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## EAST-WEST MIGRATION IN EUROPE: CAN SERBIA WITHSTAND THE WIND GUSTS?

Migracije s istoka na zapad Evrope – da li Srbija može da odoli naletima vetra?

### Abstract

Rising demand for skilled workers in Western Europe absorbs the most valuable human capital from CEE, thus endangering their economic prospects. The estimated econometric model indicates that the poorly governed countries – the ones characterized by a high level of corruption, weak rule of law, as well as low-quality public services (healthcare, education, etc.) – are most affected by emigration. Moreover, emigration is higher in the CEE countries that have easier access to the European labour market, better-educated population and lower living standards. According to the model, the migration of the young and qualified people from Serbia is expected to additionally increase in the next five years, by 20-30%, despite the relatively high GDP growth forecast of 4%. However, if in the following years Serbia undertakes necessary reforms and reaches the institutional standards that are common in CEE, the growing trend could be reversed, lowering emigrations by 10-15% compared to the current level. Wage increase, even an extreme one, does not play a key role in containing migration from Serbia.

**Keywords:** *emigration, institutions, convergence, wages, education, demographics, Serbia.*

### Sažetak

Rastuća tražnja Zapadne Evrope za obučenom radnom snagom usisava najvrednije ljudske resurse zemalja CEE i tako ugrožava njihovu ekonomsku perspektivu. Ocenjeni ekonometrijski model pokazuje da su emigracijama najviše pogođene zemlje CEE koje imaju najlošije uređenu državu: visoku korupciju, nizak nivo vladavine prava i loš kvalitet javnih usluga (zdravstvo, prosveta i drugo). Iseljavanje je veće i iz onih zemalja CEE koje imaju olakšan pristup evropskom tržištu rada, bolje obrazovano stanovništvo i nizak životni standard. Model pokazuje da će emigracija mladog i kvalifikovanog stanovništva Srbije dodatno da poraste u narednih pet godina za 20-30% čak i uz relativno visok rast BDP-a od 4%. Međutim, ukoliko Srbija u narednim godinama dostigne institucionalne standarde koji su uobičajeni u CEE, trend rasta emigracija bi se preokrenuo i smanjio za 10-15% u odnosu na sadašnji nivo. Povećanje zarada, čak i ukoliko bi bilo ekstremno snažno, ne može da ima presudnu ulogu u smanjenju emigracija iz Srbije.

**Ključne reči:** *emigracija, institucije, konvergencija, plate, obrazovanje, demografija, Srbija.*

## Introduction and main findings

Intense migration of the young and educated people to Western Europe will perhaps be the greatest economic and fiscal issue of most CEE countries (Serbia included) in the upcoming decade. Although unfavourable emigration from Serbia cannot be completely stopped, its growing trend could be reversed if the Government undertakes effective and comprehensive measures based on meticulous analyses. The problem is, however, that instead of such measures, only partial, expensive and unproven solutions are being announced, which will probably prove inefficient.

The empirical research we have conducted shows that by far the most effective measures that could reverse the growing trend of migration from Serbia to Western Europe are: improvement in the quality of institutions (suppression of corruption, improvement in the rule of law) and better public services (reforms in healthcare, education, etc.). Other measures, including even the hypothetical increase of the average salary to 900 EUR by the end of 2025, cannot play a key role in containing migration from Serbia.

There are currently about 11 million immigrants from the CEE countries living in Western Europe and their number has increased manifold in the last twenty years (in 2000 slightly more than 4 million migrants from CEE lived in Western Europe). This means that as much as 10% of the overall CEE population is currently living in Western Europe. The annual records show, even more concretely, a strong acceleration in migration since the beginning of 2000s. In early 2000s, about 0.2% of CEE population annually emigrated to Western Europe, while this percentage already grew to about 1% in 2017.

Increased emigration has severe negative effects on the CEE economies. First, they are, in large part, permanent – about a half of the migrants return to their country of origin, while populations of the CEE countries are declining, even without accounting for migrations, due to negative population growth rates. Second, the migrants that do return are mostly older, while those that are leaving CEE countries belong to mostly younger, working-age population. About 75% of the CEE migrants living in Western Europe are of working age (20-64), whereas the average share of

the working-age population in the overall CEE population is about 60%. Third, emigrants are mostly more qualified and better-educated than the population in their country of origin – on average, the education of migrants is almost twice as good as the average in the countries of origin. Fourth, the possibility of substituting the workforce leaving CEE by hiring unemployed workers from the domestic labour market is small. The unemployment rate in CEE11 (EU member countries) has already dropped to only 4.2% in 2019 on average, which is significantly lower than the average unemployment rate in the Western European countries (5.3%).

The IMF study [1] quantifies the negative effects of emigration on the CEE economies. This study estimated that in 2014, GDP per capita in the CEE countries would have been on average 5% higher, had there not been large migrations from these countries in the 1995-2012 period. However, the negative economic effects are now certainly even larger. In the last four years (since the study was published), there has been a marked deterioration in the migration trends (increased emigration, even higher level of the educated among migrants, etc.), which is why we estimate that the negative contribution of outward migrations to the growth of GDP per capita in the CEE countries would approach 0.5 p.p. per year, with a tendency of further deterioration. Hence, the main goal of our research was to determine the major factors defining the extent of emigration from individual CEE countries (including Serbia) and to show, in line with the results, what would be the best measures for lowering emigration.

The first question we address in this paper is why a substantial increase in migrations from the CEE countries to Western Europe has occurred since the beginning of 2000s. CEE countries have been converging relatively strongly to Western Europe in the last twenty years in terms of living standards. Namely, at the beginning of 2000s, GDP per capita in CEE was, on average, only 38% of the GDP in the Western European countries, whereas in 2018 it reached over 60%. With the decreasing difference in living standards, i.e. in CEE salaries compared to Western Europe, we should be seeing ever fewer people from CEE deciding to emigrate to Western Europe – while the opposite is actually taking place. Migrations are now

several times higher than they were in 2000. This indicates that there are other factors that have been a driving force of the acceleration of migrations, such that it overpowers the mitigating effect of economic convergence.

We have identified two such factors that had a decisive effect on the upward trend in emigrations: the first is the accession of 11 CEE countries to the European Union, which facilitated access to the Western European labour markets, while the second, far more important, is the growing demand for skilled workers from the CEE countries.

The Western European countries have had a negative population growth for many years; in mid 2000s, this started to have a very strong negative effect on their labour market. Namely, that was when the part of the population entering the labour market (18-22 years of age) was, for the first time, smaller than the segment leaving it (60-64 age bracket). In simple terms, this means that for each 100 elderly employees (doctors, nurses, drivers, engineers) leaving the Western European labour market, there are fewer than 100 young people applying to take their place on the domestic labour market – and these trends are deteriorating year after year.

Even though the Western European countries are currently experiencing an increase in the arrival of migrants from the Middle East and Africa, this has almost no bearing on the increasing demand for workforce from the CEE countries. In other words, migrations from CEE have not slowed down with the increased number of migrants coming in from other parts of the world, but have instead increased, over the last twenty years, in almost perfect proportion with the widening of the demographic gap in the working-age population in the Western European countries. This is because migrants from CEE (which are mostly highly skilled) can respond to the demand for labour in the highly competitive economies in Western Europe – which does not apply, to the same extent, to the migrants from the rest of the world. Hence, even with the large number of migrants arriving from the Middle East and Africa, Western Europe keeps absorbing skilled workers from the CEE countries.

Individual CEE countries will react differently to the demand for skilled labour in Western Europe. In

relative terms, more people migrate from countries with lower living standards, i.e. where the pay gap compared to Western Europe is the widest. However, the pay gap is not the only – nor, indeed, does it seem to be the most important – reason why the CEE population is migrating to Western Europe in such large numbers. More important than this is the quality of governance in the CEE countries. Namely, the countries with undeveloped institutions (high corruption, weak rule of law) and those that do not provide high quality of public services to their citizens (healthcare, education, administration, etc.) experience, as a rule, large emigration. This seems to be the main reason why annual emigrations from Latvia and Lithuania are half the emigration from Croatia, even though the average salary in Croatia (just below 900 EUR) is somewhat higher than the average salary in the two Baltic states (between 800 and 850 EUR).

In order to estimate the impact of individual factors on the extent of migrations from CEE to Western Europe more precisely, we designed an econometric model on a panel of 14 CEE countries<sup>1</sup> for the 2006-2017 period (168 observations). The estimated regression equation (Equation 1 in the section addressing the empirical model of migration from CEE to Western Europe) explains the level of emigration from individual CEE countries with the demand for skilled workforce in Western Europe (where there is a shortage of qualified working-age population) and specific characteristics of the CEE countries: level of economic development, quality of institutions, quality of education and access to the EU labour market.

The results of the model confirm that migrations from CEE are growing proportionally to the demographic decrease in the working-age population in the countries of Western Europe. Furthermore, membership in the EU and a better educational system increase migrations from individual CEE countries, while higher living standards and better institutions decrease them. All estimated coefficients are of the expected sign and are statistically significant, while the explanatory power of the model is high (coefficient of determination  $R^2$  is 60.3%). We assessed

<sup>1</sup> In addition to CEE11, this panel also includes the three Western Balkan countries for which the necessary data was available (Albania, North Macedonia and Serbia).

the robustness of the obtained results by estimating the same model in different time periods and the value of the coefficients proved quite stable, while the explanatory power of the model remained undiminished.

Based on the estimated model, we have forecast the rate of emigration from Serbia in the upcoming five years and considered the measures that would be most effective in mitigating it. The results show that Serbia will probably face further increase in emigration, even with a relatively high GDP growth rate of about 4% – unless the Government undertakes effective measures to prevent this. Under this baseline scenario, the model shows that in the next five years (2021-2025) Serbia could be faced with an annual outward migration in the range 1.2-1.3% of the working-age population (compared to the current level of about 1%). This estimate could easily turn out to be conservative, as many EU countries are putting in place measures that would open labour markets for skilled workers from the non-EU member countries.

The forecasted growth in emigration can be halted and even reversed in the upcoming five years, provided that the Government successfully implements comprehensive reforms which it has practically been failing to even initiate for years. Namely, under the improved institutions scenario, the model shows that the strengthening of institutions (lowering corruption, improving the rule of law) and increasing the quality of public services (reform of healthcare, education, etc.) could bring further growth of emigration to a standstill, and even reduce emigration in the upcoming five years by 10 to 15% compared to their current level (i.e. annual emigration level of working-age population could be brought down from 1% to 0.85-0.90%).

The expectation that a steep rise in salaries in Serbia will have a significant effect on halting or even reversing the growing emigration trend is not empirically supported. The estimated model shows that even the hypothetical increase of the average salary to 900 EUR by the end of 2025 (the 900 EUR wage scenario) could not prevent further increase of emigration from Serbia in the upcoming years – it could only slow it down. This result should not be so surprising, since countries that had a similar growth in salaries in the past (Romania) have not managed to resolve the problem of emigration – in fact, emigration grew ever

larger over the years. We have summarized the results of the three simulations in Table 1.

**Table 1: Annual emigration projections for Serbia in the next five years**

	% of working-age population
Current emigration	1.00
Average yearly emigration in 2021-2025	
Scenario 1 (Baseline)	1.2-1.3
Scenario 2 (Improved institutions)	0.85-0.90
Scenario 3 (900 EUR wage)	1.05-1.10

Source: Authors' calculations.

Finally, it is commendable that the Government has recognized the major issue of large emigration from Serbia and has founded the Coordination Team for Economic Migration Monitoring in the Republic of Serbia in 2019. However, the measures that have been made public thus far are insufficient to resolve the issue. The financial and tax incentives that were hinted at, together with some other stimulating measures (subsidised dwellings) could very well serve to persuade some of the individuals who are thinking about leaving the country to stay, but they will not be able to slow down, to any significant extent, the forecasted cumulative departure of over 200,000 of Serbian citizens in the upcoming five years. Such measures (if they are meticulously designed) could be a good addition, but far from a substitute for the necessary improvement in the quality of institutions and comprehensive reform of the public sector (education, healthcare, etc.).

## Impact of emigration on the CEE economies

Emigration of the working-age population has severe negative effects on the CEE economies, which is why slowing down and even decreasing outward migration becomes a task of critical importance for the economic perspective of these countries (Serbia included).<sup>2</sup> East-

<sup>2</sup> CEE countries encompass all CEE11 countries (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) and three Western Balkan countries (Albania, North Macedonia, Serbia) for which the most comprehensive set of data, needed for the analysis, is available. Incomplete records have made it impossible to include Bosnia and Herzegovina and Montenegro in the analysis. Similarly, developed countries of Western Europe receiving migrations from CEE include Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom.

west migrations in Europe have numerous detrimental economic effects on the CEE countries that exhibit strong outward migration of the working-age population: they are extremely long in duration, extensive and persistent compared to migration experiences elsewhere. Another characteristic trait is that migrations from CEE to Western Europe have a strong trend growth over the years, even though there has been a significant improvement in the living standards within CEE and strong convergence towards Western Europe. Average GDP per capita in CEE was at mere 38% of that in Western Europe in 2000, but migration rates were three times lower compared to 2017 (when GDP per capita reached 60% of that in Western Europe). Together with magnitude and duration, another economically unfavourable trait of migration from the CEE countries is that young and highly educated people show a much greater tendency to emigrate compared to the remainder of the population.

Economic theory does not offer a single answer to the question of economic and fiscal impacts of rising migrations on the country of origin. Neoclassical growth model ascribes more positive impacts in general, while endogenous growth models emphasize the negative implications. Specific characteristics of migration from the CEE countries indicate that endogenous models should provide a better description, as is convincingly corroborated by empirical research [1]. The IMF study estimates that in 2014 GDP per capita of the CEE<sup>3</sup> countries

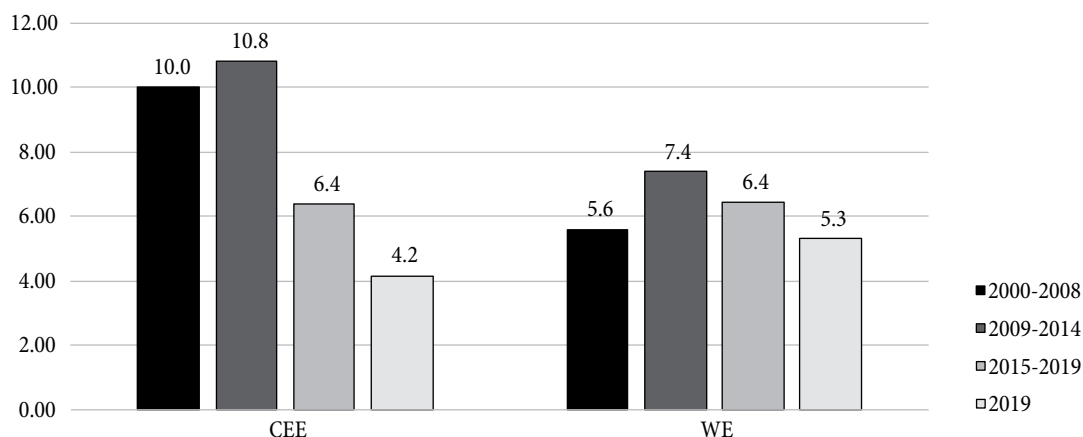
<sup>3</sup> The group of countries analysed in this study is somewhat different to our group, but the result should hold true for our analysis, too.

would have been on average 5% higher, had there not been large migrations from these countries in the 1995-2012 period. Since migrations accelerated steeply after 2012, it is to be expected that the negative impacts on the CEE economies are now far greater than the ones found in this study. A recent study [3] indirectly confirms this, indicating that negative demographic trends in the CEE countries (including further emigration and expected aging of the population) will probably be the main impediment to further economic convergence of CEE to Western Europe.

The neoclassical growth model starts from the position that emigration has a negative effect on the overall GDP growth due to a decrease in the total number of inhabitants, but that it leads to the growth of GDP per capita, fostering economic convergence. Namely, emigration eliminates surplus workforce, which, eventually, decreases the unemployment rate – meaning that production per capita is larger. At that, emigration also leads to an increase in remittances sent from abroad, which additionally increases citizens' income. This model, however, has limitations when applied to the CEE countries. First, unemployment in these countries is at its historical minimum and it is difficult to expect it could decrease any further (Figure 1). Unemployment rate in CEE dropped to 4.2% in 2019, which is already much lower than the average unemployment rate in the Western European countries (5.3%), and, in certain countries (Czechia) it has dropped to below 2%.<sup>4</sup> In

<sup>4</sup> In Serbia, the unemployment rate also dropped to its minimum in 2019 (below 10%), but due to a lack of a data series that would be long enough, Serbia is excluded from Figure 1.

**Figure 1: CEE and Western Europe: unemployment rate period averages**



Source: Authors' calculations based on the Eurostat data.

Note: Due to a lack of a long-enough data series for Serbia, Albania and North Macedonia, the figure shows only the data for the CEE11 countries.

addition, remittances cannot be a reliable source of income in the long term, as their long-term trend is to decrease as emigrants integrate into their new environments and slowly weaken their ties to their country of origin. Still, the largest issue of the neoclassical model is the fact that it fails to consider the age and educational attainment level of migrants.

Endogenous models of growth that deal with migration start exactly from the characteristics of migrants. According to these models, skilled and more productive workers are not easily substituted once they leave the economy [9]. In other words, if the most productive parts of the population (the young and skilled labour) are leaving the country, the possibility of their efficient replacement from the remaining population pool is limited. This is why such migrations lead to a drop, not only in the overall GDP of countries with high outward migration (which is not disputed in the neoclassical growth model either), but also in per capita GDP (due to a drop in the overall productivity of the economy). In addition, shortage of skilled labour (caused by increased emigration of the workforce) stipulates the increase in wages, greater than the growth of productivity which, in turn, lowers the competitiveness of countries, thus slowing down economic growth even further. Finally, emigration of the younger population skews the population pyramid towards a higher share of the elderly in the overall population, thus increasing the pressure on public expenditures (pensions, healthcare, etc.).

As mentioned, the IMF study [1] quantifies in more detail the negative effects of outward migration on the CEE economies. Thus, endogenous growth models provide a more reasonable framework for studying and estimating the negative impacts of outward migration on the CEE countries – particularly as emigration has led to a relatively large shortage of skilled workers in these countries. Namely, the countries that saw the greatest outward migration from 1995 to 2012 also have the largest shortage of skilled labour.

It is important to emphasize that in the four years since the study was published, the negative trends of migrations from CEE to Western Europe continued to deteriorate, in a manner that has particularly negative consequences for the CEE economies: 1) average annual

migrations are over twice as high in the 2013-2017 period as in the period analysed in the study (1995-2012); 2) unemployment rate in the CEE countries dropped to its record low (Figure 1), which is why now it is even harder to replace the emigrating workforce; 3) the effect of wage growth outpacing productivity, which decreases the competitiveness of the economy (which had only been hinted at in the IMF study), is now a common occurrence in CEE; 4) the share of the highly skilled migrants is most probably even higher now than before 2012 (see Equation 2). Taking all this into consideration, we estimate that the current negative effects of migrations have probably doubled compared to the effects noted in the IMF study, i.e. that outward migration is already starting to lower the per capita GDP growth in the CEE countries up to about 0.5 p.p. per year, with a tendency of further deterioration.

Negative economic consequences of migrations in Serbia are still somewhat subdued compared to other CEE countries, but they will probably become more prominent in the upcoming years. First of all, outward migrations from Serbia are large (OECD data suggests that about 1% of the working-age population emigrates from Serbia to Western Europe every year), but still far lower than in other countries in the region that are in the EU (Croatia, Romania, Bulgaria). However, this could easily change in the next few years. Germany (which receives about a half of the migrants from CEE) announced the adoption of the new law on immigration of skilled workers, opening its labour market for workers from the non-EU member states, which will probably stimulate even more outward migration from those countries. Second, Serbia was also able to partly offset the negative economic effects of outward migration by decreasing the unemployment rate (as the neoclassical model envisages) – since the unemployment rate in Serbia was far higher than in other CEE countries.<sup>5</sup> The latest data shows, however, that the unemployment rate in Serbia dropped below 10% at the end of 2019, leaving increasingly fewer opportunities for such compensation in

5 An additional issue with the analysis of economic effects of migrations on Serbian economy is the fact that the labour market statistics (Labour Market Survey) for the 2008-2017 period is remarkably unreliable (see [13]). However, it is indisputable that the unemployment rate in Serbia was far greater than that in the comparable CEE countries in the previous ten years.

the future. Finally, the economically unsustainable salary increases that outpace productivity growth in the private sector (seen in many of the CEE countries for several years now) has also been observed for the first time in Serbia in 2019, indicating that the large outward migrations are starting to leave their mark on the economic activity. Therefore, efficient measures aimed at slowing down or even reducing outward migrations from Serbia are key to the country's future economic development. Thus, the main goal of this paper is the attempt to estimate their future direction.

### Magnitude, structure and trends of migrations from CEE to Western Europe

Western Europe is the most common destination for CEE migrants. According to the UN data, about 11 million migrants from the CEE countries lived in the developed countries of Western Europe in 2019.<sup>6</sup> This is two thirds of the total number of people from CEE who live abroad. The number of migrants from CEE living in Western Europe more than doubled after 2000 – in 2000, a total of 4.1 million migrants from CEE were registered, whereas their number increased 2.7 times in 2019, to 10.9 million (Figure 2). No similar trend can be seen in migrations from CEE to other parts of the world (USA, Canada, Australia, etc.) as the number of migrants leaving CEE for these countries remained almost the same in 2019 as it had been in 2000. It is interesting to note that, until the

6 For the list of countries included in WE and CEE, see footnote 2.

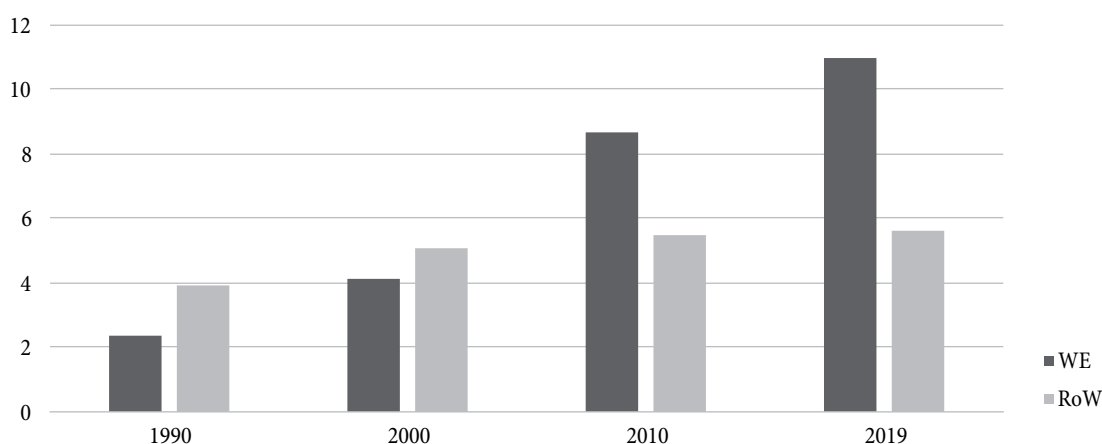
year 2000, majority of migrants from CEE lived outside of Western Europe, while in 2019 CEE migrants in Western Europe were twice as numerous as those living in the rest of the world (Figure 2). Data on migrants from Serbia are somewhat less reliable than those for other CEE countries,<sup>7</sup> but we estimate that there are currently between 600,000 and 650,000 Serbian citizens living in Western Europe (out of a total of 900 to 950 thousand currently living abroad in general).

The number of CEE citizens currently living in Western Europe is extremely high relative to the overall population of the CEE countries. In 2019, about 9.5% of the overall population of the CEE countries were living as immigrants in Western Europe. The situation is even more dramatic when only the working-age population is observed (20-64). Namely, migrants are distinctly younger than the CEE average. Almost 75% of migrants from CEE who live in Western Europe are of working age, while the share of the 20-64 population in the overall population of the CEE countries is just over 60%. This means that about 12% of the CEE working-age population is currently living in the Western European countries.

Migrants moving from CEE to Western Europe after 2000 are far more skilled compared to the CEE average. In the period prior to 2000, it was mostly the less educated workers that migrated to Western Europe. Less than 10% of CEE migrants who lived in Western Europe in 1990 had

7 The total number of migrants originating from Serbia is not completely precise because of the different treatment of Kosovo and Metohija in countries registering migrant origin; historical data are difficult to follow because Serbia gained independence in 2006.

Figure 2: Number of migrants from CEE in Western Europe and in the rest of the world (in millions)



Source: Authors' calculations based on the UN migration data.

tertiary education [5]. In 2000, this percentage increased to about 15%, whereas in 2010, almost 25% of migrants who lived in Western Europe had tertiary education.<sup>8</sup> This fast change in the structure of the educational attainment levels of CEE migrants could occur only if the new arrivals after 2000 were, for a large part, highly educated. Based on the changes in education levels of the migrant stock between 2010 and 2000, we estimate that over 35% of the new CEE migrants who settled in Western Europe were highly educated. At that time, fewer than 20% of the working-age population in the CEE countries had tertiary education. Thus, CEE migrants were significantly better-educated compared to the workforce in home countries. Similar trends of emigrants being better-educated, almost certainly, continued after 2010.

The UN database is the most comprehensive data source on the number, structure and origin of migrants by countries of destination, but it is not a perfect source for monitoring and estimating annual emigration trends from CEE to Western Europe. Namely, the UN data are given as a stock of registered migrants in the host country for every five years. Hence, it is impossible to reliably reconstruct the changes in migrations at an annual level. Also, there are some other changes in the stock of migrants occurring in the five-year period, which are independent of inflows of new migrants (naturalization of foreigners who have been living for a long time in the host country, deaths, etc.).

8 Unfortunately, the latest available data on the educational structure of migrants [5] is for 2010, but the trends of constant and intense increase of the share of the highly educated among them over the years are quite obvious.

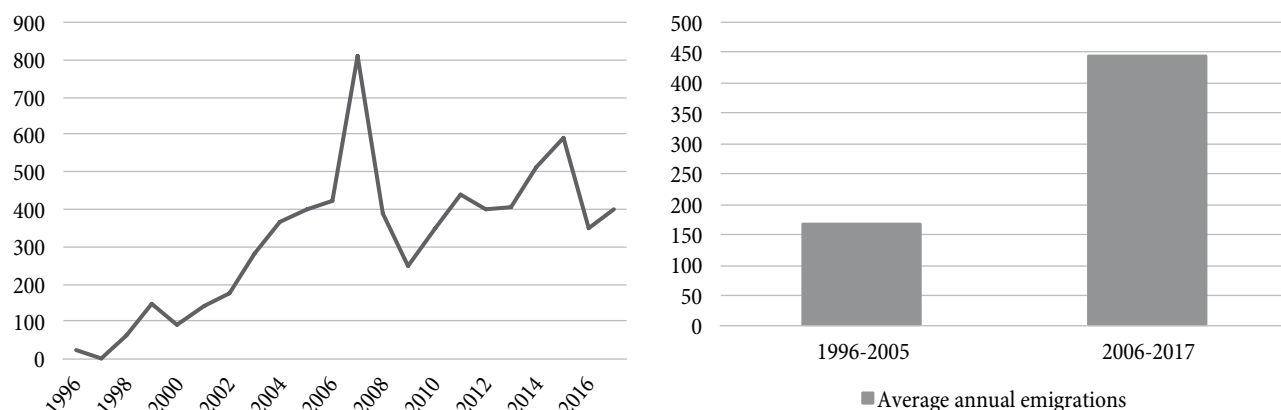
A more reliable source of data on the annual migration trends from CEE to Western Europe can be found in the OECD database. Namely, the OECD publishes, for each of its member countries<sup>9</sup>, detailed records on the number of foreigners who have moved to or from that country in the previous year. Based on this data, we reconstructed the net migration trends of the CEE population to the Western European countries by year, in the 1996-2017 period (Figure 3).<sup>10</sup> These records, similar to the UN records, show the trend increase of migration from CEE to Western Europe over the years.

A detailed analysis, however, shows that the records on net migrations mitigate the extent of loss of the CEE working-age population. The issue, as we have already stated, is the fact that migrants from Western Europe return to the CEE countries as their working career draws to a close, while younger population, those fit to work, are moving into Western Europe. Only a few countries of Western Europe publish data on the age of migrants, which is why, as an illustration for the previous claim, we have shown the data on the age of migrants in Germany (the most popular destination country for CEE migrants) in Figure 4. As can be seen from Figure 4, in 2010 Germany has seen a major net inflow of younger working-age population (20-53 age bracket) and a net outflow of the older working-age population (54+ age group), with the

9 All countries of Western Europe from our sample are members of the OECD, which means we have complete records for this analysis.

10 Due to the wars in former Yugoslavia, the records prior to 1996 are less indicative. In addition, with the expansion of the time horizon, the number of missing records for individual countries increases.

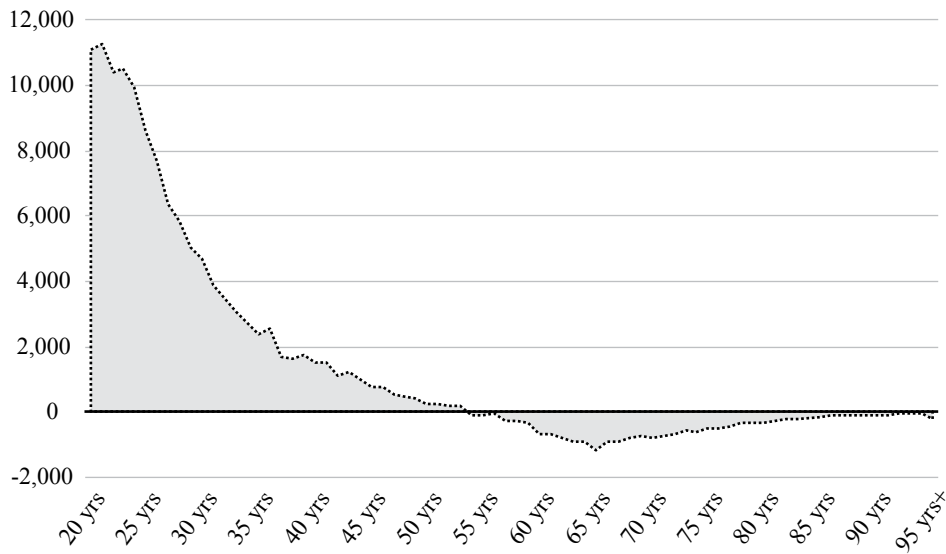
Figure 3: Net migration of citizens from CEE to developed European countries (in thousands)



Source: Authors' calculations based on the OECD data.



Figure 4: Germany – net migration of foreigners by migrant age, 2010



Source: Authors' calculations based on the Destatis data.

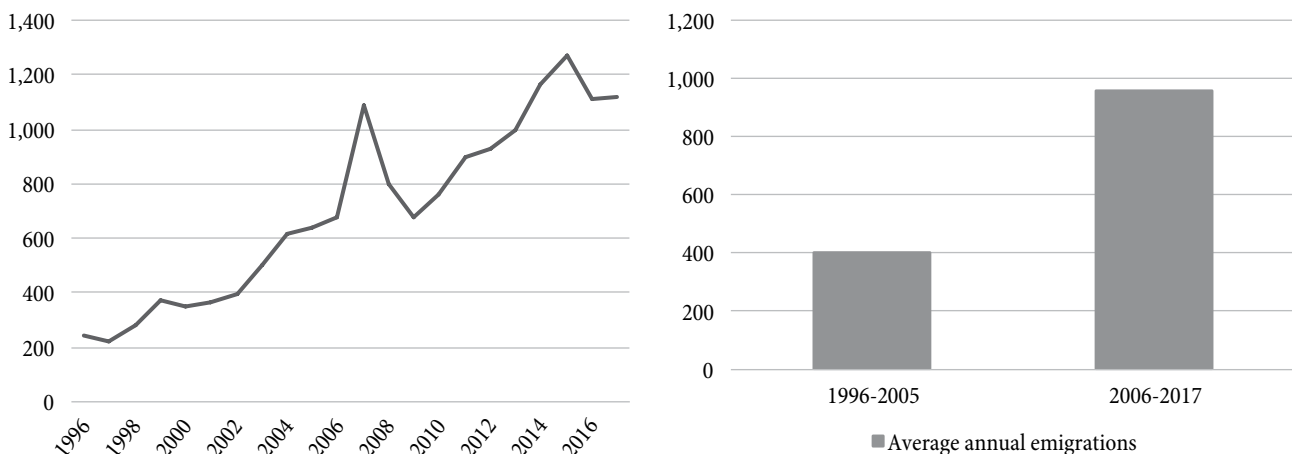
net inflows of the younger generation outweighing the net outflows of the older population.

Since the OECD data on net migrations strongly underestimate the number of working-age migrants going from CEE to Western Europe (which is the population of great economic importance), we have relied on a third data set for our analysis. Figure 5 shows the OECD data on annual emigration from CEE to Western Europe (without the returnees). Unlike the previous data sets, these records overestimate the total number of migrants from CEE who have settled into Western Europe. However, subsequent statistical analysis has shown that these records come by far the closest to the actual growing trend of migrating workforce from CEE to Western Europe, whereas the

records on net migrations can be misleading about the actual magnitude of the problem due to a large number of older returnees.

Based on the available data and the analysis presented in this section, we can conclude the following: 1) the CEE countries have annually lost at least 1% of their working-age population to migrations to Western Europe (this, too, is probably a conservative estimate); 2) the number of migrants leaving CEE is strongly increasing year-on-year, with an average annual growth rate of about 10% (Figure 5); 3) migrants are significantly younger than the average CEE population and 4) migrants are better-educated compared to the working-age population in their home countries.

Figure 5: Emigration of citizens from CEE to developed European countries (in thousands)



Source: Authors' calculations based on the OECD data.

## Driving forces behind rising migrations from CEE to Western Europe

As we have shown in the previous section, migration from CEE has been surging for over two decades, with no signs of slowing down – and such a loss of skilled workforce, if continues, threatens to jeopardize the economic perspective of the CEE countries. However, it is still unclear why this is happening – i.e. why there is an increase in outward migration when the CEE countries are relatively strongly converging, in terms of living standards, towards the Western European countries. With the decreasing wage gap between CEE and Western Europe, we should be seeing ever fewer people from CEE deciding to migrate to Western Europe, while the opposite is taking place. Migrations from the CEE countries have tripled since 2000, even though in 2000 the CEE countries were at 38% of the development level of Western Europe, while in 2018 they have reached over 60%. Therefore, it is indisputable that there are additional factors affecting the increase of migrations from these countries to Western Europe, surpassing the effect of economic convergence of CEE to Western Europe.

A part of the explanation could be that 11 CEE countries that joined the EU after 2000 had an easier access to the Western European labour markets. We hence analysed the impact of the EU accession of the CEE countries on their emigration levels (Table 2). Immediately after accession, there really was a significant increase in outward migration from the newly joined EU member states (Index 1). However, the number of migrants continued to rise even a decade after accession (Index 2). Had the EU accession effect been the only factor affecting the increase of emigration from CEE, it would have been a one-off, i.e. as the standards

of living continued to catch up to the Western European levels, migrations would have decreased; however, the data show the opposite to be true (Index 2).

The main factor driving the rise in outward migrations from CEE to Western Europe (despite the economic convergence) is the growing demand for skilled workforce in Western Europe. Namely, the countries in Western Europe have been experiencing unfavourable demographic trends for quite some time – the number of young people is dwindling compared to the older population. From mid-2000s, the number of people in the 60-64 age group for the first time exceeded that of the 18-22-year-olds. This led to the shortfall in domestic workforce in Western Europe, since there is an insufficient number of young people to replace the retiring population as they leave the labour force. In simple terms, for each 100 elderly workers (doctors, nurses, drivers, engineers) leaving the Western European labour market, there is fewer than 100 young people applying to take their place, and these trends are deteriorating year after year.

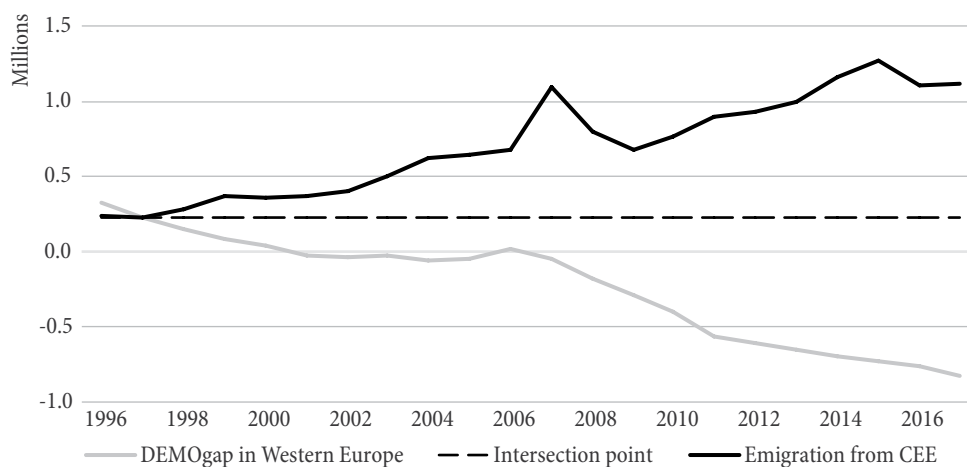
The increasing number of vacant, well-paid positions in Western Europe attracts citizens of CEE. The rise of outward migrations from CEE to Western Europe matches, almost perfectly, with the demographic decrease of the domestic working-age population in Western Europe. Figure 6 clearly shows that the number of migrants from CEE increased proportionally with the widening of the demographic gap<sup>11</sup> in Western Europe. This correlation,

<sup>11</sup> The demographic gap is the quantification of the decrease in the domestic working-age population in Western Europe. It was derived as the difference between the population in the 60-64 age bracket, which is leaving the labour market, and the population from the 18-22 age bracket, entering it (corrected for the mortality rate of the working-age population).

**Table 2: Yearly emigration from CEE11 countries before and after the EU accession, period averages**

	Before the EU accession	After the EU accession	Latest data	Index (1)	Index (2)
	1	2	3	2/1	3/2
	2002-2003	2005-2006	2017		
<b>CEE8</b> (CZ, SK, SL, HU, EE, LT, LU, PL)	171,365	342,188	415,402	199.7	121.4
	2005-2006	2008-2009	2017		
<b>CEE2</b> (BG, RO)	230,272	331,514	530,449	144.0	160.0
	2011-2012	2014-2015	2017		
<b>Croatia</b>	16,239	65,378	69,594	402.6	106.4

Source: Authors' calculations based on the OECD data.

**Figure 6: Demographic trends in Western Europe and emigration from the CEE countries, 1996-2017**

Source: Authors' calculations based on the Eurostat and OECD data.

however, does not apply to migrations to Western Europe from other parts of the world (mainly the Middle East and Africa). The number of migrants from those regions has also increased starkly in the previous years; however, it does not coincide with the demographic trends in Western Europe, but rather increases independently of them, usually as the result of crises in different parts of the world (the Arab Spring, war in Syria, etc.).

The important question is why the significant increase in the number of migrants coming from Asia and Africa in the previous decade failed to compensate the shortages in the Western European labour markets, while migrations from CEE increased in parallel to it. In simple terms, Western Europe has, on the one hand, a “surplus of migrants”, while, on the other, it keeps absorbing the workforce from the CEE countries. The answer to the question lies in different skill levels of CEE migrants compared to those from the rest of the world, i.e. in the compatibility of the CEE workers with the needs of the Western European labour markets. As we have already shown, the migrants from CEE are mostly well-educated. This means that they can respond, in terms of their skill level, to the demands for human resources in the highly competitive economies of Western Europe, which does not apply, to the same extent, to the migrants from the rest of the world.

Individual CEE countries will respond differently to the demand for skilled labour in Western Europe. In Figure 7, we have shown two factors affecting emigration from individual CEE countries. The first is the difference

in the living standards compared to Western Europe (pay gap). As a rule, more people migrate from those CEE countries which are less economically developed, i.e. where the difference in salaries compared to Western Europe is the greatest (left panel in Figure 7). The pay gap is not, however, the only, nor, indeed, most probably the deciding factor behind the level of migration from the CEE countries. In Figure 7 (right panel), we show that outward migration is the lowest from the countries that have better governance (low corruption, strong rule of law) and provide public services of better quality (healthcare, education, administration, etc.).

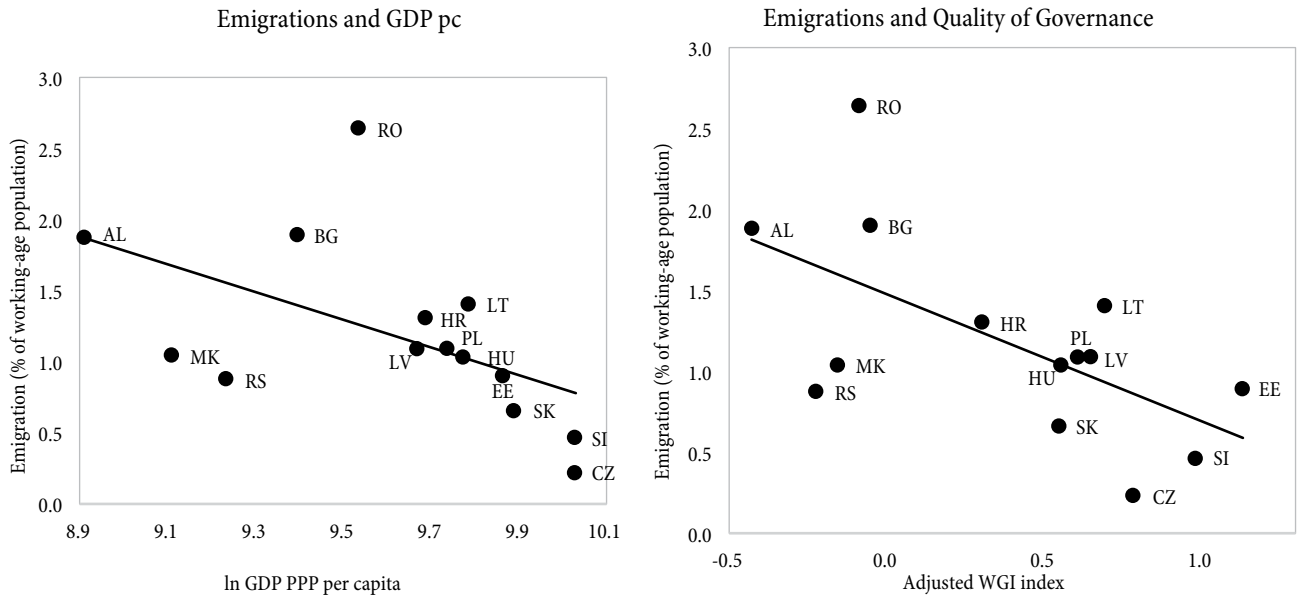
### Empirical model of migration from the CEE countries to Western Europe

Building upon the considerations from the previous section, we put forward a model that explains the magnitude of migration from individual CEE countries<sup>12</sup> to Western Europe<sup>13</sup> by the demand for labour in Western Europe and specific characteristics of the analysed CEE countries: level of economic development, quality of institutions, quality of education, and the EU labour market access.

12 CEE countries: Slovenia, Croatia, Czechia, Slovakia, Hungary, Poland, Estonia, Latvia, Lithuania, Bulgaria, Romania, Albania, North Macedonia and Serbia. Due to data limitations we were not able to include Montenegro and Bosnia and Herzegovina in the sample.

13 Western Europe: Germany, Austria, Belgium, the Netherlands, Luxembourg, the United Kingdom, Norway, Denmark, Finland, Sweden, Spain, France, Italy, Iceland and Switzerland. Portugal and Ireland were left out due to data limitations.

Figure 7: CEE: Emigration vs. GDP and Quality of Governance, 2006-2017 average



Source: Authors' calculations.

Note: i) GDP PPP per capita, EUROSTAT ii) Adjusted WGI index calculated as a simple average of Control of Corruption, Government Effectiveness and Rule of Law indicators, World Governance Indicators, World Bank.

The model can be represented by the following equation (Equation 1):

$$Emig_{i,t} = \gamma_0 + \gamma_1 DEMOgap_t + \gamma_2 GDPgap_{i,t} + \gamma_3 Institutions_{i,t} + \gamma_4 Education_{i,t} + \gamma_5 Dummy\_EU_{i,t} + \epsilon_{i,t}$$

Where:

- i)  $Emig_{i,t}$  represents the yearly emigration from a given CEE country as a percentage of the working-age population; OECD International Migration Database<sup>14</sup>.
- ii)  $DEMOgap_t$  is the demographic decline in the labour force in Western Europe,<sup>15</sup> given in % of the total working-age population; EUROSTAT.
- iii)  $GDPgap_{i,t}$  refers to the difference between (ln) GDP PPP per capita of a given CEE country and average (ln) GDP PPP per capita of developed European countries; EUROSTAT.

14 We decided to use migration data from the OECD International Migration Database because it allows us to construct yearly time series of emigration from CEE countries to Western Europe. Other data sources, the UN and EUROSTAT were not suitable for our econometric analysis. The UN data on migration is given in five-year intervals, while the EUROSTAT data, although annual, does not have long enough time series and for Germany and France it was not possible to discern the country of origin of migrants.

15 Demographic decline in labour force calculated as the difference between the number of people assumed to be entering the labour force (the average number of people aged 18-22) and the number of people assumed to be leaving the labour force (the average number of people aged 60-64), corrected for the number of people aged 20-62 that died during the previous year.

- iv)  $Institutions_{i,t}$  represents the yearly average of World Governance Indicators for Control of Corruption, Rule of Law and Government Effectiveness; World Bank.
- v)  $Education_{i,t}$  refers to the yearly average of Global Competitiveness Sub-Indices: Quality of Education and Quantity of Education; World Economic Forum.
- vi)  $Dummy\_EU_{i,t}$  is dummy variable that takes the value of 1 if a country is in the EU in a given year and 0 otherwise.

We estimated the model on a set of 14 CEE countries for the 2006-2017 period. The choice of the period was determined by the appearance of a significant demographic decline in the domestic working-age population of Western Europe from 2006 onwards (Figure 6).<sup>16</sup>

The estimated equation (Equation 2) is given by:

$$Emig_{i,t} = -3.277^{**} + 2.118^{***} DEMOgap_t + (-1.273^{**} GDPgap_{i,t} - 1.328^{***} Institutions_{i,t} + 0.518^{**} Education_{i,t} + 1.288^{***} DummyEU_{i,t})$$

(1.396) (0.579)  
(0.603) (0.486)  
(0.253) (0.238)

16 The choice of the period was also influenced by the availability of data for other variables (WEF education data) and somewhat lower reliability of older migration data.

$N = 14$  countries,  $T = 12$  years,  $NT = 168$  observations,  
 $R^2 = 60.3\%$

Notes:

- i) Model estimated using the Prais-Winsten method (see [2],[4],[6],[9])<sup>17</sup>
- ii) Corrected standard errors are given in parenthesis.
- iii) \*\*\* and \*\* represent 1% and 5% significance levels, respectively.

The model results can be summarized as follows:

(1) The demographic decline in domestic workforce in Western Europe created a labour shortfall in these countries (large number of well-paid jobs) generating the demand for the CEE workforce (DEMOgap). (2) The CEE countries respond to this demand, depending on the skill and education level of the workforce, where countries with a more educated workforce that better addresses the needs of the Western European labour markets respond more strongly (Education). (3) As expected, more people will decide to emigrate from less developed CEE countries where the difference in wages and living standards relative to Western Europe is greater (GDPgap). However, income is not the only factor. (4) More people will leave the countries where the quality of institutions is worse (Institutions). Finally, (5) facilitated access to the Western European labour markets further stimulates emigration from the analysed countries, i.e. the accession of the CEE countries to the EU was accompanied by an increase in emigration to Western Europe (DummyEU).

All estimated coefficients are significant at 5% and some at 1% (DEMOgap, Institutions, DummyEU). The model passes statistical tests and addresses the problems of serial correlation, heteroskedasticity and cross-sectional dependence in the data. The explanatory power of the model is high – the proposed model explains nearly two-thirds of the variation in emigration between the CEE countries (coefficient of determination,  $R^2$  of 60.3%). Thus, the estimated model represents a sound framework for analysing migration from the CEE countries to Western Europe. In the following paragraphs, we elaborate the meaning behind each of the coefficients in more detail.

The coefficient on the variable describing demographic trends in Western Europe (DEMOgap) is positive and

statistically significant at 1%, indicating a strong link between adverse demographic trends in Western Europe (decline of the working-age population) and migration from the CEE countries. The result supports the view that the demand for labour in developed European countries has been a major driver of growth in outward migration from CEE in the last fifteen years. The coefficient value of about 2 implies that a loss of 1% of the working-age population in Western Europe (about 2.3 million in total in 2017) is “compensated” with 2% of the working-age population in CEE countries (about 1.4 million in total in 2017). This indicates that, on average, almost two-thirds of the labour shortfall in Western Europe is mitigated by immigrant workers from the CEE countries.

The level of economic development (GDPgap) and the quality of institutions (Institutions) are negatively correlated with emigration from the CEE countries. High wages in Western Europe incentivize outward migration from CEE and relatively more people will emigrate from less developed CEE countries where the difference in the average wage compared to Western Europe is larger. However, as we have already pointed out, the pay gap alone is not the only factor that motivates the emigration of the CEE population. An important driving factor is the quality of institutions. The negative sign of the estimated coefficient on the Institutions variable (average of selected WGI indicators) indicates that people will more likely emigrate from countries where the quality of institutions and the quality of public services (healthcare, education, etc.) are lower. It is interesting to note that the magnitudes of the coefficients on Institutions and GDPgap suggest that poor institutions (high corruption, low level of rule of law and poor quality of public services) have a stronger (negative) effect on migration than the difference in living standards relative to Western Europe.

The positive sign of the coefficient describing how emigration varies with education indicates that outward migration will be higher in those CEE countries that have a higher-quality education system and a better-educated population. This indicates that the demand for the CEE workforce in Western Europe is largely driven by a shortage of skilled workers (doctors, nurses, engineers, etc.). Educated CEE workers can meet such demand (which

<sup>17</sup> The model estimation was executed in Stata using the `xtpcse` command.

other expatriates from the rest of the world generally fail to do). Therefore, relatively higher emigration will be recorded by those CEE countries whose workforce better meets the needs of the Western European labour market.

Unrestricted access to the Western European labour market accelerates outward migration from the CEE countries as indicated by the positive coefficient on the dummy variable. EU membership allows for free movement of workers between the Member States, making it easier for the workforce of the CEE countries that are in the EU to migrate to Western Europe compared to those still subject to restrictions on work and stay in the EU. Data shows that all the CEE countries that joined the EU during the analysed 2006-2017 period (Romania, Bulgaria, Croatia) had seen a strong additional rise in emigrations in the post-accession period (adding around 1 p.p. of the working-age population aged 20-64). On the other hand, the non-EU sample countries (Serbia, Albania and North Macedonia) still have a relatively lower emigration than the CEE EU member countries. However, some important EU members (Germany for example) are putting policies in place that will open the labour market for the people of other, non-EU member states. That could, in the future, reduce the difference in access to the Western European labour markets between the CEE EU and candidate countries, i.e. it could further spur outward migration from Serbia, Albania and North Macedonia.<sup>18</sup>

We checked the robustness of the obtained results by evaluating the same model (Equation 1) over different periods. The results are presented in Table 3. Most of the coefficients are relatively stable with reasonable oscillations

<sup>18</sup> On the other hand, it could somewhat ease the pressure on emigrations from CEE11.

in both directions, which confirms the quality of the estimated model. The only exception is the coefficient on Education, which systematically increases in value as the analysed time horizon shortens towards 2017 (the increase in the absolute value of the coefficient from 0.4 in 2006-2017 to 0.9 in 2010-2017). We interpret this as additional evidence in support of the claim that the acceleration of emigration from CEE during the observed period was defined by the increased demand for skilled labour in Western Europe. In other words, with the increase in negative demographic effects in Western Europe, the importance of the level of education in the CEE countries rises. Finally, the estimated models explain about two-thirds of the variations in emigration by country (value of the coefficient of determination,  $R^2$  in the range of 59.4 to 67.6), which strongly supports the soundness of the presented empirical model as a framework for analysing emigration from the CEE countries (including Serbia) towards Western Europe.

### How to mitigate emigration from Serbia?

Based on the model results, in this section we estimate the rate of emigration from Serbia in the upcoming five years and consider the measures which, if implemented, could mitigate or reverse these trends. The model shows that even with a relatively high GDP growth rate of about 4%, Serbia will almost certainly face a 20-30% increase in yearly emigration rates in the upcoming five years. Namely, demographic trends in Western Europe imply the growing demand for skilled labour which will additionally fuel emigration from the CEE countries (including Serbia) in the future. However, not only could Serbia offset this

**Table 3: Robustness checks: estimation results for different time periods**

	2004-2017	2005-2017	2006-2017	2007-2017	2008-2017	2009-2017	2010-2017
<i>DEMOgap</i>	2.501***	2.295***	2.118***	1.946***	2.333***	2.743***	3.270***
<i>GDPgap</i>	-1.296***	-1.232**	-1.273**	-1.210**	-1.249**	-1.055*	-1.170**
<i>Institutions</i>	-1.130***	-1.300***	-1.328***	-1.504***	-1.170***	-1.239***	-1.283***
<i>Education</i>	0.287	0.442*	0.518**	0.574**	0.591**	0.736**	0.915***
<i>Dummy_EU</i>	1.180***	1.234***	1.288***	1.407***	1.064***	0.964***	1.049***
<i>Constant</i>	-2.282*	-2.918**	-3.277**	-3.441**	-3.592**	-4.182***	-5.382***
<i>Number of obs.</i>	196	182	168	154	140	126	112
<i>R<sup>2</sup></i>	60.9	60.9	60.3	62.1	59.4	62.8	67.6

Source: Authors' calculations.

Note: \*\*\*, \*\* and \* represent 0.01, 0.05 and 0.10 significance levels, respectively.

growth, but could also decrease the current levels of emigration, provided the quality of institutions and the quality of public services significantly improve in the upcoming five years.

The first, baseline scenario for forecasting emigration from Serbia to Western Europe in the upcoming five-year period is founded on the following assumptions. We started from the average annual growth rate of Serbian GDP of 4%, which is in line with the somewhat optimistic Government forecasts. We also assumed that there would not be any changes in curtailing corruption, strengthening the rule of law or improving public services. There are grounds for such an assumption as these WGI indicators have practically been stagnating since 2014 in the case of Serbia. Finally, based on the forecast demographic trends in Western Europe, we estimated the demand for skilled labour in these countries. With these assumptions, the model shows that the growing labour demand in Western Europe will drive the increase of annual emigration of the Serbian population by about 20-30% compared to the current level (of about 1% of the population of working age).<sup>19</sup> In other words, the model shows that a similar scenario to the one that has unfolded in the majority of other CEE countries over the previous twenty years is in store for Serbia – despite a larger GDP growth than in Western Europe, i.e. despite the convergence in the living standards, the emigration will continue to grow.

However, if Serbia was to show strong progress in the quality of governance in the upcoming five years, it could completely offset the effect of growing demand for skilled labour in Western Europe, and even reduce future emigration. Therefore, we created the second scenario by assuming that Serbia will catch up to the current CEE average in the indicators of corruption, rule of law and quality of public services by 2025.<sup>20</sup> The econometric model shows that, in that case, not only could annual emigration from Serbia to Western Europe stop growing, but could even drop by 10-15% in relation to its current level.

<sup>19</sup> Increase in emigration from Serbia to Western Europe will depend on the degree of free access to the Western European labour markets for Serbian citizens.

<sup>20</sup> Other assumptions pertaining to the growth of GDP and the trends of workforce demand in Western Europe remain the same as in the baseline model.

Finally, we considered a hypothetical case in which the average salary in Serbia would reach the announced 900 EUR at the end of 2025, with the quality of governance (institutions and public services) remaining at the current level. The model shows that, without better governance, even (the economically doubtful) increase in salaries would not prevent the future growth of emigration. Namely, the growth of salaries to the level of 900 EUR could partially compensate for the effects of growing workforce demand from the West, but the level of emigration would still be higher in 2025 than it is now, by about 5-10%. The results of the model for all three scenarios are shown in Table 4.

**Table 4: Forecast emigration from Serbia to the Western European countries in the 2021-2025 period**

	% of working-age population
Current emigration	1.00
Average yearly emigration in 2021-2025	
Scenario 1 (Baseline)	1.2-1.3
Scenario 2 (Improved institutions)	0.85-0.90
Scenario 3 (900 EUR wage)	1.05-1.10

Source: Authors' calculations.

The results of the model showing that better institutions and the increased quality of the provided public services are superior in slowing down emigration from Serbia to Western Europe is not that surprising. This, for example, is in line with the results of the recent EBRD research that showed that suppression of corruption in Albania would have the same effect on the reduction of its emigration as the doubling of the average salary [7]. The EBRD arrived at this result by applying an alternative methodology, estimating, based on the survey data, the impact of different factors on the intentions of the population to emigrate.

Additional arguments that the institutions play a decisive role in defining the emigration rate are supported by empirical evidence from particular CEE countries. For example, Croatia has a somewhat higher average salary than the Baltic states of Latvia and Lithuania (average salary in Croatia is currently at 870 EUR, and in Latvia and Lithuania about 820 EUR), but twice their emigration. The explanation for the difference in emigration rates, thus, lies in the fact that the quality of institutions and public services is far higher in Latvia and Lithuania than in Croatia. The effect on immigration can also be seen in

the case of Romania where in the last five years the country has seen an unusually high increase in average salaries, without any effect on decreasing the emigration. Namely, salaries in Romania grew by almost 40% in the 2014-2017 period (from about 380 EUR to about 520 EUR), while emigration, instead of slowing down, increased by 15%.

Therefore, the results of the estimated model, other empirical research, as well as concrete examples of the CEE countries unambiguously show that the increase in wages has inferior impact on mitigating emigration compared to improvement in governance. Furthermore, an increase in salaries that outpaces productivity growth has a negative effect on competitiveness and, thus, slows down economic growth. On the other hand, improvement of institutions and providing higher quality of public services is politically and professionally more challenging, but it is far more effective. Not only does it directly contribute to the quality of life of the population and have the strongest effect on lowering emigration, it also plays an important role in raising the rate of economic growth in CEE (see [12]). This means that better institutions would further decrease emigration rates indirectly, through fostering faster convergence of Serbia to the West in terms of living standards.

Thus, we conclude as follows: (1) The model shows that Serbia will face growing emigration pressures in the upcoming five years, caused by the shortfall in the working-age population in Western Europe, even if economic growth averages 4% per year. (2) The key to offsetting the expected surge in emigration, and even reversing this trend, lies in the improvement of institutions – fighting corruption, increasing the rule of law, improving public services. (3) A strong wage increase cannot counterbalance the effects of growing demand for skilled workforce in Western Europe, i.e. emigration will continue to increase. Moreover, if the growth of salaries were to outpace the productivity growth, it would adversely affect macroeconomic stability and slow down economic growth and the convergence of the Serbian economy to that of Western Europe.

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