



LABOR MOBILITY PRECONDITIONS FOR THE REGIONAL ECONOMIC INTEGRATION: PROS AND CONS FROM MACEDONIAN PERSPECTIVE

Policy Study No. 47

Labor mobility preconditions for the regional economic integration: Pros and cons from Macedonian perspective

Authors:

Despina Tumanoska

Finance Think – Economic Research & Policy Institute, Skopje

Marjan Petreski

University American College Skopje / Finance Think – Economic Research & Policy Institute, Skopje

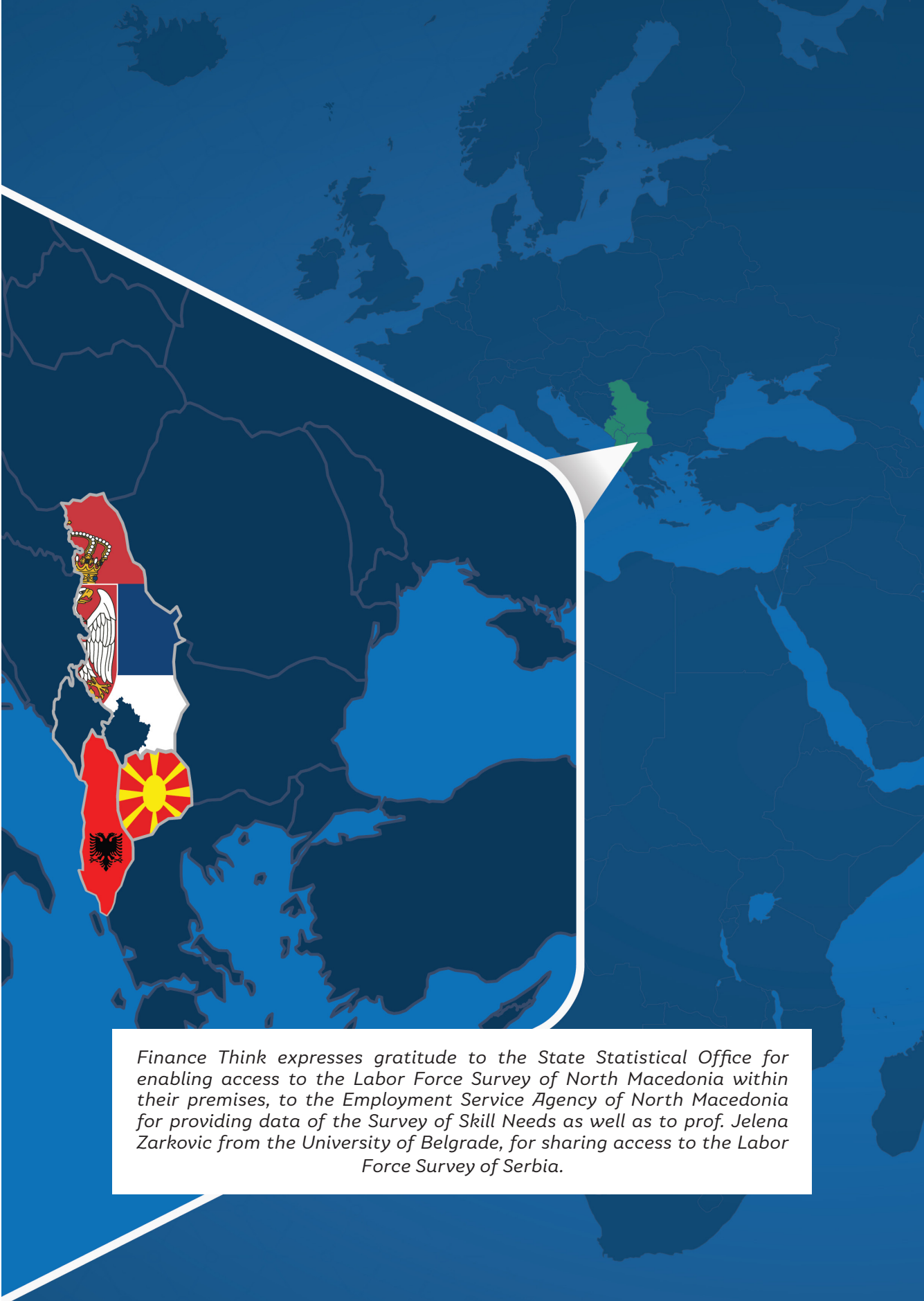
Reviewer:

Dimitar Nikoloski

Faculty of Economics - Prilep

September, 2023

This policy study is prepared within the project “Open Balkan: Free regional movement of labor in conditions of shortage of qualified workers”, implemented by Finance Think - Economic Research and Policy Institute, with financial support of the Foundation Open Society Macedonia. The contents of this study are the sole responsibility of Finance Think and do not necessarily reflect the policies and views of the Foundation Open Society Macedonia.



Finance Think expresses gratitude to the State Statistical Office for enabling access to the Labor Force Survey of North Macedonia within their premises, to the Employment Service Agency of North Macedonia for providing data of the Survey of Skill Needs as well as to prof. Jelena Zarkovic from the University of Belgrade, for sharing access to the Labor Force Survey of Serbia.

Contents

1. Introduction	6
2. Labor mobility: Overview of the referent literature and some stylized facts	9
2.1 General views on labor mobility	9
2.2 Labor mobility in a regional integration context	13
3. Stylized facts about Macedonian labour market	21
3.1 The national labor market	21
3.2 The labor markets of the bordering planning regions	27
4. Data and methodology	31
5. Results and discussion	33
5.1 Occupational gaps at the national level	33
5.2 Occupational gaps at level of bordering planning regions in North Macedonia	40
5.2.1 North-East region	40
5.2.2 Polog region	43
5.2.3 South-West region	46
5.2.4 Skopje region	47
5.2.5 National and regional comparison	52
5.3 Wage differentials	55
6. Conclusions and recommendations	61
7. References	64

List of figures

Figure 2.1 - Share of international labor migrants by income level of host countries	10
Figure 2.2 - Sectoral distribution of international labor migrants, by gender	11
Figure 2.3 - Number of migrants between WB* countries, in 2020	15
Figure 2.4 - Number of migrants from North Macedonia	16
Figure 2.5- Reason for emigration to EEA, 2021	17
Figure 2.6 – Top countries of destination by first valid permits issued in 2021	18
Figure 2.7 – Number of Macedonian labor migrants	19
Figure 3.1 - Labor market indicators, 2012-2022 in %	21
Figure 3.2 - Quarterly labor market indicators, 2021-2022	22
Figure 3.3 - Employment by sector of activity, 2017 and 2021	24
Figure 3.4 - Unemployed persons by gender, age and education level, 2022	26
Figure 3.5 - Labor market indicators of the bordering planning regions, 2021	28
Figure 3.6 - Rate of registered unemployed persons by education level, 2022	29
Figure 3.7 – Job vacancy rate, 2023	30
Figure 5.1 - Labor supply by occupation and education, 2022	33
Figure 5.2 - Labor demand by education and occupation, 2023	34
Figure 5.3 - Ratio between labor supply and demand by education	35
Figure 5.4 – Occupational gap	36

List of tables

Table 2.1 - Occupational distribution of Macedonian migrants, 2016, in %	20
Table 3.1 Labor market indicators by gender, education and age, 2012 and 2022* in %	23
Table 3.2. - Job vacancy rate, 2022, in %	25
Table 5.1 - Gap between labor supply and demand by occupation	38
Table 5.2 - Gap between labor supply and demand by level of education, North-East region	41
Table 5.3 - Gap between labor supply and demand by level of education, olog region	44
Table 5.4 - Gap between labor supply and demand by level of education, South-West region	49
Table 5.5 - Gap between labor supply and demand by level of education, Skopje region	50
Table 5.6 - Ratio between labor supply and demand	54
Table 5.7 - Wage differentials by occupation, national level	56
Table 5.8 - Wage differentials according occupations, borderline regions	59

1. Introduction

The regional economic integration helps countries to overcome the constraints to economic growth created by the poor infrastructure, inefficient policies, geographic area and demographic shifts. The smooth flow of goods, services, capital and people allows economies to operate more steadily with less government intervention, giving a chance to make the greatest use of their resources.

The free movement of workers is one of the key freedoms of the regional economic integration that increases the mobility of labor regionally and/or internationally, in search for access to the labor market of the receiving country. Economies, especially developing ones, all have long history of labor migration. According to IOM (2022), in 2021, nearly 162 million people moved in other country in search of employment. This trend is set to continue, mainly due to the wage gaps between the countries, rapid aging of the labor force in some countries and the technological development that makes easier for migrants to stay connected with their family.

Continued high levels of labor migration leave a severe development traces for the economies. While they reduce the pressure from the labor market and reduce unemployment levels, they also evoke and emphasize the noticeable skills and occupational mismatches and gaps at the regional labor market (OECD, 2022). This may prevent companies from finding adequate labor force, thus reducing or canceling investments in the home country, posing a negative impact on the economic growth.

On the other side, the large and growing diaspora provides opportunities that could contribute to the economic and social development of the sending economies. Remittances sent to the families left behind could be further formalized to realize their full development potential. The role of know-how transfer through migrants' experience gained abroad and their increased language, entrepreneurial and technical skills can also benefit the economies, if they return to their country of origin and fully integrate into the local labor market. At the personal level, labor mobility has a positive impact on the financial situation and productivity of the labor migrant. If workers have opportunity to gain new skills, move locations and search higher salary, they are more likely to be happy workers (Congdon et al., 2021).

Regional integration initiatives in Western Balkan (WB) have a long history, dating back to the breakup of Yugoslavia in 1990s, followed by the Berlin process that started in 2014 aiming to improve the multilateral ties between WB and EU countries, as well to strengthen

the regional cooperation on issues related to infrastructure and economic development. Three years later, the first signs of the Open Balkan Initiative (OBI) emerged, as an idea for improving the political and economic cooperation among three WB countries: North Macedonia, Albania and Serbia.

Aimed at bringing closer and accelerating integration into the European Union, OBI is based on the four key freedoms of the EU single market: free movement of people, goods, services and capital. As part of the initiative, several memoranda, agreements and common declarations have been signed so far, among which the Memorandum of Cooperation related to the free access to the labor market in the Western Balkans, through reduced employment barriers among the countries, electronic application for obtaining identification number and facilitation of administrative procedures for obtaining a temporary residence permit. It stipulates that every resident of the signatory countries has the right to free movement, residence and work in the territory of the three countries. In order to ensure equal access for all residents of these countries, the signatories should simplify the procedures for entry, residence and work in their countries. Before or at the latest 90 days after entering of the neighboring country, residents of the contracting countries should register in order to obtain a permit for free access to the labor market for a period of two years, with the possibility of its extension. The permit includes the right to employment without a work and residence permit for foreign nationals, but excludes the possibility of using state subsidies for employment, such as the existing active labor market programs and measures (Finance Think, 2023).

While the existing analyses confirm that the economic integration initiatives increase the labor mobility, there is a scarce firm evidence on the impact of the regional initiatives on the labor markets of the WB countries (ILO, 2021; Anukoonwattaka and Heal, 2014; Baldwin and Venables, 1995). Free movement of the labor force is of particular importance for the region, especially in conditions of labor and skill scarcities. Whether simplified employment rules in these countries under the OBI umbrella will make them more attractive than EU countries depends on the wage levels in the destination country as the most significant factor affecting labor mobility..

The aim of this paper is to understand the potentials for labor mobility within the Open Balkan Initiative, through quantitative analysis of the occupational and wage gaps, from the perspective of North Macedonia. In the analysis, a special reference is given to the borderline regions in North Macedonia: Skopje region and North-East region which have borders with Serbia, and Polog region and South-West region which borders with Albania.

The structure of the paper is as follows. The second section reviews the literature on migration with reference to labor migration. Section 3 describes the current condition on the Macedonian labor market and labor markets of the borderline regions. Section 4 explains the data and methodology used. In section 5, the results of the occupational gaps at national and regional level are presented. This section also includes results of the estimated wage differentials between North Macedonia and Serbia. The last section concludes and provides specific recommendations for improving the mismatch between labor supply and demand and the overall condition of the labor market.



2. Labor mobility: Overview of the referent literature and some stylized facts

2.1 General views on labor mobility

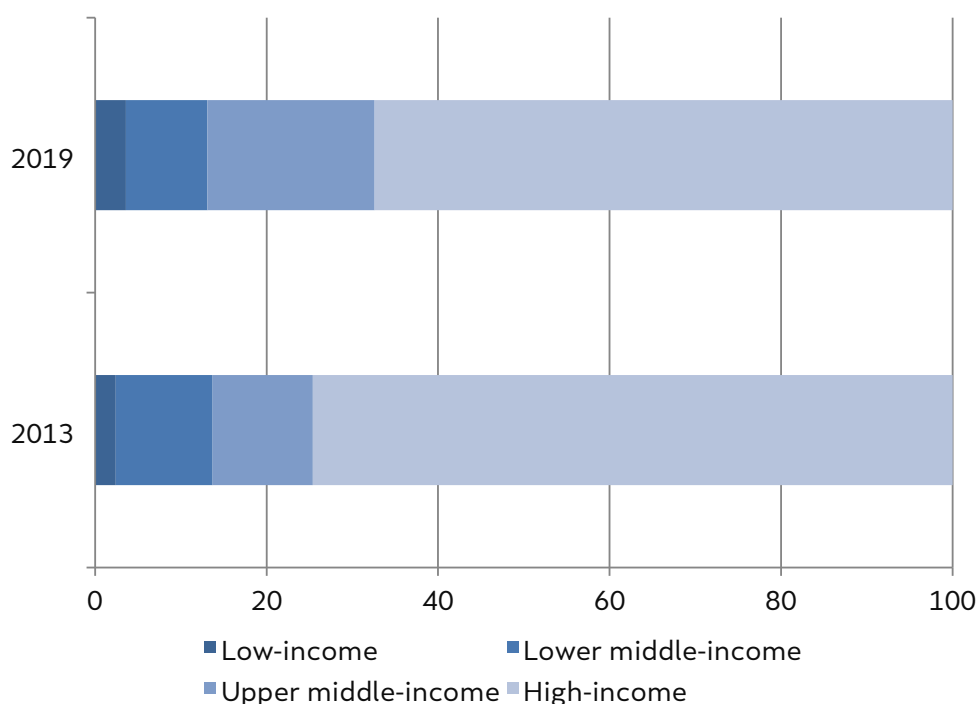
International migration defined as moving of people away from their place of residence across an international border, temporary or permanently, has been gaining significant momentum in the last decades, with the exception of the pandemic period when a slight decrease has been recorded. According to the last estimates, around 280 million people worldwide have been registered as international migrants in 2020, more than quadruple compared to the number of migrants in 1960 (Migration Policy Institute, 2021). This figure reveals that a very small proportion of 3.6% of the global population represents migrants, while vast majority (96.4%) resides in their country of birth. According the UN Global Migration Database, the estimated number of international migrants in 2020 has been lower by around 2 million due to the restrictive changes to freedom of movement all around the world in order to slow down the spread of the COVID-19 pandemics. The search for better quality of life, safer life opportunities, studying, working and protection from war conflicts are the main reasons for people moving from one country to another. Hence, the international migration spans large range of categories like international students, war migrants, migrant workers, humanitarian migrants, etc.

According to MPI (2021), much of the increase of the number of international migrants has been driven by labor migrants. Labor migrants and labor mobility/migration are different terms than migrants and mobility/migration itself. Labor migrants are those people who move across internationally in search for an access to the labor market of the receiving country, i.e. employment, while migrants ask for wider rights and even citizenship. Also, labor mobility is usually temporary, while the aim of the migration is permanent resettlement in the host country.

There is no unique statistical definition of labor migrants, but ILO (2015, p.11) defines it as „...all international migrants who are currently employed or unemployed and seeking employment in their present country of residence” and UN (2017, p.15) defines labor migrants as “foreigners admitted by the receiving state for the specific purpose of exercising an economic activity remunerated from within the receiving country...”. IOM (2022) shows that almost two-thirds (62%) of total international migrants are labor migrants, which is nearly 162 million people who moved in other country in

search of employment. Nearly 96% of them moved in high- or middle-income countries, while only 3.6% migrated in low-income countries. Between 2013 and 2019, there has been a notable fall in the share of labor migrants in the high-income countries from 74.7% to 67.4%, while the number of people who migrated in search of employment in the upper-middle-income countries rose by 7.8 percentage points (Figure 2.1). Reasons for such change may be attributed to the improved employment opportunities in the upper-middle-income countries, their simplified procedures for employing labor migrants and/or due to the changes in the immigration policies in the high-income countries (ILO, 2021).

Figure 2.1 - Share of international labor migrants by income level of host countries

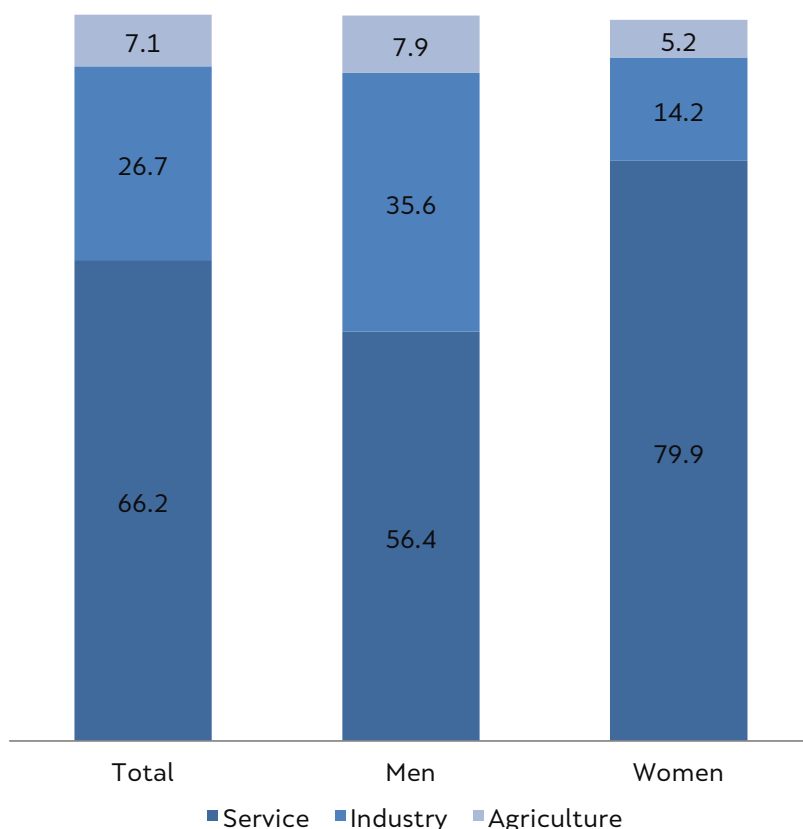


Source: International Labor Organization.

The gender data of labor migrants reveal that globally, nearly 100 million of the total people who migrated in search of employment in 2020, are men, while female labor migrants made up 70 million. ILO confirms that lower representation of female labor migrants is due to their slightly lower share in the total migration (47.9%) but more importantly due to their lower activity rates on the labor market of 59.8% compared to 77.5% of men.

According to the age group of migrants, prime-age adults (25-64) account for 86.5% of labor migrants, while young people aged 15-24 and those older than 65 constitute 10% and 3.6%, respectively (ILO, 2021). Two-thirds of the international labor migrants are concentrated in the service sector, 26.7% in industry, while 7.1% in agriculture. Nearly 80% of female labor migrants are concentrated in the service sector compared to 56.4% of male migrants. The number of female labor migrants who work in the industry sector is 2.5 times lower than that of male migrant workers (Figure 2.2).

Figure 2.2 - Sectoral distribution of international labor migrants, by gender



Source: International Labor Organization.

More than 100 million labor migrants moved in three regions of the world in search of work: Europe (except South Europe), North America and the Arab States, while less attractive regions for searching an employment are Latin America, Eastern Asia and Northern Africa. It is interesting that majority of female labor migrants moved to Europe or North America, while only 6% moved in the Arab States, due to the limited employment opportunities in this region outside of the care economy and domestic work (ILO, 2021).

It is expected that the labor mobility will continue to grow in the following decades, mainly due to several factors: 1) Wage gaps between countries – the wage that a worker can earn in his own low-income country compared with what he/she can earn in a developed country; 2) Demographic outlooks – rapid aging of the labor force in some countries may create labor shortages and increase the need for labor migrants to fill the gaps; 3) Technology development that makes easier for migrants to stay connected with their family; and 4) Diaspora growth – reduces the uncertainties related to the migration and makes easier for migrants to find a job and settle in the host countries (ILO, 2021).

However, many countries fear that the labor mobility may cause a decrease in wages and/or job losses among local workers, so they hesitate to open the labour market. They also struggle that the inclusion of people from different ethnic, religious or cultural background may impact social cohesion. The increase of the population due to labour migrants may increase the demand for public services, causing additional government expenditures (Anukoonwattaka and Heal, 2014). Also, labor migration may cause skills shortages in the sending countries (Nikoloski and Aspostolovska Toshevska, 2019). Finally, higher wages in the developed countries may attract skilled workers from developing countries, causing significant brain-drain and receding of countries' development.

On the other side, labour mobility has its own advantages, mainly in filling the gaps in the labor supply and demand. Labour shortages in certain occupations, caused by the lack of skilled labor force or the unwillingness of local workers to do that job, may be filled by labor migrants. Labor shortages may also cause pressure for higher wages, therefore employing labor migrants and closing the gaps may prevent the rising wages and excess wage inflation. Labor mobility also decreases the unemployment pressure in the sending country, providing more employment opportunities to those unemployed who are not moving. Labor diaspora may provide opportunities for improving the condition of the household left behind by sending remittances. It may impact the poverty reduction as higher income of the labor migrants is good for themselves and their families left behind in the sending country. Finally, labor mobility has positive impact on the public spending since it may reduce the costs for unemployment benefits and social and healthcare expenditures (Dustman et al., 2010).

2.2 Labor mobility in a regional integration context

The regional integration makes easier the flow of goods, services, capital and people and helps countries to overcome the obstacles created by poor infrastructure, lack of labor force and inefficient policies that impede economic growth (Baldwin and Venables, 1995). The free movement of workers is one of the four freedoms enjoyed by the citizens of the European Union which, as a regional common market, relies on the free labor mobility, accepting the labor qualifications and providing opportunities to EU citizens to look for a job in another country of the union. Many documents guarantee the free movement of workers within EU countries (Treaty on European Union – Article 3; Treaty on the functioning of the EU – Article 45; Directive 2014/54/EU). The Treaty on the EU – Directive 2004/38/EC gives a right to all workers and their families to reside and work in another EU country, if they have health insurance and resources to support themselves. Directive 2013/55/EU regulates the recognition of labor qualifications within the union.

Despite the strong regulation of the free labor movement, EU (2010) recognizes that labor migrants still face difficulties on the ground. Many cases of their discrimination, exploitation and skills underestimation, i.e. non-recognition of their qualifications have been recorded. The literature confirmed that this may cause life dissatisfaction among labor migrants (Anderson et al., 2006; Safi, 2010). Kahanec et al. (2014) document that usually, labor migrants are underemployed, thus causing lower output per worker.

At the very beginning of the EU-15 foundation, labor mobility has been relatively low as all member states have been at the similar income and development level. The further expansion of the EU and the inclusion of 28 countries led to a mass labor migration from the less developed member states toward those with higher income, motivated by the higher job opportunities and earning potentials. OECD (2009) assesses that this trend improved the allocation of labor resources within the union and increased the economic welfare as a result in more efficient use of the labor. It also facilitated the exchange of know-how, therefore increasing the productivity of the labor force.

According to the European Commission (2013), most of the people who move from north to the south of the EU are high-skilled individuals with tertiary education, which may cause both, negative and positive effect in the sending country. At first sight, this migration is assessed as a typical brain-drain, which is negative for the sending country leading to decrease of the skilled labor force. On the other hand, if these labor migrants return to their birth country with added skills and knowledge, it may positively impact their own productivity

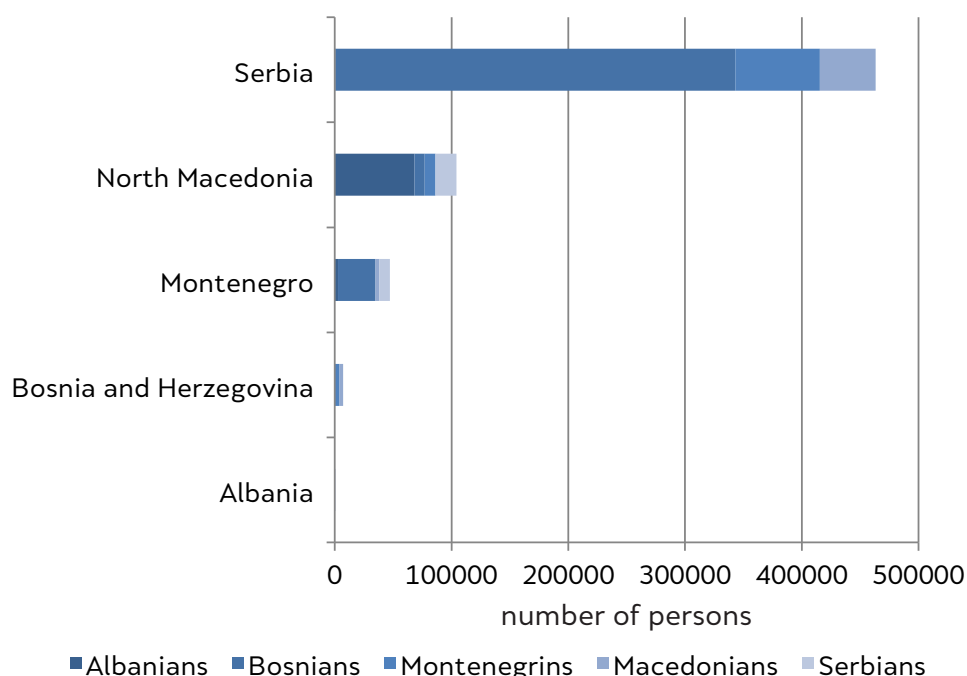
and employment opportunities, as well as the development of the sending country.

Examples are vivid from other regions. The increased regional integration of the Asia-Pacific region led to increased intra-regional labor migration. This migration likewise happened mainly due to the large wage and developmental disparities among the countries in this region. According to the UN (2014), more than 40% of the labor migrants from the Asia-Pacific region are currently based in another country within the region. Also, growing intraregional labor migration is recorded in Eastern and Southern Africa, especially after the ratification of several arrangements that regulated the free movement of workers, such as East African Common Market Protocol, Free Movement and Transhumance Protocol, as well as envisaged programs for facilitating labor migration prepared by the regional economic communities like Common Market for Eastern and Southern Africa. Despite the absence of ratified agreements and/or protocols that ease the intraregional labor migration in Central Asia, the number of people who move in other countries within the region in search of work increased significantly in recent years. According to the Migration Policy Institute (2021), there is a significant increase in female labor migrants from Kyrgyzstan and Tajikistan to the Russian Federation due to the higher wages, employment opportunities and better working conditions.

The positive development of the labor migration policies in South America led to increase of the intraregional labor migration. Other factors that speeded up the growing labor migration within the region included factors like increase in the employment opportunities, communication means, decline in migration to Europe, etc. Approximately 80 per cent of migrants in South America are intraregional migrants (Migration data portal, 2020). Labor migration programs such as the Seasonal Workers Program and Pacific Labor Scheme in Australia and the Recognized Seasonal Employer scheme in New Zealand recruit migrants primarily from the Pacific and South-East Asia to occupy jobs in agriculture and accommodation (Australian Government Productivity Commission and New Zealand Government Productivity Commission, 2012).

The intraregional mobility in the six countries of the Western Balkan remained stable from 1995, accounting for 15% of the total migrants from these countries. Data in Figure 2.3 reveals that Serbia attracts the most migrants from the other WB countries, but there are also significant number of Albanian migrants in North Macedonia and Bosnians in Montenegro. Bosnia and Herzegovina has the largest stock of migrants in other WB economies: more than 383.000, or 23% of the total migrants from this country (OECD, 2021).

Figure 2.3 - Number of migrants between WB* countries, in 2020



Source: UN Department of Economic and Social Affairs

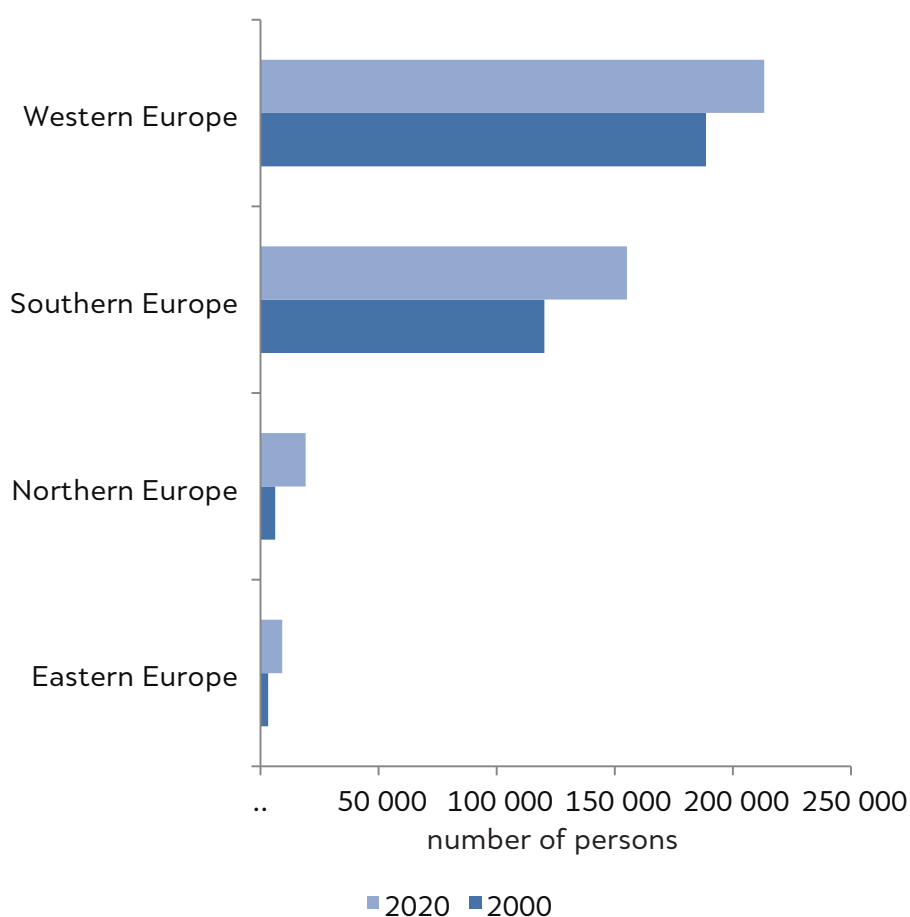
*Kosovo is excluded due to lack of data

However, the higher quality of life in the EU countries encouraged the WB citizens to move outside the region, searching for better employment and educational opportunities. At the beginning of the 2000s, emigration to the EU was challenging due to the existing visa regime. Starting in 2005, the EU concluded visa facilitation and readmission agreements with WB countries (except Kosovo), thus facilitating the mobility from the region to the EU. Certain EU countries, like Germany, enacted policies that ease the migration to EU, explaining the significant increase of migrants. Also, EU enlargement with Slovenia in 2004 and Croatia in 2013, and easing the mobility from these countries to the other EU countries, caused labor shortages in the domestic labor markets, increasing the demand for workers from the WB. Hence, the number of WB citizens who moved to a country outside the region in the past 10 years increased by 10%, and in 2021, nearly one-fifth, or close to 4.77 million citizens of the WB lived in a different country, mostly in Germany, Italy, Greece, Austria, the United States and Switzerland, with an increased pace of moving to Croatia and Slovenia (OECD, 2021). Until the COVID-19 pandemic, the number of labor migrants from WB to EU increased between five and ten times compared to 2011. More than half of the WB migrants were employed in medium-skilled jobs, while

over-qualification is very common, as most of the highly-educated migrants work in low- or medium-skilled occupations. Male migrants are usually employed in the construction and manufacturing sectors, while women generally perform jobs as sales and service workers.

In 2020, nearly 700 thousand citizens of North Macedonia lived outside their country of birth, which is 30% more compared to 20 years ago. Two-thirds of them live in Europe, primary in the South and West parts of the continent, although the number of Macedonians who live in the Eastern and Northern Europe has tripled in the last two decades (Figure 2.4)

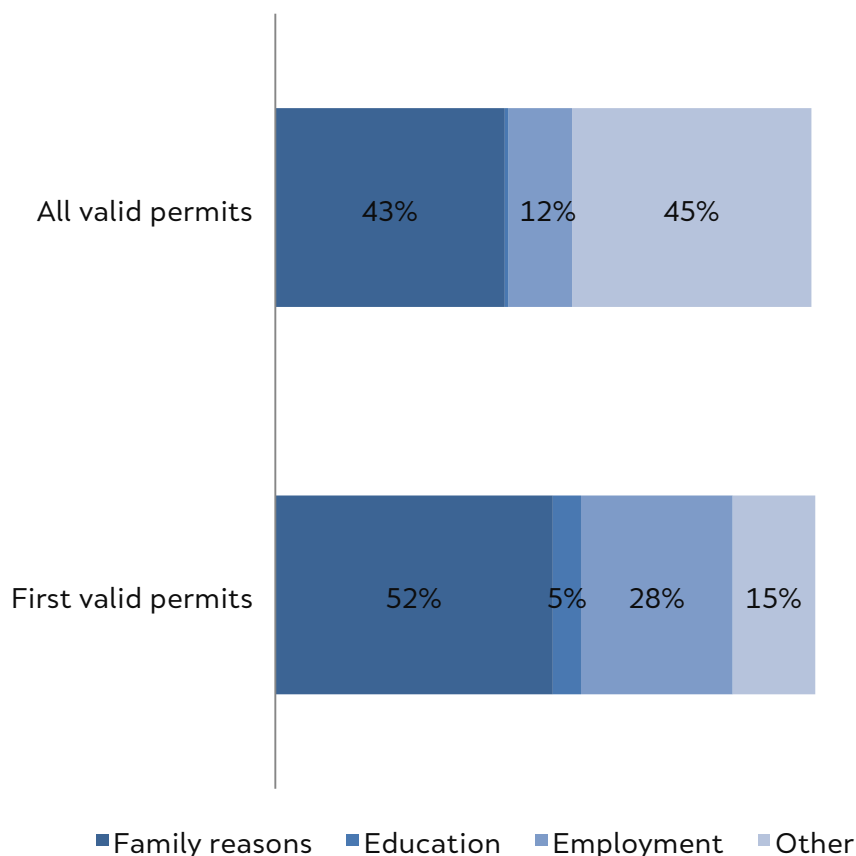
Figure 2.4 - Number of migrants from North Macedonia



Source: UN Population Division

Figure 2.5 shows that, family reasons are the driver of the emigration of Macedonians to the countries of the European Economic Area (EEA), according to the valid and issued permits in 2021. Besides employment and education, other reasons that motivate people to migrate are the international protection, residence without the right to work (such as pensioners) and people in the intermediate stages of the regularization process (OECD, 2021).

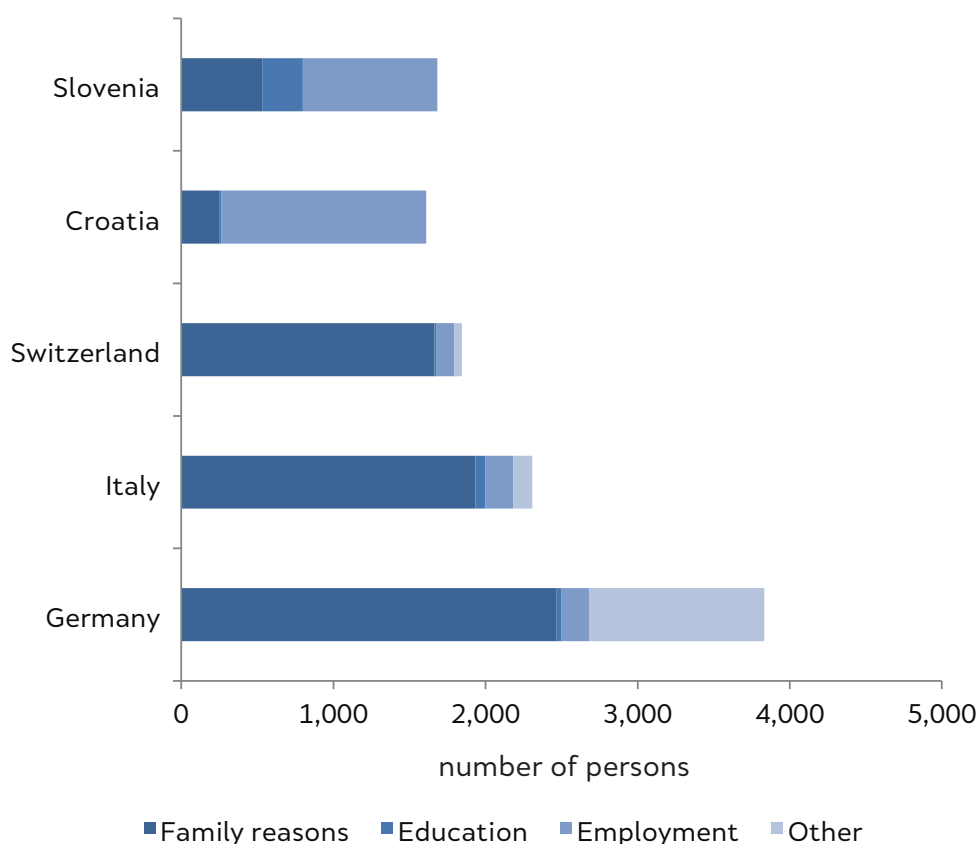
Figure 2.5- Reason for emigration to EEA, 2021



Source: Eurostat

In 2021, more than 16 thousand citizens of North Macedonia moved to an EEA country and obtained a valid permit to live and work. Main reason for the emigration has been family reunification (52%) followed by employment (28%). Nearly 80% of the migrants moved to Germany, Italy, Switzerland, Croatia and Slovenia, while the motive for emigration differs between countries (Figure 2.6). Most of the migrants in Slovenia and Croatia are led by the search for better employment and earnings, while other countries are dominated by migrants who emigrated for family reasons.

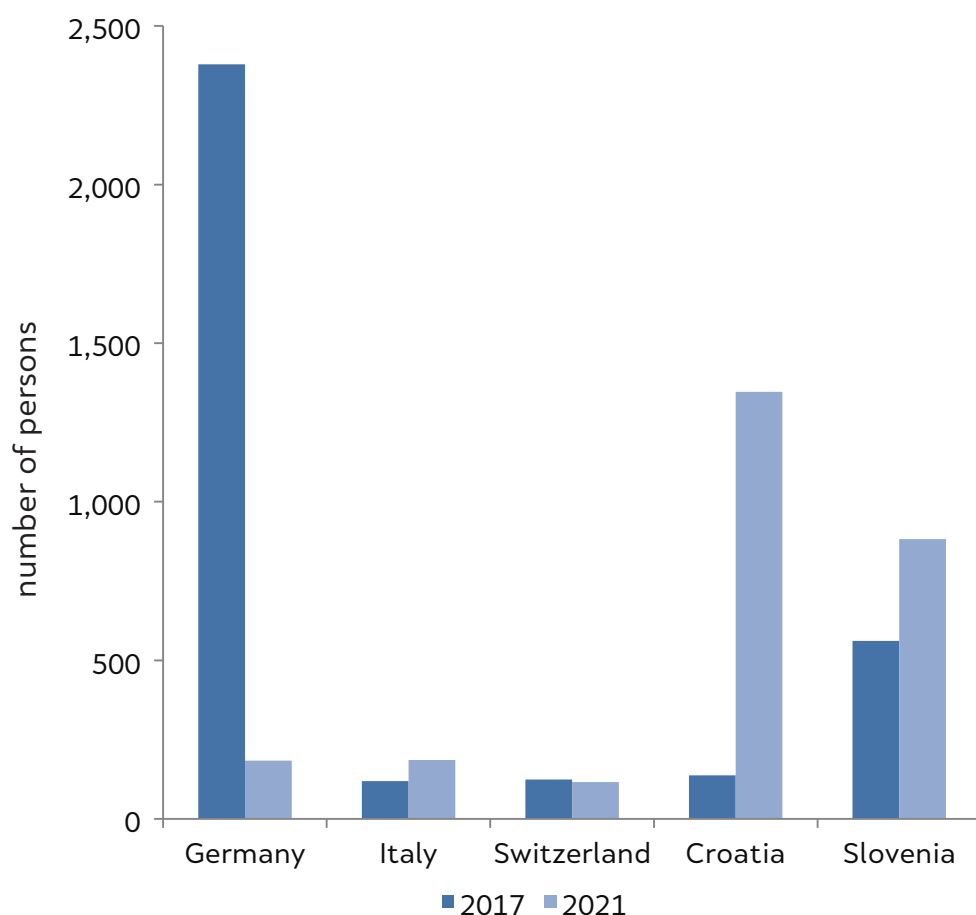
Figure 2.6 – Top countries of destination by first valid permits issued in 2021



Source: Eurostat

Search of better employment opportunities has been the reason for the emigration of 4 thousand citizens of North Macedonia, who obtained first valid permit in 2021, for living and working in an EEA country, half of which in Croatia and Slovenia (Figure 2.7). Compared to five years ago, the map of the Macedonian labor migrant has significantly changed, by bringing Croatia and Slovenia to the top, as the most attractive countries for temporary employment.

Figure 2.7 – Number of Macedonian labor migrants



Source: Eurostat

Table 2.1 shows a different occupational distribution of Macedonian labor migrants. Males are usually concentrated in the building and blue-collars manufacturing sectors, while one in three women are employed as cleaners and helpers, sales and personal service workers. This pattern is almost similar for all WB labor migrants. Due to the lack of more recent data, a change in the sectoral distribution is possible, given the change in the map of the countries for attracting labor migrants from the country. Although there are no official data, for example, a large part of our migrants in recent years leave and work in the hospitality sector in Croatia.

Table 2.1 - Occupational distribution of Macedonian migrants, 2016, in %

Occupation	Male	Female
Building and related trade workers	18.8	1
Metal, machinery and related trades workers	6.6	-
Drivers and mobile plant operators	8.2	-
Laborers in mining, construction, manufacturing	5.8	1.8
Stationary plant and machine operators	5.2	5.7
Personal service workers	4.4	8.1
Science and engineering associate professionals	3.9	-
Numerical and material reporting clerks	3.2	1.9
Sales workers	1.9	8.5
Business and administration associate professionals	1.9	3.1
Agricultural, forestry and fishery laborers	3.1	1.9
Skilled agricultural workers	2.1	1.3
Food processing, woodworking, garment and other craft and related trades workers	3.7	2.9
Cleaners and helpers	2	21.5
Hospitality retail and other services managers	1.1	-
Production and specialized service managers	1.4	-
Science and engineering professionals	1.1	-
Personal care workers	1.2	6.3
Health associate professionals	1.9	4.2
Other	25.6	24.3

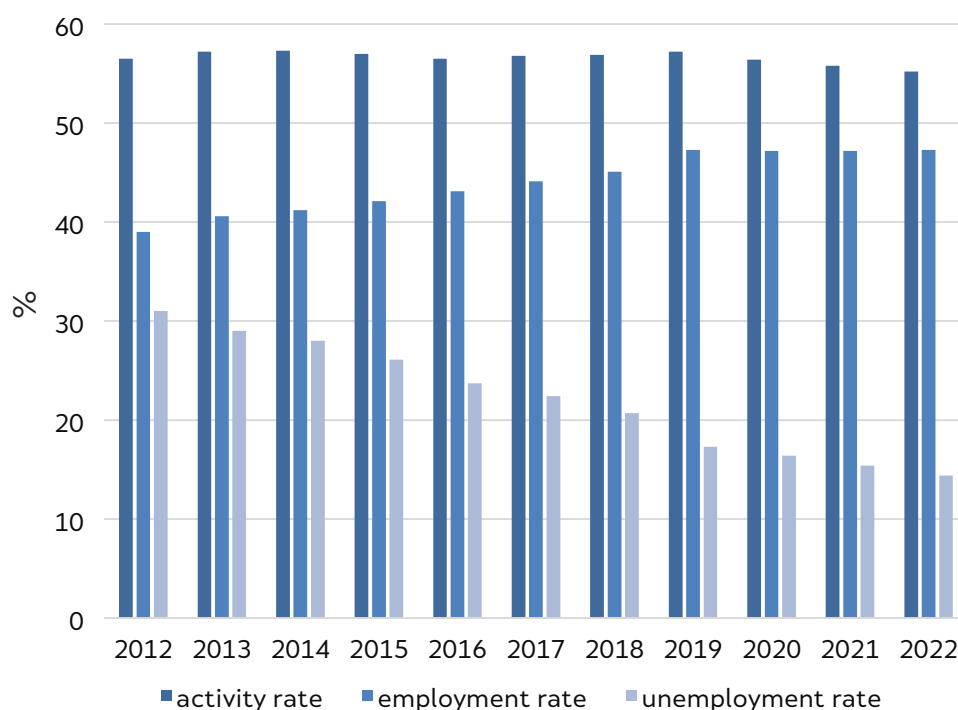
Source: OECD Database on immigrants

3. Stylized facts about Macedonian labour market

3.1 The national labor market

Macedonian labor market has been marking continuous improvements in the last decade. The trend of the basic labor market indicators shown on Figure 3.1 reveals significant improvements in unemployment and employment rates. In 2022, the unemployment rate recorded the historically lowest level, more than halved compared to 2012. Over the same period, the employment rate increased by 8.3 p.p., mainly due to the favorable economic climate, the active role of the companies with FDI, the numerous active labor market measures and the new jobs created by the domestic private sector. On the other hand, the rates of inactivity remained almost constant over the same period, even a slight increase of 1.3 percentage points has been recorded in 2022 compared to 2012.

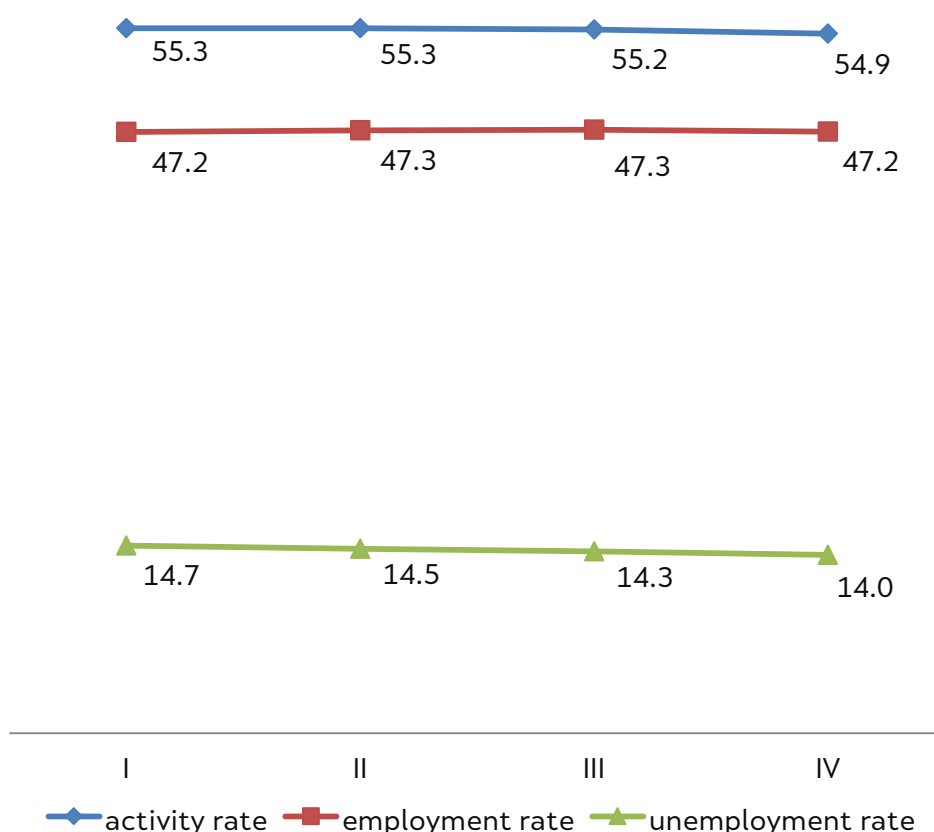
Figure 3.1 - Labor market indicators, 2012-2022



Source: State Statistical Office – North Macedonia

The last three years since the pandemic have been more peculiar though. Despite the further reduction of the unemployment rate, the activity and employment rates have stagnated and noted even a slight decrease, likely due to the increased flows to inactivity, due to discouragement for finding a work (triggered during the hit of the COVID-19 pandemic), but also due to their emigration to other countries in search for better employment (Figure 3.2).

Figure 3.2 - Quarterly labor market indicators, 2021-2022 in %



Source: State Statistical Office – North Macedonia

There are significant differences by gender, education attainment and the age of the labor force. Table 3.1 shows that in 2022 a difference of 22 p.p. has been recorded between men and women in their activity rates. The high inactivity rate of women is connected with their engagement in unpaid domestic and care work; living in households receiving remittances, traditional division of labor within the household, etc. (International Labor Organization, 2010; Binzel and Assaad, 2011). As a result, the unemployment rate of

women has been slightly lower than that of men, 12.5% versus 15.7%, respectively. With regard to the educational attainment of the workforce, primary-educated individuals are in the worst condition facing the lowest activity and employment rates. These rates even deteriorated compared to a decade ago, both for the workforce with primary and secondary education, which signals that the deactivation and possible labor mobility more frequently occurred among the low-educated and low-skilled workers.

Table 3.1 Labor market indicators by gender, education and age, 2012 and 2022* in %

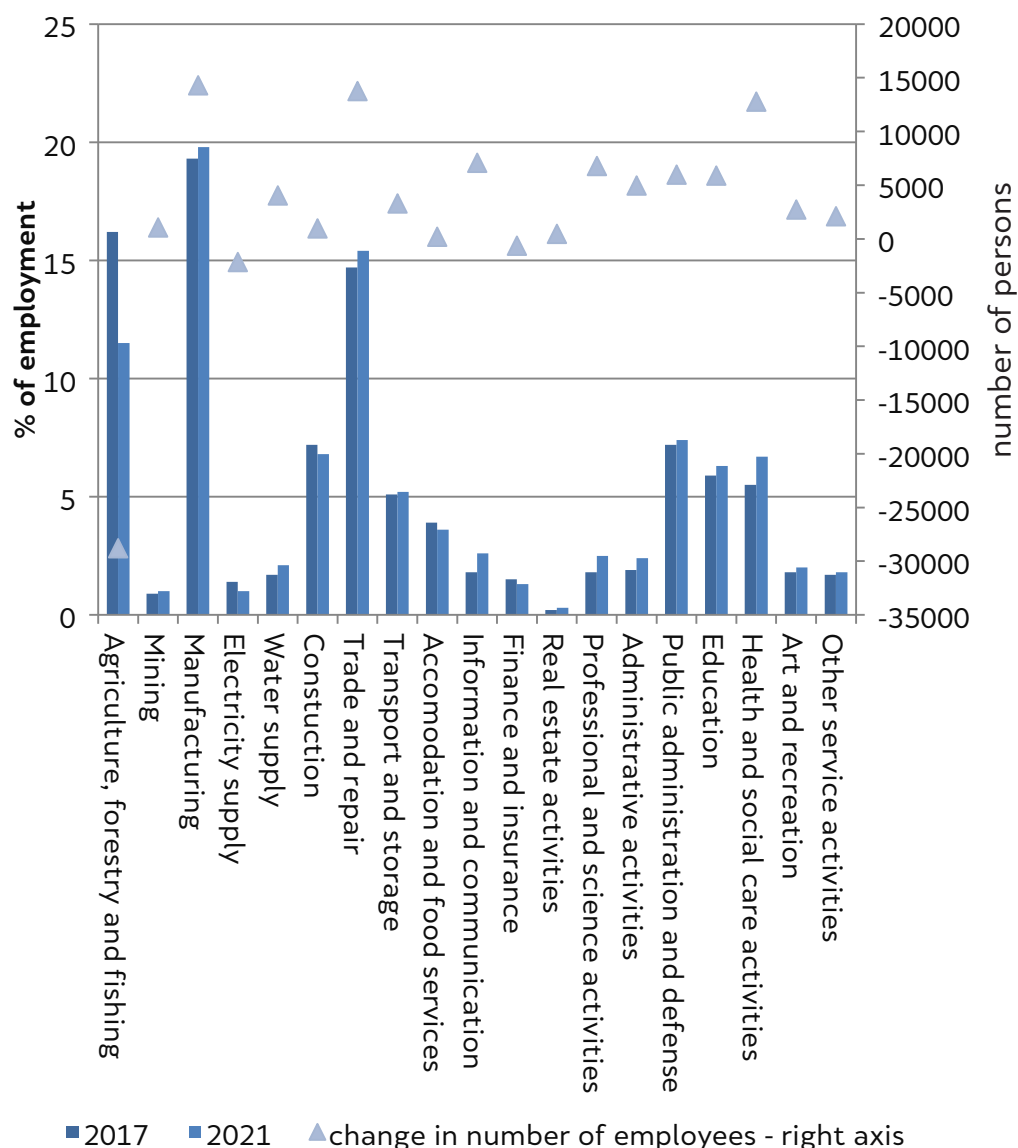
	Gender		Education level*			Age		
	Males	Females	Primary	Second-ary	Tertiary	15-24	25-49	50-64
Unemployment rates								
2012	30.8	30.3	39.1	29.7	23.4	53.9	29.9	24.4
2022	15.7	12.5	22.0	15.6	11.9	36.1	14.4	12.8
Employment rates								
2012	47.1	30.8	32.4	57.7	71.9	15.5	55.8	42.8
2022	55.9	38.8	23.6	54.5	74.4	19.2	70.4	55.2
Activity rates								
2012	68.7	44.3	34.4	68.7	79.5	33.6	79.5	56.7
2022	66.3	44.3	30.3	64.5	84.5	28.4	82.0	61.8

Source: State Statistical Office - North Macedonia

*Note: Data for indicators by educational level are for 2021

The structure of employment by sectors of activity indicates that almost half of the workers are employed in the manufacturing, trade and agriculture. During the last five years, the number of agricultural workers decreased by 30 thousand at the expense of the other two most numerous sectors, as well the health and social care sector (Figure 3.3). These figures may explain the improvement of the women's position at the labor market, given that the health and social care sector are usually considered as traditionally 'female' sectors.

Figure 3.3 - Employment by sector of activity, 2017 and 2021



Source: State Statistical Office

The highest job vacancy rate has been recorded in 2022 compared to the previous years, which may indicate an increased labor mobility due to the post-pandemic openness of the economies. The rate of job vacancies has been continuously among the highest in the accommodation and food services, which may further signalize on labor mobility (Table 3.2).

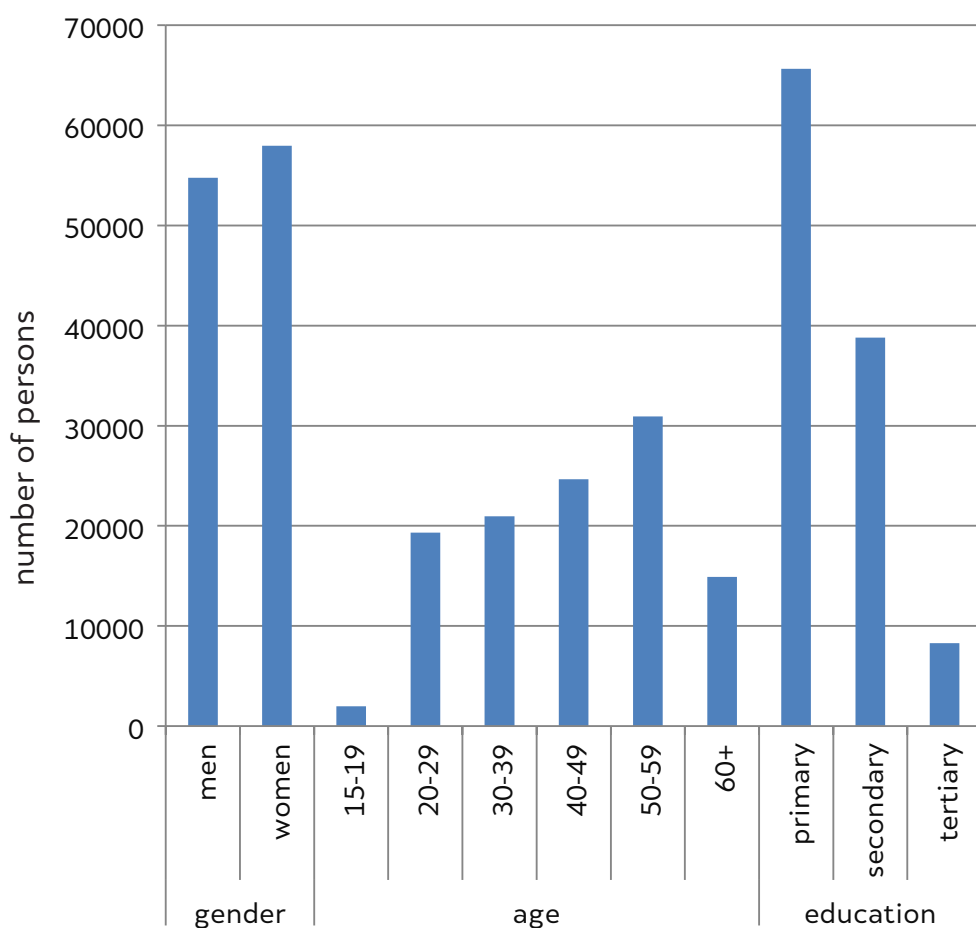
Table 3.2 – Job vacancy rate, 2022, in %

Sector	2018	2019	2020	2021	2022
TOTAL	1.60	1.62	1.61	1.66	1.84
Mining and quarrying	1.24	1.51	3.92	3.34	1.56
Manufacturing	1.98	1.73	1.92	1.55	2.20
Electricity, gas, steam and air conditioning supply	0.30	0.37	0.35	0.20	0.25
Water supply; sewerage, waste management and remediation activities	0.41	0.54	1.15	1.16	0.44
Construction	1.74	1.61	2.56	3.18	2.43
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.84	1.68	1.67	1.77	1.82
Transportation and storage	1.78	1.89	1.74	2.31	2.88
Accommodation and food service activities	2.68	3.19	2.14	2.70	3.60
Information and communication	1.50	2.53	2.65	2.91	3.13
Financial and insurance activities	0.93	1.16	0.71	1.04	0.97
Real estate activities	0.52	2.10	0.93	0.79	0.60
Professional scientific and technical activities	1.30	1.42	1.12	1.49	1.47
Administrative and support service activities	3.43	3.43	3.38	3.23	3.27
Public administration and defense; compulsory social security	0.53	1.01	0.46	0.52	0.44
Education	0.71	0.69	0.51	0.72	0.72
Human health and social work activities	1.05	0.91	0.87	0.76	0.91
Arts, entertainment and recreation	1.44	1.60	0.91	1.40	1.95
Other service activities	0.97	1.27	1.20	1.20	1.69

Source: State Statistical Office – North Macedonia

Despite the significant decrease of the unemployment rate over the last decade, still more than 112 thousand people have been searching for a job in 2022. Men and women are almost equally distributed among unemployed, while the unemployment rate is the highest among those aged 50-59 and among people with primary education. Youth (15-19), due to involvement in (compulsory) education, and workers with tertiary education are the least represented among the unemployed (Figure 3.4). Besides the active jobseekers, there are more than 47 thousand people who are passive jobseekers, i.e. they are not registered with ESA, due to detachment from the labor market, informal work, or (possibly) emigration to another country.

Figure 3.4 - Unemployed persons by gender, age and education level, 2022



Source: Employment Service Agency – North Macedonia

3.2 The labor markets of the bordering planning regions

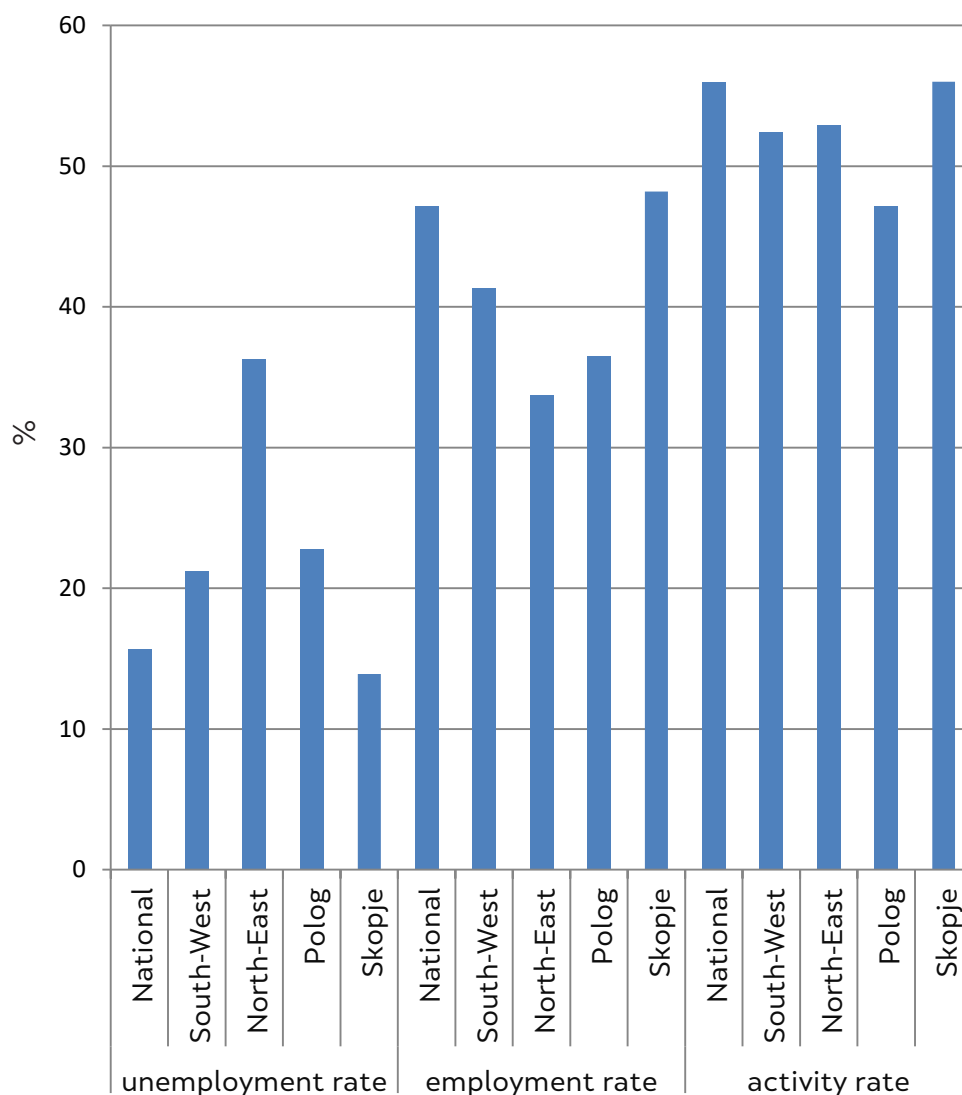
As the Open Balkan Initiative is a three-lateral project of North Macedonia, Serbia and Albania, it is expected that the planning regions bordering the other two countries would benefit the most of the initiative for free labor mobility. Therefore, we analyse the regional labor markets of Polog, North-East, South-West regions and the region of Skopje.

Picture: Map of the OBI countries



The labor markets of the analyzed regions significantly differ (Figure 3.5). The unemployment rate is the highest in the North-East region (36.3%), more than double the national average, while only the Skopje region recorded lower unemployment rate than the national one. The employment rate is also the lowest in the North-East region, followed by Polog which also characterizes with the lowest activity rate of the working-age population.

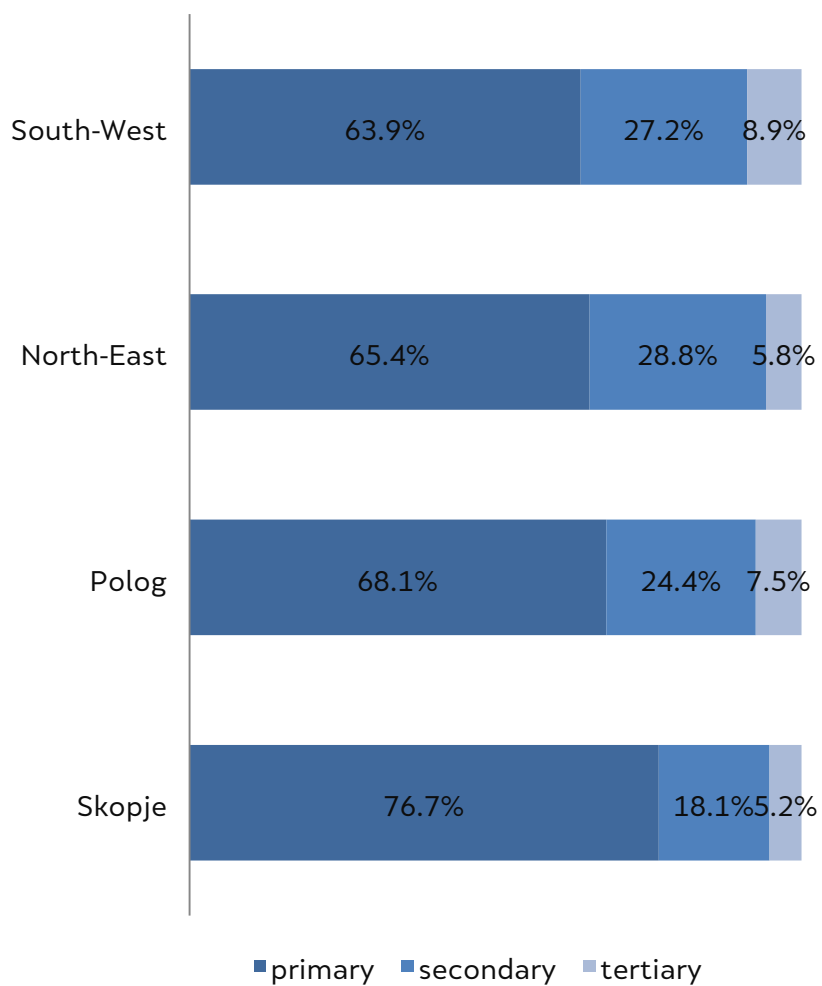
Figure 3.5 - Labor market indicators of the bordering planning regions, 2021



Source: State Statistical Office – North Macedonia

The structure of the registered unemployed individuals in Figure 3.6 reveals that workers with primary education prevail in all regions, being the largest in the Skopje region. The share of unemployed with tertiary education is highest in the South-West region.

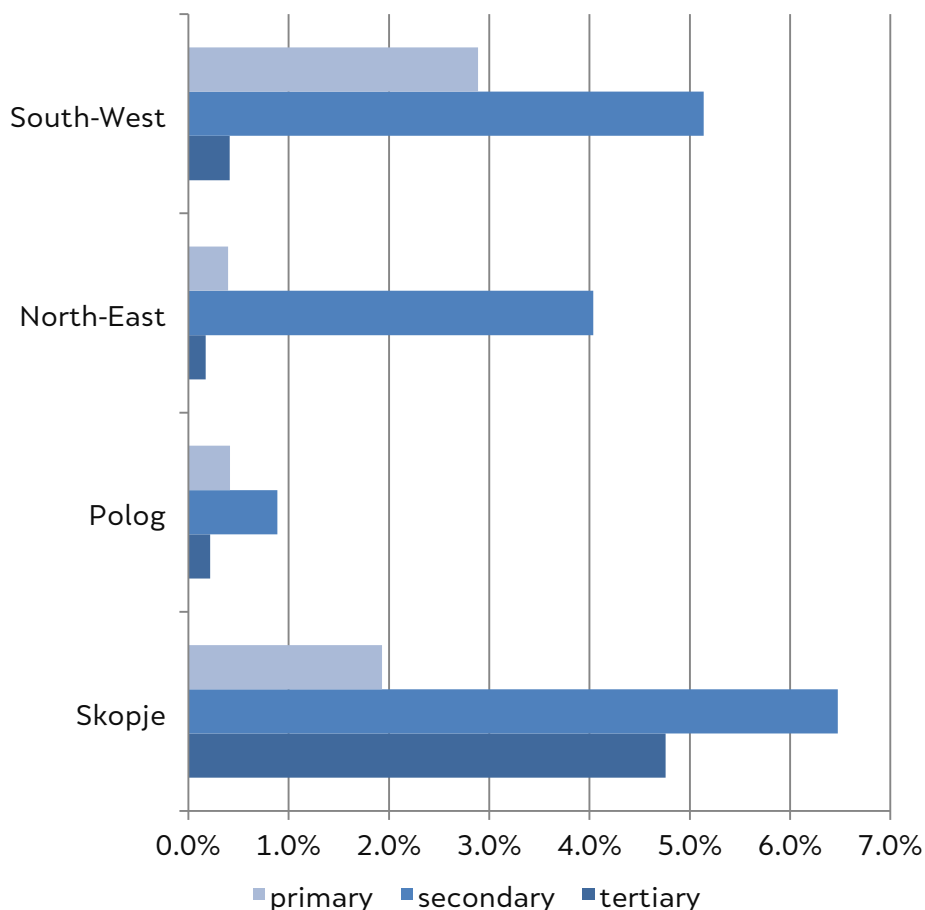
Figure 3.6 - Rate of registered unemployed persons by education level, 2022



Source: Employment Service Agency – North Macedonia

According to Figure 3.7, the South-West region has almost a double rate of vacancies than the North-East region, explaining the lowest employment rate recorded there. With respect to the education level of the required workers, in all regions the demand for secondary-educated is the highest. Only in the Skopje region, a one third of the required labor force is with tertiary education, while in the other three regions the need for high-skilled workers is very limited.

Figure 3.7 – Job vacancy rate, 2023



Source: Employment Service Agency – North Macedonia

4. Data and methodology

The objective of the study is twofold: first, to estimate the occupational gaps; and second, to investigate how and to what extent the wage differentials among the OBI countries may affect the labor market in terms of fulfilling the existing gaps. Both objectives refer to the Macedonian perspective, driven by the need to confine the research to manageable boundaries, as well by the data availability.

To fulfil the first objective, we use data on labor supply and demand by occupation, provided by the Employment Service Agency of North Macedonia. The obtained data on the labor demand are obtained from the Survey of Skill Needs for 2023 whereby occupations are coded according to the International Standard Classification of Occupations (ISCO-08). The obtained data on labor supply are administrative data from ESA, classified according the profile of the persons, i.e. the occupation that an unemployed person reported in ESA registry based on his/her qualification and/or prior occupation. Hence, these data do not have a corresponding code according to ISCO-08. Therefore, all occupations are appropriately coded at the 2-digit level, and then the occupational gap, at one and two-digit level, is calculated. However, we are left with a contingent of unemployed individuals who reported no occupation. As these individuals are mostly without or at most with a primary education, their joint observation with the low-skill groups of 'elementary occupations' and 'plant and machine workers' provides a satisfactory proxy of the occupational gaps. Still, we present them separately in the 'Results' section below.

We estimate occupational gaps at the national level, as well as gaps for the four bordering regions within the Open Balkan Initiative: Skopje, Polog, South-West and North-East. The negative gap, where the supply is lower than the demand, is marked in red, while the positive gap, where the supply is higher than the demand, is marked in green. It is worth accentuating that we deal exclusively with data from the registries of the ESA, so that we necessarily cannot capture potential tendencies that occurred outside the radar of ESA, like for example informal agreements, who may distort the picture presented in this study. From that viewpoint, some of the results should be considered with caution.

For the second objective, we use data from the Labor Force Surveys of North Macedonia and Serbia for the year of 2021. We had no access to the survey of Albania and decided to illustrate the role of wage differentials only on the relation between North Macedonia and Serbia. At the level of 2-digit code of the ISCO-08 classification, we compare the weighted average wages per hour usually worked

between the two countries, and then between the (aggregated) bordering regions. For Serbia, the South and East Serbia region is designated as a bordering region. The reported net wages are used, while when wage interval is reported per individual, the median wage is imputed. Hours usually worked are used, though when not reported the hours actually worked are used instead. To ensure full between-country comparability, wages are expressed in US dollars in purchasing power parity. For the estimated wage difference, standard t-test is applied to gauge statistical significance. The negative and significant difference, where the wage is particular occupation is lower in North Macedonia than in Serbia, is marked in red, while the positive and significant different, where the wage is particular occupation is higher in North Macedonia than in Serbia, is marked in green.

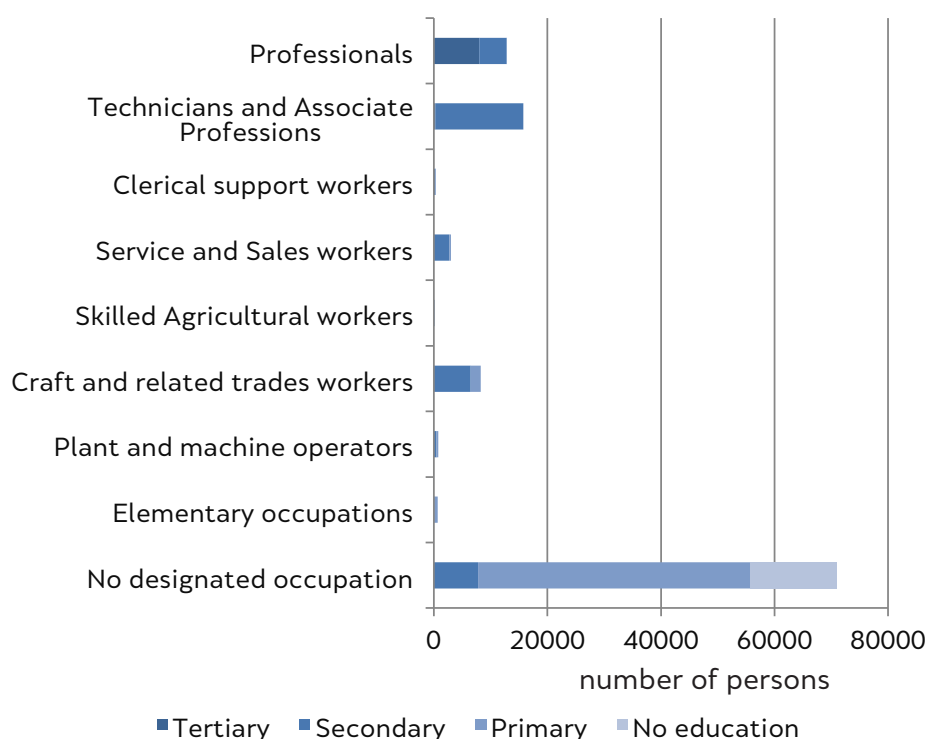


5. Results and discussion

5.1 Occupational gaps at the national level

More than 70 thousand of the registered unemployed persons in North Macedonia have no designated occupation and 90% of them have primary or no education. Even the smallest share of them with secondary education are usually those who completed a general high school (gymnasium) only, which justifies why they reported no occupation. As discussed in the methodological section, in what follows, we will mainly contrast the gap of this group with the gaps in the low-skill groups (mainly ‘elementary occupations’ and ‘machine and plant operators’), despite smaller shares of the ‘no designated occupation’ group may fit into the medium-skill occupational categories. With this in mind, the second most numerous occupational group on the labor supply side is ‘Technician and associate profession’, followed by ‘Craft and related trades workers’ and ‘Service and sales workers’. The supply of skilled agricultural workers is the lowest, only 145 (Figure 5.1).

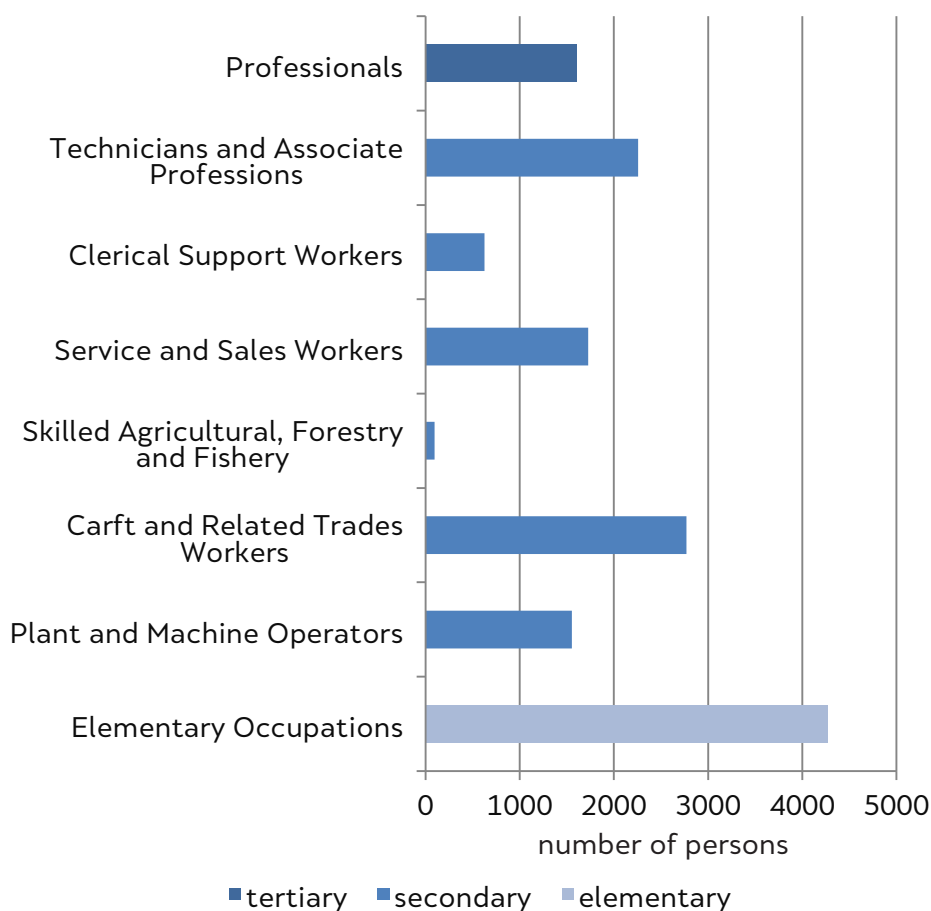
Figure 5.1 - Labor supply by occupation and education, 2022



Source: Employment Service Agency – North Macedonia

Observed by needed occupations, the demand for workers with primary education in elementary occupations (especially: refuse workers and other elementary workers and laborers in mining, construction, manufacturing and transport) is the highest, also considering that primary-educated individuals face the lowest employment and activity rates as shown in Table 1. Highly educated individuals are required as professionals only, mainly as information and communication technology professionals (48.8%) and science and engineering professionals (27.8%). More than half of the workers with secondary education are needed as craft and related trades workers, more specifically as garment workers (60.4%). Also, there is a high demand for workers with secondary education in the technicians and associate professions, mainly as administrators and mechanical and electrical engineering technicians (Figure 5.2).

Figure 5.2 - Labor demand by education and occupation, 2023

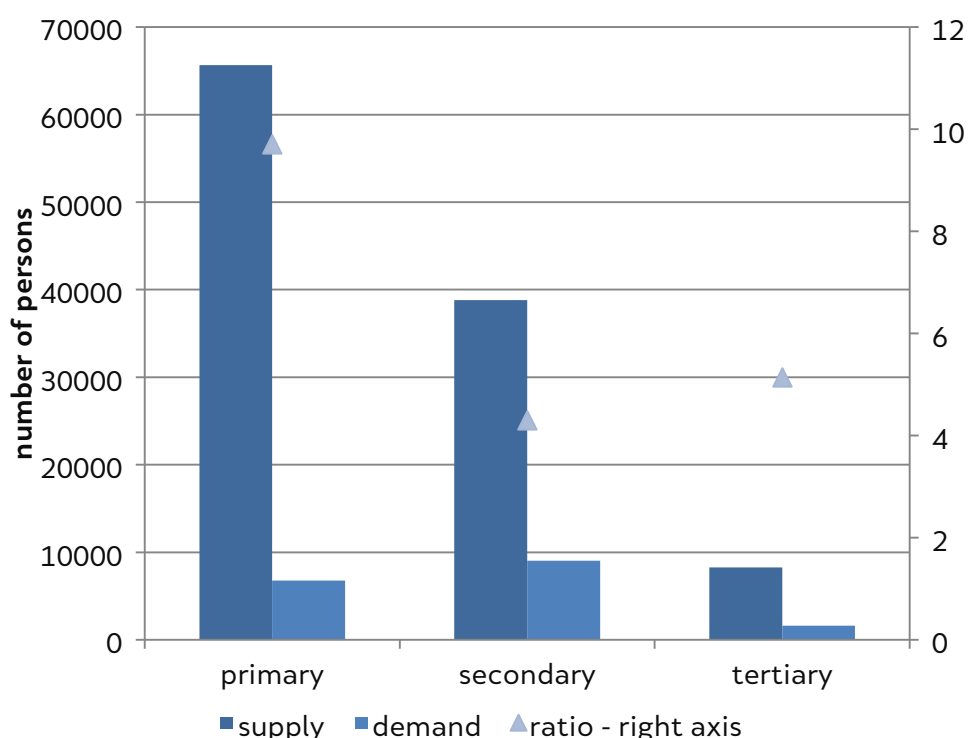


Source: Employment Service Agency – North Macedonia.

Note: For the occupational group of Managers, there is no reported labor supply or demand.

In Figure 5.3 is presented a comparative analysis of the labor supply and demand, by educational level. The ratio of 10 is the highest among workers with primary education, meaning that for each job vacancy that hires a worker with primary school, there are 10 unemployed individuals. The gap is the lowest for workers with secondary school: the labor supply is 4 times higher than the required number of workers, yet similar to the one for workers with tertiary education.

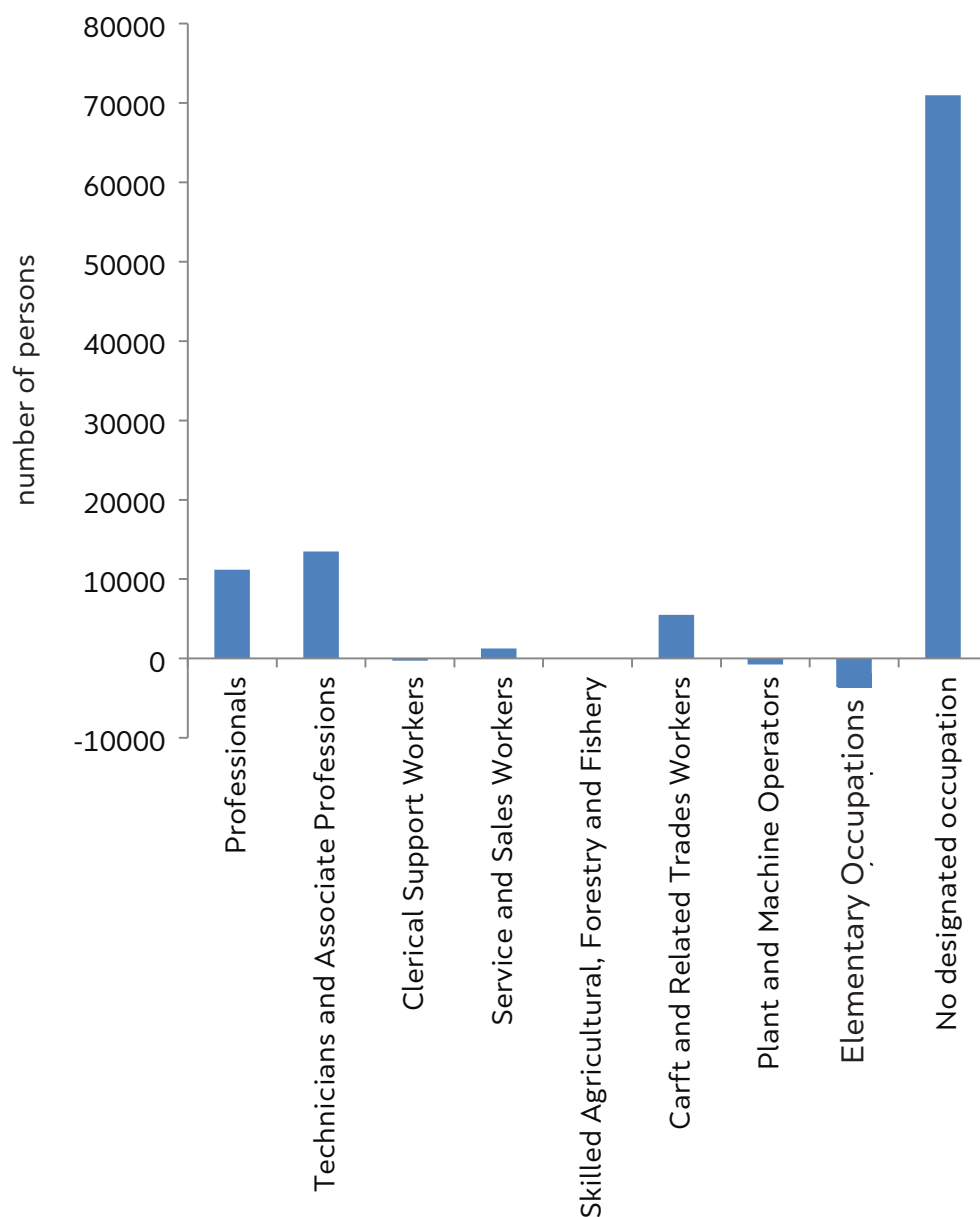
Figure 5.3 - Ratio between labor supply and demand by education



Source: Employment Service Agency – North Macedonia

In Figure 5.4 is presented the gap between labor demand and supply by major groups of occupations, where positive occupational gap means greater supply than demand and vice versa. It is the highest and positive among professionals and technical and associate professionals, suggesting that North Macedonia has on disposal surpluses of workers in the medium-to-high occupational groups; and negative yet small in three groups of occupations: clerical support workers, plant and machine operators and elementary occupations, suggesting a deficit of skills. However, when such gaps are crossed with the supply of the 'no designated occupation' group, it is evident that the low-skill occupational groups are more likely in surplus than in deficit.

Figure 5.4 – Occupational gap



Source: Employment Service Agency – North Macedonia

Note: For the occupational group of Managers, there is no reported labor supply or demand.

In Table 5.1 is further analysed the gap between labor supply and demand at the 2-digit code level of ISCO-08, revealing the deficit and surplus of labor at the national level. In this context, 13 out of 33 occupations are in supply shortage, while the labor supply is greater than demand in the remaining 20 occupations. The deficit is the largest among low-skilled workers, especially among refuse workers, elementary workers and workers in mining, construction, manufacturing and transport. However, these could be well matched by the high contingent of 'no designated occupation' group, which results in low-skill occupations being in surplus in North Macedonia.

Accordingly, the Macedonian labor market lacks 1,612 highly-qualified workers, most of them as business and administration associate professionals and information and communication technology professionals, and 711 workers with medium skills. Furthermore, the absolute surplus is dramatically high among science and engineering associate professionals (11,439) and legal, social and cultural professionals (6,935). The relative gap estimated as ratio between labor supply and demand is the highest among teaching assistants and legal, social and cultural professionals, suggesting that for each job vacancy for these occupations there are 71 and 52 potential workers, respectively. Significant relative gap, several times higher than the national average of 7.6, also exists among health associate professionals, science and engineering associate professionals, handcraft and printing workers and general and keyboard clerks.

In the context of OBI, the eased labor mobility between the neighboring countries may worsen the medium-skill occupational gap, given that more than half of the labor migrants from North Macedonia possess medium skills (OECD, 2022). Also, the remarkable development and growth of the ICT sector's contribution to the GDP in Serbia in the last years, more than 5% (Mara and Landesmann, 2022) may attract our ICT workers, further exacerbating the existing occupational gap. However, EU countries have traditionally host the most of the labor migrants, despite some changes in destinations, while the intra-regional mobility has remained low. Hence, significant changes in such destination structure can be expected if there are significant differences in the earning prospects, an issue we discuss in section 5.3.

Table 5.1 - Gap between labor supply and demand by occupation

Skill	Code	Occupation	Absolute gap - number of persons	Relative gap - %
high skill	21	Science and Engineering Professionals	1,612	5.2
	22	Health professionals	750	7.6
	23	Teaching professionals	2,178	71.3
	24	Business and administration professionals	316	3.0
	25	Information and communication technology professionals	-597	0.2
	26	Legal, social and cultural professionals	6,935	52.8
	31	Science and engineering associate professionals	11,439	19.8
	32	Health associate professionals	2,198	29.2
	33	Business and administration associate professionals	-830	0.4
	34	Information and communication technology associate professionals	137	3.5
	35	Legal, social and cultural associate professionals	-185	0.0
medium skill	41	General and keyboard clerks	281	16.6
	42	Customer service clerks	-222	0.0
	43	Numerical and material recording clerks	-267	0.1
	44	Other clerical support workers	-77	0.0
	51	Personal service workers	956	2.7
	52	Sales workers	416	1.4
	53	Personal care workers	-13	0.5
	54	Protective service workers	-79	0.4
	61	Market-oriented skilled agricultural workers	51	1.5
	71	Building and related trade workers	-53	0.8
	72	Metal, machinery and related trade workers	3,606	9.9
	73	Handcraft and printing workers	596	22.3
	74	Electrical and electronic trades workers	939	9.0

	75	Food processing, wood working, garment and other craft related trades workers	1,128	1.6
low skill	81	Stationery plant and machine operators	120	1.4
	82	Assemblers	-472	0.2
	83	Drivers and mobile plant operators	-409	0.4
	91	Cleaners and helpers	-214	0.0
	92	Agricultural, forestry and fishery laborers	52	1.5
	93	Laborers in mining, construction, manufacturing and transport	-1,496	0.2
	94	Food preparation assistant	-30	0.3
	96	Refuse workers and other elementary workers	-1,923	0.1
		No reported occupation	70,972	-

Significant surplus	Surplus	Deficit	Significant deficit
---------------------	---------	---------	---------------------

Source: Author's calculation

Note: The absolute gap shows the difference between labor supply and demand, while the relative gap is a ratio between these two categories.

5.2 Occupational gaps at level of bordering planning regions in North Macedonia

5.2.1 North-East region

The North-East region faces the highest unemployment rate in 2022, 36.3%, more than the double the national level. At the end of 2022, nearly 15 thousand citizens of the North-East region have been unemployed, which is 13.3% of the total unemployed labor force in the country. More than half are individuals with primary education, and only 6% are highly-skilled. More than 60% of the unemployed are without reported occupation, nearly 35% are professionals, technicians and craft and related trade workers, while the supply of labor in the other occupations is very low. It is expected that 674 people will be employed in the region; only 4.5% of the total active jobseekers, which is lower compared to the national ratio of 7.5%. Two-thirds of job vacancies are for workers with secondary education in three occupations: craft and related trade workers, plant and machine workers and service and sales workers, while the need for agricultural and clerical workers is inexistent.

Only six of 31 occupations in this region face lower supply than demand, with the highest gap among secondary-educated drivers and mobile plant workers and building workers operators (Table 5.2). All high-skill occupations are in surplus, excluding information and communication technicians. The surplus among technicians is led by the high supply of workers as science and engineering associate professionals, where there are 1,761 supplied potential secondary-educated workers more than the job vacancies. The high gap among craft and related trade workers occurs as a result of the high labor supply of metal, machinery and related trade workers, food processing, wood working, garment and other craft related trades workers. The surplus among the tertiary educated is the highest among legal, social and cultural professionals, where there are more than 360 unemployed economists and lawyers, and 233 unemployed teaching professionals. There is no dramatically high deficit or surplus among the workers with primary education, but the number of unemployed without reported occupation is very high and may easily fulfill the deficit of refuse workers and other elementary workers and drivers and mobile plant operators.

Table 5.2 - Gap between labor supply and demand by level of education, North-East region

	Code	Occupation	Education			Total
			primary	secondary	tertiary	
High skill	21	Science and Engineering Professionals	0	34	126	160
	22	Health professionals	0	7	60	67
	23	Teaching professionals	0	62	233	295
	24	Business and administration professionals	0	2	22	24
	25	Information and communication technology professionals	0	27	-2	25
	26	Legal, social and cultural professionals	0	492	363	855
	31	Science and engineering associate professionals	4	1,761	0	1,765
	32	Health associate professionals	0	306	0	320
	33	Business and administration associate professionals	0	23	0	40
	34	Legal, social and cultural associate professionals	0	19	0	20
	35	Information and communication technicians	0	-20	0	-20
Medium skill	41	General and keyboard clerks	10	48	0	58
	43	Numerical and material recording clerks	1	9	0	10
	51	Personal service workers	23	33	0	56
	52	Sales workers	1	106	0	107
	54	Protective service workers	0	-21	0	-21
	61	Market-oriented skilled agricultural	1	45	0	46
	71	Building and related trade workers	2	-52	0	-50
	72	Metal, machinery and related trade workers	58	546	0	604
	73	Handcraft and printing workers	37	173	0	210
	74	Electrical and electronic trades workers	25	101	0	126
	75	Food processing, wood working, garment and other craft and related trades workers	99	170	0	269

Low skill	81	Stationery plant and machine operators	13	5	0	18
	82	Assemblers	1	4	0	5
	83	Drivers and mobile plant operators	12	-85	0	-73
	91	Cleaners and helpers	-6	0	0	-6
	92	Agricultural, forestry and fishery laborers	6	1	0	7
	93	Laborers in mining, construction, manufacturing and transport	33	9	0	42
	94	Food preparation assistants	-1	0	0	-1
	95	Street and related sales workers	4	0	0	4
	96	Refuse workers and other elementary workers	-38	9	0	-29
		No occupation	7,760	1,268	0	9,028
Significant surplus		Surplus	Deficit		Significant deficit	

Source: Author's calculation

5.2.2 Polog region

Polog region characterizes with the lowest ratio between the labor demand and supply, only 1.5%, considering the relatively high labor supply of almost 23 thousand workers for whom there are only 315 job vacancies. The low number of job vacancies may be a result of the lack of large companies with more than 250 employees (only 7 in 2021), but may also indicate greater incidence of the informal economy.

The detailed analysis of the gap in the labor supply and demand shown in Table 5.3 reveals that only few, mainly low-skill occupations are in deficit. Namely, there is a lack of 68 refuse workers with primary education and 28 drivers and 15 assemblers with secondary education, occupations that may also be performed by the unemployed individuals without reported occupation. The surplus is the highest among secondary-educated workers in the high-skill occupations, especially legal, social and cultural professionals, science and engineering associates and health associate professionals. Among the 1,592 legal, social and cultural professionals there are 1,077 economists who ‘fight’ for only one job vacancy, while nearly 2,000 science and engineering associate professionals may apply for only 15 job vacancies for electrical (10), machine (4) and construction (1) technicians. Teaching professionals are ‘most endangered’ among the highly educated workers, given the high surplus.



Table 5.3 - Gap between labor supply and demand by level of education, Polog region

	Code	Occupation	Education			Total
			primary	secondary	tertiary	
High skill	21	Science and Engineering Professionals	0	22	149	171
	22	Health professionals	0	82	114	196
	23	Teaching professionals	0	32	581	613
	24	Business and administration professionals	0	1	53	54
	25	Information and communication technology professionals	0	16	-1	15
	26	Legal, social and cultural professionals	0	930	661	1,591
	31	Science and engineering associate professionals	3	1,935	2	1,940
	32	Health associate professionals	0	830	12	842
	33	Business and administration associate professionals	1	13	34	48
	34	Legal, social and cultural associate professionals	0	54	18	72
	35	Information and communication technicians	0	0	1	1
Medium skill	41	General and keyboard clerks	9	36	0	45
	43	Numerical and material recording clerks	0	-1	0	-1
	51	Personal service workers	50	128	0	178
	52	Sales workers	8	349	0	357
	53	Personal care workers	0	2	0	2
	54	Protective service workers	0	-4	5	1
	61	Market-oriented skilled agricultural	1	7	0	8
	71	Building and related trade workers	6	16	0	22
	72	Metal, machinery and related trade workers	52	352	0	404
	73	Handcraft and printing workers	19	48	0	67
	74	Electrical and electronic trades workers	19	119	0	138
	75	Food processing, wood working, garment and other craft related trades workers	209	129	0	338

Low skill	81	Stationery plant and machine operators	7	24	0	31
	82	Assemblers	1	-15	0	-14
	83	Drivers and mobile plant operators	78	-28	0	50
	91	Cleaners and helpers	1	0	0	1
	92	Agricultural, forestry and fishery laborers	17	1	0	18
	93	Laborers in mining, construction, manufacturing and transport	91	1	0	92
	95	Street and related sales workers	4	0	0	4
	96	Refuse workers and other elementary workers	-68	22	0	-46
		No occupation	13,699	1,179	0	14,878

Significant surplus	Surplus	Deficit	Significant deficit
---------------------	---------	---------	---------------------

Source: Author's calculation

5.2.3 South-West region

The labor market in the South-West region has the most job vacancies compared to the other regions: 1171, for which there are 13,874 potential workers, which is an 8.4% participation ratio. It means that for each job vacancy there are 12 potential workers, a lower number compared to 73 in Polog and 21 in the South-East region. This is probably due to the several large companies located in this region, among the key reasons. 60% of the unemployed individuals are without reported occupation, and the supply is the largest among the high-skill occupations: professionals and technicians, and among the craft and related trade workers. On the other side, the demand is the highest for the low- and medium-skilled workers, like those in elementary occupations and service and sales workers.

Table 5.4 shows that, for 10 occupations, the labor demand exceeds the supply in this region. The deficit is the highest among the low-skill occupations for workers with primary school. The lack of 323 refuse workers is the highest compared to the other occupations within the region and with the other regions. There are only 8 unemployed protective workers and 40 job vacancies. Also, there is a lack of 40 drivers and mobile plant operators with secondary education, although there are 22 available workers with primary school. However, the entire deficit can be filled with the large supply of unemployed individuals without reported occupation. The surplus is the highest for the high-skill occupations like legal, social and cultural professionals and science and engineering associate professionals, as a result of the large supply of labor, especially with secondary education, for a very low number of job vacancies.

Table 5.4 - Gap between labor supply and demand by level of education, South-West region

	Code	Occupation	Education			Total
			primary	secondary	tertiary	
high skill	21	Science and Engineering Professionals	0	60	185	245
	22	Health professionals	0	11	99	110
	23	Teaching professionals	0	33	158	191
	24	Business and administration professionals	0	14	180	194
	25	Information and communication technology professionals	0	12	-17	-5
	26	Legal, social and cultural professionals	0	421	540	961
	31	Science and engineering associate professionals	1	1,349	8	1,358
	32	Health associate professionals	0	214	14	228
	33	Business and administration associate professionals	0	-10	6	-4
	34	Legal, social and cultural associate professionals	0	10	6	16
	35	Information and communication technicians	0	-10	0	-10
Medium skill	41	General and keyboard clerks	14	1	0	15
	42	Customer service clerks	1	-10	0	-9
	43	Numerical and material recording clerks	2	-22	0	-20
	44	Other clerical support workers	0	1	0	1
	51	Personal service workers	52	192	0	244
	52	Sales workers	11	-8	0	3
	53	Personal care workers	2	0	0	2
	54	Protective service workers	0	-36	4	-32
	61	Market-oriented skilled agricultural	1	3	0	4
	71	Building and related trade workers	25	44	0	69
	72	Metal, machinery and related trade workers	126	438	0	564
	73	Handcraft and printing workers	19	18	0	37

Low skill	74	Electrical and electronic trades workers	24	147	0	171
	75	Food processing, wood working, garment and other craft related trades workers	160	97	0	257
	81	Stationery plant and machine operators	17	23	0	40
	82	Assemblers	2	-1	0	1
	83	Drivers and mobile plant operators	22	-40	0	-18
	91	Cleaners and helpers	-21	0	0	-21
	92	Agricultural, forestry and fishery laborers	16	2	0	18
	93	Laborers in mining, construction, manufacturing and transport	79	4	0	83
	94	Food preparation assistants	-11	0	0	-11
	95	Street and related sales workers	2	0	0	2
	96	Refuse workers and other elementary workers	-348	25	0	-323
		No occupation	8,342	0	0	8,342
Significant surplus		Surplus	Deficit		Significant deficit	

Source: Author's calculation

5.2.4 Skopje region

The number of job vacancies in the Skopje region is the largest, given it nests the capital of the country and the largest number of companies, especially the big ones. The ratio between labor supply and demand of 12.6% is almost double the national level, suggesting increased employment opportunities. Among the supply, two thirds of individuals are without reported occupation, and as for all other regions, the supply is the largest among the high-skill occupations. On the other side, the demand is the highest for the professionals with tertiary education which was not a case in the other regions.

The Skopje region is distinguished by the largest number of deficient occupations (14 of 33), due to the highest number of job vacancies compared to the other three regions. There are occupations in short supply for all skill levels, but the deficit is the largest among low-skilled workers with primary education like refuse workers, cleaners and helpers and drivers. However, it is not so worrying considering the 15 thousand unemployed without reported occupation. Similarly as for all other regions, highly-skilled workers with secondary education are at a disadvantage, as most of these occupations are in surplus, especially science and engineering associate professionals (mechanical technician, trade and marketing technician and garment technician) and legal, social and cultural professionals (economic technician). The deficit among the tertiary educated is the largest among information and communication technology professionals due to the large need for developers (442) and software testers (53), and a very limited supply of only 13 graduated information professionals (Table 5.5). The last may be further deepened as a result of the eased labor mobility within OBI, considering the fast growing ICT industry in neighbouring Serbia.

Table 5.5 - Gap between labor supply and demand by level of education, Skopje region

	Code	Occupation	Education			Total
			primary	secondary	tertiary	
High skill	21	Science and Engineering Professionals	0	34	117	151
	22	Health professionals	0	23	14	37
	23	Teaching professionals	0	60	275	335
	24	Business and administration professionals	0	2	-72	-70
	25	Information and communication technology professionals	0	8	-561	-553
	26	Legal, social and cultural professionals	1	568	543	1,112
	31	Science and engineering associate professionals	2	1,296	7	1,305
	32	Health associate professionals	0	157	5	162
	33	Business and administration associate professionals	0	182	8	190
	34	Legal, social and cultural associate professionals	0	-1	8	7
	35	Information and communication technology associate professionals	0	-56	0	-56
Medium skill	41	General and keyboard clerks	4	87	0	91
	42	Customer service clerks	0	-68	0	-68
	43	Numerical and material recording clerks	1	-64	0	-63
	44	Other clerical support workers	0	-3	0	-3
	51	Personal service workers	79	107	0	186
	52	Sales workers	1	41	0	42
	53	Personal care workers	0	-8	0	-8
	54	Protective service workers	0	-45	6	-39
	61	Market-oriented skilled agricultural workers	1	4	0	5
	71	Building and related trade workers	11	-20	0	-9
	72	Metal, machinery and related trade workers	19	694	0	713
	73	Handcraft and printing workers	23	93	3	119

Medium skill	74	Electrical and electronic trades workers	7	171	0	178
	75	Food processing, wood working, garment and other craft related trades workers	50	100	0	150
Low skill	81	Stationery plant and machine operators	22	58	0	80
	82	Assemblers	8	16	0	24
	83	Drivers and mobile plant operators	1	-70	0	-69
	91	Cleaners and helpers	-115	0	0	-115
	92	Agricultural, forestry and fishery laborers	35	10	0	45
	93	Laborers in mining, construction, manufacturing and transport	-69	27	0	-42
	94	Food preparation assistant	-11	0	0	-11
	95	Street and related sales workers	2	0	0	2
	96	Refuse workers and other elementary workers	-170	19	0	-151
		No occupation	14,262	1,202	0	15,464
Significant surplus		Surplus	Deficit		Significant deficit	

Source: Author's calculation

5.2.5 National and regional comparison

Table 5.6 makes a comparison of the national and regional ratios between labor supply and demand, to detect any deviation that would point out the regional characteristics of the analyzed labor markets. The labor market in the South-West region is most similar to the national average, since the ratios for only six occupations are considerably different than the national one. This is probably driven by the largest number of job vacancies compared to the regions of Polog and North-East, due to the higher number of medium-sized and large active companies (123) compared to 115 and 81 in Polog and North-East region, respectively. Contrary, the ratios for most of the occupations in the Polog region are significantly higher than the national average, suggesting that this regional labor market has very little capacity to absorb the labor supply, which means a drastic surplus of potential workers. On the other hand, the ratios for most of the high-skill occupations in Skopje region are lower compared to the national average, indicating better employment opportunities.



Table 5.6 - Ratio between labor supply and demand

	Code	Occupation	National average	North-East	Polog	South-West	Skopje
High skill	21	Science and Engineering Professionals	5.2	41	8.4	10.4	2
	22	Health professionals	7.6	8.4	50.0	56.0	1.5
	23	Teaching professionals	71.3	296*	62.3	191*	19.6
	24	Business and administration professionals	3.0	9.0	11.8	`	0.4
	25	Information and communication technology professionals	0.2	6.0	8.5	0.8	0.02
	26	Legal, social and cultural professionals	52.8	286*	1592*	962*	13.5
	31	Science and engineering associate professionals	19.8	71.6	130.3	36.7	12.5
	32	Health associate professionals	29.2	46.7		29.5	7
	33	Business and administration associate professionals	0.4	6.7	5.8	0.8	3.6
	34	Legal, social and cultural associate professionals	3.5		72		1.1
	35	Information and communication technicians	0.04				0.1
Medium skill	41	General and keyboard clerks	16.6	30.0	45	6.0	31.3
	42	Customer service clerks	0.0			0.1	
	43	Numerical and material recording clerks	0.1	4.3	0.7	0.1	0.3
	44	Other clerical support workers	0.0				
	51	Personal service workers	2.7	2.3	10.4	2.6	3.3
	52	Sales workers	1.4	2.9	14.2	1.0	1.2
	53	Personal care workers	0.5				0.1
	54	Protective service workers	0.4	0.0		0.2	0.3
	61	Market-oriented skilled agricultural	1.5				6*
	71	Building and related trade workers	0.8	0.2	2.5	5.1	0.9

Medium skill	72	Metal, machinery and related trade workers	9.9	31.2	32.1	15.8	10
	73	Handcraft and printing workers	22.3	210*	67	37.0	24.8
	74	Electrical and electronic trades workers	9.0	11.5	24.0	22.4	8.7
	75	Food processing, wood working, garment and other craft related trades workers	1.6	2.4	29.2	4.0	1.8
Low skill	81	Stationery plant and machine operators	1.4	1.6	7.2	4.6	11
	82	Assemblers	0.2		0.3	1.5	
	83	Drivers and mobile plant operators	0.4	0.2	2.5	0.8	0.2
	91	Cleaners and helpers	0.04	0.3		0.04	0.03
	92	Agricultural, forestry and fishery laborers	1.5				5.5
	93	Laborers in mining, construction, manufacturing and transport	0.2	6.3	24.0	8.5	0.5
	95	Street and related sales workers	0.3	0.0		0.2	
	96	Refuse workers and other elementary workers	0.1	0.3	0.4	0.1	0.1
Significantly higher			Significantly lower				

Source: Author's calculation

* The high ratio between labor supply and demand of teaching professionals in North-East and South-West regions is due to the only one job vacancy for such staff. Similarly, the demand for legal, social and cultural professionals is very limited in all three regions (North-East = 3; Polog = 1, South-West = 1), hence the gap is dramatically higher compared to the national level of 52.8. The same refers to the high gap for handcraft and printed workers in North-East region and for skilled agricultural in Skopje region.

Due to the proximity of the Skopje and North-East regions to neighboring Serbia, the facilitated labor mobility may cause a distortion of the regional labor markets for ICT occupations. The galloping development of this industry in Serbia, offering better employment opportunities, may increase the already existing deficit for ICT workers in both regions. Due to the limited labour demand in the Polog region, the eased labor mobility may steer the large pool of unemployed to emigrate in search of employment in Albania, considering that two-thirds of the citizens of Polog are ethnic Albanians who will not face any language barriers. Yet, the latter may be a disadvantage for the labor mobility of the citizens of the South-West region, where almost half are ethnic Macedonians.

5.3 Wage differentials

The search for higher earnings is one of the main motives for labor mobility. Countries that offer higher wages to workers can more easily meet their labor needs with labor migrants, and vice versa. In order to see if and to what extent the facilitated movement of labor within the Open Balkan Initiative can affect the outflow/inflow of labor migrants in the country, in this section we calculate the wage differentials, in order to estimate to what extent the wages for certain occupations differ between countries.

The analysis of the wage differentials for high-skill occupations reveals small or insignificant wage differences for most occupations, especially those of major group 1 (Managers) and 3 (Technicians and Associate Professionals) (Table 5.7). The second major group, Professionals, recorded a statistically significant and negative result which suggests that wages in North Macedonia are lower compared to wages in Serbia, by 6.1% for science and engineering professionals, up to around 14% for health and social professionals and 23.8% for IT professionals. The latter may further deepen the shortage of IT professionals in North Macedonia, while the lower wages for 14% may steer the pool of unemployed health and social professionals to seek employment in Serbia.

Table 5.1 earlier showed that among the medium-skill occupations, the skills deficit is highest among the clerical support workers. However, the estimated wage differentials for these occupations are statistically insignificant, suggesting that we cannot expect an increased inflow of Serbian workers who would fulfil the shortage of workers in North Macedonia. Medium-skilled service and sales workers are paid more in North Macedonia, especially personal care workers who receive almost 50% higher wages than workers in Serbia. The Open Balkan initiative can result in greater mobility of these workers from Serbia to North Macedonia, hence reducing their shortage. The estimates for three of five occupations from the major group 7 (Craft and Related Trade Workers) are positive and statistically significant, suggesting that wages in North Macedonia are higher compared to those in Serbia. However, the previous estimations showed that in North Macedonia, there is deficit of building workers only, and the higher salary of 9.5% can, to a certain extent, encourage Serbian workers to relocate in North Macedonia.

Most of the low-skill occupations in North Macedonia are in deficit, especially elementary workers and workers in mining, construction and transport. The positive wage differentials for all low-skill occupations are encouraging, hinting that higher wages in North Macedonia may attract workers from Serbia, who will fill the significant shortage of these workers. Wages are significantly higher for street

sales workers, 60%, but there are no vacancies for this occupation in the country. The wages for food preparation assistants are nearly 25% higher, which may be a trigger to fill the shortage of these workers, especially during the summer season, when Macedonian workers move to work in more developed countries like Croatia. The higher wages compared to the neighboring countries may be also a trigger for persons without reported occupation, to look for and accept jobs that they can perform, mostly elementary occupations, or through vocational training to acquire skills for occupations that face negative gap between labor supply and demand.

Table 5.7 - Wage differentials by occupation, national level

	Code	Occupation	Difference	No. of observations
High-skill occupations	11	Chief Executives, Senior Officials and Legislators	0.047	124
	12	Administrative and Commercial Managers	-0.104	89
	13	Production and Specialized Services Managers	-0.100	255
	14	Hospitality, Retail and Other Services Managers	0.315*	254
	21	Science and Engineering Professionals	-0.0619*	687
	22	Health Professionals	-0.141***	619
	23	Teaching Professionals	-0.089***	1781
	24	Business and Administration Professionals	-0.118*	558
	25	Information and Communications Technology Professionals	-0.238***	307
	26	Legal, Social and Cultural Professionals	-0.144***	849
	31	Science and engineering associate professionals	-0.016	873
	32	Health associate professionals	-0.0449**	1171
	33	Business and administration associate professionals	-0.0272	1604
	34	Legal, social and cultural associate professionals	-0.0079	198
	35	Information and communication technicians	-0.0216	179

Medium-skill occupations	41	General and keyboard clerks	0.0322	504
	42	Customer Services Clerks	0.0787***	637
	43	Numerical and Material Recording Clerks	0.0301	1023
	44	Other Clerical Support Workers	0.0056	501
	51	Personal Service Workers	0.0759***	1385
	52	Sales Workers	0.141***	3168
	53	Personal Care Workers	0.481***	258
	54	Protective Services Workers	0.106***	1085
	61	Market-oriented skilled agricultural	-0.137**	1131
	71	Building and related trade workers	0.0945**	1016
	72	Metal, machinery and related trade workers	0.0149	1322
	73	Handcraft and printed workers	0.0041	135
	74	Electrical and electronic trades workers	0.148**	525
	75	Food processing, wood working, garment and other craft related trades workers	0.071***	1291
Low-skill occupations	81	Stationery plant and machine operators	0.0061	2165
	82	Assemblers	0.099***	660
	83	Drivers and mobile plant operators	0.125***	1854
	91	Cleaners and helpers	0.0979***	1178
	92	Agricultural, forestry and fishery laborers	0.0349	361
	93	Laborers in mining, construction, manufacturing and transport	0.0565**	1107
	94	Food preparation assistants	0.244***	81
	95	Street and related sales workers	0.609*	8
	96	Refuse workers and other elementary workers	0.137***	513

Source: Author's calculations.

Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. Constant is included for each country.

In the final calculations, we estimate the wage differentials using data for the workers from the borderline regions of both countries: Skopje and North-East regions in North Macedonia and the South-East region in Serbia. Results follow similar pattern like those at the national level (Table 5.8), yet with some differences. High-skill occupations in the borderline regions are generally not paid differently between the two countries, or slightly less than in Serbia for two occupations, which indicates that there is no premium wage to encourage labor mobility. An important difference when compared to the national level is recorded for the wages of the IT workers: IT professional and technicians in the borderline regions of North Macedonia receive 37% and 21.6% higher wages, respectively, although the national data showed a reverse trend. This is probably driven by the higher wages that IT companies in the Skopje region pay, and may cause a significant inflow of Serbian IT workers from the borderline places to the IT companies based in Skopje.

The need for customer care clerks in the Skopje region is high; 68 workers are needed for each job vacancy. At the same time, the wage for these workers in the borderline regions in the county is 17.7% higher in North Macedonia, opening the possibility of attracting workers from Serbia. The results for wage differentials in low-skill occupations are the same as those at the national level, suggesting that Macedonian workers are paid more than those in Serbia. This could encourage the movement of labor but also the engaging of the domestic unemployed labor force with 'no designated occupation'.

Table 5.8 - Wage differentials according occupations, borderline regions

	Code	Occupation	Difference	No. of observations
High-skill occupations	11	Chief Executives, Senior Officials and Legislators	-0.0304	64
	12	Administrative and Commercial Managers	-0.0243	35
	13	Production and Specialized Services Managers	-0.164**	84
	14	Hospitality, Retail and Other Services Managers	0.331***	114
	21	Science and Engineering Professionals	0.0853	215
	22	Health Professionals	-0.127	186
	23	Teaching Professionals	-0.092***	527
	24	Business and Administration Professionals	0.473	237
	25	Information and Communications Technology Professionals	0.371***	89
	26	Legal, Social and Cultural Professionals	-0.0635	320
	31	Science and engineering associate professionals	-0.0012	220
	32	Health associate professionals	-0.031	364
	33	Business and administration associate professionals	0.0559	654
	34	Legal, social and cultural associate professionals	-0.0416	70
	35	Information and communication technicians	0.216***	75
Medium-skill occupations	41	General and keyboard clerks	-0.0997	129
	42	Customer Services Clerks	0.177***	195
	43	Numerical and Material Recording Clerks	0.148***	308
	44	Other Clerical Support Workers	0.1	181
	51	Personal Service Workers	0.181***	410
	52	Sales Workers	0.262***	919
	53	Personal Care Workers	0.591***	113
	54	Protective Services Workers	0.0899**	344
	61	Market-oriented skilled agricultural	-0.137	112
	71	Building and related trade workers	0.340***	344
	72	Metal, machinery and related trade workers	0.0934***	390

Medium-skill occupations	73	Handcraft and printed workers	0.213***	35
	74	Electrical and electronic trades workers	0.112	122
	75	Food processing, wood working, garment and other craft related trades workers	0.0381	395
Low-skill occupations	81	Stationery plant and machine operators	0.0062	402
	82	Assemblers	0.140***	257
	83	Drivers and mobile plant operators	0.109***	544
	91	Cleaners and helpers	0.178***	419
	92	Agricultural, forestry and fishery laborers	0.103	60
	93	Laborers in mining, construction, manufacturing and transport	0.0816**	319
	94	Food preparation assistants	0.281***	26
	95	Street and related sales workers		
	96	Refuse workers and other elementary workers	0.186***	264

Source: Author's calculations.

Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. Constant is included for each country.

6. Conclusions and recommendations

The Open Balkan Initiative aims at bringing closer and accelerating integration into the European Union of three Western Balkan countries: North Macedonia, Serbia and Albania. It is based on the four key freedoms of the EU single market: free movement of people, goods, services and capital. The Initiative, as an opportunity for regional economic integration with our neighbors, is extremely important for the Macedonian economy and should enable a faster structural adjustment to the challenges brought by the open labor market. The Initiative's effect on the domestic labor market depends on its current state, but also on the desire of policymakers to conduct structural changes.

The analysis shows that, in general, Macedonian labor market faces a greater supply of unemployed people than the demand for workers, but more deeply, there are significant differences depending on the occupational skill level that unemployed force possesses. There are large surplus gaps (greater supply than demand) in high-skill occupations, with the exception of workers in IT, reaching the maximum in educational occupations, where there are up to 71 unemployed persons for one job vacancy. On the other side, six of eight low-skill occupations are in deficit (lower supply than demand), which is particularly pronounced for service and elementary workers. The latter is probably due to the frequent emigration of these workers to other countries in search of higher earnings, but also a reflection of the notion that there is a large contingent of individuals with no designated occupation, who are frequently with low or no education, but who do not fill at least some of these gaps. Seen from the perspective of the regional integration and labor mobility, the advantages of the OBI would be fulfilling the shortages of workers, especially in the borderline regions.

The analysed borderline regions follow similar pattern as the national one, facing greater supply than demand in most of the high-skill occupations and a deficit of workers in the elementary occupations. However, again, if we take into account the large pool of unemployed individuals without reported occupation, the deficit of low-skill occupations would disappear in all regions. A slight difference is recorded in the Polog region, where the ratios for most of the occupations are significantly higher than the national average, suggesting that this regional labor market has very little capacity to absorb the labor supply, creating a drastic surplus of potential workers. Better employment opportunities in the capital of Skopje are the likely driving force of the lower ratios for most of the high-skill occupations compared to the national average.

Higher wages are the most common reason for labor migration. The higher the wage premium is, the more attractive a particular country in attracting workers from neighboring countries. However, calculations showed that in neighboring Serbia the salary premium is very small, almost insignificant, and hence, it is not expected that the destination will be chosen for relocation of Macedonia workers. However, for sectors that are seasonal in nature and cyclical in need of workers, differences in wages may appear, and this may cause additional pressure on already existing occupational gaps, like those in elementary occupations.

The OBI needs to be a stimulus for faster conduct of the structural reforms for addressing the existing labor market gaps and a starting point in the eventual opening of the labor market upon accession to the EU. An efficient policy coherence and participative dialogue between economic, educational and social stakeholders should take special care of the labor market, in order to avoid future rise of the existing gaps. Our recommendations as part of this approach include a coherent set of activities of many stakeholders that will improve the response of the Macedonian labor market during its opening to the neighboring countries and will reduce the incidence of occupational skills gaps among the labor force.

Adjusting labor market policies to prevent increase of the workers in the surplus occupations, who, unable to find suitable employment, emigrate to the neighboring countries or further:

- Regular monitoring of the occupational shortages or surpluses through deeper survey of the demanded skills needs and the labor force survey to identify deficit/surplus of certain occupations.
- Designing active labor market policies for appropriate qualification of workers without occupation into at least elementary workers. ESA, together with the service providers that offer program verification and/or further qualification, should design and deliver verified training courses and modules to the workers without occupation, and equip them with qualifications suitable for at least the low-skill occupations. Business sector should enable more numerous and more intense on-the-job training opportunities for the workers without designated occupation.
- Intensifying the labor market services for career counseling and guidance of the secondary school entrants into the VET schools, in order to decrease the supply of workers that are currently in a surplus, like science and engineering associate professionals and legal, social and cultural professionals.

Creating tailor-made educational policies to steer creation of workers in the deficit occupations, reducing the need for import of foreign workers and preventing that their prospective import plagues domestic unemployed into a very long-term unemployment:

- Activating the Skills Forecasting Observatory as a starting point for increasing attractiveness and quotas of deficit occupations.
- Intensifying the activity of the Centers for qualification, retraining and verification, with the aim of adequate retraining of unemployed workers without designated occupation who can fulfill the deficit of workers in the elementary occupations.
- Designing educational curricula that reflect the labor market needs, and intensifying the participation of the business sector in the design process.

Narrowing the gaps in the labor markets of the planning regions, through providing more employment opportunities in the domestic economy and reducing the need for emigration in search for employment in the (neighbouring) countries:

- Increasing the attractiveness among the large companies and foreign investors that create new job vacancies, through providing preferential services in the regions/municipalities where the labor demand is low and limited.
- Directing potential investors in technological industrial zones located in regions with a large number of unemployed persons (e.g. Polog region), with the aim of more balanced regional development.

7. References

- Anderson, B., Ruhs, M., Rogaly, B. and Spencer, S. (2006) Fair enough? Central and East European migrants in low-wage employment in the UK. Joseph Rowntree Foundation, London.
- Anukoonwattaka, A. and Heal, A. (2014) Regional integration and labor mobility: Linking trade, migration and development. UN Economic and Social Commission for Asia and the Pacific Studies in Trade and Investment 81.
- Australian Government Productivity Commission and New Zealand Government Productivity Commission (2012) Strengthening trans-Tasman economic relations. A joint study – Final report.
- Baldwin, R. and Venables, A. (1995) Regional Economic Integration. Handbook of International Economics, 3, p.1597-1644.
- Dustman, C., Frattini, T. and Halls, C. (2010) Assessing the fiscal costs and benefits of A8 migration in the UK. Fiscal Studies, 31(1), p.1-41.
- European Union (2010) EU Citizenship Report: Dismantling the obstacles to EU citizen's rights.
- Finance Think (2023) Policy Brief No. 61: How will the workforce move in the Open Balkan? Critical review of the proposed regulatory framework and the existing regulation on work for foreigners. Finance Think – Economic Research & Policy Institute.
- International Labor Organization (2015) ILO global estimates on migrant workers: Special focus on domestic migrant workers. International Labor Office – Geneva.
- International Labor Organization (2021) ILO Global estimates on international migrant workers: Results and methodology. International Labor Office – Geneva.
- International Organization for Migration (2022) World migration report 2022. International Organization for Migration – Geneva.
- Kahanec, M., Pytlikova, M. and Zimmermann, K. (2014) The free movement of workers in and enlarged EU: Institutional underpinnings of economic adjustment. IZA Research Report No. 8456.

Mara, I. and Landesmann, M. (2022) Use it or lose it? How do migration, human capital and the labor market interact in the Western Balkans? European Training Foundation Report.

Migration Data Portal (2020) 5 salient facts about intraregional migration in South America. Available at: <https://www.migrationdataportal.org/blog/5-salient-facts-about-intra-regional-migration-south-america#:~:text=Nowadays%20in%20South%20America%2C%20the,residing%20elsewhere%20in%20the%20world.&text=Annual%20South%20American%20inflows%20to,2015%20to%20256%2C210%20in%202018>

Migration Policy Institute (2021) The Eurasian Economic Union: Repaving Central Asia's road to Russia. Available at: <https://www.migrationpolicy.org/article/eurasian-economic-union-central-asia-russia>

Migration Policy Institute (2021) Top statistics on global migration and migrants. Migration Policy Institute – Washington.

Nikoloski, D. and Apostolovska-Toshevska, B. (2019) The factors affecting emigration and its implications on the skills shortages: Evidence from the Republic of North Macedonia. In: 6th Scientific Conference "Economy of Integration" ICEI 2019, 5-7 December, Tuzla.

OECD (2009) International Migration Outlook 2009. Paris: OECD Publishing.

OECD (2022) Labor migration in the Western Balkans: Mapping patterns, addressing challenges and reaping benefits. OECD Publishing.

Safi, M. (2010) Immigrants' life satisfaction in Europe: Between assimilation and discrimination. European Sociological Review, 26(2), p.159–176.

United Nations (2017) Handbook on measuring international migration through population censuses. United Nations: Department of Economic and Social Affairs – New York.

United Nations (2014) Regional integration and labor mobility: Linking trade, migration and development. United Nations Economic and Social Commission for Asia and the Pacific

