia and Lithuania recorded sizeable pre-crisis increases in cross-border credit. 2008 was a watershed year, as direct cross-border credit stocks declined or underlying growth rates slowed down markedly in all countries but Slovakia and Slovenia. Slovakia and Slovenia represent exceptions from this general trend, as direct cross-border credit showed noticeable increases in the period from end-2008 until end-2014 followed only by a relatively small decline afterwards.

Chart 2

### Changes in direct cross-border credit stocks (excl. intercompany loans and trade credit)

Changes over three-year periods in %



Source: IMF, national central banks.

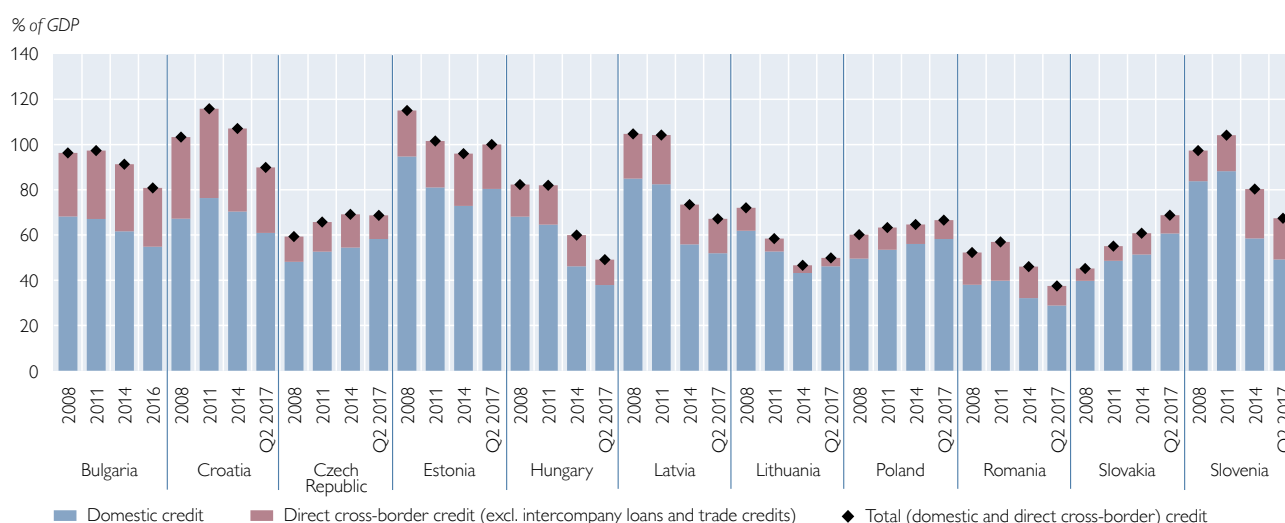
<sup>3</sup> Another substitute, at least for corporates, could be bond financing. Our data capture bonds held by the domestic banking sector and bonds held by foreign investors, but not bonds held by the domestic nonbank sector. However, according to financial accounts data, bond financing is not yet considerably relevant in the CESEE countries under review.

<sup>4</sup> Even though intercompany loans are quite sizeable in the investigated CESEE countries, we prefer a narrow definition of cross-border credit as, among others, intercompany loans capture both debt and equity instruments. Moreover, narrow and broad definitions of cross-border credit show a rather similar degree of variation over time. In a robustness check we also used the broader classification and the results remained qualitatively unchanged.

How did these changes in the credit stocks – together with nominal GDP developments – translate into total (i.e. domestic plus cross-border) private sector credit-to-GDP ratios? In most countries, the credit-to-GDP ratio was lower in mid-2017 than at end-2008, but total credit ratios did not decline steadily in some countries (chart 3). Only in the Czech Republic, Poland and Slovakia were the total credit-to-GDP ratios higher in mid-2017 than at end-2008.

Chart 3

### Domestic and direct cross-border credit to the nonbank private sector



Source: National central banks, Eurostat, IMF.

## 2 Calculating credit levels determined by fundamentals

We use a static heterogeneous panel model to analyze the impact of financial and macroeconomic fundamentals on credit over GDP in CESEE.<sup>5</sup> The estimated coefficients are used to calculate the fundamentals-based credit ratios so as to then assess the actual values. Our method allows us to look at the country-specific contributions of each fundamental in driving the ratios over time. Starting with the estimation of the fundamentals' coefficients, we found that the panel experiences cross-sectional dependence, nonstationarity and cointegration. With this in mind, in our static framework with heterogeneous coefficients, the best possible choice given the presence of cointegration is the group mean-fully modified OLS (GM-FMOLS) estimator, which is built as the average of the FMOLS estimator over the cross-sectional dimension (Pedroni, 2000).<sup>6</sup> To allow for comparison with the results of previous studies, we also apply the fixed effects (FE) estimator (though with Driscoll-Kraay correction to account for cross-sectional dependence). Moreover, given the presence of cross-sectional dependence

<sup>5</sup> The background working paper (Comunale et al., 2018) also applies a dynamic setup (for growth rates). Moreover, it documents for both the static and dynamic frameworks all the necessary pre-estimation diagnostic tests, the comparison of different eligible estimators as well as the results of a broad range of robustness checks.

<sup>6</sup> The FMOLS is a semi-parametric correction to the ordinary least squares (OLS) estimator which eliminates the second-order bias induced by the endogeneity of the regressors. In our panel we applied the group-mean (GM) version of this estimator to keep as much heterogeneity as possible and to correct for cointegration. For a more detailed discussion of this estimator and its properties see the appendix in Comunale (2017).

and the fact that cross-border credit enters our dependent variable, we also add foreign variables as regressors.

As a result, the equation for our preferred model is the following:

$$\left(\frac{\text{credit}}{\text{GDP}}\right)_{i,t} = \beta_{1i}X_{i,t-1} + \beta_{2i}G_{t-1} + \beta_{3i}S_{i,t-1} + \mu_i + \varepsilon_{i,t}, \quad (1)$$

where  $\beta = (\beta_{1i}, \beta_{2i}, \beta_{3i})'$  is the cointegrating vector of slope parameters.<sup>7</sup>  $X$  is a vector of cointegrated series consisting of the domestic (CESEE countries') fundamentals: GDP per capita in purchasing power parity USD, domestic banks' credit to the general government (% of GDP), the producer price index (PPI) inflation rate and the spread of lending rates over deposit rates. Furthermore, we add two foreign variables (also as cointegrated regressors):  $G$  is the common global factor taken as the seasonally adjusted global GDP<sup>8</sup> and  $S$  is a country-specific, time-varying variable for spillovers in total credit. The latter is calculated as the trade-weighted average of trading partners' total private sector credit-to-GDP ratios.<sup>9</sup> These global "supply push" factors may be important in determining credit and particularly cross-border credit (Bruno and Shin, 2015). Furthermore, credit in CESEE can be affected by other countries' performance, given the strong economic interlinkages, for instance via the banking sector (see Fadejeva et al., 2017). Lastly,  $\mu_i$  is the country fixed effect. The error terms  $\varepsilon_{i,t}$  are not assumed to be cross-sectionally independent.<sup>10</sup>

For the estimations we apply an in-sample approach, so our panel covers the 11 CESEE EU countries presented in the previous section. In general we try to use quarterly series from the mid-1990s until end-2016. But given that for some countries data for cross-border credit are available only from the late 1990s or early 2000s onward, we have an unbalanced panel for total credit estimations. Our main data sources are Eurostat (nominal GDP for CESEE countries), the IMF World Economic Outlook database (GDP per capita), the IMF International Financial Statistics (interest rates, PPI and nominal GDP for partner countries), statistics from the national central banks (credit variables for CESEE countries) and the BIS (total credit for partner countries). More detailed information on data definitions and sources is available in Comunale et al. (2018).

Fundamental determinants of credit may themselves be subject to short-run shocks, potentially creating an incorrect impression for certain periods that actual

<sup>7</sup> For a complete description of the cointegrating system applied here, see Pedroni (2000) and the appendix in Comunale (2017).

<sup>8</sup> Specifically, we use the sum of the nominal GDP of 42 countries in USD million from IMF International Financial Statistics. This measure can be seen as a proxy for the global real business cycle.

<sup>9</sup> We do not use financial weights for three main reasons. First, they would be very much correlated with our credit series; second, there is no consensus on the best way to compute such weights (see Kearns and Patel, 2016). Third, for the latter reason, the computation of different types of financial weights for CESEE countries would require a separate paper to be correctly done, especially at a quarterly frequency, given that these types of weights are not provided in any public database.

<sup>10</sup> Normally the errors are taken as independently and identically distributed (i.i.d.) across  $i$  and  $t$ . In our case for each  $i$ , the errors are i.i.d. error terms but we do not assume independence anymore for all  $t$ . That opens the possibility of having cross-sectionally correlated idiosyncratic errors (due to common factors or cross-country spillovers). The assumption of stationarity remains, as well as zero mean and variance. We also assume that underlying error processes are symmetrically distributed. For a deeper understanding of the cross-sectional dependence and the error structure, see Pesaran (2004).

credit is overshooting, although a widening gap is actually due to lower fundamental levels of credit which are of a short-run nature due to adverse shocks. We address this concern by applying a one-sided Hodrick-Prescott (HP) filter to extract medium-term trends from credit determinants.<sup>11</sup> Based on the estimates of equation (1), the credit-to-GDP ratio determined by fundamentals is then calculated as the sum of the estimated coefficients multiplied by the correspondent HP-filtered values of each fundamental. This is how we arrive at country-specific, time-varying fundamental credit ratios.

### 3 Estimation results and credit gaps

Static panel estimation results for total private sector credit in the 11 CESEE EU countries, based on GM-FMOLS estimates of equation (1), are shown in table 1. Evidently, an increase in the credit-to-GDP ratio in a given quarter is associated with larger GDP per capita levels, higher lending rates, a lower interest rate spread, higher global GDP as well as more intense credit dynamics abroad in the preceding quarter. The results for domestic variables remain robust when accounting for the foreign variables in the last column. The inflation rate and government credit do not have a statistically significant impact.

Table 1

#### Static panel estimation results for total private sector credit

Explanatory variables	Dependent variable: total credit/GDP	
GDP per capita	1.383*** [0.036]	0.918*** [0.084]
Domestic general government credit/GDP	0.028* [0.020]	−0.041 [0.020]
PPI inflation rate	−0.244 [0.140]	−0.022 [0.130]
Lending rate	0.023*** [0.040]	0.064*** [0.030]
Interest rate spread	−0.204*** [0.020]	−0.172*** [0.010]
Global GDP		0.313*** [0.080]
Total credit spillovers		0.842*** [0.110]
Constant	−13.810*** [0.040]	−14.790*** [0.740]
Observations	811	811
Number of countries	11	11

Source: Authors' calculations.

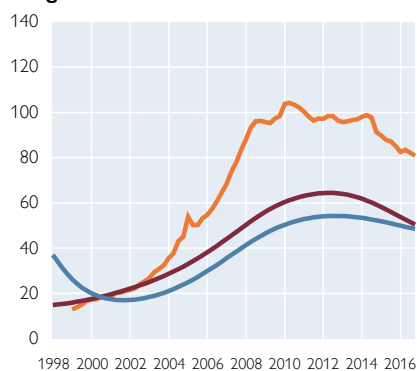
Note: Standard errors in brackets. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . GM-FMOLS estimator; all values in logs except for the PPI inflation rate.

<sup>11</sup> We mainly follow the approach by the IMF in the Consultative Group on Exchange Rate Issues (CGER). The IMF approach is normally used in calculating equilibria for the real effective exchange rate (Ricci et al., 2013; Comunale, 2017), the current account (Lee et al., 2008; Comunale, 2018) and credit growth (Jovanovic et al., 2017).

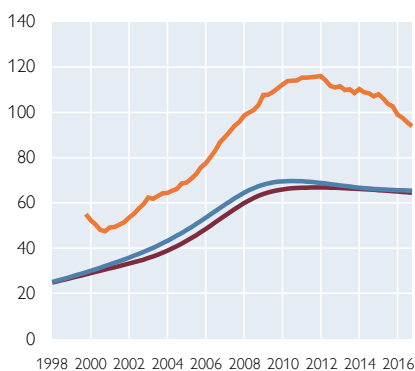
## Evolution of total (domestic+cross-border) private sector credit in comparison to fundamentals-based levels

% of GDP

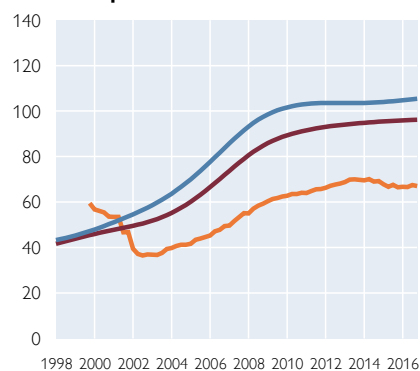
### Bulgaria



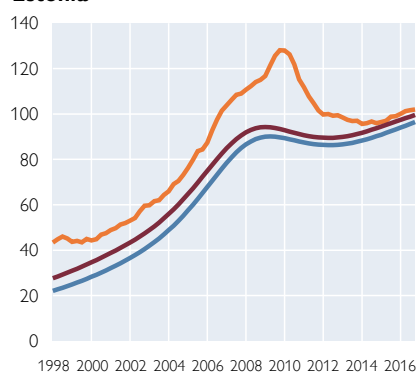
### Croatia



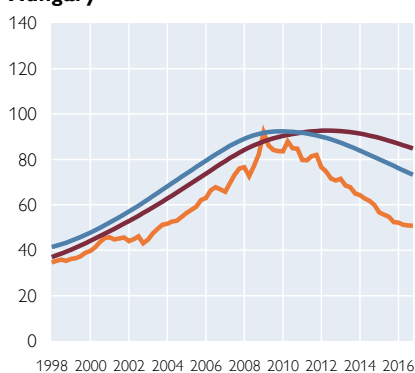
### Czech Republic



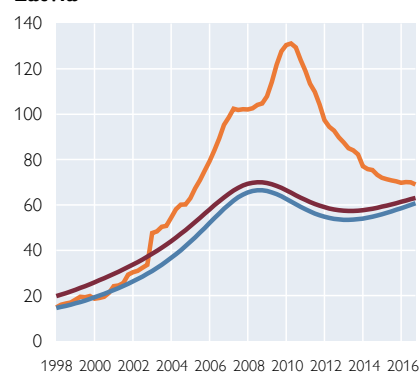
### Estonia



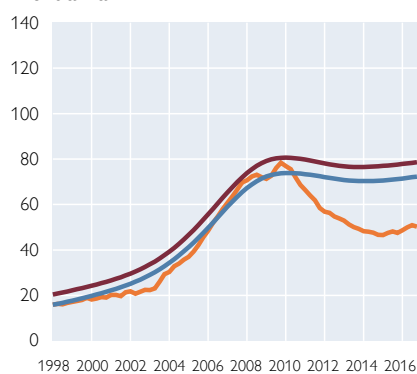
### Hungary



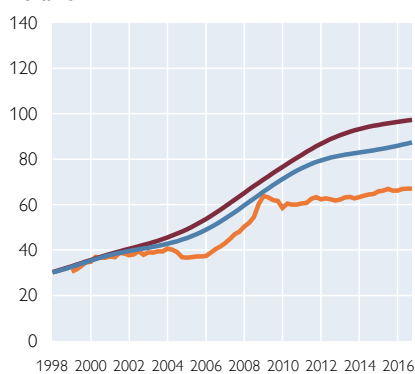
### Latvia



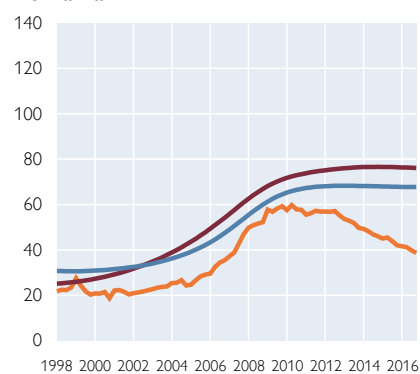
### Lithuania



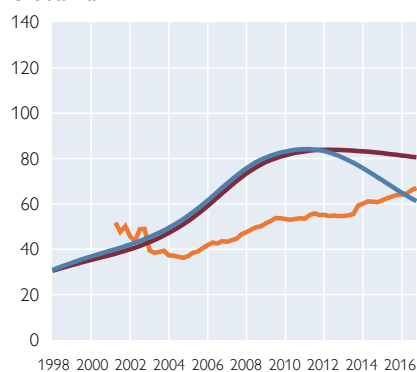
### Poland



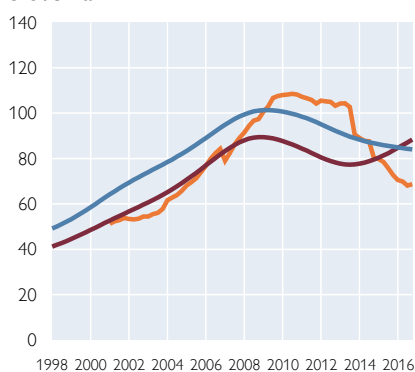
### Romania



### Slovakia



### Slovenia



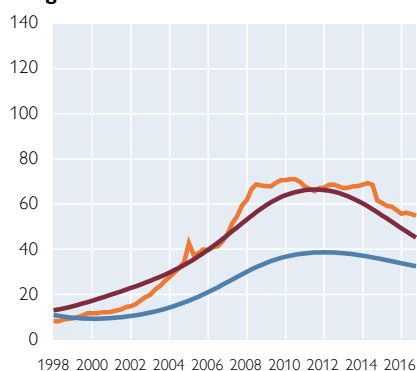
— Total private sector credit — Fundamental level (based on GM-FMOLS) — Fundamental level (based on fixed effects)

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

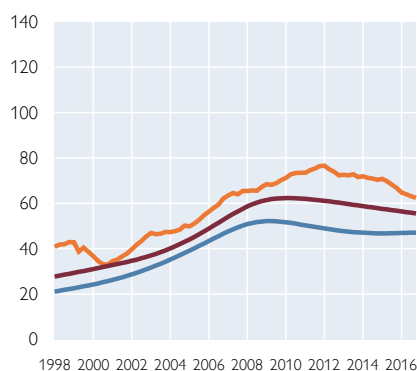
## Evolution of domestic private sector credit in comparison to fundamentals-based levels

% of GDP

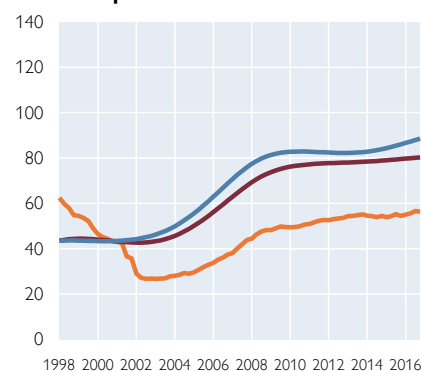
### Bulgaria



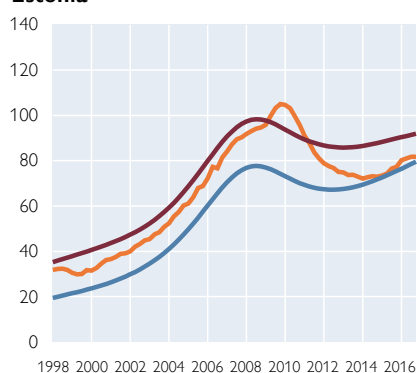
### Croatia



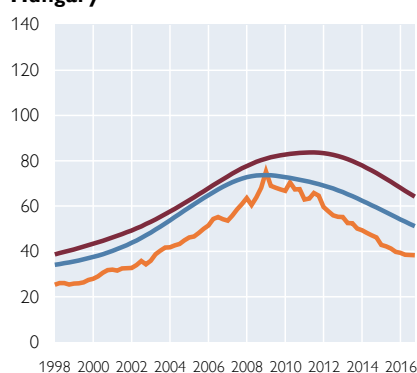
### Czech Republic



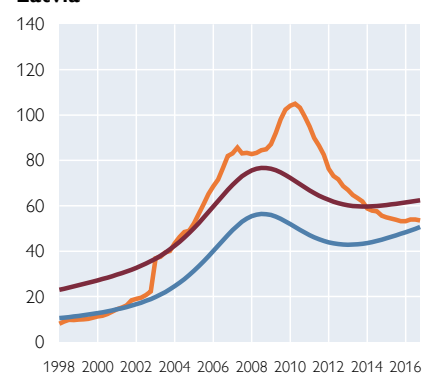
### Estonia



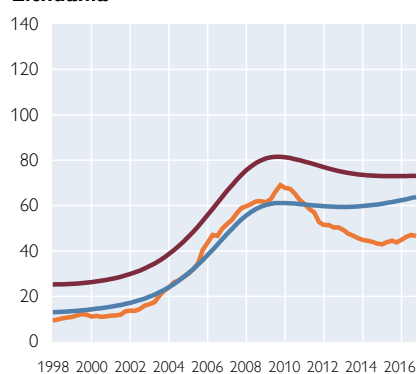
### Hungary



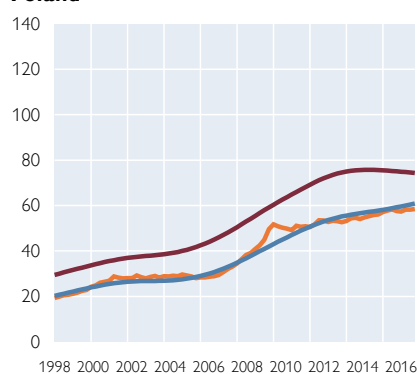
### Latvia



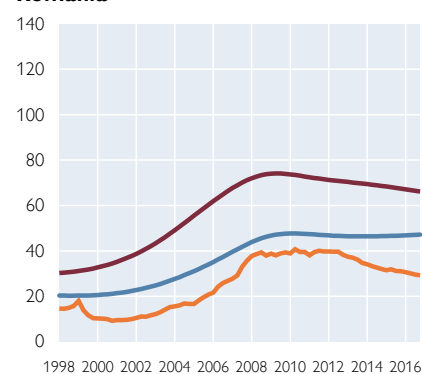
### Lithuania



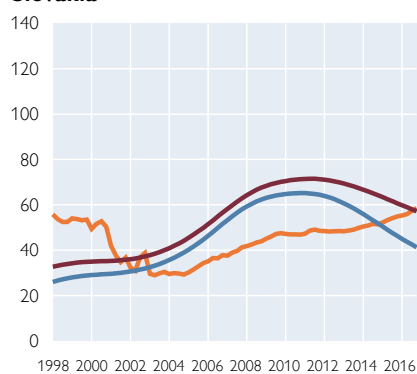
### Poland



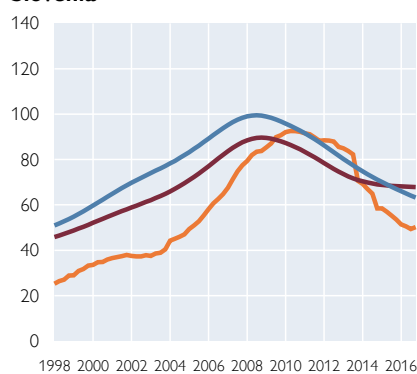
### Romania



### Slovakia



### Slovenia



— Domestic private sector credit — Fundamental level (based on GM-FMOLS) — Fundamental level (based on fixed effects)

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

Two – at first sight counterintuitive – results deserve some more discussion. First, the positive sign for the lending rate corroborates existing empirical evidence (see the discussion in Eller et al., 2010) and simply reflects the stable positive correlation of credit dynamics and interest rates over the past two decades in the region: credit growth was large in a period with comparatively high interest rates (before the GFC), while after the GFC subdued lending coincides with a low interest rate environment (as also pointed out in Zumer et al., 2009). Second, the result for the interest rate spread variable would suggest that the larger the lending rate compared to the deposit rate, the smaller the credit-to-GDP ratio. In pre-GFC studies (e.g. Égert et al., 2006) this variable was included to account for financial liberalization and/or bank profitability, whereby a higher spread was assumed to signal easier funding of banks' credit supply. However since the GFC, with deposit rates gradually approaching zero levels, the spread variable has widened considerably and now apparently captures something else than originally intended, e.g. the low post-GFC interest environment, nonstandard monetary policies or just deleveraging. With this different interpretation in mind we retain the spread variable in our set of fundamentals (also endorsed by its robust impact across a variety of specifications). In a robustness check we replaced the interest rate spread with another variable proxy for deleveraging, i.e. banks' leverage ratio (bank assets over equity) as in Bologna et al. (2014). In line with the discussion above, a shrinking leverage ratio is associated with lower credit ratios (while other regressors remain largely robust). Additional robustness checks, reported in Comunale et al. (2018), underline that the results shown in table 1 remain qualitatively unchanged across a variety of specifications (e.g. alternative or additional credit determinants).

Considering the significant and robust impact of the chosen determinants, we calculate the credit levels determined by fundamentals for the period 1998–2016. Chart 4 (for total credit) and chart 5 (for domestic credit only) compare the levels of credit that are in line with fundamentals, based on GM-FMOLS and fixed effects estimates, with actual credit levels. Several interesting results emerge.

First, referring to total credit (chart 4), all the countries that recorded large positive credit gaps in the pre-GFC boom years and/or during the GFC have experienced corrections back to fundamental levels in recent years. Nevertheless, there are considerable cross-country differences. While Estonia and Latvia have been able to bring formerly overshooting credit levels more or less fully back to fundamental levels, adjustment in Bulgaria and Croatia is not yet complete. Although overshooting gaps have narrowed in these two countries they are still quite sizeable, amounting to about 30% of GDP at the end of 2016. Another case is Slovenia where considerably positive credit gaps opened up in the wake of the GFC but were closed again as a result of the adjustment undertaken in the course of the Slovenian banking crisis in 2012–2013.

Second, there are several countries with undershooting credit levels, i.e. negative credit gaps. Total credit ratios in Hungary, Lithuania, Poland and Romania had been rather close to fundamental levels until the GFC, but the deleveraging episode right after the GFC led to negative credit gaps, reaching about 30% of GDP until the end of 2016. Poland is a bit different insofar as actual credit ratios have not declined since the GFC but experienced a sideward movement, while fundamental levels increased, thus widening the negative gap. The Czech Republic and Slovakia, in contrast, recorded negative credit gaps already considerably before the GFC, in



fact ever since they had implemented adjustments after their banking crises in the late 1990s and early 2000s. In both countries the undershooting gaps widened in the course of the GFC, and while they have remained very persistent in the Czech Republic, some recent closing can be observed in Slovakia.

Third, if we were to ignore cross-border credit, i.e. if we look only at domestic credit (chart 5), we observe clearly smaller credit gap overshoots. In Bulgaria for instance, the credit gaps for domestic credit would be about two-thirds lower than the figure for total credit at the end of 2016, and in Croatia they would be about three-quarters lower. Likewise, we find smaller and more short-lived overshoots for Estonia and Latvia around the GFC. For countries with negative credit gaps, in contrast, the gap size remains broadly unchanged.

#### 4 Summary and policy implications

Our analysis reveals that countries which experienced overshooting before and/or during the GFC have indeed been able to bring total credit levels back toward fundamentals-based levels. In a few countries, though, adjustment has not yet been accomplished, e.g. considering still sizeably positive credit gaps in Bulgaria and Croatia. On the other hand, several countries shifted toward undershooting during the post-GFC deleveraging episode, often with widening negative credit gaps in recent years. As several of these countries had already been quite close to fundamental levels up to the GFC, post-GFC deleveraging was apparently driven also by other factors, such as a the specific composition of credit (featuring e.g. high shares of foreign currency-denominated loans in some cases). The policy response to identified (positive or negative) credit gaps must be geared not only to the size of the gap, but also to the adjustment path. For instance, in order not to undermine economic development and convergence, restrictions on (domestic) credit growth could be tightened in order to contribute to shrinking positive credit gaps if and only if macrofinancial conditions are favorable.

Note that our results may differ from recent attempts in calculating credit-to-GDP gaps based on statistical filtering techniques. These are recommended when setting a countercyclical capital buffer (CCyB), whereby national authorities rely on a set of indicators and attach different weights to selected indicators across countries (see Mazzaferro and Dierick, 2018, in this issue to learn more about the current state of play in the EU). Our approach draws a relationship between the credit-to-GDP ratio on the one side and macroeconomic and financial fundamental factors on the other side in a CESEE context, and hence takes a more structural perspective. In the CCyB framework, in contrast, the focus is on the deviation of the credit-to-GDP ratio from its long-term trend over time in each individual country, with a view to assessing the position of the economy in the financial cycle (Drehmann and Tsatsaronis, 2014). For a more detailed discussion of the two alternative approaches, see Geršl and Seidler (2015). Similarly to them, we suggest using both approaches complementarily. What does this mean in practice in our view? In case the credit ratio is considerably above the identified fundamentals-based level, but the filtering approach does not signal a positive credit gap due to only moderate credit growth (such as currently in Bulgaria and Croatia), policymakers may nevertheless want to consider policy measures to steer credit ratios toward the level justified by fundamentals. At the same time, there are certainly also good reasons to take regulatory measures to smoothen the financial cycle even if a

country records credit levels below the identified fundamental levels. Such a country, e.g. recently the Czech Republic, can have expansionary phases (i.e. positive deviations from the trend) that can justify the activation of the CCyB.<sup>12</sup> Moreover, as Hajek et al. (2017) pointed out, the main purpose of the CCyB is not necessarily to tame credit growth (this can only be seen as a positive side effect), but to boost the banking sector's resilience to ensure smooth funding of the real economy throughout the financial cycle. From our perspective, it is important that the regulatory framework taken as a whole does not hinder the credit-to-GDP ratio moving toward the level justified by fundamentals in the longer term.

Finally, our results also show that accounting for cross-border credit as a substitute for domestic bank credit matters considerably for credit gap assessments. Cross-border credit is quite sizeable in several countries, and ignoring it would lead to the conclusion that actual credit levels are not larger than levels justified by fundamentals in most of the CESEE countries under review. One could argue that cross-border credit does not constitute credit risk from a domestic point of view. However, if a company relying on both cross-border and domestic credit gets into debt-servicing difficulties due to its overall heavy debt burden, the domestic banking sector would nonetheless be affected. Furthermore, an overly large share of cross-border credit has implications for overall macrofinancial stability, as an overly indebted private sector has a harder time adjusting during episodes of macrofinancial stress. Moreover, in such a situation, a relatively large share of private sector debt owed to foreigners could imply risks of unduly large capital outflows and thus balance of payment risks. Finally, there is also an ongoing policy discussion to which extent cross-border lending and macroprudential measures are interrelated. The European Systemic Risk Board (ESRB, 2018), for instance, investigates the role of cross-border lending for the reciprocity of macroprudential measures activated in another EU country.

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<sup>12</sup> The CNB justified its decision of June 2017 to increase the CCyB with risks of excessive credit growth; explicitly mentioned are mortgage loans ([https://www.cnb.cz/en/public/media\\_service/press\\_releases\\_cnb/2017/20170613\\_zfs.html](https://www.cnb.cz/en/public/media_service/press_releases_cnb/2017/20170613_zfs.html)).

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