



EUROPEAN POLICY ANALYSIS

Economic growth and real convergence in Central and Eastern Europe: lessons for the future enlargement of the EU

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Summary

This paper examines experiences of the former Central and Eastern European candidate countries, as newcomers to the European Union (EU) in 2004–2013, and prescribes lessons and policy recommendations for current candidate countries.

The study analyses economic growth and real convergence paths of the former candidate countries toward the EU15 over the twenty years of their EU membership and seeks to identify the key drivers of economic growth related to their EU membership. To compare the former and the current candidate countries with the EU15, two theoretical concepts of income convergence are empirically tested, along with a discussion of economic, political and institutional differences.

The results indicate that EU membership exerted a positive impact on the economic growth and catching up of the former candidate countries. The current candidate countries may have a greater potential for an acceleration of their economic growth than the former, due to the very convergence mechanism. However, a comparable positive effect on economic growth is critically contingent upon the current candidate countries' ability to embark on comprehensive reforms of the institutional architectures of their economies. In reality, the adverse impact of weak and ineffective institutions may offset or even outweigh the first effect.

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The opinions expressed in the publication are those of the authors.

1. Introduction

The Eastern enlargement of the European Union in 2004+ may be deemed a success story, in particular with regard to the record of economic growth and catching up of the eleven new members of the EU in Central and Eastern Europe (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia, which will be referred to by the acronym ‘CEE11’). Between 2004 and 2023 the CEE11 economies markedly outperformed the members of the ‘old’ EU in Western Europe (EU15)¹ in terms of GDP growth and substantially narrowed the economic development gap (GDP per capita in purchasing power standard/parity or PPS/PPP).

The primary aim of this paper is to capitalize on the experience of growth and catching up of the CEE11 countries, as newcomers to the European Union, and to suggest lessons and policy recommendations to their prospective followers or the current candidate countries representing the second wave of post-communist states in Southern and Eastern Europe (Albania, Bosnia and Herzegovina, Georgia, North Macedonia, Moldova, Montenegro, Serbia and Ukraine, referred to as the ‘SEE8’ cluster) expected to also enter the EU as the most recent outsiders to the capitalist world.

This paper is structured as follows. Section 2 depicts the general picture of economic growth and real convergence paths of the CEE11 toward the EU15 over the twenty years of their EU membership (2004–23). Section 3, based on the application of econometric models, seeks to identify the key drivers of the economic growth in these countries related to their EU membership. Section 4 provides empirical verification of two theoretical concepts of income convergence² of the CEE11 economies toward the ‘core’ of the European Union, namely, the EU15. Section 5 endeavours to highlight the economic, political and institutional differences between the CEE11 and the SEE8 countries. Finally, Section 6 prescribes lessons and policy recommendations for the latter,

stemming from the experience of their CEE predecessors, appropriately adjusted to take account of the differences and the peculiar features of these SEE8 countries.

2. Economic growth and catching up

Seen in a historical comparative perspective, the CEE11 countries’ accession to the EU, the exception being Slovenia and Czechia, took place under an unprecedented disparity in the levels of economic development compared to the ‘core’ member countries. In 2004, the mean GDP per capita in PPS terms in the CEE11 group amounted to only 44.5% of the EU15 average, ranging between 30% in Romania and 75% in Slovenia. For benchmarking purposes, it is worth recalling that twenty years earlier, i.e. between 1981 and 1986, when three Mediterranean countries were being admitted to the Community, this indicator averaged 72% and ranged from 60% in Portugal to 76%–80% in Spain and Greece (Rapacki 2012).

As another background historical reminder, it should be noted that the development gap between the CEE11 and EU15 was somewhat smaller (by approximately 2 percentage points) at the very outset of their systemic transformation from a centrally planned or command economy to a fully-fledged market system. In 1989, the average GDP per capita at PPS of the former represented 46.4% of its mean level in the latter (own calculations based on Rapacki 2009). However, in the next several years the gap involved dramatically increased due to the ‘transformation recession’ or a deep contraction of output triggered by a systemic U-turn from the previous trajectories of institutional and political development of these former socialist countries. The recession in most CEE11 economies lasted from two (Poland) to five years (Estonia). In turn, in two outliers from this general pattern, viz., Bulgaria and Romania, it took until 1999 – with some spells of temporary improvement – to start a sustained recovery from the slump. The recession brought about a cumulative fall of the GDP level in the CEE11

¹ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the UK. In this paper, we include the United Kingdom in the EU15 benchmark, as this country remained an EU member for most of the period of our study.

² They comprise the notions of beta and sigma convergence, well-embedded in contemporary economic growth theory.

Table 1. **Economic growth and real convergence in CEE11 countries, 2004–23**

Country	Average annual GDP growth rate in constant prices			GDP per capita (PPS, EU15 = 100)			Change in GDP gap 2023/2004 (p.p.) ^d
	2004–19	2020–23	2004–23	2004	2019	2023	
Bulgaria	3.1	2.3	2.9	30.1	49.4	60.9	-30.8
Croatia	1.5	3.3	1.9	48.4	62.5	70.0b	-21.6
Czechia	2.9	0.3	2.3	69.0	86.9	86.7	-17.7
Estonia	3.0	0.6	2.5	47.8	77.3	77.8	-30.0
Hungary	2.2	1.5	2.1	53.7	68.1	72.9	-19.2
Latvia	2.7	1.4	2.4	40.5	64.6	67.6	-27.1
Lithuania	3.4	2.1	3.1	43.0	78.6	82.6	-39.6
Poland	4.1	2.6	3.8	44.1	68.0	76.3	-32.2
Romania	3.8	2.0	3.5	29.7	64.9	74.4	-44.7
Slovakia	3.8	1.2	3.3	50.1	65.8	69.6	-19.5
Slovenia	2.2	1.9	2.2	75.1	82.8	87.2	-12.1
CEE11 ^c	3.5	2.0	3.2	44.5	68.4	75.3	-30.8
EU15 ^c	1.2	0.8 ^a	1.1 ^a	100	100	100 ^a	x

a - the EU15's average growth rates for 2020–23 (and accordingly for 2004–23) as well as the GDP per capita level for 2023 have been recalculated and adjusted by the authors relative to the background Eurostat data for the EU27, to take account of the UK,

b - data imputed by the authors,

c - weighted averages, weights being population size,

d - 'x' implies real convergence.

Source: Eurostat (ec.europa.eu/eurostat); the missing observations for the UK were completed with data from the British Office for National Statistics (GDP growth rates in 2020–23), Worldometers (population number in 2023) and International Monetary Fund, World Economic Outlook, (GDP per capita in 2023); own calculations.

economies, ranging from approximately 14% in Czechia and Poland to nearly 50% in Bulgaria, Latvia and Lithuania (Rapacki and Próchniak 2009b, IMF 2024). Seen from the perspective adopted in this paper, one important implication of this development was a sharp rise in income disparities between the CEE11 and the EU15. As a result, the process of real income convergence that has unfolded with the recovery from the transformation recession since the mid-1990s (or later, as in Bulgaria and Romania), was time-lagged and started from a lower level compared to the initial conditions of systemic transformation in 1989. The overall balance of the transformation recession and the subsequent accelerated growth was positive for the CEE11 countries in terms of growth dynamics: between 1990 and 2004 the average annual rate of growth of the GDP amounted to 1.8%. However, in the same period, the EU15 economies grew at an annual rate of 2.1% (Rapacki 2009). This made the CEE11 suffer a backlash in terms of their economic development gap vis-à-vis the latter: by 2004 it was bigger than

in 1989, the only exceptions being Poland (the gap shrank by 6 percentage points) and Slovenia (1 point).

Table 1 provides the most relevant data depicting the economic growth and real convergence trajectories of the CEE11 economies between 2004 and 2023.

Based on the data shown in Table 1 and our earlier empirical studies, the following key conclusions concerning the economic growth and catching up record of CEE11 countries since their accession to the EU in 2004 can be drawn.

1. Economic growth in the CEE11 cluster was, on average, faster than in the 'old' EU countries (EU15) both in the entire period of 2004–23 and more recently, at the time of the COVID-19 pandemic and the war in the Ukraine (2020–23).
2. The CEE11 countries, embodying the model of a post-communist socio-economic system that we

have called *patchwork capitalism* (Rapacki 2019, Gardawski and Rapacki 2021), recorded the fastest economic growth compared to the four other models of Western capitalism coexisting in the EU, singled out by Bruno Amable (2003): Anglo-Saxon (Ireland, the UK), Continental European (Austria, Belgium, France, Germany, Luxembourg, the Netherlands), Mediterranean (Greece, Italy, Portugal, Spain), and Nordic (Denmark, Finland, Sweden) [Maszczyk, Próchniak and Rapacki 2024].

3. Among the CEE11 countries, Poland was the top performer in terms of growth throughout the whole of the period examined, with Romania and Slovakia following close. In the entire EU, only Ireland and Malta exhibited higher growth rates.
4. Despite their having the best records of growth of GDP in the EU in the longer run, the CEE11 economies fared significantly worse in handling some adverse short- and medium-run external shocks, as corroborated by the data for 2009–14, i.e. the time of the global financial crisis and its aftermath.³
5. On the other hand, the growth performance of the CEE11 economies turned out to be relatively more resilient to the effects of the COVID-19 pandemic compared to the EU15. The contraction of the GDP in 2020 in the former was smaller than in the latter (-3.4% vs. -7.2%) while the ensuing rebound of output in 2021 was similar (6.6%). Overall, in 2020–23 the CEE11 displayed an average annual GDP growth rate of 2.0%, which favourably compares with the 0.8% growth in the EU15 (Maszczyk, Próchniak and Rapacki 2024).⁴
6. All in all, over the twenty years since their accession to the EU, the CEE11 countries experienced a rapid process of income-level or real convergence, narrowing their development gap vis-à-vis the EU15 by nearly 31 percentage points. This outcome sharply contrasts with the experience of their Mediterranean peers. As a result, they substantially narrowed the pertinent gap with the latter, from 45 percentage points in 2004 to just 11 points by 2023 (the EU15 average as a benchmark).⁵
7. The process of real convergence between 2004 and 2023 proceeded most rapidly in Romania (45 percentage points), followed by Lithuania (40) and Poland (32 points). In contrast, it was the slowest in Slovenia (12), Czechia (18) and Hungary (19 points). An important co-determinant of the pace of real convergence was the diversified scale of migration in individual countries, including a sizeable emigration and a decline in the total population in the Baltic countries and Romania.⁶ These factors resulted in the per capita growth rates of the GDP in those countries being substantially higher than the corresponding figures for absolute GDP, shown in Table 1.

³ This finding is based on pertinent data calculated as arithmetic averages. In these terms, the mean GDP annual growth rate for the CEE11 economies amounted to only 0.1%. The corresponding weighted average (1.1%) is strongly biased by the figure for Poland (2.9%) whose population was 37% of the whole CEE11. It should be also stressed that within the CEE11 group the overwhelming majority of its members experienced either a slump (three economies) or stagnation (six).

⁴ It should be noted though that a comparatively good growth performance of the CEE11 countries during the COVID-19 crisis entailed high economic (accelerated inflation and increased fiscal imbalances) and social costs (high levels of excess deaths and high health sacrifice coefficients) of growth and employment protection (Próchniak et al. 2022).

⁵ Own calculations based on Eurostat data and on our earlier research (Maszczyk, Próchniak and Rapacki 2024). If only three Mediterranean countries which joined the EU in the 1980s are considered (Greece, Portugal and Spain) the development gap involved in 2023 amounted to only 4.6 points.

⁶ Between 2004 and 2019, the population of Romania shrank by 2.2 million, i.e., by 10.2%, mostly due to emigration. In the same period, the populations of Lithuania and Latvia decreased by 17.8% and 16.2%, while those of Bulgaria and Croatia by 10.3% and 9.4%, respectively. Simultaneously, the relevant figures for Visegrad countries and Slovenia in this period showed a modest growth or remained essentially unchanged (own calculations based on Eurostat data, 2023; Próchniak et al., 2021).

Technical Chapter

3. Key EU membership-related determinants of economic growth – Empirical tests

In this section we strive to sharpen the empirical picture of the growth in the CEE11 countries by conducting an econometric test aimed to check whether selected variables related to EU membership contributed in a statistically significant manner to accelerating their economic growth. In this test, ten possible explanatory variables were selected on the basis of the theory of economics, with special reference to the theory of economic integration. They cover four areas: 1. institutions, 2. EU funds, 3. international trade, and 4. foreign investment.

The following variables were selected:

1. Institutions:

- the Heritage Foundation index of economic freedom (two variables – *economic freedom level* representing the scope of economic freedom and *economic freedom change* measuring the change in economic freedom),
- the World Bank worldwide governance indicator (two variables – *quality of governance level* measuring the level of the index and *quality of governance change* capturing its change),

2. EU funds:

- the inflow of European Union funds (*inflow of EU funds* calculated by the authors as

expenditures from the EU budget targeted to a member country relative to its gross national income),

3. International trade:

- *openness level* and *openness change* which measure the level of and the change in the economy's openness, i.e. the sum of exports and imports as a proportion of GDP,
- *exports ratio level* and *exports ratio change* expressing the level and the change in the exports ratio, i.e. the share of exports in GDP,

4. Foreign investment:

- net inflow of foreign direct investments (FDI) (as % of GDP) [*foreign investments*].

Our empirical test covers the period 2004–23. The relevant econometric models were estimated on the basis of panel data averaged for 5-year overlapping subperiods: 2005–09, 2006–10, ..., 2018–22 and 2019–23. This was motivated by the need to augment the number of observations and hence to improve the statistical validity of the models involved. The pertinent models were estimated for the whole group of the CEE11.⁷

Table A1 (see the Appendix) contains the ten models of economic growth estimated in this paper.⁸ The set of explanatory variables includes the initial income level and ten variables related to the EU membership of a country in the CEE11.

⁷ The values of each variable were calculated as averages for five annual observations in each subperiod (if at least three annual observations for a five-year subperiod were missing, the final value for that subperiod was not calculated). The changes in variables were calculated as the differences between the value in the last year of a subperiod and the value for the year prior to the initial year of that subperiod. For example, the change in the index of economic freedom for the 2005–09 subperiod is the difference between the 2009 and 2004 values of that index. The initial level of GDP (*initial GDP*) was computed as the natural logarithm of real GDP per capita at PPP in the year prior to the initial year of a given subperiod (e.g., for 2005–09, the initial income level was the 2004 GDP per capita). The economic growth rate is thus the difference in the natural logarithms of real GDP per capita at PPP between the last year of a subperiod and the year prior to the initial year of this subperiod.

⁸ For each of the ten variables related with the enlargement of the EU, a separate model has been estimated. To avoid multicollinearity, different variables representing a similar coverage should not appear in the same model. That is why in our estimations, the variables representing the membership in the EU appear in separate models. Since there are ten variables altogether, ten different models have been estimated.

Since the complete model should include numerous factors of economic growth in order to capture the many channels of influence of the various determinants on the dynamics of output to avoid any error due to omitted variables, the estimated models also include numerous control variables as typical economic growth determinants. They are consistent with the findings of many other empirical studies and the economic theory. They encompass the following variables: investment rate (% of GDP) [*investment rate*], general government balance (% of GDP) [*government balance*], government consumption expenditure (% of GDP) [*government consumption*] (this variable is a proxy for the size of the government sector), expenditure on education (% of GDP) [*education expenditure*], the inflation rate (%) [*inflation*], the volume of non-performing loans (% of total loans) [*non-performing loans*], the share of services in GDP [*services*], life expectancy [*life expectancy*], fertility rate [*fertility rate*], population aged 15–64 (% of total population) [*population aged 15–64*], and the rate of growth of the population [*population growth*].⁹

The parameter estimates are consistent with economic theory, and mostly statistically significant.

Economic freedom and improved quality of governance both exert a positive and statistically significant impact on the growth of the GDP. The inflow of EU funds contributes similarly.¹⁰ As regards variables representing international trade, a positive and statistically significant relationship was recorded in the case of two variables measuring the development of foreign trade (*openness level* and *exports ratio level*). However, two incremental variables depicting changes in this area (*openness change* and *exports ratio change*) do not show such an impact. Similarly, we found a positive and statistically significant effect of foreign investment on growth of the GDP.

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Our research shows, among other things, that a higher rate of economic growth is driven by a good fiscal position of the economy (budget surplus or

⁹ In interpreting the results, attention must be paid to the issue of causality. The regression models estimated in this study confirm in a statistical sense interdependence (co-existence) rather than causality. It is very difficult to econometrically test for causality. The statistical procedures available for this, for example the Granger test, have many disadvantages (these tests rely on the inclusion of lags of the explanatory variables, which does not necessarily imply causality). Regarding causality, it is useful to refer to economic theory and the theoretical links between variables, which we do in this study. Furthermore, the estimated regression models are based on data averaged over sub-periods, which means that the interdependencies between the variables cover a longer time horizon. Hence, it can be assumed that the results obtained here reflect, at least partially, a causal relationship and it is therefore legitimate to interpret the results in terms of the impact of some variables on others. On the other hand, the issue of endogeneity is taken into account in the research method used. By estimating the regression equations using the Blundell-Bond GMM system estimator, the variables are grouped into categories, including endogenous and exogenous factors.

¹⁰ An analysis of the impact of EU funds on economic growth requires a few words of comment. The money received from the EU covers various programmes and is intended for various purposes. Some of the programmes take into account only demand-side effects, while others are also related with supply-side effects. Both channels of influence contribute to faster economic growth, the only difference being that demand-side effects materialise solely in the short run (obviously, they are greater than the initial inflow of money due to the expenditure multiplier), while supply-side effects lead to sustained economic growth in the medium and long term. For example, money transferred to farmers aimed to subsidise food production leads primarily to demand-side effects through an increase in household disposable income and thus a rise in consumption. In contrast, funds for investments in infrastructure, including the construction of motorways and the modernisation of railway lines, have strong supply-side effects (in addition to demand-side implications).

low deficit). In turn, a large size of the government, measured by a high share of government consumption in the GDP, adversely affects the GDP growth. The same holds for a large volume of non-performing loans or a high inflation rate.

It is worth highlighting that the results of the econometric exercise carried out in this section are largely consistent with the findings of our earlier empirical studies on the role of membership in the EU as a driver for growth in the CEE countries (Rapacki and Próchniak 2009a, 2019). In particular, they indicate the importance of selected EU membership-related variables as key drivers of the acceleration of economic growth in these countries, with special regard to institutional factors such as the scope of economic freedom and the quality of governance, as well as the inflow of EU funds.

‘Our research findings can also serve as a basis for empirical generalization and a premise to argue that membership in the EU significantly contributed to the acceleration of economic growth of the CEE11 countries in 2004–23.’

Our research findings can also serve as a basis for empirical generalization and a premise to argue that membership in the EU significantly contributed to the acceleration of economic growth of the CEE11 countries in 2004–23. This can be seen in two interrelated comparative perspectives: (i) as a result of contrasting statistical data for the period examined with historical time series, and (ii) comparing these data with a counterfactual scenario of non-EU membership.

Seen from the first perspective, the years 2004–23 saw a remarkable acceleration of economic growth in the CEE11 countries, compared to the period of 1990–2004, preceding their accession to the EU. While the average annual rate of growth of the GDP for this group in 1990–2004 amounted to 1.8% (Rapacki 2009, Maszczyk, Próchniak and Rapacki 2024), between 2004 and 2023 it averaged 3.2% (Table 1) which is equivalent to an almost 78% acceleration. Obviously, these

outcomes should be treated with caution as they are not directly comparable. This is mostly due to the fact that the growth of the CEE11 economies in 1990–2004 was strongly biased by the effects of the ‘transformation recession’ in the early years of the systemic change from a centrally planned to a market economy.

Within the second perspective, we will refer to three recent empirical studies by Grassi (2024), Maganga Zonga, Lin and Chang (2023), and Hagemejer, Michałek and Svatko (2021) who estimated the growth and income effects of the 2004 enlargement of the EU on the new member countries, comparing their actual record of growth with a counterfactual scenario of non-membership. According to these authors, membership induced large and positive effects on the entrants, including an acceleration of economic growth, which by 2019 resulted in an increment in the mean level of GDP per capita in the new member countries in the range of 14% to 32%.

Summary of findings on economic growth

In this section we have conducted an econometric test aimed to check whether selected variables related to EU membership contributed in a statistically significant manner to accelerating the economic growth in CEE11 in 2004–23.

The estimates are consistent with economic theory, and mostly statistically significant. Our results indicate the importance of selected EU membership-related variables as key drivers of the acceleration of economic growth in these countries, with special regard to institutional factors such as the scope of economic freedom and the quality of governance, as well as the inflow of EU funds. Similarly, we found a positive and statistically significant effect of foreign investment on growth of the GDP. Conversely, a large size of government, a large volume of nonperforming loans or a high inflation rate affect the GDP growth negatively.

Our research findings can serve as a basis for empirical generalization and a premise to argue that membership in the EU significantly contributed to the acceleration of economic growth of the CEE11 countries in this period.

Technical Chapter

4. Real convergence toward the EU15 – Empirical tests

In this section we aim to shed new empirical light on the paths of the process of catching up with Western Europe followed by the CEE11 EU members, and to delve deeper into the speed and sustainability of this process.

The concept of real convergence, which boils down to the equalization of income disparities between countries, is well grounded in economic theory. It is confirmed by many theoretical models, including models of economic growth.

In this study, we use two widespread concepts of convergence: beta convergence and sigma convergence.

- Beta convergence occurs when less developed countries with lower GDP per capita exhibit a higher rate of economic growth than more developed ones.
- Sigma convergence means that income differences between countries, measured, e.g. by the standard deviation of GDP per capita levels, decrease over time.

Although both types of convergence are interrelated and imply equalizing differences in development levels, they used to be examined separately in empirical studies since they require the estimation of a different econometric model. They also show different aspects of economic growth trajectories. Beta convergence compares only the levels of GDP per capita for the final and initial years, whereas sigma convergence indicates the stability of growth trajectories over time.

The real convergence mechanism of less developed countries is related to their initial income level

through a variety of channels, of which two are of special importance. The first one deals with the initial level of capital. According to economic theory, the marginal productivity of capital tends to diminish as its stock increases. Countries with a lower stock of capital experience therefore a higher rate of return on capital, which is conducive to faster economic growth. This is the primary mechanism explaining real convergence in theoretical terms. The second one boils down to the diffusion of knowledge and transfer of technology. Less developed countries can benefit from the latest available knowledge without incurring the costs of its creation. Technology transfer from more advanced to less developed countries facilitates the catching up process of the latter through an accelerated growth of total factor productivity.

4.1 Beta convergence: CEE11 versus EU15 – Do countries with lower gdp per capita grow faster?

As mentioned above, beta convergence occurs when less developed countries with lower GDP per capita exhibit a faster rate of economic growth than more developed ones. Table 2 and Figure 1 show the beta convergence results for the CEE11 countries toward the EU15 for the whole period of 2004–23 and two shorter subperiods: 2007–23 and 2013–23.¹¹

Figure 1 demonstrates that the CEE11 group recorded much faster economic growth than the EU15 cluster. The CEE countries are marked in red. The empirical points for these countries in most cases are located in the upper left corner of the chart. This implies faster economic growth in the former than in the latter. The income-level convergence was very strong, especially for the least developed CEE11 economies: Bulgaria, Romania, Poland and Lithuania. The economic growth rate of these countries in 2004–23 reached nearly 4% annually. Conversely, most Western European countries recorded economic growth of no more than 1% per year in the same period.¹²

¹¹ At first glance, the figures presenting the results of beta and sigma convergence tests carry the same information as the tables. However, the former show the distribution of individual points along the estimated trend line, which is not the case with the latter. This is equivalent to saying that, seen from the economic point of view, the figures allow drawing broader conclusions from the analysis. The behaviour of individual countries (in the case of beta convergence) and the stability of changing income differences over time (in the case of sigma convergence) could not be assessed based only on the tables. On the other hand, tables include the model estimations for two shorter subperiods which is difficult (or even impossible) to show on the figure for the whole period.

¹² The trend lines in the figures show the average tendencies of the countries (in the case of beta convergence) or across the whole period (in the case of sigma convergence).

Table 2. Regression models for absolute (unconditional) beta convergence of CEE11 economies toward the EU15

Explanatory variable / Statistics	26 countries			2 regions (CEE11 and EU15)		
	2004–23	2007–23	2013–23	2004–23	2007–23	2013–23
<i>initial GDP</i>	-0.0205*** (0.000)	-0.0182*** (0.001)	-0.0203*** (0.006)	-0.0321	-0.0337	-0.0433
<i>constant</i>	0.2301*** (0.000)	0.2039*** (0.000)	0.2350*** (0.003)	0.3500	0.3657	0.4746
<i>R</i> ²	0.5554	0.3941	0.2734	1.0000	1.0000	1.0000
Beta convergence	yes	yes	yes	yes	yes	yes
No. of observations	26	26	26	2	2	2
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

Estimated coefficients and *p*-values (in parentheses) are reported for each explanatory variable.

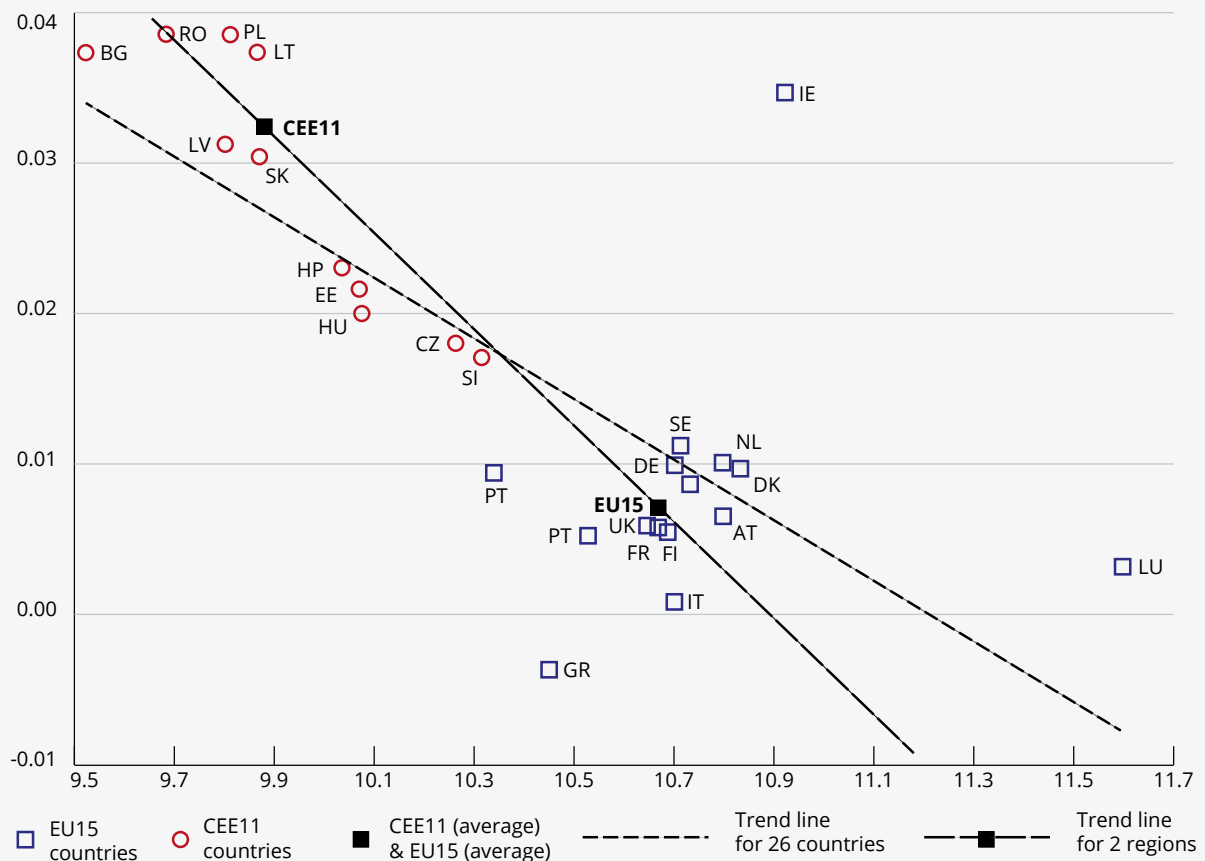
OLS – ordinary least squares.

The growth rate of real GDP per capita at PPP is the dependent variable. Models are estimated on the basis of cross-sectional data.

*** Significant at the 1% level. ** Significant at the 10% level.

Source: Own calculations.

Figure 1. Absolute (unconditional) beta convergence of CEE11 towards the EU15



Source: Own calculations

Table 3. **Regression models for sigma convergence of CEE11 economies toward EU15**

Explanatory variable / Statistics	26 countries			2 regions (CEE11 and EU15)		
	2004–2023	2007–2023	2013–2023	2004–2023	2007–2023	2013–2023
<i>time</i>	-0.0059*** (0.000)	-0.0047*** (0.000)	-0.0047*** (0.000)	-0.0120*** (0.000)	-0.0112*** (0.000)	-0.0127*** (0.000)
<i>constant</i>	0.4474*** (0.000)	0.4166*** (0.000)	0.3887*** (0.000)	0.3876*** (0.000)	0.3423*** (0.000)	0.2850*** (0.000)
<i>R</i> ²	0.9087	0.9422	0.8809	0.9840	0.9852	0.9847
Sigma convergence	yes	yes	yes	yes	yes	yes
No. of observations	20	17	11	20	17	11
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

Estimated coefficients and *p*-values (in parentheses) are reported for each explanatory variable.

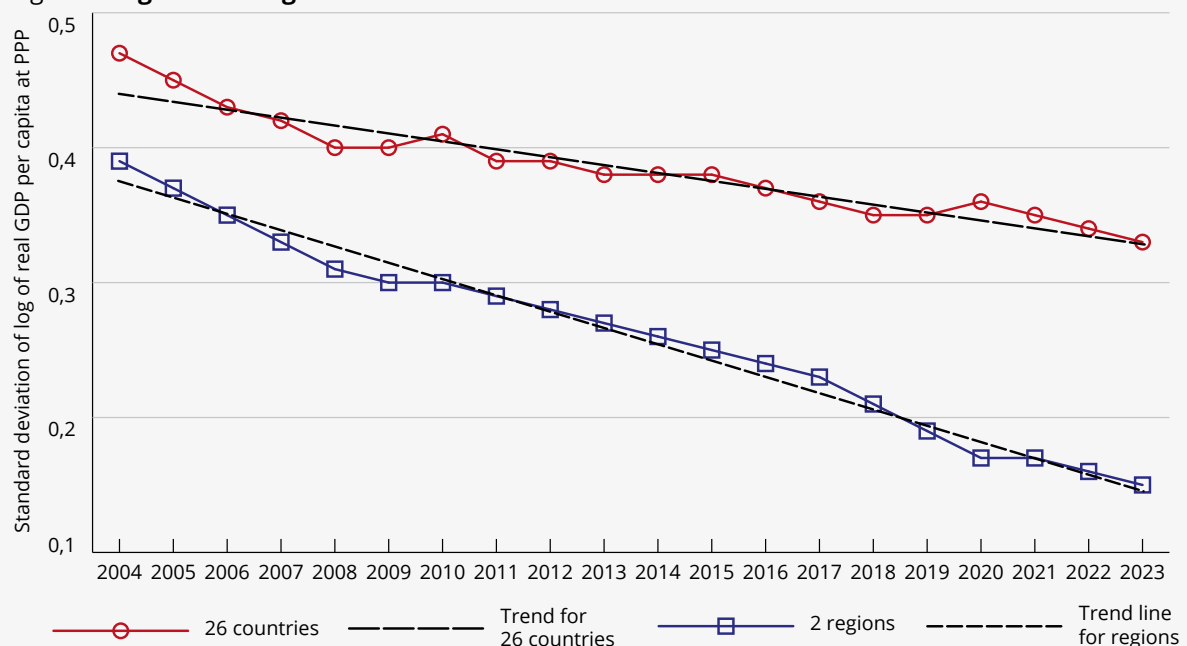
OLS – ordinary least squares.

The standard deviation of log of real GDP per capita at PPP between countries or regions is the dependent variable.

*** Significant at the 1% level. ** Significant at the 10% level.

Source: Own calculations.

Figure 2. **Sigma convergence of CEE11 toward EU15**



Source: Own calculations

The occurrence of convergence, which is clearly visible in Figure 1, is also supported by statistical properties of the regression models. The results of the estimated regression equations are provided in Table 2. The models were estimated for 26 countries (on the basis of individual data) and for two areas (aggregated data). Data for both groups (CEE11 and EU15) are population-weighted averages (both in the tables and figures).

Table 2 demonstrates that the slope of the regression line for the 2004–23 period and 26 countries is negative (i.e. the sign of the coefficient is negative, implying a downward sloping trend line on the figure) and statistically significant (if the *p*-value given in parentheses is less than 0.1, a variable is statistically significant at the 10% level; significance at the 1% level, calculated accordingly, indicates a higher significance than at the 10% level). This is equivalent to saying that the level of income in 2004 was strongly negatively correlated with the rate of economic growth in this period. Table 2 also contains the models estimated for shorter subperiods, viz., 2007–23 and 2013–23. The initial years of these subperiods correspond to the subsequent Eastern enlargements of the EU involving Bulgaria and Romania (2007), and Croatia (2013), respectively. In both shorter subperiods, real convergence occurred, which is illustrated by negatively sloped, statistically significant trend lines in the group of 26 countries. In the case of data aggregated for two areas, the slope of the regression line is also negative in all three distinguished time frames. However, statistical significance cannot be calculated because the line simply connects two empirical points, which means that by definition it has a perfect match.

4.2 Sigma convergence: CEE11 versus EU15 – Do income differences decrease over time?

As mentioned above, sigma convergence means that income differences between countries decrease over time. Table 3 and Figure 2 report the results of sigma convergence of the CEE11 group towards the EU15. As can be seen from Figure 2, income differences between the CEE11 and EU15 countries showed a decreasing trend in 2004–23. This applies both to between-country differentiation (among 26 countries) and regional differentiation (among two regions). Between 2004 and 2023, sigma-divergence trends occurred

only twice and were relatively short-lived: during the global financial crisis and the Covid-19 pandemic. In 2008–10 and 2019–20, income differences among the 26 EU countries increased slightly, although the data for the two areas do not corroborate this. A closer look at Figure 2 shows that the convergence of the new EU members to Western Europe was fairly sustained over time. Short-term internal and external shocks resulting from both demand-side and supply-side factors only temporarily disrupted the convergence processes within the EU.

Strong and sustainable convergence has also been corroborated by the estimates of the regression equations in Table 3. In all six estimated models, the slope of the regression line is negative and statistically significant. This indicates a strong sigma convergence of the CEE11 countries towards the EU15.

4.3 Beta convergence: SEE8 versus EU15 – Do countries with lower gdp per capita grow faster?

Table 4 and Figure 3 show the results of the beta convergence of SEE8 candidate countries towards the EU15. Both have an analogous structure to Table 2 and Figure 1, which refer to the CEE11 countries. These outcomes allow a comparative analysis of the catching up of the SEE8 and CEE11 clusters in terms of the speed and sustainability of the convergence process.

Compared to the CEE11 group, the beta convergence of SEE8 countries to the ‘core’ of the European Union proceeded much more slowly. The slope of the trend line in Figure 3 is smaller than that in Figure 1. A flatter trend line implies a slower convergence of the EU candidate countries towards the EU15. The flattening of the trend line is partly due to slow economic growth and recession in the Ukraine, which in recent years, as a result of the war with Russia, has recorded poor growth performance. The Ukraine is a country with a large population and therefore has a significant impact on the aggregate – population-weighted – data for the SEE8 group. In the case of individual data for the candidate countries, the Ukraine is treated equally with other much smaller countries and the trend line for 23 countries in Figure 3 is steeper than that for two groups, although still flatter than that for the 26 countries, including CEE11, in Figure 1.

Table 4. **Regression models for absolute (unconditional) beta convergence of SEE8 countries towards EU15**

Explanatory variable / Statistics	23 countries			2 regions (SEE8 and EU15)		
	2004–23	2007–23	2013–23	2004–23	2007–23	2013–23
<i>initial GDP</i>	-0.0145*** (0.000)	-0.0137*** (0.000)	-0.0102** (0.047)	-0.0084	-0.0043	-0.0016
<i>constant</i>	0.1643*** (0.000)	0.1540*** (0.000)	0.1239** (0.021)	0.0964	0.0512	0.0280
<i>R</i> ²	0.5801	0.4622	0.1754	1.0000	1.0000	1.0000
Beta convergence	yes	yes	yes	yes	yes	yes
No. of observations	23	23	23	2	2	2
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

Estimated coefficients and *p*-values (in parentheses) are reported for each explanatory variable.

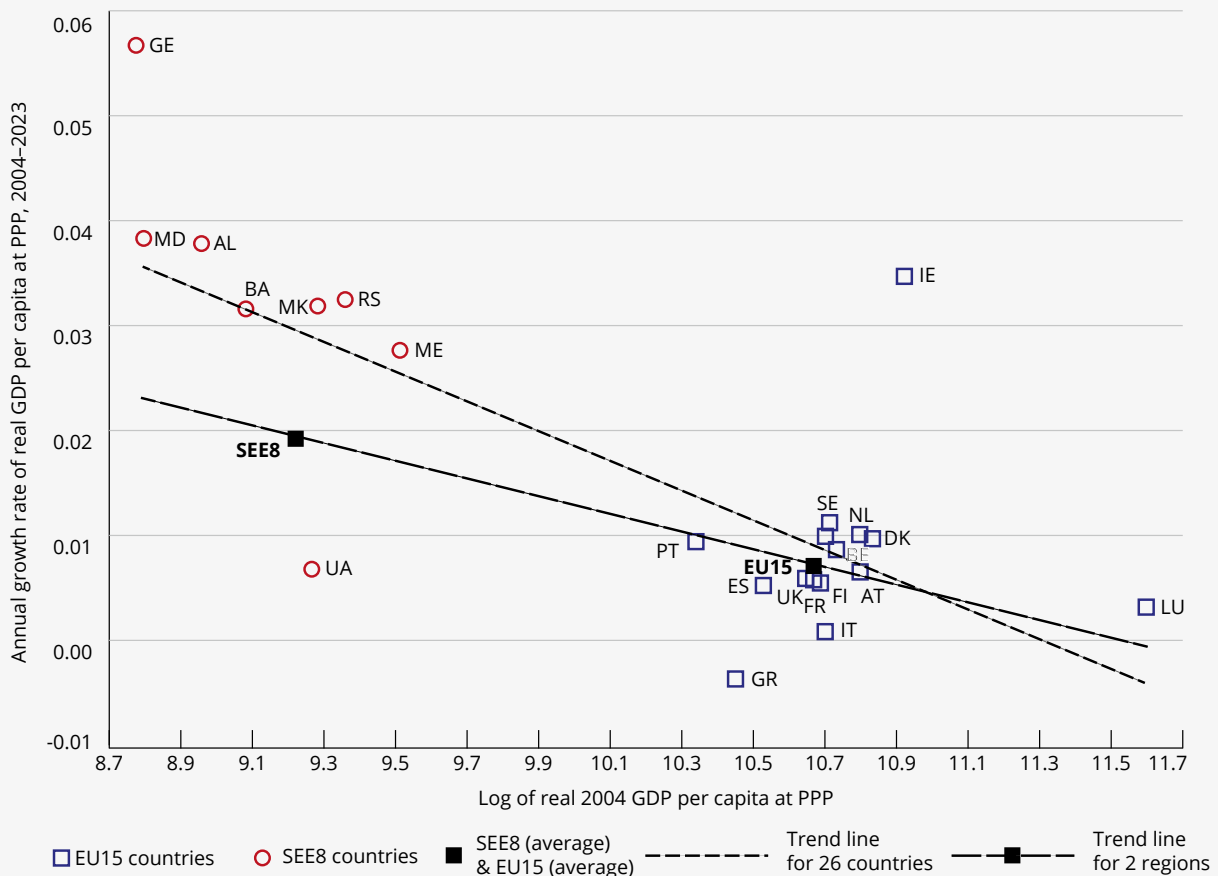
OLS – ordinary least squares.

The growth rate of real GDP per capita at PPP is the dependent variable. Models are estimated on the basis of cross-sectional data.

*** Significant at the 1% level. ** Significant at the 10% level.

Source: Own calculations.

Figure 3. **Absolute (unconditional) beta convergence of SEE8 countries towards EU15**



Source: Own calculations

Table 5. Regression models for sigma convergence of SEE8 countries toward the EU15

Explanatory variable / Statistics	23 countries			2 regions (SEE8 and EU15)		
	2004–2023	2007–2023	2013–2023	2004–2023	2007–2023	2013–2023
<i>time</i>	-0.0090*** (0.000)	-0.0071*** (0.000)	-0.0047*** (0.000)	-0.0042*** (0.000)	-0.0023** (0.020)	-0.0027 (0.212)
<i>constant</i>	0.7864*** (0.000)	0.7383*** (0.000)	0.6795*** (0.000)	0.6883*** (0.000)	0.6544*** (0.000)	0.6435*** (0.000)
<i>R</i> ²	0.9007	0.9039	0.8018	0.5660	0.3093	0.1669
Sigma convergence	yes	yes	yes	yes	yes	no
No. of observations	20	17	11	20	17	11
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

Estimated coefficients and *p*-values (in parentheses) are reported for each explanatory variable.

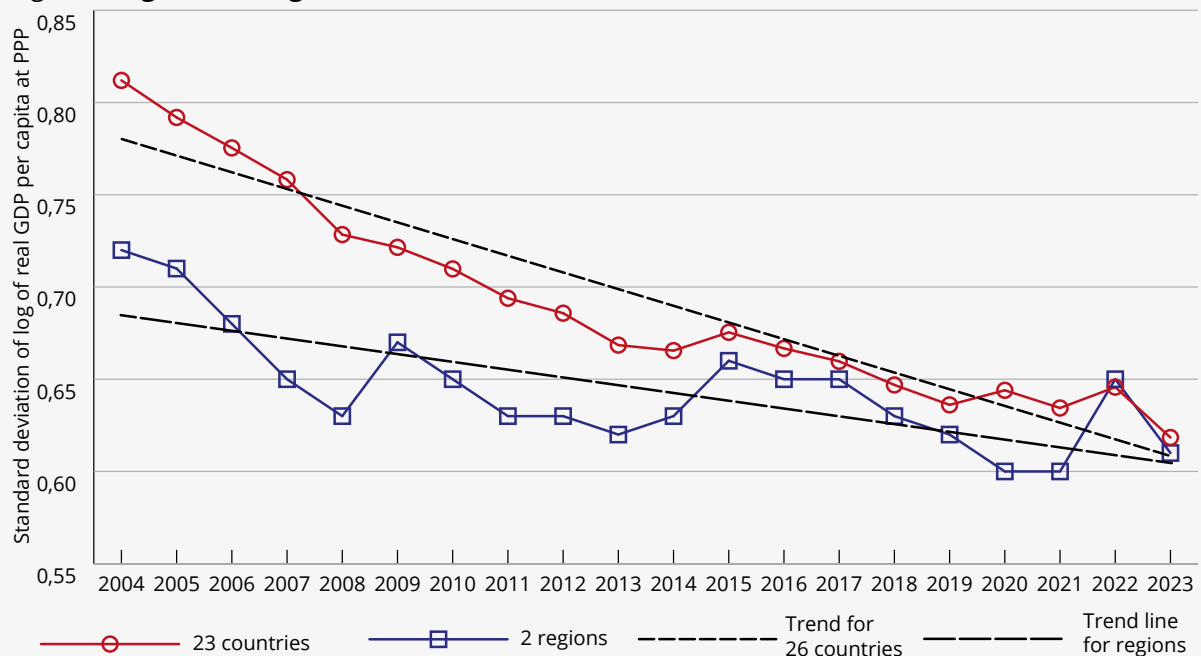
OLS – ordinary least squares.

The standard deviation of log of real GDP per capita at PPP between countries or regions is the dependent variable.

*** Significant at the 1% level. ** Significant at the 10% level.

Source: Own calculations.

Figure 4. Sigma convergence of CEE11 toward EU15



Source: Own calculations

A more in-depth analysis of the data in Figure 3 indicates that most SEE8 countries recorded economic growth rates between 3% and 4% over the 2004–23 period. At first glance, this is the same outcome as in the CEE11 group. However, it should be remembered that the level of income in the candidate countries was much lower in 2004.¹³ Hence, according to the convergence hypothesis, they should have achieved faster economic growth than the CEE11 countries. But that wasn't the case. Even though the SEE8 countries were less developed in 2004 relative to their CEE11 peers, the economic growth rates of both groups were quite similar.

This can be explained by the fact that 'the integration anchor' (economic policy actions, reforms of the economy and institutional changes related to accession to the EU) exerted a positive impact on the economic growth of the latter, triggering an acceleration in their GDP growth which was not the case for the candidate countries. As a consequence, the income-level convergence of SEE8 countries toward the EU15 has been slower than would likely have occurred had they joined the EU earlier.

4.4 Sigma convergence: SEE8 versus EU15 – Do income differences decrease over time?

Table 5 and Figure 4 show the results of the sigma convergence test of SEE8 countries toward the EU15. The data point to yet another disadvantage for economic growth of staying outside the EU. As can be seen in Figure 4, the process of sigma convergence of the EU candidate countries toward the EU 'core' was not sustained over time. There

were clear periods of divergence, which was much more pronounced compared to the CEE11 cluster. This outcome may be interpreted as a logical premise to argue that the non-membership in the European Union made the SEE8 economies more vulnerable to adverse exogenous shocks, which implied more frequent deviations from their long-run economic growth paths and more volatility in their growth.

Summary of findings on real convergence

The major findings of the beta and sigma convergence tests carried out in this section may be briefly summarized as follows.

First, since the time of their accession to the EU, the CEE11 countries have exhibited a rapid income-level convergence toward the EU15. The former, which were less developed in 2004, recorded on average a much faster economic growth during the 2004–23 period compared to their more economically advanced Western European counterparts. Hence, the income gap between the CEE11 and the EU15 substantially narrowed in 2023.

Second, the present EU candidate countries or the SEE8 group exhibited a faster economic growth (on average) than the EU15 economies between 2004 and 2023, too; however, the process of real convergence of the SEE8 cluster was slower than for the CEE11. One of the key explanations of this result may be seen in 'the integration anchor' that has become a strong driver of growth acceleration in the new EU member states, unlike in the candidate countries remaining outside the EU.

¹³ That is why the convergence process of SEE8 toward the EU15 was slower than in their CEE11 counterparts, even though economic growth rates were similar in both groups of countries. Since income levels in SEE8 were lower than those in CEE11, the same GDP growth rates translated into smaller changes in the absolute level of income in the former compared to the latter.

5. Former vs. current candidate countries – A comparative perspective

Before prescribing lessons and policy recommendations for the current EU candidates, capitalizing on the experience with growth and catching up of the CEE11 member countries in the last twenty years, it seems advisable first to make them more readily applicable to the SEE8. To this end, we need to take account of marked differences between the current EU candidates (SEE8) and their predecessors (CEE11) now (2023) and then (2004) and adjust the lessons accordingly. The two groups of countries differ essentially on many grounds, with special regard to the following aspects.

Size of economy and population

The SEE8 cluster is significantly smaller than the CEE11 in terms of the size of its economy and population. Its aggregate GDP in PPP in 2023 represented 3.9% (of which the share of the Ukraine alone was 2.0%) of that of the present EU (the EU27), compared to 17.8% for the CEE11 (own calculations based on the Eurostat database). In 2023, the size of the SEE8's population amounted to 14.0% of that of the EU27 (if excluding the Ukraine, only 4.8%), compared to the CEE11's 22%.

Size of development gap

The level of economic development of the candidate countries (SEE8), in terms of GDP per capita in PPS as a proportion of the EU15 average, is much lower than that prevalent in the CEE11, both now and then. The mean population-weighted GDP per capita at PPS in the SEE8 group in 2023 was equal to just 28.6% of the benchmark value for the EU15 (imputed values, based on IMF 2024 data, calculated by the authors), compared to 22.1% in 2004.¹⁴ This figure sharply contrasts with the corresponding indices for the CEE11 countries both in 2004 and 2023. At the time of their accession to the EU this index amounted to 44.5% of that of the EU15; today it amounts to 75.3% (Table 1) which is almost a triple of the corresponding figure for the SEE8.

Socio-economic development

Similar disparities hold for a more comprehensive gauge of socio-economic development, namely, the Human Development Index (HDI). Whereas the average value of this index in 2022 for the SEE8 was 0.787, for the CEE11 it amounted to 0.870 (UNDP 2024). This means that the candidate countries have been clearly lagging behind the CEE11 not only in terms of their level of economic development but also in such crucial dimensions of social development as the quality of education and the provision of health care. Moreover, similar disparities held for the Inequality-Adjusted Human Development Index (IHDI): for 2022, the pertinent figures for the SEE8 and CEE11 were 0.704 and 0.802, respectively (own calculations based on UNDP 2024).

Resilience to external shocks

As evidenced in Section 4, compared to the CEE11 cluster, economic growth in the SEE8 countries turned out to be much more vulnerable to adverse external shocks, which made it volatile and unsustainable in the longer run.

Speed of catching up

Between 2004 and 2023 the process of real convergence toward the 'core' of the EU proceeded more slowly in SEE8 than in the CEE11. Whereas the former narrowed their economic development gap with the EU15 by 6.5 percentage points, the latter saw this gap narrowed by 30.8 points (all figures are population-weighted averages).

Quality of formal institutions

Both at the time of their accession to the EU and today, the CEE11 countries, compared to the SEE8 cluster, exhibited a substantially higher level of institutional development. The notion of institutions, according to a canonical definition of the Nobel prize winner in economics Douglass North (2005), may be understood as the prevalent rules of the game in the economy and society or binding social norms, both written or formal (laws, regulations, etc.) and unwritten/informal (codes of conduct, prevalent values, attitudes, shared beliefs, etc.) guiding the behaviour of individuals and organizations (players).

¹⁴ It has to be borne in mind that these indices are weighted averages and are strongly biased by the figures for the Ukraine, whose population in 2023 represented 65.7% of the whole SEE8. If arithmetic averages are applied instead, the relative development level of SEE8 group would amount to 18.0% of the EU15 average in 2004 and 35.6% in 2023.

Seen from this angle, the CEE11 countries were well ahead of their SEE8 peers in the development of a formal institutional environment for the market. This may be illustrated by three widely used indicators showing – either directly (institutional design) or indirectly (economic performance) – the comparative quality of institutions in CEE11 and SEE8 in the global context. They corroborate most of our conclusions regarding the quality of institutions in the Western Balkan countries made in an earlier study (Rapacki 2014). The first yardstick is the Heritage Foundation Index of Economic Freedom, which in 2023 amounted to 69.5 and 63.4, respectively pointing to an institutional comparative advantage of the CEE11 countries (Heritage Foundation 2024).¹⁵ The second crucial institutional gauge is the Corruption Perception Index (CPI), developed by Transparency International, measuring the perceived incidence of corruption. It is a widely shared belief that the level of this indicator is inversely related to the scope of economic freedom. In a recent TI report, the average score for CEE11 was 54.6 while for SEE8 it was only 40.9 (Transparency International 2024).¹⁶ Finally, a very telling measure of institutional development is the World Bank's Worldwide Governance Indicator, reflecting the quality and performance of the very institution of government. This measure is a composite score encompassing six components,¹⁷ which may take values between -2.5 (lowest quality of governance) and +2.5 (highest quality). The mean value for the CEE11 cluster in 2022 was 0.7 while that for the SEE8 was

-0.1 (Kaufmann and Kraay 2023), which implies a large gap between the institutional quality of governments in the current EU candidate countries relative to their predecessors.

The foregoing findings are largely consistent with the results of the annual country ratings of the progress of market reforms published by the European Bank of Reconstruction and Development (EBRD), based on the assessment of the quality of formal institutions in individual countries and their changes. In the light of these results, the CEE11 cluster was more advanced than the SEE8 in the implementation of institutional reforms consistent with the logic of a Western-type, sustainable market economy. According to the most recent EBRD '*assessment of transition qualities*' [ATQ] or institutional reforms (EBRD 2023), whereas the average score measuring their progress by 2023 in the former can be estimated at 6.79, the corresponding indicator for the latter was 5.18, implying a gap of 24% (own calculations).¹⁸ Similar proportions held roughly around the time of the CEE11 countries' accession to the EU: the composite score measuring the progress of market (institutional) reforms in 2005, based though on a different EBRD methodology applied until 2016,¹⁹ amounted to 3.59 and 2.82, respectively, which translates into a gap of some 22% (Rapacki et al. 2006). Worth highlighting in this context is that by 2023 the SEE8 countries performed relatively better (compared to their average score) in pushing on with reforms aimed at increasing their resilience

¹⁵ The scale stretches from 0 to 100, with 100 meaning full economic freedom.

¹⁶ The scores range from 0 to 100, where 100 means no corruption whatsoever; the higher the score, the smaller the incidence of perceived corruption.

¹⁷ They comprise (i) voice and accountability, (ii) political stability and absence of violence/terrorism, (iii) government effectiveness, (iv) regulatory quality, (v) rule of law, and (vi) control of corruption.

¹⁸ The scores range between 1 and 10, where 10 implies a full implementation of structural reforms and building a sustainable market economy compatible with the benchmark established in Western Europe. Higher figures mean more progress in structural reforms. The composite score computed in the text is an arithmetic average of six components or qualities of a country (or group of countries) in terms of how: (i) competitive, (ii) well governed, (iii) green (environmentally friendly), (iv) inclusive, (v) resilient (to adverse shocks), and (vi) integrated it is.

¹⁹ The score in question encompasses nine components (small- and large-scale privatization, enterprise restructuring and corporate governance, price liberalization, foreign trade and exchange rate regime, competition policy, bank reform and liberalization of interest rate, securities markets and non-banking financial institutions, reform of infrastructure) in four areas, namely (i) enterprise restructuring and corporate governance, (ii) development of markets and competition, (iii) financial institutions and (iv) infrastructure. Its scale ranges from 1 (no progress whatsoever) to 4.3 (completed process of building a fully-fledged market economy).

to shocks and strengthening the inner integration of their economies, while they lagged behind with those geared towards fostering competitiveness and an environmentally friendly pattern of development.

Prevailing patterns of informal institutions

In addition to the six aspects outlined above, the CEE11 and SEE8 countries also differ essentially in terms of their historical, path-dependent endowment in informal or 'deep' institutions, that is, the prevalent value patterns, attitudes, beliefs and preferences shared by the members of their societies. Worth emphasizing in this context is a lower level of trust in the latter, which translates into a low stock of bridging social capital, and generally an even more pronounced (relative to CEE11) inconsistency of the prevalent beliefs and preferences with the underlying values of a market economy, as documented in Inglehart and Welzel (2010) and more recently by the European Social Survey (ESS10 2020).

Heterogeneity

Finally, it should be stressed that the set of current candidate countries is much more heterogeneous than its CEE11 counterpart. This refers in particular to the following characteristics of the SEE8.

1. *Geographical stretch.* The SEE8 countries are much more spatially dispersed than the CEE11, their area stretching from the Western Balkans to the Caucasus region.
2. *Size of economy and population.* SEE8 are more differentiated in terms of the size of their populations and the absolute levels of GDP (in PPP): the proportion between the population of the smallest and the largest countries (Montenegro vs. the Ukraine) amounted in 2023 to 1:69, compared to 1:26 in CEE11. A similar ratio for GDP was 1:29 vs. 1:27, respectively (own calculations based on Eurostat and IMF data).
3. *Religious divides.* Unlike their CEE11 predecessors, which reconciled two varieties

of essentially the same religion (Catholic and Orthodox Christianity) and a substantial component of non-religiosity (e.g. Czechia), the religious divides in the SEE8 cluster have three faces: Roman-Catholic, Orthodox Christian, and Islamic, which may be found both at the level of the entire cluster and within particular countries (Albania, Bosnia and Herzegovina).

4. *Ethnic diversity.* One more important discriminating factor between the current candidate countries and their CEE11 predecessors is the multiethnicity of the populations in a number of SEE8 countries (entangled with religious divides) which entails a high potential for social and political conflict. This particularly applies to the Western Balkans (e.g. Albania vs. Serbia in Kosovo or Bosnia vs. Serbia in Bosnia and Herzegovina) but also holds in some other countries (e.g. Georgia).
5. *Varieties of post-communist capitalism.* As we have contended elsewhere (Rapacki 2019, Gardawski and Rapacki 2021), the CEE11 countries are fairly homogenous in terms of the prevailing design of their institutional architectures, embodying one specific model of post-communist capitalism, which we call *patchwork capitalism*. In contrast, the SEE8 cluster hosts two different varieties of capitalism (one that emerged in five post-Yugoslav states in the Western Balkans and another one that developed in Georgia, Moldova and the Ukraine, as former Soviet republics) that are moreover distinct from their patchwork counterpart.²⁰ The institutional heterogeneity of the SEE8 group in terms of a co-existence of two varieties of post-communist capitalism may be ascribed, inter alia, to marked differences between the Western Balkans and Eastern Europe in their path-dependent development patterns or historical inheritance of long duration (Braudel 1999). Equally important as a more recent discriminating factor between these two subgroups or the successor states of the former Yugoslavia, on the one hand, and former Soviet republics, on the other, is also their diverging legacies of a command economy.

²⁰ This distinction finds its empirical support in a number of widely-quoted typologies of post-communist capitalism, including in particular the one put forward by Myant and Drahokoupil (2011), who allocate the Western Balkan countries and three former Soviet republics to two different clusters or types of capitalism.

Given the foregoing differences, it may be claimed that the prospective accession of the candidate countries and their subsequent integration with the EU is likely to present an unprecedented challenge both for the would-be entrants and for the EU alike, being in many respects even greater than that faced by the CEE11 EU member states in 2004 onwards.

6. Lessons for candidate countries

The starting premise for the lessons and policy recommendations to be formulated in this section is that accession to the EU opens a ‘window of opportunity’ for the entrants to exploit the gains from membership including, inter alia, acceleration of their economic growth and narrowing the development gap or catching up. This is feasible due to two interconnected factors. The first one is the general mechanism of income-level or real convergence, explained in Section 4, which allows less developed countries to grow faster than the more developed ones. The second is the ‘integration anchor’ which may enhance the first mechanism by means of increasing the stock of available resources/factors of production (e.g. through transfers of EU funds to new member countries and induced inflow of foreign direct investment) and/or enabling their more productive use and thus triggering faster growth of the total factor productivity (TFP).

It should be emphasized, however, that such a causality is not automatically guaranteed: whether the ‘integration anchor’ delivers its promise or not depends primarily on the quality and design of institutions, their enforcement, and the policies pursued in a new member country.

Based on the historical experience of previous, less developed newcomers from the EU peripheries, it may be inferred that the overall empirical picture of the effects of EU membership on long-run economic growth and income convergence is mixed. On the one hand, the Eastern enlargement in 2004+, as we have shown earlier in the text, turned out to be mostly a success story. On the other hand, however, this was not necessarily the case for three Mediterranean countries – Greece, Portugal and Spain – which joined the European Community between 1981 and 1986. As we have shown elsewhere (Rapacki 2012), both

at the time of their accession and by 2004, the quality of the institutional environment of their economies remained below the levels prevalent in most CEE11 countries. Hence, after some early progress on their real convergence path toward the EU15’s mean between the mid-1980s and late 1990s, since the beginning of the 2000s the catching up process has halted or even turned into a real divergence. While in 2004 the average population-weighted level of GDP per capita in PPS in these three countries relative to the EU15’s mean amounted to 83.7%, in 2023 this ratio fell to 79.9%.²¹

Having said that we now make explicit the key lessons for the SEE8 countries stemming from the experiences regarding growth and catching up of their CEE11 predecessors as new members of the EU. They may be summarized under two broad headings: general lessons and SEE8-specific lessons and policy recommendations.

6.1 General lessons

1. The prospective accession to the EU of the SEE8 countries may become a crucial vehicle for an acceleration of their economic growth, making it sustainable, and contributing to the resulting catching up with the EU ‘core’, as a function of the convergence mechanism and full exploitation of the gains stemming from the ‘integration anchor’ (economic policy actions, reforms of the economy, and institutional changes related to the accession to the EU).
2. As shown in the empirical part of this paper, the major transmission channels of the propelling effect of the EU membership on economic growth and real convergence, which may hold in the case of the current candidate countries, too, include both the direct and indirect impacts:
 - a. *Direct impacts* comprise in particular: transfers of funds from the EU budget, induced inflow of FDI, trade creation effect due to improved access to export outlets (applies to SEE8 economies with a low level of openness).
 - b. *Indirect impacts* take place via the institutions which affect economic performance, with special regard to economic growth. The main

²¹ Own calculations based on historical Eurostat data.

EU membership-related drivers of a potential acceleration of the growth in SEE8 countries in this category encompass especially a rise in the scope of economic freedom and improved quality of governance.

3. Whether or not this optimistic scenario comes true is critically contingent upon the ability of the current candidate countries to embark on comprehensive reforms of the institutional architecture of their economies and perseverance in their upgrading. Otherwise, a pessimistic scenario may occur. It would boil down to a negative balance between the two driving forces described above: even though the SEE8 countries may have a greater potential for an acceleration of their economic growth than their CEE11 peers due to the convergence mechanism alone (substantially lower initial level of GDP per capita and larger gap with the EU15), the adverse impact of weak and ineffective institutions may offset or even outweigh the first effect.

6.2 Specific lessons and policy recommendations for current candidate states

1. **Institutional reforms are urgent.** Starting from the last general lesson above regarding the reform of their institutional setup as a directional guideline, the SEE8 countries ought to put the most emphasis on streamlining in the first place two categories of institutions: (i) those providing the strongest stimuli for accelerating economic growth (growth-propelling institutions, such as laws and regulations fostering economic freedom and those enhancing improved governance), (ii) those inhibiting growth the most (growth inhibitors, e.g. barriers to foreign direct investment or perverse incentives encouraging corruption and government capture).
2. **Increased economic freedom and improved quality of governance are needed.** Given the empirical evidence discussed earlier in Section 5 as well as the results of our earlier study showing positive correlation between economic freedom and economic growth (Rapacki, Matkowski and Próchniak 2015), the reform of the former should rely on strategies and policies geared towards increasing the scope of economic freedom (including ease of doing business)

and improving the quality of governance, with special focus on government effectiveness.

3. **Open countries with upgraded institutions will attract more FDI.** Simultaneously, the policy makers in the candidate countries should enact new laws and regulations or amend the existing ones with the end of making their economies more open (in those SEE8 countries with a relatively low share of exports/imports in GDP). It is equally crucial to also support and upgrade institutions (including the design and implementation of a system of proper incentives) encouraging increased inflow of FDI.
4. **Introduction of structural reforms to foster a green and circular economy are important for several reasons.** In turn, a marked improvement in the operation of the growth-inhibiting institutions calls for policies aimed at fostering – fairly low so far – international competitiveness or revealed comparative advantage of the SEE8 economies. This can be done primarily (as can be deduced from the composition of the EBRD scores for the progress in structural reforms in candidate countries, see Section 5) by means of policies aimed to foster the development of a green or environmentally friendly circular economy, through switching towards renewable sources of energy at the cost of fossil fuels and diversification of the sources of energy supply which would diminish the hitherto too heavy dependence on Russia (especially in the case of Serbia).
5. **Increased social inclusion is key; recommended policy measures include a focus on employment and education.** At the same time, the EBRD ATQ rating prompts another policy recommendation for candidate countries concerning improvements in the area of social inclusion, where they consistently have lagged behind the CEE11 since 2016. The most advisable policy measures and institutional changes should encompass, *inter alia*, laws and regulations ensuring increased labour force participation (including for women), declines in the percentage of young people not in employment, education or training, improved access to training through employment, better affordability of the Internet (including fixed broadband) services, greater

financial inclusion, and increases in the quality of trade and transport infrastructure (especially that connected with SEE8 countries' access to the European Single Market, see Steinbach 2024). In this context, it sounds like a good idea for enhanced social inclusion to invite the representatives of civil society to take part in the negotiation process of the accession to the EU (Steinbach 2024).

6. A comprehensive anti-corruption package is vital. A special problem in the candidate countries which needs to be addressed is corruption. According to a widespread view, there is a trade-off between the incidence of corruption and the scope of economic freedom and hence, economic growth (see, e.g. Rapacki, Matkowski and Próchniak 2015). Although the roots of corruption are of a much more complex nature (historical, social, cultural), it tends to be unambiguously promoted by the absence of clear rules governing political life in general, and excessive government functions, lack of transparency in decision-making, unclear and overly complicated laws and regulations that leave day-to-day economic decisions to the discretion of public administration officials and politicians, government capture by oligarchs and business at large, and excessive bureaucracy or red tape in the economy in particular. Seen from this angle, the obvious policy recommendation for the SEE8 countries (with a certain exception of Georgia where the level of corruption is relatively lower) is to implement a well-designed, comprehensive package of anti-corruption

policies aimed at making the pertinent laws and regulations more stringent while simultaneously geared towards stifling the incentives for corruption and changing eventually the prevalent informal institutions or social norms of behaviour.

Two additional remarks are worth making regarding the political feasibility of applying the foregoing lessons in the present international context. The first is that the current EU candidates meet to a much lesser degree the economic standards for entry than did their CEE predecessors, which means that their possible membership will be motivated predominantly by political considerations. The second insight concerns the external determinants of these countries' prospective accession to the EU and ensuing their integration, which differ essentially from those for the Eastern enlargement twenty years ago. This refers in particular to the present geopolitical situation which carries several high-risk factors that may endanger the whole process, at least in some SEE8 countries. To name the most important, this is the continuing war in the Ukraine and a potential interference of Russia in Georgia and Moldova, aimed at undermining the political integrity of these states through the secession of some of their regions (Abkhazia and South Ossetia, and Transnistria, respectively). Another risk factor may be seen in the ambiguous political stance of the present governments of Serbia and Georgia concerning their accession to the EU, coupled with their friendly bias towards Russia.

References

- Amable, B. (2003), *The Diversity of Modern Capitalism*, Oxford: Oxford University Press.
- Braudel, F. (1999), *History and Duration* (in Polish), Czytelnik, Warsaw.
- EBRD (2023), *Transition Report 2023-2024*, European Bank for Reconstruction and Development, London.
- ESS10 (2020), *European Social Survey: Democracy, Digital Social Contacts*, European Research Infrastructure Consortium, City University of London.
- Gardawski, J., Rapacki, R. (2021), 'Patchwork Capitalism in Central and Eastern Europe – A New Conceptualization', *Warsaw Forum of Economic Sociology*, 12(24), pp. 7–104.
- Grassi, B. (2024), *The EU Miracle: When 75 Million People Reach High Income*, IGIER Working Paper n. 709, Milan, Italy: Bocconi University.
- Hagemeyer J., Michałek J.J., Svatko P. (2021), 'Economic Impact of the EU Eastern Enlargement on New Member States Revisited: The Role of Economic Institutions', *Central European Economic Journal*, 8(55), pp. 126–143, doi: 10.2478/ceej-2021-0008.
- Heritage Foundation (2024), *Index of Economic Freedom* (www.heritage.org/index/), accessed on 14 August 2024.
- IMF (2024), *World Economic Outlook*, October, Washington, D.C.: International Monetary Fund (<https://www.imf.org/en/Publications/WEO/Issues/2024/10/22/world-economic-outlook-october-2024>), accessed on 10 November 2024.
- Inglehart, R., Welzel, C. (2010), 'Changing Mass Priorities: The Link between Modernization and Democracy', *Perspectives on Politics*, 8(2), pp. 551–567.
- Kaufmann, D., Kraay, A. (2023). *Worldwide Governance Indicators, 2023 Update* (www.govindicators.org), accessed on 14 August 2024.
- Maganga Zonga, J., Lin, C-C., Chang, M-J. (2023), 'A Tide that Lifts Some Boats: Assessing the Macroeconomic Effects of EU Enlargement', *The B.E. Journal of Macroeconomics*, 24(1). doi: 10.1515/bejm-2023-0053.
- Maszczyk, P., Próchniak, M., Rapacki, R. (2024), 'Development trajectories in Central and Eastern European countries, 2004–2023 – the evolution of the sources of institutional comparative advantage in the patchwork model of capitalism' (in Polish), in: *Report of the SGH Warsaw School of Economics and the Economic Forum 2024*, Warsaw: SGH Publishing House, pp. 17–56.
- Myant, M., Drahokoupil, J. (2011), *Transition Economies. Political Economy in Russia, Eastern Europe, and Central Asia*, Wiley, Hoboken, NJ, USA.
- North, D. (2005), 'Institutions and the performance of economies over time', in: C. Ménard and M.M. Shirley (eds.), *Handbook of New Institutional Economics*, Berlin: Springer.
- Próchniak, M., Lissowska, M., Maszczyk, P., Rapacki, R., Towalski, R. (2022). 'Differentiation of inflation rates in the EU countries vs. the labour market and economic growth – lessons from the COVID-19 pandemic' (in Polish), in: *Report of the SGH Warsaw School of Economics and the Economic Forum 2022*, (in Polish), pp. 13–53, Warsaw: SGH Publishing House.
- Próchniak, M., Gardawski, J., Lissowska, M., Maszczyk, P., Rapacki, R., Sulejewicz, A., Towalski, R. (2021), 'Development trajectories of CEE countries, 2015–2020', in: *Report of the SGH Warsaw School of Economics and the Economic Forum 2021* (in Polish), pp. 13–62, Warsaw: SGH Publishing House.
- Rapacki, R. [ed.] (2019), *Diversity of Patchwork Capitalism in Central and Eastern Europe*. Abingdon–New York: Routledge.
- Rapacki, R. (2014), 'Implementing Structural Reforms in the Western Balkan Countries', in: V. Esch, J. Kobus (eds.), *EU Enlargement: Between Conditionality, Progress, and Enlargement Fatigue?* Aspen Institute Germany, Berlin.

- Rapacki, R. (2012), *Poland and Greece – Two Contrasting EU Enlargement Experiences*, ZEI Discussion Paper no. C213, Center for European Integration Studies (ZEI), University of Bonn.
- Rapacki, R. [ed.] (2009), *Economic Growth in Transition Countries: Convergence or Divergence?* (in Polish), Warsaw: Polish Economic Publishers (PWE).
- Rapacki, R., Próchniak, M. (2019), ‘EU Membership and Economic Growth: Empirical Evidence for the CEE Countries’, *European Journal of Comparative Economics* 16(1), pp. 3–40.
- Rapacki, R., Matkowski, Z., Próchniak, M. (2015), *Transition Countries: Economic Situation and the Progress of Market Reforms*, Working Paper no. 324, World Economy Research Institute, SGH Warsaw School of Economics, Warsaw.
- Rapacki, R., Próchniak, M. (2009a), ‘The EU Enlargement and Economic Growth in the CEE New Member Countries’, *European Economy, Economic Papers*, no. 367.
- Rapacki, R., Próchniak, M. (2009b), ‘Economic Growth Accounting in Twenty-Seven Transition Countries, 1990-2003’, *Eastern European Economics*, 47(2), pp. 67–112.
- Rapacki, R., Matkowski, Z., Maszczyk, P., Próchniak, M. (2006), ‘Economic Situation and the Progress of Market Reforms’, chapter III in: *New Europe – Report on Transformation*, ed. D. Rosati, pp. 99-212. Instytut Wschodni, XVI Economic Forum, Krynica-Zdrój, 6–9 September.
- Steinbach, A. (2024), ‘The rocky road to EU accession for Western Balkan countries: obstacles and lessons from the Eastern Partnership’, *Working Paper* 08/2024, Bruegel.
- Transparency International (2024), *Corruption Perceptions Index* (www.transparency.org/en/cpi/2023), accessed on 14 August 2024.
- UNDP (2024), *Human Development Report 2023/24*, United Nations Development Program, New York.

7. Appendix

Table A1. **Regression models for determinants of the economic growth of CEE11 countries, 2004–23**

Explanatory variable / Statistics	Model [1]	Model [2]	Model [3]	Model [4]	Model [5]
initial GDP	0.5277019*** (0.000)	0.7727639*** (0.000)	0.6887364*** (0.000)	0.6656566*** (0.000)	0.4335217*** (0.000)
economic freedom level	0.0089389*** (0.002)				
economic freedom change		0.0042666** (0.061)			
quality of governance level			0.1008036 (0.207)		
quality of governance change				0.1515051*** (0.002)	
inflow of EU funds					0.0253629** (0.024)
investment rate	0.0012283 (0.739)	0.0047157 (0.237)	0.0024979 (0.585)	0.000449 (0.888)	-0.0005308 (0.829)
government balance	0.0129374** (0.017)			0.0219139*** (0.000)	
government consumption					-0.0085064** (0.099)
education expenditure		-0.0511115** (0.020)	-0.0728936*** (0.009)		
Inflation		-0.0118042*** (0.004)	-0.0104415** (0.052)		
non-performing loans					-0.0143579*** (0.000)
Services	-0.0042382 (0.403)			-0.0006952 (0.877)	
life expectancy	1.975197*** (0.003)			1.438882 (0.163)	3.041347*** (0.000)
fertility rate	0.2276011 (0.132)			0.222714 (0.258)	-0.0126698 (0.936)
population aged 15-64	-0.0144529** (0.069)	-0.0247778*** (0.003)	-0.023913*** (0.000)	-0.0114184 (0.118)	-0.014186** (0.044)
population growth		-0.0086811 (0.776)	-0.0087114 (0.808)		-0.0526712** (0.024)
Constant	-3.108581 (0.119)	4.22171** (0.019)	5.100103*** (0.000)	-1.949402 (0.541)	-6.160258*** (0.006)
No. of observations	165	165	165	154	157
Estimator	GMM	GMM	GMM	GMM	GMM

Explanatory variable / Statistics	Model [6]	Model [7]	Model [8]	Model [9]	Model [10]
initial GDP	0.4494702*** (0.000)	0.5052395*** (0.000)	0.4232042*** (0.000)	0.5684653*** (0.000)	0.5883533*** (0.000)
openness level	0.0013423*** (0.003)				
openness change		0.000064 (0.820)			
exports ratio level			0.0025528*** (0.002)		
exports ratio change				-0.001389** (0.031)	
foreign investments					0.0027172*** (0.007)
investment rate	-0.0005732 (0.842)	-0.0013297 (0.648)	-9.75e-06 (0.997)	-0.0016015 (0.593)	-0.001584 (0.516)
government balance					0.0189157*** (0.002)
government consumption	-0.0167724*** (0.000)	-0.0147766*** (0.001)	-0.0151763*** (0.000)	-0.0158963*** (0.000)	
non-performing loans	-0.0126664*** (0.000)	-0.0137925*** (0.000)	-0.0126512*** (0.000)	-0.0129458*** (0.000)	
Services					0.0001385 (0.971)
life expectancy	3.106017*** (0.000)	3.028792*** (0.000)	3.004869*** (0.000)	2.874508*** (0.000)	1.392664 (0.155)
fertility rate	-0.0548798 (0.767)	-0.082431 (0.560)	-0.044802 (0.813)	-0.1615552 (0.179)	0.2969309** (0.053)
population aged 15-64	-0.0127448** (0.050)	-0.0150531*** (0.008)	-0.0139448** (0.029)	-0.0118467** (0.035)	-0.0150785** (0.089)
population growth	-0.080915*** (0.000)	-0.0782296*** (0.003)	-0.0783637*** (0.000)	-0.0905825*** (0.000)	
Constant	-6.6376** (0.049)	-6.542447** (0.013)	-5.890709** (0.083)	-6.67335** (0.014)	-0.7667038 (0.773)
No. of observations	157	146	157	146	165
Estimator	GMM	GMM	GMM	GMM	GMM

Estimated coefficients and *p*-values (in parentheses) are reported for each explanatory variable.
GMM – Blundell and Bond's GMM system estimator.
The level of real GDP per capita at PPP in the final year of a given subperiod is the dependent variable.
Hence, a coefficient on initial GDP per capita less than 1 indicates the existence of convergence. Models are estimated on the basis of panel data with overlapping 5-year subperiods.
*** Significant at the 1% level. ** Significant at the 10% level.
Source: Own calculations.