

# LABOR MIGRATIONS BETWEEN BOSNIA AND HERZEGOVINA AND AUSTRIA

**Expected trends and  
potential reflections  
on both economies**



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**TITLE:**

# **Labor migrations between Bosnia and Herzegovina and Austria – expected trends and potential reflections on both economies**

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# Executive Summary

**B**osnia and Herzegovina is the leading country of Western Balkans in emigration both in absolute and relative terms. According to the UN estimates, BiH has 1.6 million emigrants, which implies that its emigration stock is as large as almost half of the population that lives in BiH.

About 47 percent of the BiH emigration is related to the intra-regional migration, mostly to Serbia and Croatia, which is primarily a consequence of the past war, and also Slovenia where economic factors of migration play a more important role.

In the after-war period, and particularly in the last decade, the EU-15 countries became the primary choice for BiH migrants while the intra-regional and overseas migrations subdued. Among the EU-15 countries, Germany, Austria and Slovenia have been the most common destinations for BiH citizens.

Austria hosts 168.5 thousand or around 10 percent of the total BiH emigration. There is a relatively long history of migrations from BiH to Austria initiated by “guest workers” from former Yugoslavia in 1970s, followed by refugee flows in 1990s and labor-related movements afterwards. In the recent period the labor migration between these two countries have strengthened with the stock of BiH migrants in Austria increasing by over 10 percent in the last six years.

The strong labor migration flows from BiH to Austria have been expected due to drastic differences in wages and levels of unemployment between the two countries coupled with their geographical proximity, visa-free regime and existence of substantial social networks of BiH citizens in Austria.

These migration flows to Austria are expected to continue strong, if not stronger. By applying a macro-migration gravity model we evaluate the mid-term mobility of BiH migrants to Austria and other main European destinations for the 2019-2024 period. Under the first scenario (status quo in institutional arrangements for BiH migrants applied by Austria and other destination countries) the stock of BiH migrants in Austria is expected to increase by 12.7 thousand in the next five years. Under the second scenario (Austria and other destination countries will facilitate additional access to the labor markets to BiH migrants) the projected stock is expected to increase by 29.4 thousand. Therefore, the expected increase of BiH migrant stock in Austria is in the range of 7.5-17.5 percent.

**The migration from BiH to other main European destinations is expected to be almost as strong.** We estimate that the BiH migration stock in ten EU receiving countries (Germany, Austria, Slovenia, Croatia, Sweden, Switzerland, Denmark, France, Italy and the United Kingdom) will increase by 72.2 thousand under scenario one and 176.5 thousand under scenario two, in the period 2019-2024. This implies that the estimated rise of BiH migrant stock in those ten countries is in the range of 6.8-16.7 percent.

**The emigration contributed to tightening conditions at BiH labor market** reflected by a decrease in unemployment rate and an increase in average wage. The available data suggests that the BiH emigrants have a significantly higher share of individuals with high education in comparison with the domestic population they left behind. This, together with the expected continuation of emigration in the coming years, leads to a “brain drain” effect and can easily exert additional upward pressures on wages of high-skilled workers in BiH.

**Interestingly, the educational structure of BiH migrants to Austria is less skill-intensive** in comparison with the overall BiH migrants and even with the BiH population. Thus, this particular migration flow could positively affect wages of the low-skilled workers in BiH by reducing their labor supply.

**In the last decade, the emigration reduced the BiH population by around 2.4 percent, with Austria accounting for about one fifth of that reduction.** Based on the experience of Visegrad countries, the continuation of this process will lead to further tightening of the BiH labor market and eventual skill shortages that undermine a potential GDP growth and bring closer needs for return/inward migration. Looking from the current perspective, the rising wages are contributing to domestic consumptions and thus to the GDP growth of BiH.

**Empirical research is much more unanimous on positive effects of immigration on the labor markets and economic activities of developed countries.** Several studies find that an inflow of work force with a certain skill level is usually not associated with negative effects on employment and wages of native workers with the same education level.

**In the case of Austria, the positive impact of labor immigrations is hardly disputable having in mind its acute labor shortages.** The share of BiH migrants in the Austria's total stock of migrants is 9.7%, which points to the important role of BiH for Austria's immigration trends. Although the BiH migrants in Austria are relatively low-qualified with only 5 percent of high-skilled individuals, there are findings that the migrants from BiH are still employed below their skill levels. This implies that the primary purpose of BiH migrants in Austria has been to alleviate shortages of labor supply for low-qualified jobs. The employed workers from BiH are mostly concentrated in economic sectors with high vacancy rates, which suggests that a demand for similar profiles of workers at Austria's labor market will remain high in the next period.

# Introduction

In the period 2010-2019 the population of Bosnia and Herzegovina (BiH) has decreased from 3.8 million to 3.3 million<sup>1</sup> due to natural population decline and, increasingly, emigration. The emigration flows from BiH have started to noticeably effect the country's labor market conditions in the last three years reflected by a decrease in unemployment rate, rising wages as well as employers' complaints in the social dialogue about difficulties to find workers with required skills. These processes intensified a public debate in BiH about future emigration trends and their expected impact on domestic labor market, external competitiveness and economic activity. Nonetheless, the empirical research about these topics in BiH has been almost non-existent.

Austria is one of the key receiving countries of BiH migrants. The robust immigration flows from BiH in the last decade have contributed to creating an estimated stock of BiH migrants in Austria at the level of around 168 thousand, or 10% of the total migrant stock in Austria, in 2019.<sup>2</sup> In the same period Austria has been confronted with the growing shortages of domestic labor supply in a number of economic sectors, which thus had to strongly rely on foreign workers and are likely to do so in the coming years. Therefore, it seems to be in the interest of stakeholders from both countries to gain more information about the prospects of migration flows and their potential implications on labor markets in Austria and BiH.

This study investigates:

- a profile of BiH migrants in the context of migrants from other Western Balkan countries;
- specifics of BiH migrants to Austria vs. BiH migrants to the rest of the world;
- characteristics of key “push” and “pull” factors in relation to BiH-Austria migration flows;
- potential mid-term migrations from BiH to Austria and from BiH to other main destination countries in the EU;
- labor market and main economic implications for BiH from the overall emigration and from the BiH-Austria migration flows;
- labor market implications for Austria from the BiH-Austria migration flows.

1 United Nations, Department of Economic and Social Affairs, Population Division (estimations for 2019)

2 According to the STATISTIK AUSTRIA, Statistik des Bevölkerungsstandes.

The section two of the report presents and compares information on the countries' population dynamics, labor markets, social conditions, migration regimes and other migration-relevant factors. Results of mid-term projections of potential migration from BiH to Austria and to other selected EU countries are presented in the section three. The section four discusses labor market and economic implications of the overall emigration (for BiH) and BiH-Austria migration flows (for both countries).

# General migration profile of WB countries

**T**he Western Balkan region is historically affected by strong migration flows, even before the latest wars and during the former Yugoslavia time. This geographical space has been characterized by high cumulative outflows and massive labor emigration, dominantly caused by economic and social reasons as the most common push and pull factors. Available UN data on international migrations show that all WB countries are migrant sending countries, from 1990s up to recent days.

**Table 1:**  
**Total migrant stock (at mid-year) by origin country, 1990-2019**

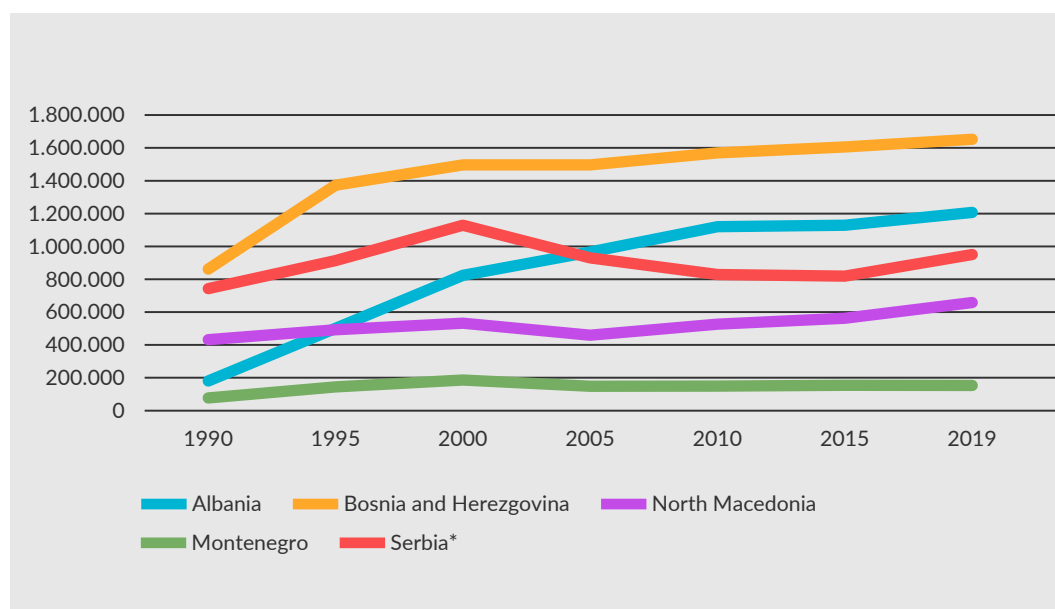
Year	Albania	Bosnia and Herzegovina	North Macedonia	Montenegro	Serbia*	TOTAL
1990	180.284	861.766	432.296	77.384	742.547	2.294.277
1995	501.142	1.372.534	492.304	144.640	914.112	3.424.732
2000	824.413	1.496.702	532.531	185.958	1.129.412	4.169.016
2005	966.234	1.496.969	459.289	148.156	929.729	4.000.377
2010	1.120.305	1.569.275	527.075	148.982	829.298	4.194.935
2015	1.129.044	1.606.003	562.907	154.657	819.273	4.271.884
2019	1.207.032	1.653.056	658.264	153.009	950.485	4.621.846

Source: United Nations, Department of Economic and Social Affairs, Population Division (2019)  
\*data for Kosovo included

The figures from the previous table show that the stock of migrants from the region has doubled during last 30 years, reaching more than 4.6 million in 2019. Bosnia and Herzegovina is the region's leading country in terms of absolute numbers of emigrants (1.6 million), followed by Albania (1.2 million), and Serbia (0.9 million).



**Figure 1:**  
**Trend of total migrant stock by origin WB countries over the last 30 years**



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019), and own calculation

It is also visible that emigration trends were particularly strong during 1990s, due to wars and ethnic tensions. The trend of emigration was temporarily slowed down in the early 2000s, but then intensified again in all countries except Montenegro. Such strong migration trends have caused a sharp decline in population of the whole region. Today, most of the Western Balkan countries, with the exception of Montenegro and North Macedonia, are facing a significant decrease in population compared to 1995.

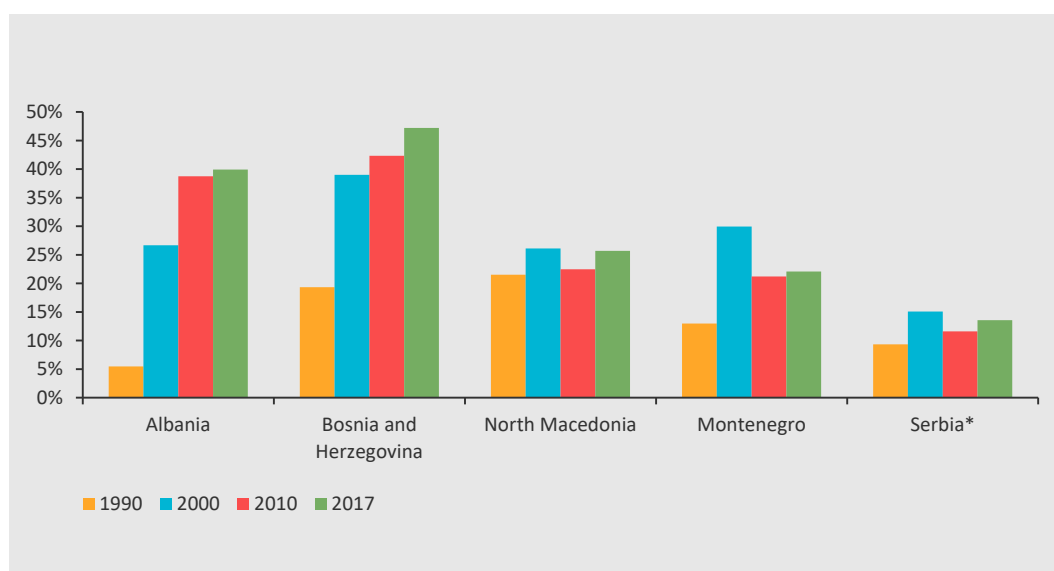
**Table 2:**  
**Total population of WB countries, 1990-2019 (in thousands)**

Country / Year	1990	1995	2000	2005	2010	2015	2019
Albania	3.286	3.113	3.129	3.087	2.948	2.891	2.881
Bosnia and Herzegovina	4.463	3.829	3.751	3.765	3.705	3.429	3.301
Montenegro	615	620	614	616	624	627	628
North Macedonia	1.996	1.983	2.035	2.060	2.071	2.079	2.083
Serbia*	9.518	9.884	9.488	9.194	8.991	8.877	8.772
<b>TOTAL</b>	<b>19.878</b>	<b>19.430</b>	<b>19.016</b>	<b>18.723</b>	<b>18.340</b>	<b>17.903</b>	<b>17.666</b>

Source: United Nations, Department of Economic and Social Affairs, Population Division (2019),  
\*data for Kosovo included

As it is shown in the previous table, the population in the Western Balkans has been decreased by more than 2 million people since 1990. Bosnia and Herzegovina has been affected the most by population changes with cumulative deficit of more than 1.3 million persons. Bosnia and Herzegovina is also the regional leader in another aspect, share of emigration in total population. According to UN data more than 45 percent of BiH total population are living abroad. Figures from the Ministry of Human Rights and Refugees of Bosnia and Herzegovina indicate even higher percentage, showing that BiH worldwide diaspora numbers about 2 million people spread across more than 50 countries.<sup>3</sup>

**Figure 2:**  
**Emigration as share of current total population**



Source: Own calculation and UN statistics, 2018. \*data for Kosovo included

## Main destination countries

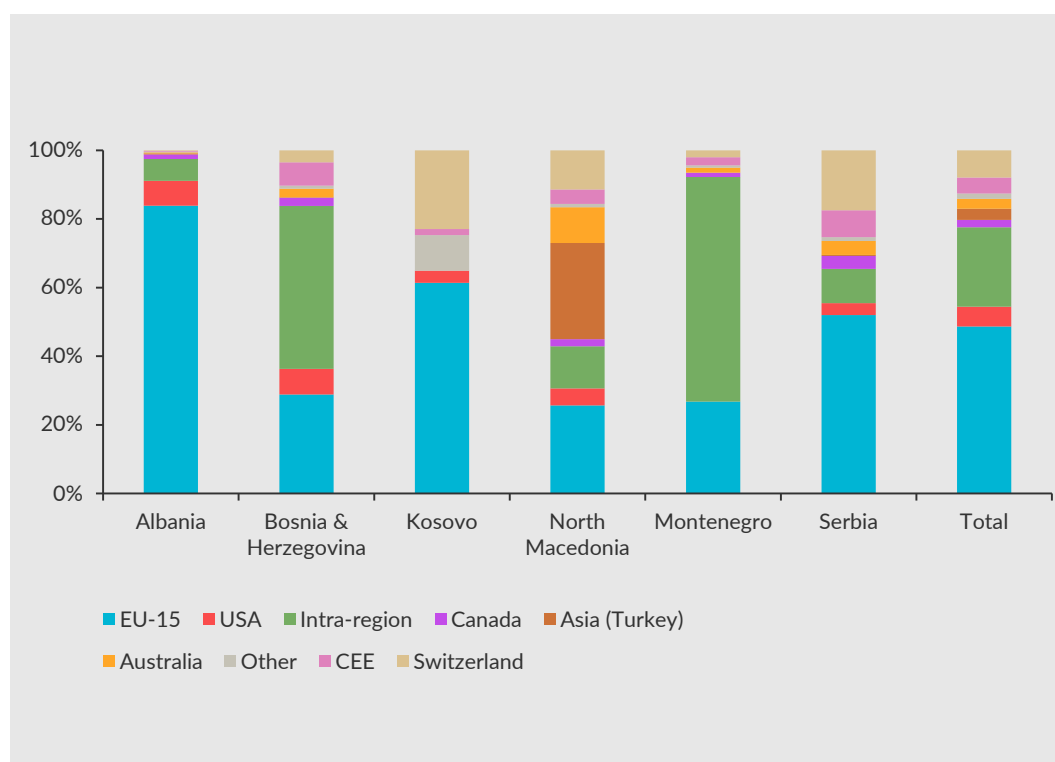
When considering migration processes, it is important to understand nature of migration flows, motives and relations between source and receiving countries. In this context it should be emphasized that half of emigrants from the Western Balkans moved to the EU-15 countries. Specifically, Greece and Italy are the primary destinations for more than 80 percent of Albanian emigrants. More than 50 percent of Serbian emigrants have chosen Austria and Germany as their destination countries, similar to Bosnian emigrants who also have had strong preferences for Croatia and Serbia as their neighbouring countries.

3 Ministry of Human Rights and Refugees Report for 2016, pages 67-75.

For 61 percent of Kosovar emigrants Germany and Switzerland are important destinations, while emigrants from North Macedonia prefer Germany, Italy and Switzerland as their destination countries. Beside EU-15 countries, overseas or distant countries – such as the United States, Canada, and Australia – were also preferred destinations for significant number of emigrants from the region, especially during 1990s and early 2000s.

The United States has been particularly attractive to migrants from Albania and Bosnia and Herzegovina while Australia has drawn Macedonian and Serbian emigrants. In the case of Macedonian emigrants, Turkey was also a key destination, attracting more than 25 percent of emigrants from that country (Figure 3).

**Figure 3:**  
**Main destination regions for emigrants**



Source: own elaboration using UN statistics

If we look at the trends from 2010 up to now, it can be noted that EU-15 countries have become the first choice for the most of Western Balkan emigrants during last ten years, as it is shown in Figure 4. At the same time, regional migration (between neighbouring countries) and overseas departures have been significantly reduced.

In case of Bosnia and Herzegovina, it is evident that Germany, Austria and Slovenia

are the most popular destination countries for majority of Bosnian emigrants. Only in Austria the increase of Bosnian emigrants stock has been about 12,6 percent since 2010 according to Austrian official statistics.

**Figure 4:**  
**Main destination countries in the region and EU for BiH migrants, 1995-2019**



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019)

## WB6 labor market

Concomitantly with the migration flows, labor markets have changed during the last decade in all Western Balkan countries. In general, the key labor market indicators in all WB6 countries have been improved over the last several years.

On the other side, despite evident improvements on the WB6 labor market, certain challenges from the past remained, specifically when it comes to long-term unemployment (structural unemployment), low activity rates (in particular among women) and wage disparities. Those aspects of regional labor market are briefly described in the following paragraphs.

**Figure 5:**

**Employment, unemployment and activity rate on WB6 labor market (by gender)**



Source: DIOC Database 2010-2011<sup>4</sup>

## Unemployment rates

One of the key labor market indicator is unemployment rate. It is visible from the next table that unemployment decreased across the region (reaching an all-time minimum in some countries) but it is still significantly higher compared to the Austrian labor market (16,93% as WB6 average compared to AT 5,52%). In Bosnia and Herzegovina, the unemployment rate (measured by ILO methodology) dropped considerably from 27,2 percent in 2010 to 20,5 percent in 2017. According to BIH official statistics this positive trend continued in 2018 and the first half of 2019. A similar decrease of unemployment rate was recorded in other WB countries as well, Serbia (from 19,5 percent to 13,47 percent), North Macedonia (from 32 percent to 22,38 percent) and Montenegro (from 19,7 percent to 16,07 percent in 2017). On the other side, the unemployment rate varied in Kosovo and Albania during last five years and returned to the same level from 2012.

4 DIOC Database: <http://www.oecd.org/els/mig/dioc.htm>

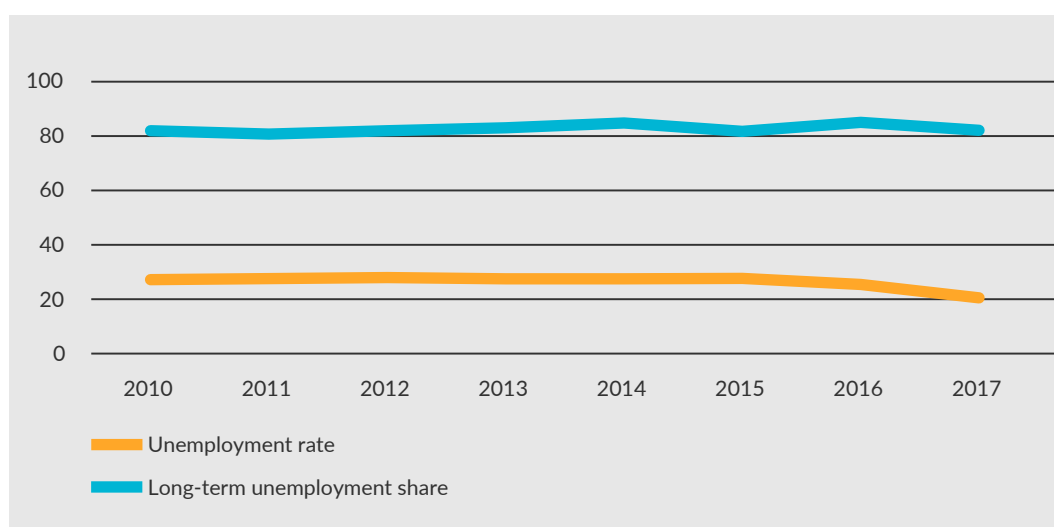
**Table 3:**  
**Unemployment rates (in %) in WB countries and Austria over 2010–2017**

Period	2010	2011	2012	2013	2014	2015	2016	2017
WB6 average			23,9	23,4	22,4	21,2	18,7	16,93
Albania	14	14	13,4	15,9	17,5	17,1	15,2	13,75
Austria	4,8	4,6	4,9	5,4	5,6	5,7	6	5,52
Bosnia and Herzegovina	27,2	27,6	28	27,5	27,5	27,7	25,4	20,53
Montenegro	19,7	19,7	19,7	19,5	18	17,5	17,7	16,07
North Macedonia	32	31,4	31	29	28	26,1	23,7	22,38
Serbia	19,5	23,3	24,2	22,5	19,2	17,7	15,3	13,47
Kosovo			30,3	29,5	35,1	32,7	27,4	30,31

Source: South East Jobs Gateway ([www.seejobsgateway.net](http://www.seejobsgateway.net))

In addition to a general unemployment rate, a long-term unemployment rate should also be considered when observing labor market in WB countries. It is indicative for BiH that the long-term unemployment share in total unemployment was always above 80 percent despite the significant fall in general unemployment during last several years.

**Figure 6:**  
**Unemployment rate and long-term unemployment share for BiH (2012 – 2017)**



Source: SEE Jobs Gateway Database ([www.seejobsgateway.net](http://www.seejobsgateway.net))

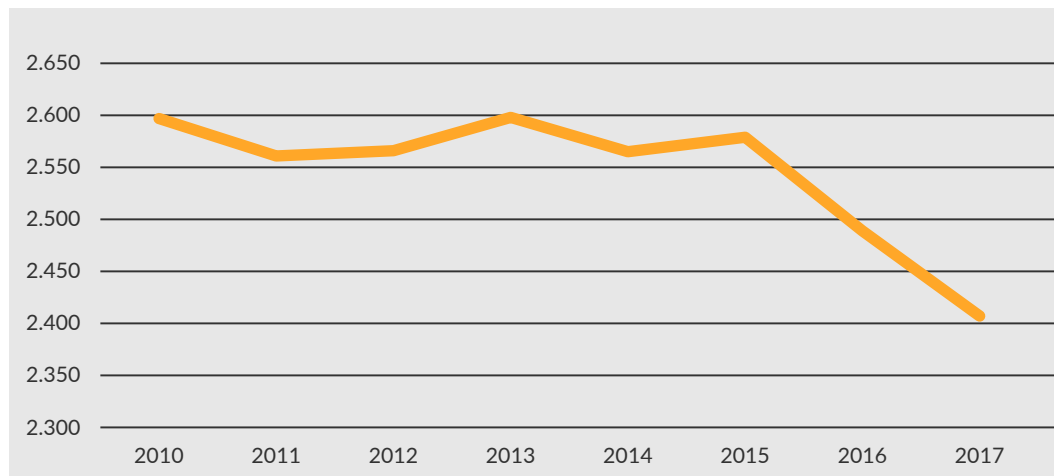
## Working-age population

Another important characteristic of WB labor market in last several years has been a decline of the working-age population (15–64). On average, the overall working-age population in WB countries dropped from 14,5 million in 2012 to 14,2 million persons in 2017. Apart from Kosovo and Albania, all countries saw a decline in the observed seven-year period.

This decline is notable the most in Bosnia and Herzegovina (see the next figure). To some extent it could be also an explanation for the significant fall in unemployment rate in Bosnia and Herzegovina, bearing in mind that this fall was driven by a combination of factors: rising employment, strong outward migration and aging of the population.

In the case of Austria, the working-age population continued to grow, mainly due to a rising influx of migrants. At the same time the unemployment rate in Austria increased slightly, from 4,8 percent in 2010 to 5,5 percent in 2017.

**Figure 7:**  
**Working age population in BiH over the time (2010 – 2017)**



Source: SEE Jobs Gateway Database ([www.seejobsgateway.net](http://www.seejobsgateway.net))

## Wage dynamics and ratio for WB6, BiH and AT

A difference in wage levels (wage ratio) between source and receiving countries represents also an important driver for labor related migrations. Available data show that wage levels varied within the Western Balkans countries, and between the Western Balkan six countries and Austria as the peer country. During 2010-2017

period Montenegro and Bosnia and Herzegovina reported the highest wage levels, while Albania reported the lowest.

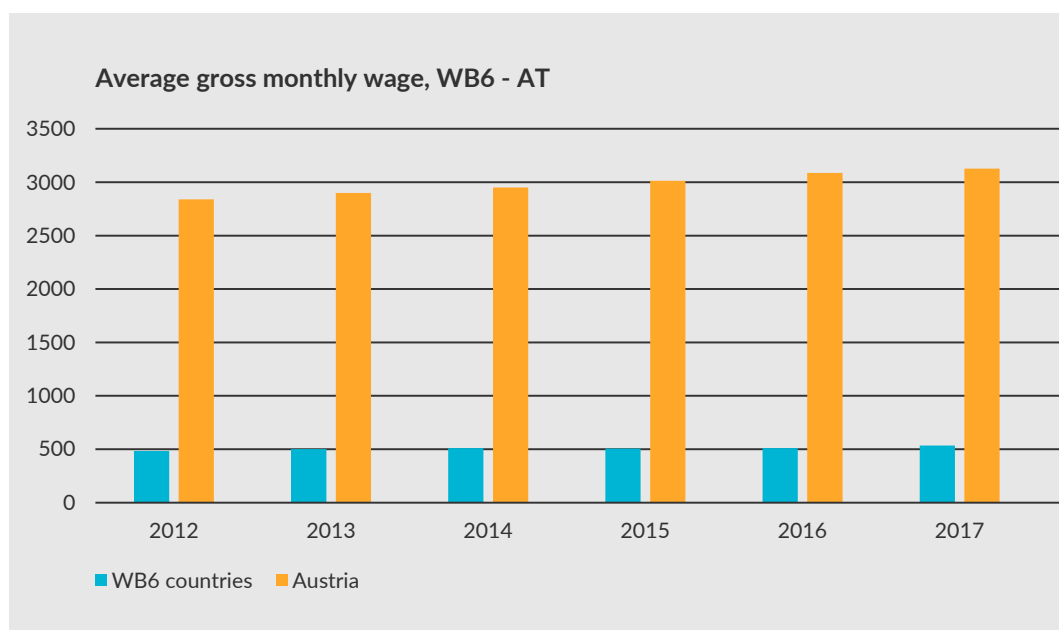
**Table 4:**  
**Monthly Gross Wages in EUR**

Country / Period	2010	2011	2012	2013	2014	2015	2016	2017
Western Balkans	.	.	483	501	510	506	511	534
Albania	252	260	270	259	325	335	334	372
Austria	2.709	2.763	2.839	2.899	2.950	3.010	3.082	3.128
Bosnia and Herzegovina	622	650	660	660	659	659	665	676
Montenegro	715	722	727	726	723	725	751	765
North Macedonia	491	497	498	504	508	522	533	547
Serbia	460	517	508	537	524	506	516	544
Kosovo	.	.	431	444	482	510	519	511

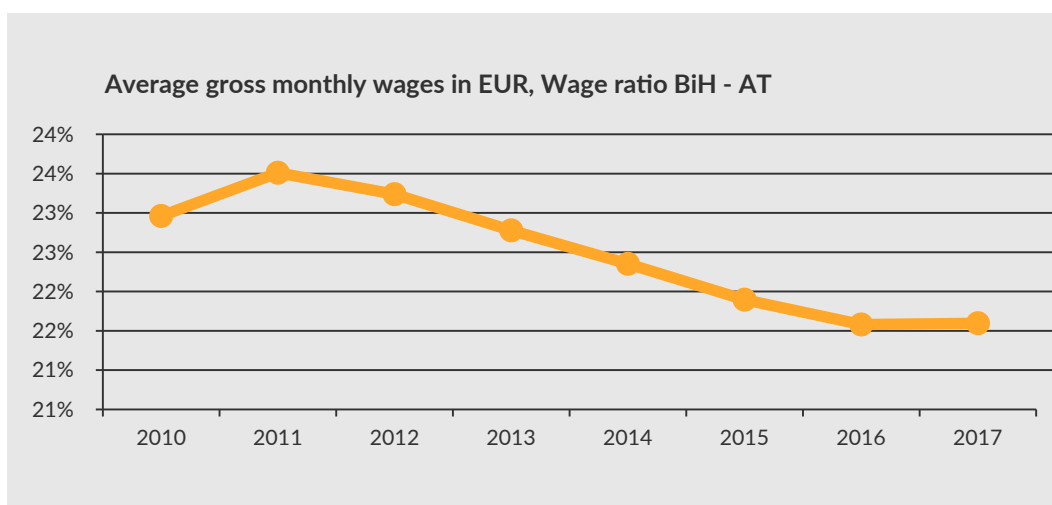
Source: SEE Jobs Gateway Database

Next figure shows that gaps in wage levels between WB countries and Austria increased in last 5-7 years. Additionally, according to the latest “Western Balkans Labor Market Trends” for 2018, the share of low-wage earners (defined as employees who make less than two-thirds of the median wage) is also considerably higher in all WB countries compared to Austria.

**Figure 8:**  
**Average monthly gross wages (in EUR) (2012-2017)**







Source: SEE Jobs Gateway Database

# Migration flows from Bosnia and Herzegovina to Austria

From a historical point of view migration flows between Bosnia and Herzegovina and Austria have been constant with periodical amplitudes. Initial wave of Bosnian immigration was predominately composed of so called “guest workers” from Yugoslavia in the 1970s, then followed by refugee movements in 1990s and again by labor related migrants after 2010. It should be also emphasized that Austria received the second highest number of refugees from Bosnia and Herzegovina during the war in the 1990s, which made BiH migrants in Austria one of the largest refugee groups. Before 1998, they were in a system of temporary protection, excluded from access to labor market. After 1998, BiH migrants gained access to permanent residence and permanent labor permits. Later on, the status of migrants originating from BiH, residing in Austria for a longer period of time, was fully resolved through the acquisition of Austrian citizenship or through obtaining residence permits (permanent or limited stay), mainly for family reunification, work and studying.

According to recent mapping of Bosnian diaspora<sup>5</sup>, there are a number of different bilateral agreements between Bosnia and Herzegovina and Austria that are relevant for BiH migrants. The most relevant are the Agreement between BiH and Austria on Social Security and the Convention between the Republic of Austria and BiH on Avoidance of Double Taxation. Moreover, some of the Agreements concluded during Yugoslavia are still in power (for instance the agreement between the SFRY and the Government of Austria on the Equivalence of Evidence of Final Examination for Secondary Schools; the Agreement between the SFRY and Austrian Governments on Equivalencies in Universities, the Labor Recruitment Agreement from the 1960s, etc).

Since 2010 BiH citizens do not need a visa to enter in Austria, but, same as other non-EU and third-country nationals, persons from BiH need a residence permit for Austria when they plan to stay longer than six months. For those looking for a job it includes working permits known as “Red-White-Red” cards that might be issued for qualified workers from non-EU countries in accordance with certain conditions. With regard to the migration of Bosnia and Herzegovina’s citizens to Austria, there is a decrease in number migrants who seek asylum. This especially refers to all economic asylum seekers, who cannot apply for asylum in Austria since 2014, when Bosnia and Herzegovina was put on the list “Safe country of origin”.

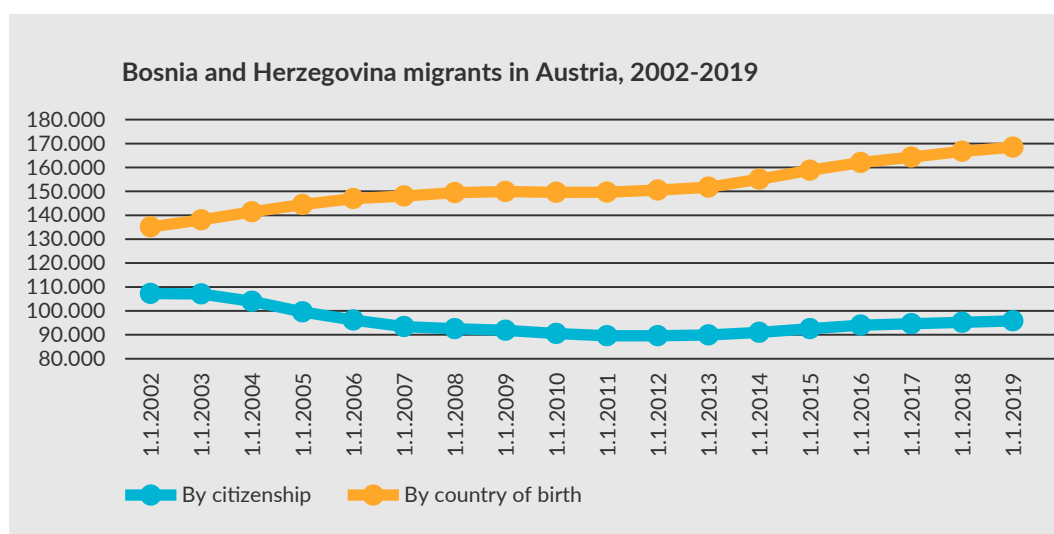
<sup>5</sup> Mapping the Bosnian-Herzegovinian Diaspora, (Sarajevo, 2018)

## Trends, stocks and employment status of BiH migrants in Austria

It is hard to determine the exact number of BiH migrants in Austria today. Data pertaining to the emigration of Bosnia and Herzegovina in Austria may be classified into three basic groups: nationals of BiH, persons born in BiH and the persons with the BiH origin including their descendants.

According to the official data from Austrian statistics there are more than 168 thousand persons born in Bosnia and Herzegovina who are living now in Austria, regardless of their current citizenship<sup>6</sup>. The following graphic shows that upward trend in the number of BiH emigrants in Austria has been particularly pronounced since 2010 and it is overlapping with the period when BiH citizens get a visa-free regime to enter the EU countries.

**Figure 9:**  
**Stock of BiH migrants in Austria by country of birth and citizenship**



Source: STATISTIK AUSTRIA, *Statistik des Bevölkerungsstandes*

The graph also shows that the number of BiH nationals in Austria who only have the BiH citizenship is around 95.000. After ten years of a constant decline this number has started to increase again, from 2013 up to now. Today, citizens from Bosnia and Herzegovina are among the largest communities of nationals from outside of the European Union, after Serbs (120.000) and Turks (117.000)<sup>7</sup>.

<sup>6</sup> There should be taken into account that UN estimates of BiH migrants' stock in Austria are also available for 2019. According to the UN source the number of BiH migrants in Austria is about 180.000. However, having in mind that this figure is estimation, and as such it is subject of further revision, available data from Austrian official statistics have been used in this document for relevant calculation and projection of BiH migrants' stock in Austria.

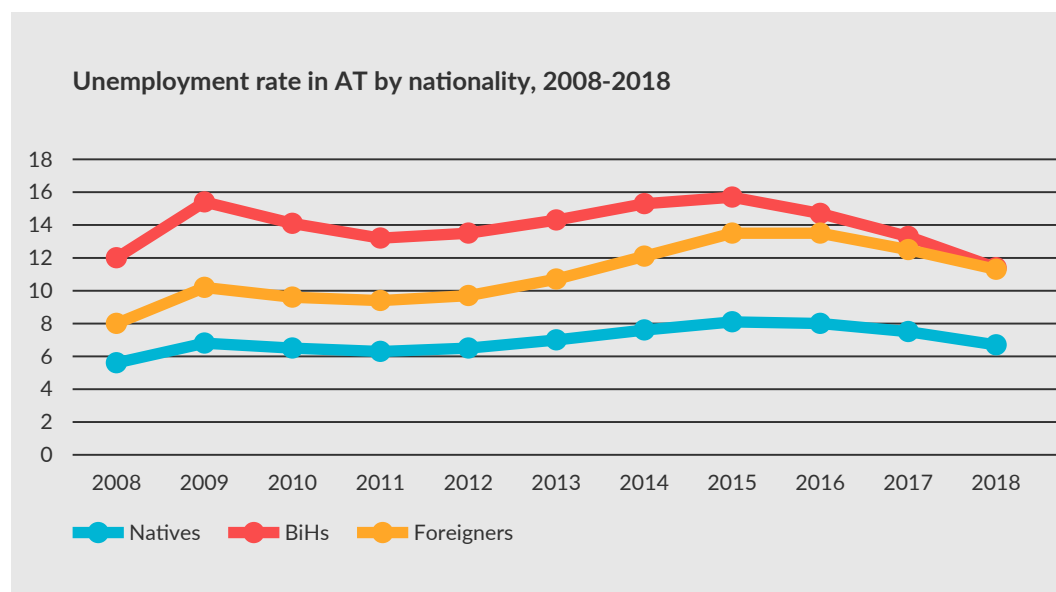
<sup>7</sup> Austria, Data. Figures. Facts – Statistik Austria, 2019

From a regional perspective, the majority of BiH migrants in Austria live in Vienna (around 35.000), Upper Austria (around 30.000), Styria (up to 18.000) Lower Austria (16.000), Salzburg (14.000), and Carinthia region (10.000). Other groupings are smaller and more dispersed<sup>8</sup>.

When considering migration flows from BiH to Austria it is important to note that Austrian Citizenship Act does not permit dual citizenship. It is estimated that around 40% of BiH migrants (including those with previous refugee status) have taken Austrian citizenship by now. Bearing in mind that that Austria requires a waiver of previous citizenship in the process of naturalization, it is indicative that 4,464 persons renounced the citizenship of Bosnia and Herzegovina in 2017 according to the data from Ministry of Civil Affairs of BiH and it mostly refers for those who decided to acquire Austrian or German citizenship.

When it comes to the integration of BiH citizens into the Austrian labor market, they are in the top three non-EU migrant worker groups (57.5% of the total number, again along with Turkish and Serbian workers). Their unemployment rate has varied over the past decade, but has declined in recent years, approaching the average unemployment rate of foreigners at the Austrian labor market (below 12 percent). Compared to workers from other Western Balkan countries, BiH citizens are among the group of foreign workers in Austria with the lowest unemployment rate.

**Figure 10:**  
**Unemployment rate in Austria by nationality, 2008-2018**



Source: *Bali Web*

For better understanding of BiH migration in Austria it is again worth mentioning the mapping of Bosnian diaspora conducted in 2018 (*“Mapping the Bosnian-Herzegovinian Diaspora”* – authors: H. Halilovic, J. Hasic, Dz. Karabegovic, A. Karamehic – Muratovic, N. Oruc). Within this research about Bosnian Herzegovinian diaspora in Austria, focus groups and individual interviews were organized with BiH citizens in Austria, staff members at the BiH Embassy in Vienna and employees at the Federal Ministry for European, Integration and Foreign Affairs, in charge of integration of migrants and refugees. According to this research the most frequent reasons for the migration of BiH citizens to Austria are economic in nature. The prevailing tendency is to retain employment, followed by the pursuit of education, as a continuation of the 100-year-old tradition of free education for students from BiH, and merging and reunification of members of diaspora families who arrived in previous years. Low income, an absence of prospects and a lack of economic development in BiH are among main push factors, an existence of substantial social networks abroad, attractiveness of living in economically developed societies and better and higher educational and professional opportunities are among main pull factors.

# Mid-term projections about potential migration from Bosnia-Herzegovina to Austria

## Methodology and model specification

We evaluate a potential mid-term mobility of migrants from Bosnia-Herzegovina (BiH) to Austria for January 2019 - January 2024 by applying a macro-gravity model which follows Landesmann et al. (2013), Mara and Vidovic (2015, 2018). This approach revealed to predict quite well the migration potential of Romanians and Bulgarians to Austria with the opening up of the labor market in 2013. The approach accounts that future mobility will be affected by macroeconomic determinants such as earnings and employment opportunities in home and host countries, geographical and cultural proximity related determinants and institutional features (e.g. labor mobility constraints.) which might differ across countries.

Potential mobility of migrants from Bosnia-Herzegovina has been calculated using the macro-gravity model estimates which were attained from the analysis of the potential mobility of Croatian migrants to Austria (Mara and Vidovic, 2018). The macro-gravity model estimates included 11 sending countries - Croatia and NMS-10 - towards 25 EU destination countries - Croatia, NMS-10 and EU-14 - and Switzerland. The period taken into account for the estimation of the model is 1998-2017.<sup>9</sup> The main variables of the model which are assumed to have an effect on mobility include macroeconomic determinants, such as relative level of earnings of sending and potential destination country - usually proxied by income per capita - and employment opportunities in the country of origin relative to the labor market conditions of destination countries proxied by employment rates. Other determinants include population size of the origin and destination country. The former is a proxy for migration potential as concerns the sending country and the latter is a proxy for hosting capacity in the destination countries. A previous stock of migrants of a particular sending country in a corresponding destination country is also included. This variable aims to capture the pull effect exercised by migrant networks towards a particular destination country.

<sup>9</sup> The NMS-10 includes Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia, Estonia, Latvia and Lithuania. The EU-14 includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Portugal, the Netherlands, Spain, Sweden and the United Kingdom. Luxembourg, Cyprus, and Malta have been excluded from the list of destination countries due to missing information or negligible number of observations.

Gravity model determinants that enrich a set of explanatory variables consist of distance, contiguity/sharing common borders, language proximity or other cultural ties under the assumption that geographic and cultural proximity might be other pull factors which affect mobility.

Between 1998 and 2017, but also during different phases of EU enlargement, the EU-15 countries applied different transitional arrangements (and visa regimes) towards NMS. Therefore, the impact of different institutional conditions is captured by including level dummies depending on institutional setting being in place between 1998 and 2017. Accordingly, three level dummies represent each group: countries that impose restrictions on labor market access; countries that impose bilateral transitional agreements on accessing certain labor market sectors; and lastly, countries where a free visa regime was applied during that period. This approach is flexible in the sense that it allows to measure the effect of different institutional conditions and their changes over time at a pair country level.

The migration function is specified in the following form:<sup>10</sup>

eq. (1)

$$\begin{aligned}
 m_{fit} = & \beta_1 * \ln\left(\frac{w_{ft}}{w_{it}}\right) + \beta_2 * \ln(e_{ft}) + \beta_3 * \ln(e_{it}) + \beta_4 * \ln(pop_{ft}) + \beta_5 * \ln(pop_{it}) + \\
 & + \\
 & \beta_6 * dist_{if} + \beta_7 * contiguity_{if} + \beta_8 * com\_language_{if} + \beta_9 * ethnic\_language\_c_{if} \\
 & + \\
 & \beta_{10} * D\_visa\_free_{if} + \beta_{11} * D\_trans\_Ag_{if} + \beta_{12} * D\_rest\_lmkt_{r_{if}} \\
 & + \\
 & + \beta_{13} * m_{fit-1} + \varepsilon_{fit}
 \end{aligned}$$

whereby the main determinants are:

- $m_{fit}$  refers to the stock of migrants residing in a destination country (f) as a share of population from a sending country (i). Subscript (f) stands for the destination country and takes values from 1 to 26, representing EU-14 destination countries, NMS-10 Switzerland and Croatia; subscript (i) stands for an origin country taking values from 1 to 11, representing Croatia and NMS-10 countries;

<sup>10</sup> Landesmann et al. (2013); Mara and Vidovic (2015, 2018) .

- ›  $m_{fit-1}m_{fit-1}$  is a lagged stock of migrants from a particular sending country in a destination country, as a proxy for network effects;
- › wage rates in a foreign and an origin country, correspondingly  $w_{ft}w_{ft}$  and  $w_{it}w_{it}$ , to proxy expectations about the level of earnings in the foreign and home country;
- ›  $e_{ft}e_{ft}$  and  $e_{it}e_{it}$  represent employment rates in a respective foreign and an origin country;
- ›  $pop_{ft}pop_{ft}$  and  $pop_{it}pop_{it}$  stand respectively for a population of a foreign and sending country, which implies that countries with a bigger population and thus labor force, as compared to smaller countries, have higher emigration potential as concerns the sending country and higher capacities to absorb the labor force coming from abroad as concerns host countries.

Gravity<sup>11</sup> model determinants which are country-specific and constant over time are represented by:

- $dist_{if}dist_{if}$ , a geographical distance between a sending and host country;
- $contiguity_{if}contiguity_{if}$ , a border proximity or a commonality;
- $com\_language_{if}com\_language_{if}$  refers to sharing a same official language;
- $ethnic\_language\_c_{if}ethnic\_language\_c_{if}$  when at least 9% of populations of sending and host countries share a same language.<sup>12</sup>

The impact of different institutional conditions is captured by level dummies such as:

- ›  $D\_visa\_free_{if}D\_visa\_free_{if}$  representing visa liberalisation should capture the effect of switching from restrictive to free visa regime for the group of (destination) countries to which this applies;
- ›  $D\_trans\_Ag_{if}D\_trans\_Ag_{if}$  representing bilateral transitional arrangements agreed between countries during different phases of enlargement with the purpose of allowing employment in certain working sectors, e.g. those with labor market shortages;
- ›  $D\_rest\_lmktD\_rest\_lmkt$  capturing restrictions in accessing a labor market in a destination country for NMS over the periods in which these were in force.<sup>13</sup>

11 These variables are commonly used in gravity models and we have downloaded them from: [http://www.cepii.fr/CEPII/en/bdd\\_modele/presentation.asp?id=8](http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8)

12 The literature that has explored the use of gravity model variables to explain determinants of migration suggests that sharing the same official language or a common ethnic language might positively affect migration (Lewer and Van den Berg, 2008; Mayda, 2010; Mayer and Zignago, 2011).

13 Such dummies were constructed using the information about restricted mobility and transitional arrangements between EU-14, NMS-10, Croatia and Switzerland derived from <http://ec.europa.eu/social>.



The model has been estimated using FGLS estimators, which according to previous experience perform better compared to other estimators. The estimation results are presented in Table A.1 in the Annex. The estimated coefficients are further used to project mid-term migration, January 2019-2024, of BiH migrants towards Austria and other main destinations in the EU.

The database contains information on migration stocks (population of all ages) of 11 individual sending countries (Croatia, NMS-10) towards 26 destination countries (Croatia, NMS-10, Switzerland and EU-14) for the period 1998-2017. Stock of migrants data have been obtained from Eurostat Population Statistics.<sup>14</sup> In case of BiH information about the stock of migrants is provided in Table A2 in Annex. The information has been attained from the UN statistics because for a number of countries information about the stock of migrants from BiH was not reported from Eurostat Population Statistics<sup>15</sup>. Population mobility instead of labor mobility is used as a proxy to estimate migration potential. Available data on mobility of workers are limited and quite often incompatible, a condition which constrains a possibility to make comparisons across countries and over time. Population statistics are used as a substitute to estimate mobility of workers under the assumption that the latter strongly follows and is highly correlated to the former.

As a proxy for average earnings, we have used GDP per capita at PPPs obtained from the World Bank and the IMF- World Economic Outlook Database. Employment rates in each of the sending and destination countries have been taken from the World Bank and the IMF-World Economic Outlook Database. The IMF World Economic Outlook Database variables - GDP per capita at PPPs, unemployment rate and population projection until 2024 - have been used to project potential migration in the medium term, 2019-2024.

## Estimation results

The estimation results obtained by the macro-migration gravity model suggest that the previous stock of migrants has an important and positive effect on the future mobility of migrants, pointing to networks being an important pulling factor that drives mobility. As expected, GDP per capita and employment opportunities in a destination country are other important pulling factors, whereas improvements in an income level and employment conditions in a country of origin would reduce the mobility abroad.

14 The stock of migrants consists of population stocks by citizenship on 1 January [migr\_pop1ctz], Eurostat

15 Stock of BiH migrants to AT by country of birth have been attained from Austrian Statistics (the latest year available 01/01/2019). For a number of other important destination countries (Slovenia, Switzerland, Sweden and Denmark) the stock of BiH migrants by country migrants was attained by Eurostat Population Statistics (as of January 2018). For other countries (Germany, Italy, Croatia, France and the UK) which Eurostat Statistics were not available, the UN statistics, 2017 estimates, have been used as a proxy for the stock of BiH migrants by country of birth to these countries

Other determinants which show to have a significant and expected effect on mobility suggest that cross-bordering is more likely to happen among neighboring countries as well among those that share cultural affinities. Determinants related to institutional constraints turn out to be significant, suggesting that free visa regimes push towards further mobility while bilateral transitional arrangements and restricting access to labor market negatively affect the mobility. The free visa regime shows to be positive and in terms of size its coefficient is larger than the size of both transitional and restricted access to the labor market coefficients, suggesting that limited access to national labor markets proves to deter mobility, but free mobility encourages it.

## Mid-term mobility projection 2019-2024

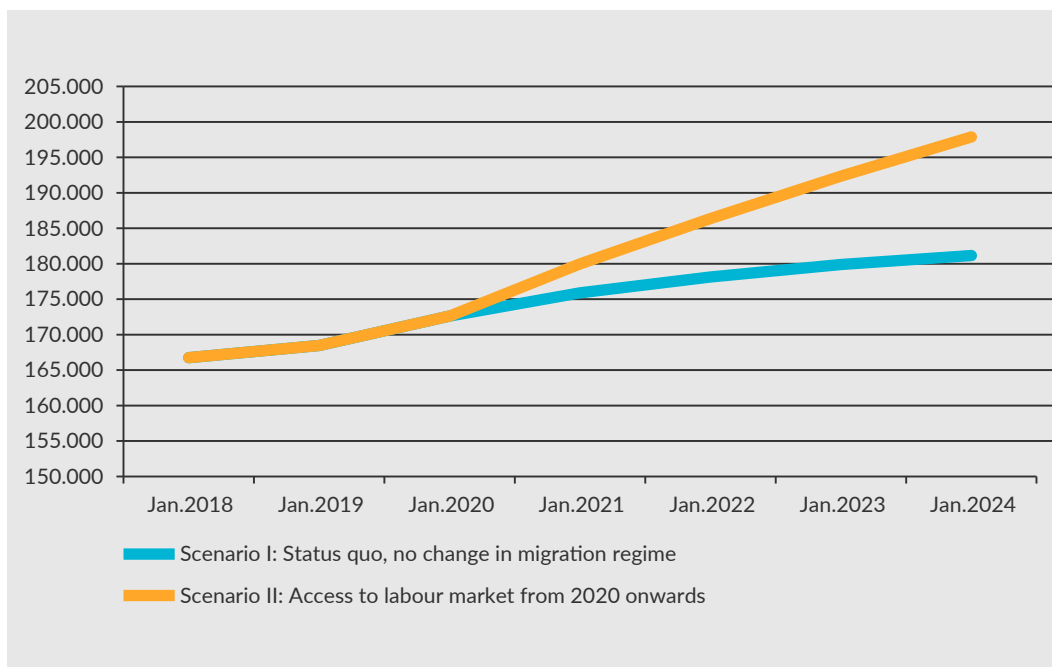
In order to disentangle the effects of institutional arrangements on mobility and to evaluate the mid-term mobility of BiH migrants for the 2019-2024 period, we would need to predict mobility under different hypothetical scenarios. The first scenario implies a status quo scenario which suggests that the existing mobility arrangements applied from Austria, but also other main destination countries of BiH migrants, will be preserved until 2024. The second scenario assumes that Austria and other destination countries will facilitate access to labor markets of BiH migrants. Consequently, the future mobility of BiH migrants is attained by applying these caveats - as concerns the institutional setting of mobility - and the estimated coefficients of the macro-gravity model attained in the context of Croatia.

Under the first scenario, labor market restrictions imposed by Austria will continue being operational. This projection would constitute the lower bound of potential migration from BiH. Under the second scenario - the ceasing of labor market restrictions are supposed to favour the flow of migrants. Therefore the upper bound of mobility will be projected following it.

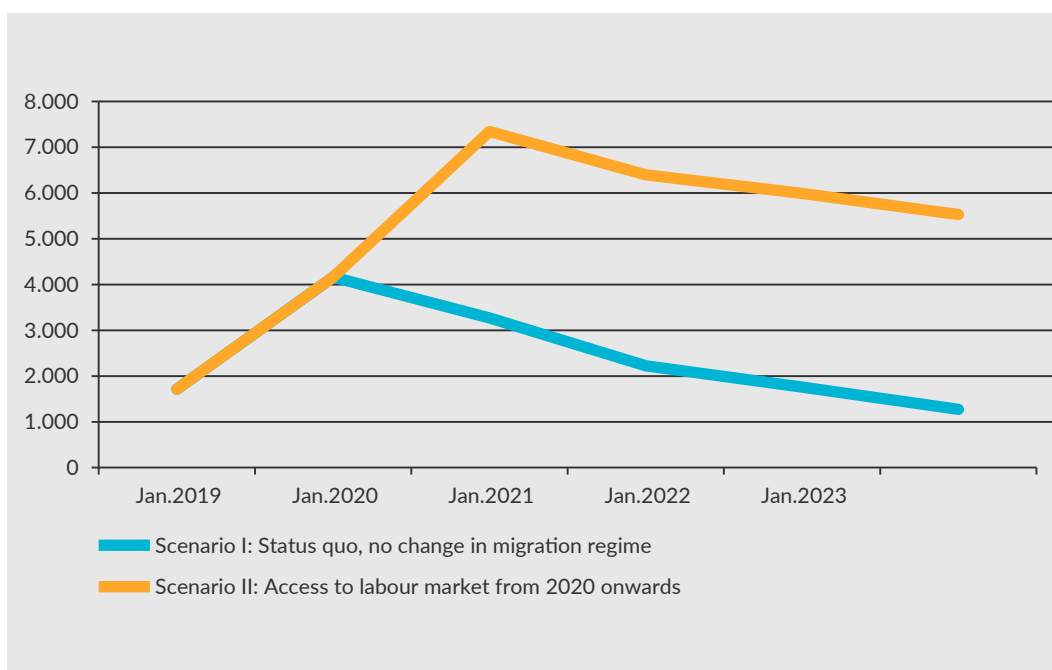
Accordingly, following Scenario I, between 2019 and 2024, the projected stock of BiH migrants in Austria is expected to rise from 168,465 up to 181,157 (Figure 11, Table A1 in Annex). Such projected trend implies a net increase in the stock of migrants by 12,692. Following Scenario II the projected stock is expected to reach the level of 197,892 by 2024 (Figure 12, Table A2 in Annex). Such trend suggests a net increase in migration stock by 29,427. The comparison between Scenario I and II indicates that the additional increase in migration stock due to easier access to labor market from 2020 onward will be at around 16.735.

Further details about potential migration of BiH migrants to other main destinations in the EU, under Scenario I and II, are provided in next Figures 11-13 and in Tables A1- A2 in Annex.

**Figure 11:**  
**Projected stock of BiH migrants to AT, 2019-2024<sup>16</sup>, Scenarios I, II**



**Figure 12:**  
**Projected net migration flow of BiH migrants to AT, 2019-2024<sup>17</sup>, Scenarios I, II**

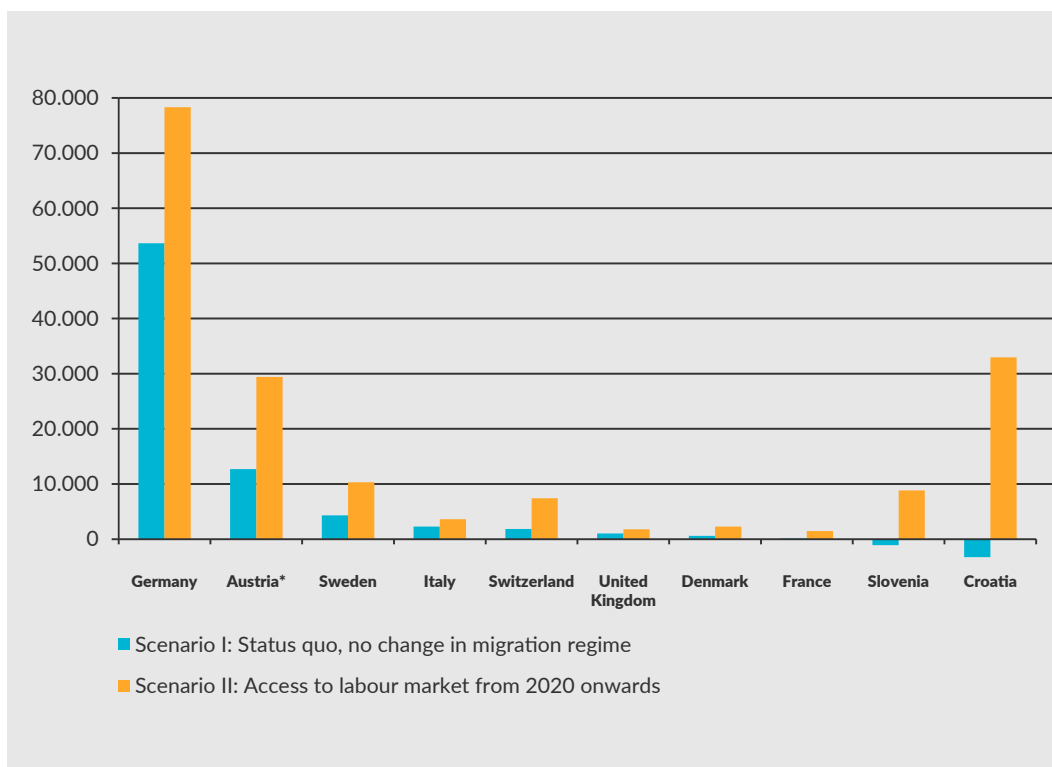


<sup>16</sup> Stock and net migration statistics as reported by Austrian Statistics apply to January 2018-2019 period. Stock and net migration projections apply to January 2020-2024 period.

<sup>17</sup> *ibid*

**Figure 13:**

**Projected net migration flow of BiH migrants to main destination countries in the EU, 2019-2024**



## Main findings

Scenario I – status quo until 2024 for BiH migrants in Austria

- The stock of migrants is projected to reach the level of 181,175 by January 2024
- Net migration between 2020 and 2024 is expected to reach the level of 12,692.

Scenario II – access to the labor market facilitated from January 2020 onwards for BiH migrants in Austria

- The stock of migrants is projected to reach the level of 197,892 by January 2024.
- Net migration between 2020 and 2024 is expected to reach the level of 29,427.

## Differences comparison between the two scenarios

- An additional stock of 4,074 migrants will be generated in 2020 if the access to the labor market is facilitated in that year.
- On average, on annual basis, a net migration flow of 2,500 BiH migrants to Austria is expected between 2020 and 2024 under Scenario I.
- On average, on annual basis, a net migration flow of 5,800 BiH migrants to Austria is expected between 2020 and 2024 under Scenario II.

# Coin flip – dual nature of the impact of migration on sending and receiving country economies (case of Austria and BiH)

## Implications for BiH

Empirical research on **impact of emigration on labor markets of sending countries** has been scarce, especially until early 2000s, which is unexpected if we consider relatively large shares of labor force that have been leaving many countries throughout the world. The available empirical literature on this topic largely finds evidence of a strong and positive relationship between emigration and wages in source countries.<sup>18</sup>

Docquier et al. (2011), who examined within-OECD migrations, find that college-educated individuals from OECD countries tend to emigrate in larger proportions than the unskilled workers, which contributes to lower wages of the unskilled workers left behind due to their reduced productivity. In the case of Poland, Dustamann et al. (2012) find that emigration was largest for workers with intermediate level skills and that wages of this skill group increased most, while the unskilled workers made no gains and may have experienced small wage decreases.

When the Southeastern Europe (SEE)<sup>19</sup> is concerned, Atoyan et al. (2016) find that emigrants from SEE have been generally better educated than the population they left behind and that their significant outflow has exerted upward pressure on domestic wages. They find that low substitutability between skilled and unskilled emigrants in the sending countries, higher reservation wages (associated with remittances) and strengthened workers' bargaining power (due to increased opportunities to work abroad) may have contributed to this outcome.

In the case of BiH, the total population of emigrants are indeed better educated than the domestic population they left behind. Moreover, the educational structure of BiH emigrants is particularly skewed towards high-skilled workers in comparison with other

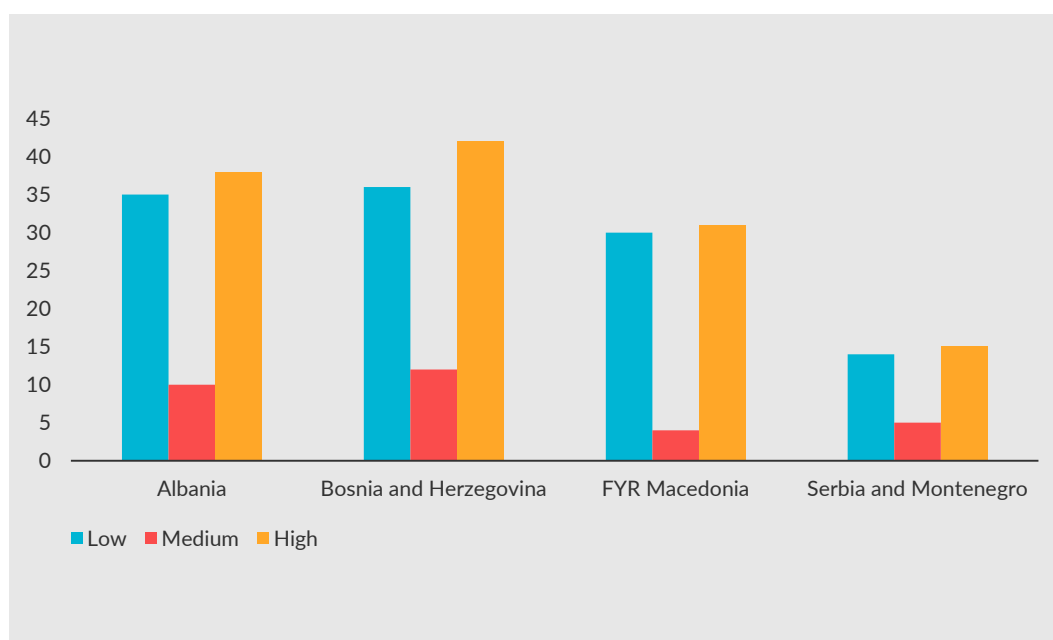
<sup>18</sup> See Mishra (2014) for a survey of the empirical literature on emigration and wages in source countries.

<sup>19</sup> SEE includes BiH.

countries from the region (see Figure 15). Taking into account that BiH has extremely high emigration rates, it is not difficult to conclude that emigration has deteriorated the skill structure of the BiH labor force.

The earlier-mentioned findings on the positive relationship between emigration and wages in source countries suggest that the massive outflow of high-skilled individuals from BiH exerted an upward pressure on wages of this skill group.

**Figure 14:**  
**Emigration rates per skill level, 2010\***



Source: Institute for Employment Research (IAB) of the German Federal Employment Agency

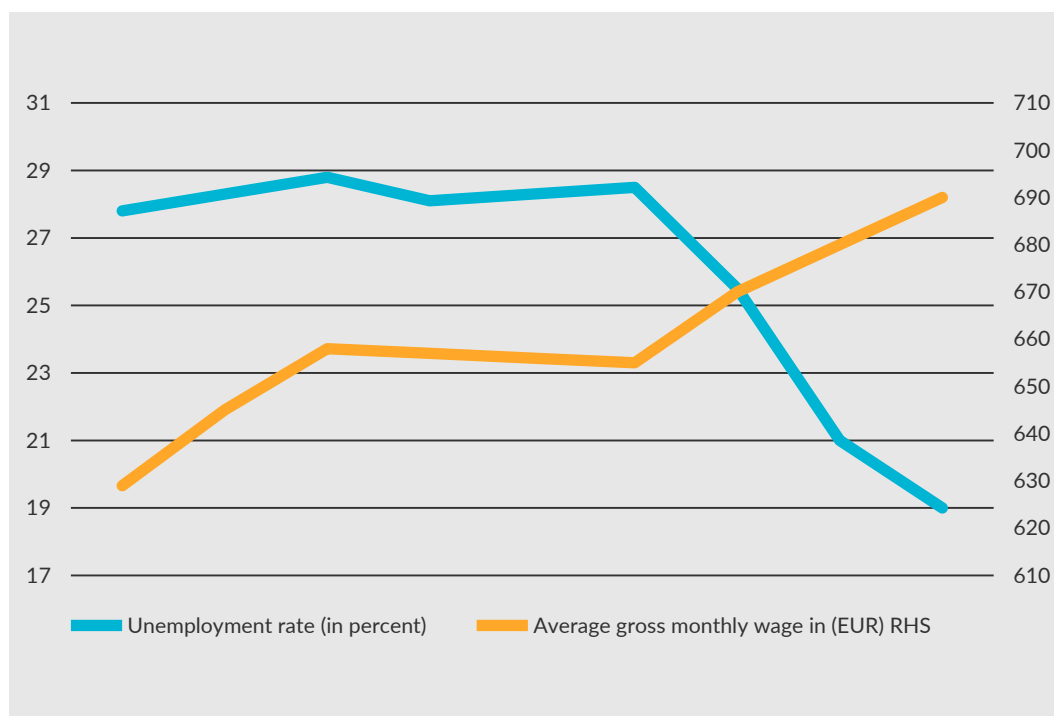
\*The names of the countries were taken from the IAB Database which contains data series from 1980 to 2010.

In general, the tightening labor market in BiH has exerted pressure on domestic wages and these trends started to appear in 2016 (see Figure 16). However, Figure 17 shows that it is the low-skilled group whose unemployment rate fell the most in the current decade.

Since the employment rates of all three skill groups remained almost unchanged<sup>20</sup>, a significant share of the unemployment decline can be attributed to emigration.

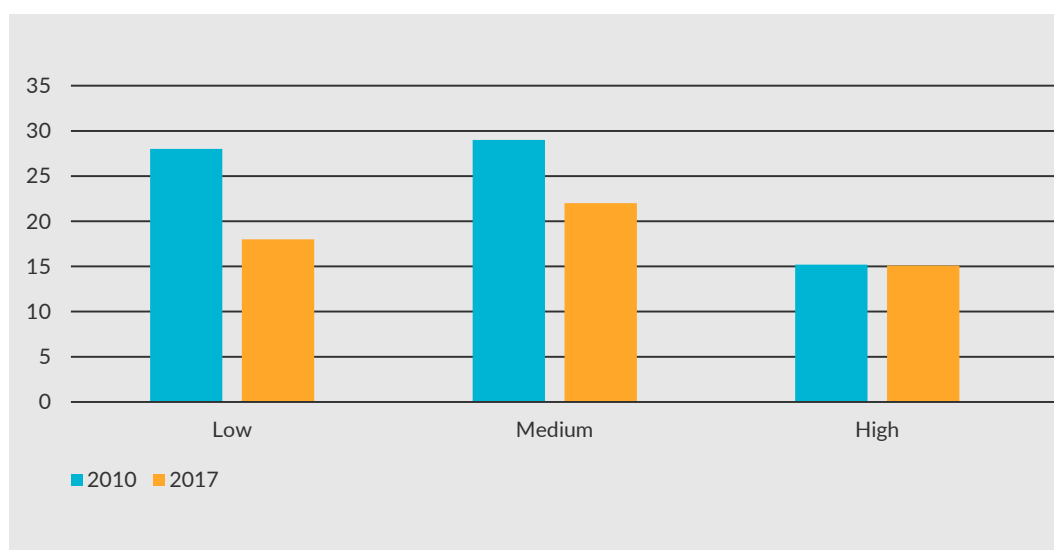
<sup>20</sup> Please note that in this period the number of employed low-skilled workers in BiH declined by almost 19% (or 32 thousands). The employment rate of this group remained unchanged because the working age population of this group also declined by similar rate. Employment rate = (The employed / Working age population) x 100.

**Figure 15:**  
**Movements of unemployment rate and wages in BiH (2010-2018)**



Sources: wiiw Database and BiH Agency for Statistics

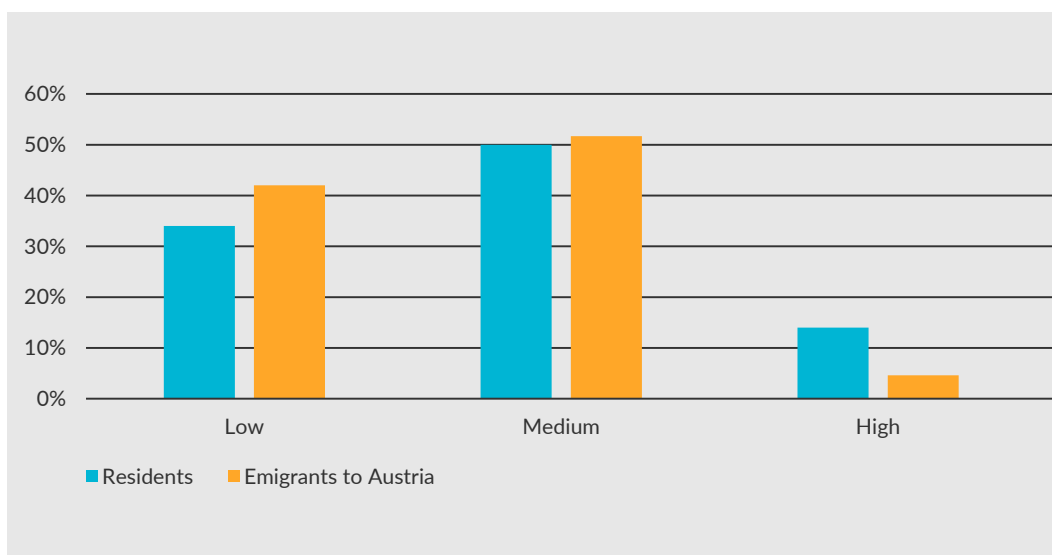
**Figure 16:**  
**Changes of unemployment rates per skill level in BiH**



Source: SEE Jobs Gateway Database



**Figure 17:**  
**Structure of BiH residents and BiH emigrants in Austria per skill level**



Sources: IAB Database and BiH Agency for Statistics

It is interesting to observe that the educational structure of BiH emigrants in Austria is less high-skill intensive than of the overall BiH emigrants in the world. Even in comparison with the educational structure of BiH residents, the BiH emigrants in Austria are low-skill intensive, which implies that their migration has positively affected the skill structure of those left behind (see Figure 18). Therefore, this particular migration flow could have positively affected the wage growth of the low-skilled workers in BiH by shrinking their labor supply.

Empirical research related to **economic impact of emigration on sending countries** is relatively ambiguous. Positive effects have been identified through remittances (di Giovanni, Levchenko, and Ortega, 2015) and return migration (Léon-Ledesma and Piracha, 2004), while negative effects have been attributed to output losses from lower labor supply (Barrell et al. 2007) including reduced productivity of those that stay behind due to human capital externalities (Docquier, Ozden, and Peri, 2014). Atoyan et al. (2016) find that the economic impact of emigration in sending Central, Eastern, and Southeastern Europe (CESEE) countries has been mostly negative as it lowered potential economic growth by reducing labor force and creating shortages of high-skilled workers, with particularly pronounced effects in SEE. They find that about two-thirds of losses from lower GDP growth can be attributed to the direct impact of the emigration on labor supply and the rest to the skill deterioration.

According to estimates of the UN, the total stock of BiH migrants in the world reached 1.65 million in 2019. Out of that number Austria hosted 10.2% (or 168.5 thousand),

which represents an increase in the Austria's share of the total stock of BiH migrants from 7.8% in 2010. In this period the number of BiH migrants in Austria grew by 18.9 thousand (or by 12.6%), which was faster than the total growth of BiH migrants in the world (5.3%) and in Europe (4.8%).<sup>21</sup>

Thus, if we take this data at face value, we can calculate that in the period 2011-2019 the emigration from BiH to the world decreased the BiH population by about 2.4%, with Austria accounting for more than half of that decrease (1.4% of the BiH population).<sup>22</sup> BiH today has the largest stock of emigrants among the Western Balkan countries. Based on the experience of Visegrad countries<sup>23</sup>, the continuation of this process will lead to further tightening of the labor market and eventual skill shortages that could put a selling on BiH's GDP growth if not coupled with productivity growth and inward/return migration. On positive side, the falling unemployment and rising wages are currently contributing to domestic consumption and thus to GDP growth of the country.

When the **effects of remittances** are concerned, Giuliano and Ruiz-Arranz (2009) find that remittances may help strengthen private investment by alleviating credit constraints, while Aggarwal et al. (2011) also find that they may contribute to financial deepening and intermediation. Atoyan et al. (2016) find that in the countries with remittance-to-GDP ratio over 10%, the remittances had important role in financial deepening and in supporting private sector activity, but negative effects on incentives to work through higher reservation wages. They also find that positive effects of remittances may lessen in the future as emigration becomes more permanent.

In the case of BiH, Trokic (2012) finds negative long-term effects of remittance inflows due to their tendency to promote further emigration of high-skilled population and their limited use for private investment. Oruc (2011) finds that contribution of remittances to economic development through investments in education, employment and reduction of poverty in BiH falls below its potentials because of lacking policies in this regard.

In general, the ratio of remittances to GDP for BiH is large (see Figure 18), which is consistent with the large ratio of BiH diaspora to BiH population. According to the World Bank calculations, the total estimated remittances to BiH were 2.010 million USD in 2017. If this data is disaggregated per countries (using host country and origin country incomes and estimated migrant stocks), the estimated remittances from Austria to BiH are 193 million USD (or 9.6% of the total amount) for the same year. Therefore, Austria is an important source of remittances for BiH, which have positive effects on financial intermediation and private sector activity. On the other side, these

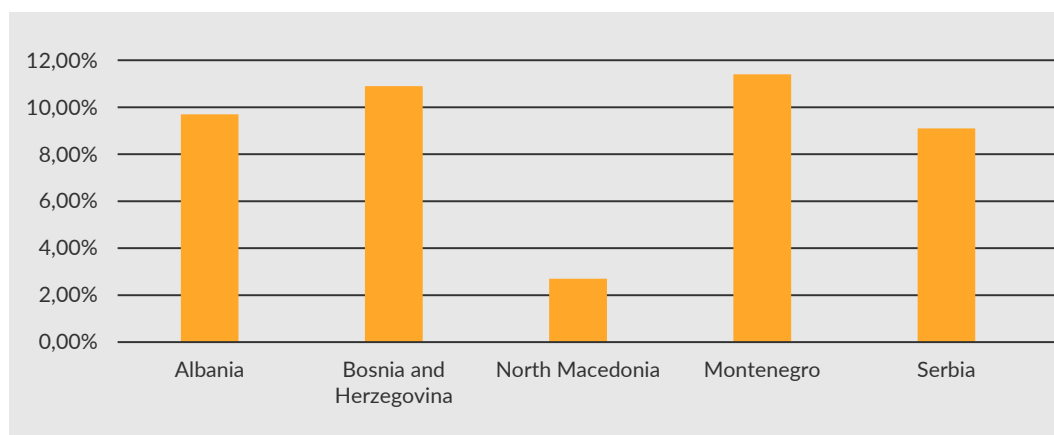
21 The data on BiH migrants in Austria is used from the Statistics Austria data, while the UN estimates are used for the data on BiH migrants in Europe and the world.

22 The data on BiH population was used from 2013 Census.

23 See for example Astrov, V. (2019), „Labor Market Trends in Visegrad Countries: Implications for Austria“, wiiw Policy Notes and Reports 33, Vienna.

remittances seem to contribute to (from the perspective of BiH labor market) a vicious circle of *migration-remittances-higher reservation wages-higher inactivity*.<sup>24</sup>

**Figure 18:**  
**Remittances as a share of GDP, 2018 (in percent)**



Source: World Bank

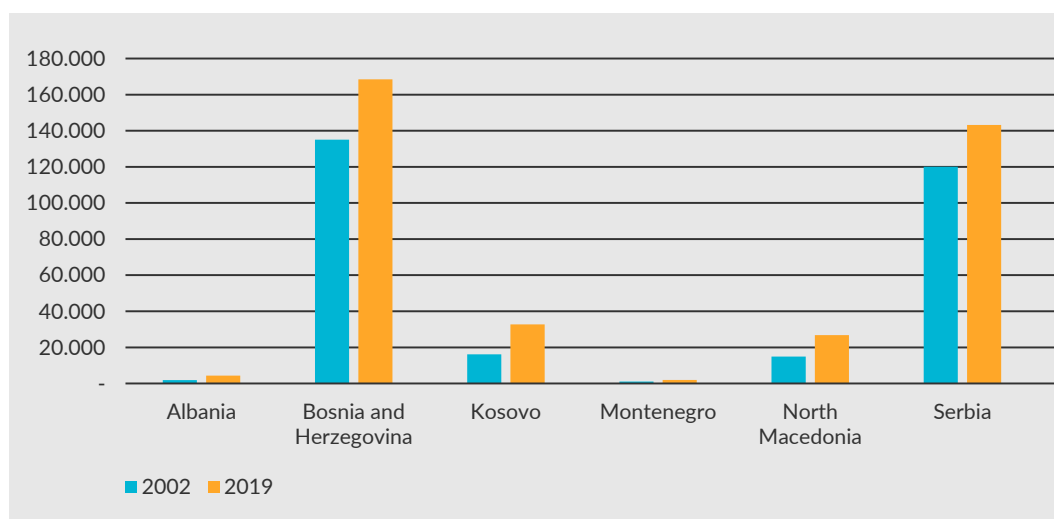
## Implications for Austria

Empirical research, for the most part, finds **positive effects of immigration on the labor market** and the economies of developed countries. It is interesting to notice that an inflow of work force with a certain skill level is not necessarily associated with worsening position of native workers with the same education level. On the contrary, Docquier et al. (2011) find positive effects of immigration on wages of low-educated native workers, and positive or no effect on employment of natives in the receiving OECD countries. Also, Ortega and Peri (2009) find that immigration boosts employment with no evidence of crowding-out of natives, resulting with increases of GDP without affecting average wages. In cases when short-term negative effects do occur, e.g. due to massive immigrations or low initial employability of immigrants, Lucas (2008) finds that in most situations the net overall impact on incomes of natives is probably small. In the case of Western Europe, including Austria, the positive impact of regular migrations are especially clear having in mind its acute labor shortages. Astrov (2019) finds that expected decline in the inflow of mobile workers from the Visegrad countries will likely aggravate labor and skill shortages in Austria and suggests increased recruitment from Western Balkans, e.g. by easing access to Austria's labor market following Germany's "Western Balkans Regulation".

<sup>24</sup> Atoyan et al. find that a 1% of GDP increase in remittance inflows is associated with about 3 percentage points increase in the economy-wide inactivity rate in SEE-XEU (Albania, BiH, Kosovo\*, Montenegro, North Macedonia and Serbia).

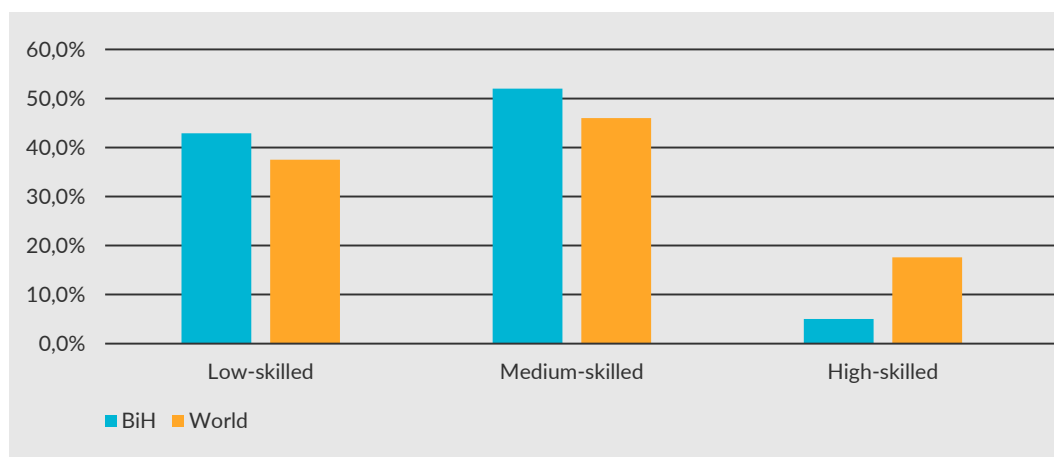
As earlier noted, the net increase of BiH migrant stock in Austria in the period 2002-2019 was more than 30 thousand, which represents an addition of 0,2% to the total population of Austria. According to the same data source, the share of BiH migrants in the total stock of migrants in Austria is 9.7%, which indicates the significant role of this country for Austria's immigration trends. Indeed, as Figure 19 shows, the stock of BiH migrants in Austria has grown over the time and they represent the largest community in Austria from the Western Balkan countries.

**Figure 19:**  
**Changes of migrant stocks in Austria per country of birth**



Source: Austrian Statistics

**Figure 20:**  
**Skill structure of migrants in Austria per place of birth, 2010 (in percent)**

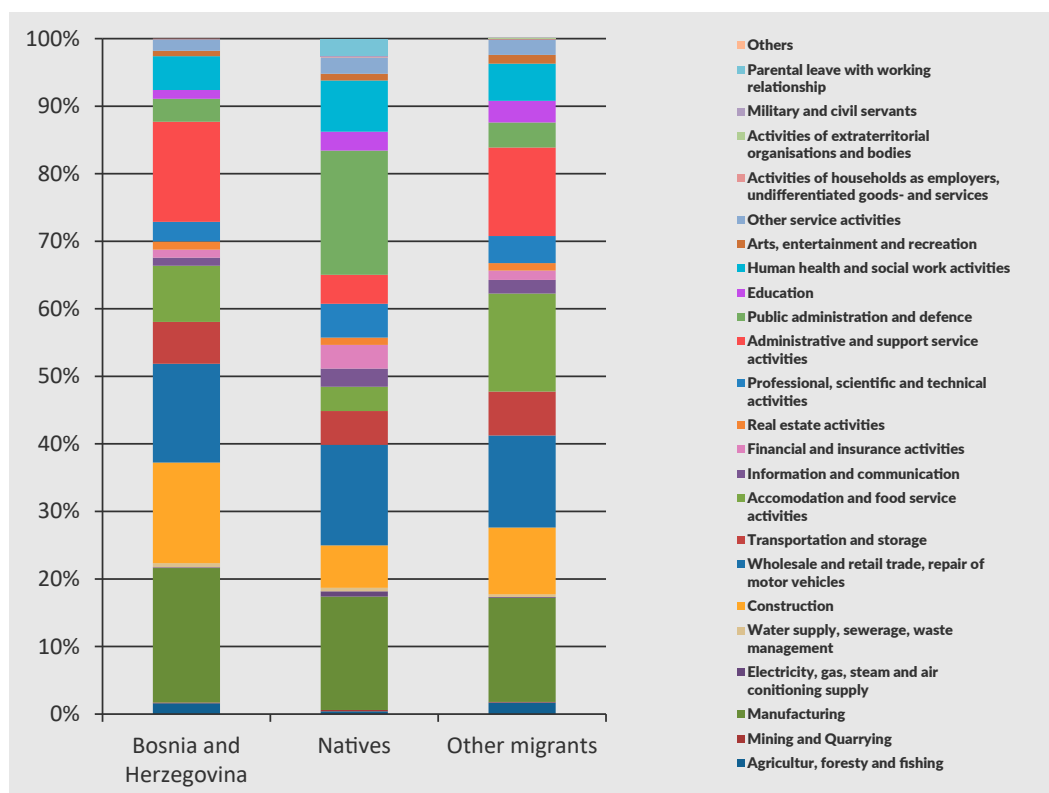


Source: IAB Database

As earlier noted, the educational structure of BiH migrants in Austria is biased towards the low-skilled and middle-skilled groups compared with those left behind. With only 5% of high-skilled migrants, the BiH migrant population is less educated than the total migrant population in Austria (see Figure 20). Still, Mara et al. (2013) find that migrants from BiH are employed well below their skill levels partly due to human capital transferability, enhancement of education in Austria and discrimination. Therefore, it seems that the role of BiH migrants in Austria's labor market in the past period has been dominantly related to addressing shortages of labor supply for low-qualified jobs.

When occupational sectors are concerned, BiH migrants in Austria mostly work in Manufacturing (20%), Construction (15%), Administrative and support service activities (15%), Wholesale and retail trade, repair of motor vehicles (15%), Accommodation and food service activities (8%) and Transportation and storage (6%) (see Figure 21). At the same time, it can be noticed that the concentration of natives in those sectors is considerably lower. Compared to other migrants in Austria, migrants from BiH are more concentrated in Construction (+5 p.p.) and Manufacturing (+5 p.p.), but less in Accommodation and food services (-6 p.p.).

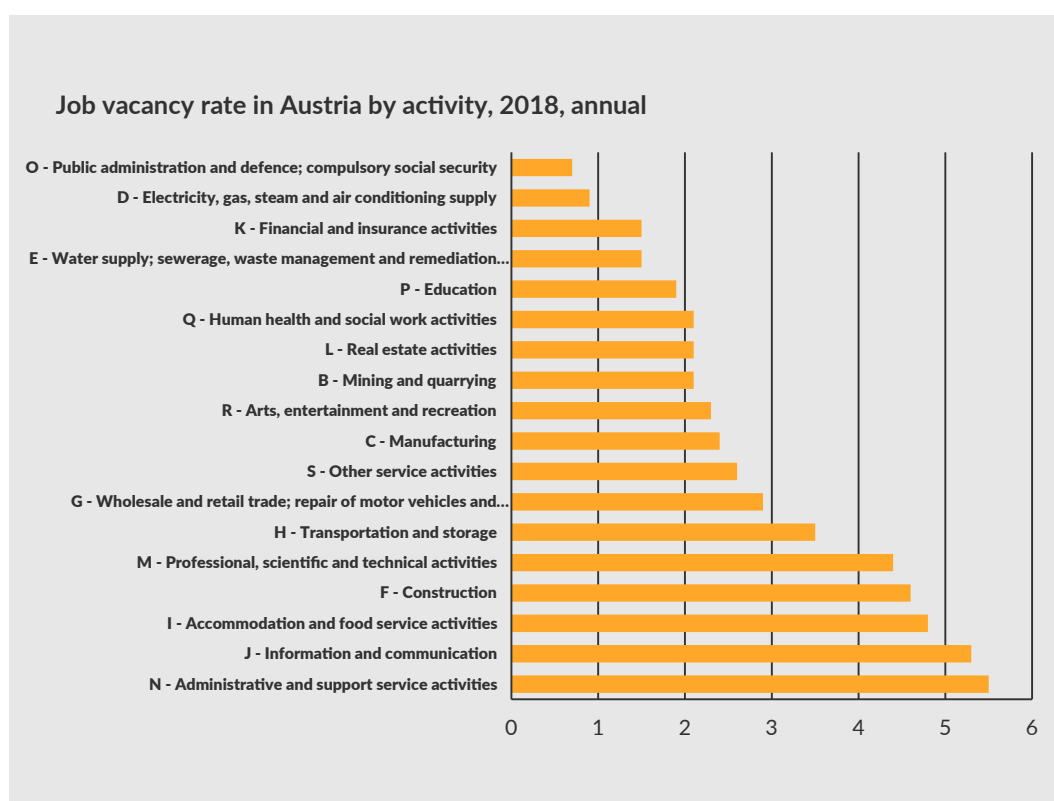
**Figure 21:**  
**Employed BiH migrants, natives and other migrants in Austria by economic sector, 2018**



Source: BALI web

The labor market of Austria displays a continuation of strong demand for workers in the sectors in which BiH migrants are mostly concentrated. Figure 22 shows that on the ranking list of sectors by vacancy rates, four out of first six sectors are from the above-mentioned sectors in which BiH migrants mostly work. This is consistent with the expectations that the “pull” factors that influence the BiH-Austria migration patterns will continue to be strong in the forthcoming period.

**Figure 22:**  
**Job vacancy rate in Austria, by activity, annual, 2018**



Source: EUROSTAT

## Main findings and policy implications

Due to drastic differences in wages and levels of unemployment between the two countries (coupled with other push-and-pull factors), labor migration flows from BiH to Austria are expected to be strong in the forthcoming period as well. Such scenario might have positive impact on the Austrian labor market having in mind its acute labor shortages and strong demand for workers in the sectors in which BiH migrants are mostly concentrated. Accordingly, one of policy options is additional easing of access

to labor market for workers from Bosnia and Herzegovina (and other WB countries) which is similar to recent Germany's decision expressed through "Western Balkans Regulation". In such case, a projected stock of BiH migrants in Austria is expected to reach the level of 197,892 by 2024, which is a net increase of 29,427 persons. Another possible decision is to hold the status quo option (no changes in access to labor market for BiH workers) which also implies a net increase in the stock of BiH migrants, but 40% less workers compared to the first scenario. From a current perspective of labor market trends and employment needs this option could bear a risk of lowering a potential economic growth.

Economic impact of labor migration on a "sending country" such as Bosnia and Herzegovina will be more pronounced. Positive effects could be recognized in higher remittances inflows, benefits from return (circular) migration, short-term balancing of the BiH labor market (significant share of the unemployment decline can be attributed to emigration) and related upward pressure on wages of the low-skilled workers in BiH. The other side of the coin shows a risk of population decrease and further tightening of the labor market due to emigration. The BiH labor market is already faced with skill shortages that could severely affect the BiH's economic growth in the next five-year period. Looking from a long-term perspective, it is of utmost importance for Bosnia and Herzegovina to create overall socio-economic environment that will encourage potential emigrants to stay, also to generate some return migrations. In order to mitigate negative effects of current emigration trends, prompt responses are needed primarily through better utilization of the remaining workforce. Specifically, interventions on the supply side of the labor market through education and vocational training of unemployed in accordance with employers' needs, as well as activation of those who are inactive (especially women), should offset the negative effects due to labor shrinking.

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# Annex

**Table A1:**  
**Main destination countries of BiH migrants in the EU, current and projected stock, 2017-2024**

Scenario I: Status quo, no change in migration regime							
	Reported statistics 2017			Projections 2019-2024			
	2017	2018	2019	2020	2021	2022	2023
dest	Jan.2018	Jan.2019	Jan.2020	Jan.2021	Jan.2022	Jan.2023	Jan.2024
Austria	166 752	168465*	172628	175899	178124	179884	181157
Germany	200 510	213300	225498	236930	247320	257373	266967
Sweden	58 880	60686	62145	63256	63993	64578	65004
Italy	11 301	11920	12475	12975	13411	13823	14213
Croatia	394 146	395471	396440	396635	395360	393922	392210
Slovenia	107 679	108619	109248	109448	109057	108426	107535
Switzerland	57 130	58485	59448	60056	60302	60393	60340
Denmark	17 060	17444	17738	17934	18019	18057	18048
France	14 150	14360	14502	14570	14565	14541	14493
United Kingdom	6 943	7255	7529	7759	7949	8125	8283
Scenario II: Access to labor market from 2020 onwards							
	2017	2018	2019	2020	2021	2022	2023
dest	Jan.2018	Jan.2019	Jan.2020	Jan.2021	Jan.2022	Jan.2023	Jan.2024
Austria*	166 752	168465	172628	179973	186369	192362	197892
Germany	200 510	213300	225498	242418	258768	275225	291628
Sweden	58 880	60686	62145	64722	66956	69058	71009
Italy	11 301	11920	12475	13275	14031	14782	15526
Croatia	394 146	395471	396440	405823	413661	421246	428441
Slovenia	107 679	108619	109248	111983	114105	115947	117469
Switzerland	57 130	58485	59448	61447	63093	64582	65914
Denmark	17 060	17444	17738	18350	18853	19310	19715
France	14 150	14360	14502	14907	15239	15549	15832
United Kingdom	6 943	7255	7529	7939	8317	8689	9048
* Reported statistics also for 2018							

**Table A2:**

**Main destination countries of BiH migrants in the EU, current and projected net migration flow, 2017-2024**

Scenario I: Status quo, no change in migration regime						
	Projections 2019-2024					
	2018	2019	2020	2021	2022	2023
dest	Jan.2019	Jan.2020	Jan.2021	Jan.2022	Jan.2023	Jan.2024
Austria*	1 713	4 163	3 271	2 225	1 760	1 273
Germany	12 790	12 198	11 432	10 390	10 053	9 594
Sweden	1 806	1 459	1 111	737	585	426
Italy	619	555	500	436	412	390
Croatia	1 325	969	195	-1 275	-1 438	-1 712
Slovenia	940	629	200	-391	-631	-891
Switzerland	1 355	963	608	246	91	-53
Denmark	384	294	196	85	38	-9
France	210	142	68	-5	-24	-48
United Kingdom	312	274	230	190	176	158
Scenario II: Access to labor market from 2020 onwards						
	2018	2019	2020	2021	2022	2023
dest	Jan.2019	Jan.2020	Jan.2021	Jan.2022	Jan.2023	Jan.2024
Austria*	1 713	4 163	7 345	6 396	5 993	5 530
Germany	12 790	12 198	16 920	16 350	16 457	16 403
Sweden	1 806	1 459	2 577	2 234	2 102	1 951
Italy	619	555	800	756	751	744
Croatia	1 325	969	9 383	7 838	7 585	7 195
Slovenia	940	629	2 735	2 122	1 842	1 522
Switzerland	1 355	963	1 999	1 646	1 489	1 332
Denmark	384	294	612	503	457	405
France	210	142	405	332	310	283
United Kingdom	312	274	410	378	372	359
* Reported statistics also for 2018						

**Table A3:**  
**Estimation results**

Dependent Variable: Stock of migrants	
ln_mst_oe_t-1	0.976*** (0.00138)
ln_gdp_o_ t-1	-0.0845*** (0.00939)
ln_gdp_d_ t-1	0.0803*** (0.00769)
ln_pop_o_ t-1	0.0120*** (0.00192)
ln_pop_d_ t-1	0.0187*** (0.00221)
ln_empl_o_ t-1	-0.206*** (0.0434)
ln_empl_d_ t-1	0.252*** (0.0566)
contig	-0.00190 (0.00631)
comlang_ethno	0.0521 <sup>+</sup> (0.0287)
ldist	-0.00654** (0.00221)
transa	-0.0316 <sup>+</sup> (0.0139)
rest_lmkt	-0.0229 <sup>+</sup> (0.0139)
free_visa	0.0881*** (0.0137)
dum_cr_AT	-0.0102 (0.00999)
dum_cr_BE	-0.0489** (0.0151)
dum_cr_BG	-0.0115 (0.0506)
dum_cr_CZ	-0.0550** (0.0181)
dum_cr_DK	-0.0469 <sup>+</sup> (0.0268)
dum_cr_ES	0.122 <sup>+</sup> (0.0534)
dum_cr_FL	0.0104 (0.0699)
dum_cr_FR	-0.0833***

Dependent Variable: Stock of migrants	
	(0.0200)
dum_cr_DE	0.0174
	(0.0114)
dum_cr_GR	-0.0648
	(0.0479)
dum_cr_HU	-0.0544 <sup>+</sup>
	(0.0286)
dum_cr_IR	0.0391
	(0.0378)
dum_cr_IT	-0.0386 <sup>+</sup>
	(0.0216)
dum_cr_LT	-0.106 <sup>*</sup>
	(0.0481)
dum_cr_LV	-0.0104
	(0.126)
dum_cr_NL	-0.0908 <sup>***</sup>
	(0.00943)
dum_cr_PL	-0.104 <sup>*</sup>
	(0.0422)
dum_cr_PR	-0.0575
	(0.0491)
dum_cr_RO	0.00526
	(0.0515)
dum_cr_SK	-0.0512 <sup>*</sup>
	(0.0239)
dum_cr_SL	0.0232
	(0.0176)
dum_cr_SP	0.0390
	(0.0533)
dum_cr_SE	-0.0594 <sup>+</sup>
	(0.0335)
dum_cr_CHE	-0.0560 <sup>***</sup>
	(0.0127)
dum_cr_UK	-0.0831 <sup>*</sup>
	(0.0417)
_cons	-0.285 <sup>*</sup>
	(0.125)
N	4923
RMSPE	0,10

Standard errors in parenthesis: +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table A4:**  
**Stock of BiH migrants 1990-2017**

		1990	2000	2010	2017
	WORLD	863 399	1 468 799	1 575 669	1 659 852
EU-15	Germany	108 349	151 087	161 676	200 510
EU-15	Austria	92 349	116 023	132 666	170 864
EU-15	Sweden	40 488	51 526	56 337	58 372
EU-15	Denmark	16 411	18 844	18 889	21 492
EU-15	France	8 357	8 898	12 886	14 150
EU-15	Italy	4 034	26 839	11 104	11 301
EU-15	United Kingdom	1 816	6 470	7 540	6 943
EU-15	Luxembourg	2 334	2 130	2 421	2 569
EU-15	Spain	643	1 466	2 162	2 139
EU-15	Belgium	1 966	1 884	1 703	1 929
EU-15	Netherlands	131	458	757	905
EU-15	Finland	..	200	612	850
EU-15	Ireland	123	748	627	688
EU-15	Greece	487	363	468	432
EU-15	Iceland	9	18	146	163
EU-15	Portugal	13	44	37	42
EU-CEE	Croatia	312 821	430 399	402 318	394 146
EU-CEE	Slovenia	68 549	67 952	107 807	103 663
EU-CEE	Poland	4 625	3 383	3 606	3 642
EU-CEE	Czechia	355	711	2 574	2 798
EU-CEE	Slovakia	47	257	324	408
EU-CEE	Hungary	381	264	388	276
EU-CEE	Bulgaria	18	54	103	167
EU-CEE	Latvia	2	3	6	4
EU-CEE	Estonia	..	..	2	..
EU-CEE	Lithuania	..	..	..	..
WB6	Serbia	42 141	360 524	343 743	333 687
WB6	Montenegro	..	..	34 300	29 462
WB6	TFYR Macedonia	4 365	7 614	8 043	8 729
WB6	Albania	..	..	..	..
Other destination countries	Russian Federation	876	648	505	515
	Norway	3	11 573	12 989	14 370
	Malta	25	77	153	204
	Liechtenstein	297	419	297	323
	Switzerland	41 166	38 666	48 965	59 685
	Latin America	33	38	111	135
	Canada	25 135	25 945	35 885	41 722
	United States of America	55 354	101 273	120 693	125 442
	Australia	22 312	28 690	39 750	43 456

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017)



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