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LABOUR FORCE AS A COMPONENT OF THE ECONOMY

Radna snaga kao element ekonomije

Abstract

According to MIP (Macroeconomic Imbalance Procedure) indicators, it can be concluded that there have been positive changes in the labour market over the past decade in Serbia. Most of the indicators, such as the activity rate, youth unemployment rate, and long-term unemployment rate, remained stable during this period. However, these indicators also showed that the situation in the Serbian labour market was considerably less favourable than in EU countries, although more favourable than in Western Balkan countries. The following text will delve into the main characteristics of the labour market in Serbia and the changes that have occurred over the past decade. We will explore the key causes and consequences of imbalances, with the first part of the paper focusing on labour force loss due to emigration and the second part analysing employment trends in Serbia during the second decade of the 21st century. We will also examine the most important characteristics of the labour force in Serbia and how labour market supply and demand are perceived. Finally, we will present the results of the Labor Cost Survey, which enables a comparison of the labour market situations in Serbia and the European Union.

Keywords: *labour market, labour force, emigration, employment, skills mismatch*

Sažetak

Prema MIP indikatorima (Macroeconomic Imbalance Procedure) može se zaključiti da je u Srbiji tokom protekle decenije došlo do pozitivnih promena na tržištu rada. Većina indikatora, kao što su stopa aktivnosti, stopa nezaposlenosti mladih i stopa dugoročne nezaposlenosti, ostali su stabilni tokom ovog perioda. Međutim, ovi pokazatelji su takođe pokazali da je stanje na tržištu rada u Srbiji znatno nepovoljnije nego u zemljama EU, ali povoljnije nego u zemljama Zapadnog Balkana. U nastavku teksta biće reči o osnovnim karakteristikama tržišta rada u Srbiji i promenama koje su se desile u protekloj deceniji. Istražićemo ključne uzroke i posledice neravnoteža, pri čemu će se prvi deo rada fokusirati na gubitak radne snage usled emigracije, a drugi deo analizira trendove zapošljavanja u Srbiji u drugoj deceniji 21. veka. Takođe ćemo ispitati najvažnije karakteristike radne snage u Srbiji i kako se percipira ponuda i potražnja na tržištu rada. Na kraju ćemo predstaviti rezultate Istraživanja o troškovima rada, koje omogućava poređenje stanja na tržištu rada u Srbiji i Evropskoj uniji.

Ključne reči: *tržište rada, radna snaga, emigracija, zaposlenost, neusklađenost veština*

Introduction: Indicators (labour market) for monitoring macroeconomic imbalances

In response to the economic and financial crisis, the European Union introduced the Macroeconomic Imbalance Procedure (MIP) in 2011. The MIP is a surveillance mechanism that aims to identify potential macroeconomic risks early, prevent the emergence of harmful imbalances and correct existing ones. It is a tool for adequate and timely management of macroeconomic policies in EU member states.

The European Commission produces the Macroeconomic Imbalance Procedure (MIP) based on the Alert Mechanism Report (AMR). The AMR uses defined indicators for monitoring macroeconomic imbalances (MIP indicators), presented in a scoreboard called the MIP Scoreboard. There are 14 headline indicators that monitor short-term and long-term macroeconomic imbalances, with each indicator having a defined reference value for evaluating the achievements of EU member countries. The European Commission reviews these indicators to determine if there are excessive macroeconomic imbalances and considers launching the procedure if necessary. The headline MIP indicators[1] cover external imbalance and competitiveness (such as the current account balance, real effective exchange rate, export market share, and nominal unit labour cost), internal imbalances (such as debts, financial market movements, real estate market movements, and unemployment), and employment indicators. Four of the 14 headline indicators are related to the labour market, including the unemployment rate, activity rate, long-term unemployment rate, and youth unemployment rate

(aged 15-24). The publication *Trends* analyses recent data on MIP indicator trends for Serbia in depth [9], focusing specifically on MIP indicators related to the labour market.

One of the indicators for measuring internal imbalances is the unemployment rate (aged 15-74)[2], which is monitored as a three-year moving average. The reference value for this indicator is 10%, indicating that the share of unemployed individuals in the labour force should not exceed 10%. This indicator is monitored to assess the mid-term capacities of the labour market adaptation, as high unemployment can signify an unfavourable allocation of resources in the economy and inadequate capacity for the economy to adapt. In Serbia, the unemployment rate (aged 15-74) has considerably improved over the last ten years, with a decrease from 25.0% in 2011 to 11% in 2021, just above the set reference value of 10%. However, the unemployment rate is still higher than in most EU countries, except for Spain and Greece. When compared to other Western Balkans countries, Serbia had the lowest unemployment rate in 2021, with Albania following closely behind with 11.5%, while Bosnia and Herzegovina had the highest rate of 17.4%.

The second indicator is the activity rate (15-64)[3], measured as a three-year change in percentage points (pp.). The reference value for this indicator is a change of -0.2 pp. The activity rate provides insight into labour force dynamics, including employed and unemployed persons leaving the labour force due to retirement or discouragement in finding a job, as well as the integration of new individuals into the labour market. The activity rate reflects how successful the economy is in engaging the population in any form of production of goods or services. The activity rate also has relevance in analysing the impact on potential output or GDP, as low activity implies reduced labour offers and unused production capacity in a country's economy. The activity rate exceeded the reference value during the observed period, and it is far from the set alert

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1   MIP indicators are divided into three groups. The first group includes *external imbalance indicators*: Current Account Balance (% of GDP) - three-year moving average, Net International Investment Position (% of GDP) – current year, Real Effective Exchange Rate - 3 year % change, Export Market Share - % change (5 years). The second group consists of *internal imbalance indicators*: Deflated House Prices Index, % change (1 year), Private Sector Credit Flows, consolidated, (% of GDP), Private Sector Debt, consolidated, (% of GDP), Unemployment rate – three-year moving average (%), Total Financial Sector Liabilities, not consolidated - % change (1 year). The third group is made of *employment indicators*: Activity Rate - % of total population aged 15-64 (three-year change in pp.), Long-term Unemployment Rate (three-year change in pp.), Long-term Unemployment Rate - % active population aged 15-74 (three-year change in pp.), Youth Unemployment Rate - % active population age 15–24 (three-year change in pp.).

2   *Unemployment rate* is the share of the unemployed (aged 15-74) in the labour force, i.e. active population (active population consists of employed and unemployed persons) of the same age.

3   *Active population* (*labour force*) is made of all employed and unemployed persons. *Activity rate* is the share of active population in total reference population.

limit. The activity rate for the population aged 15-64 was 59.4% in 2010, rising to 70.3% in 2021.

The long-term unemployment rate is the third indicator monitored as a three-year change, represented as the share of long-term unemployed individuals (more than one year) in the active population aged 15-74. The reference value for this indicator is a change of 0.5 pp. High long-term unemployment rates indicate that the labour market is not functioning well, implying obstacles in the labour market. Long-term unemployment monitoring helps assess employment trends, as longer unemployment durations lead to smaller chances of re-employment. Serbia experienced an imbalanced situation in 2011 and 2012, with this rate recording better results than the reference values afterward. The long-term unemployment rate in Serbia has been constantly decreasing since 2014, although the share of long-term unemployment in the total unemployment (15-74) remained high, amounting to 54.8% in 2020. In comparison, the highest average value of the long-term unemployment share in total unemployment (15-74) in the EU-27 was recorded in 2016 and amounted to 48.5%, while in Serbia the same indicator was 74.1%. Among Western Balkan countries, Serbia had the smallest long-term unemployment share in total unemployment, with Albania coming in slightly under 60% in 2020. Other Western Balkan countries had long-term unemployment accounting for over 70% of total unemployment.

The youth unemployment rate (aged 15-24), expressed as the percentage of young people in the active population of the same age, is measured over a three-year period, with a reference value of 2 percentage points. This indicator is also monitored in order to alert early on the decline in labour market situation and detect decreased potential output due to the deterioration of acquired skills and unrealised salaries in the future, with multiple social consequences and increase of social exclusion. During the entire observed period, Serbia had very good results – moreover, the youth unemployment rate was constantly decreasing. In 2013, this rate amounted to 52% and fell to 26.4% in 2021. However, over the whole observed period this indicator was considerably over the EU average. In 2021, higher youth unemployment rates than that of Serbia were recorded in Greece (35.5%), Spain (34.8%),

and Italy (29.7%). Among Western Balkans countries only in Serbia and Albania, the youth unemployment rate was under 30%, and above 35% in the other countries (North Macedonia, Bosnia and Herzegovina, and Montenegro).

When examining labour market-related MIP (Macroeconomic Imbalance Procedure) indicators, it can be concluded that there have been positive changes in the labour market over the past decade. Most of the indicators, such as the activity rate, youth unemployment rate, and long-term unemployment rate, remained stable during this period. However, these indicators also showed that the situation in the Serbian labour market was considerably less favourable than in EU countries, although more favourable than in Western Balkan countries.

The following text will delve into the main characteristics of the labour market in Serbia and the changes that have occurred over the past decade. We will explore the key causes and consequences of imbalances, with the first part of the paper focusing on labour force loss due to emigration and the second part analysing employment trends in Serbia during the second decade of the 21st century. We will also examine the most important characteristics of the labour force in Serbia and how labour market supply and demand are perceived. Finally, we will present the results of the Labor Cost Survey, which enables a comparison of the labour market situations in Serbia and the European Union.

Emigration-induced labour force loss

The issue of emigration has been a phenomenon for several decades, and measuring its volume and effects has always posed significant challenges. The lack of an efficient legal mechanism to compel citizens leaving the country to deregister their place of residence has made it impossible to establish official statistics on external migrations. Therefore, only estimations, using different approaches and data sources, can be made with varying degrees of accuracy.

One way to understand migration volume is through the population census and comparing census data with available immigration statistics in destination countries (known as mirror statistics). Immigration is subject to stricter regulation as destination countries require

individuals to apply for a residence visa, working permit, and other documentation.

Starting from the conclusion that Serbia "mostly exports workers, and much less people" [1] and that employment-related migration became the dominant category of migration flows, as shown by the data on abrupt gross outflow of emigrants from Serbia towards European Union countries in the second half of last decade, we will deal here with the analysis of data from the Eurostat database on residence permits issued for the first time to Serbian citizens by EU member countries. While we recognize the limitations of Eurostat statistics in capturing the full scope of Serbian emigration, these statistics offer harmonization and uniform methodological principles. The data will be useful in assessing the minimum labour force loss over the past decade.

Eurostat statistics on residence permits pertain to third-country citizens, or individuals who are not EU citizens, who have received a residence permit or authorization to reside in one of the EU member countries or EFTA countries. The data are based on administrative sources and are primarily provided by ministries of internal affairs or related immigration agencies. EU member countries are required to transmit data on residence permits to Eurostat in accordance with the Regulation adopted by the European Parliament and Council on Community statistics on migration and international protection. A

residence permit is any authorization valid for at least three months issued by the authorities of a member country that allows a third-country citizen to legally reside in its territory. The first residence permit is a permit issued to a person for the first time, and it is considered a first permit even if the time gap between the expiry of the old permit and the start of validity of the new permit issued for the same reason is at least six months, regardless of the year of issuance of the permit. Therefore, the data analysed in this study only pertains to EU countries.

Data on first residence permits for the EU-27 have been available since 2013. According to Table 1, the number of first residence permits has been increasing consistently and rapidly from 2013 to 2019, reaching its peak in 2019. However, in 2020, due to the pandemic, the number fell considerably, but still remained high at over 40,000 a year. Family-related permits were dominant until 2016, although this type of permit did not prevent emigrants from working abroad. Working permits have dominated since 2017. Employment-related emigration peaked in 2019, with a minimum of 32,000 Serbian citizens finding employment in EU countries. The coronavirus pandemic and border closures slowed down this trend, and in 2021 slightly more than 17,000 persons received a residence permit for employment reasons, while the number of residence permits for family reasons was approximately the same.

Table 1: First residence permits to Serbian citizens* in EU-27 by reasons for issuing residence permits

GEO (Labels)	European Union - 27 countries (from 2020)				
TIME	Total	Family reasons	Education reasons	Employment reasons	Other reason
2010	:	:	:	:	:
2011	:	:	:	:	:
2012	:	:	:	:	:
2013	23,770	10,685	2,252	5,293	5,540
2014	24,367	10,762	2,086	5,760	5,759
2015	26,603	13,013	2,222	6,367	5,001
2016	30,572	12,663	2,249	9,212	6,448
2017	39,707	13,534	2,342	17,215	6,616
2018	51,056	15,293	2,359	26,925	6,479
2019	62,373	15,667	2,336	32,639	11,731
2020	41,008	13,644	1,462	16,246	9,656
2021	44,182	17,349	2,014	17,258	7,561
Total in the period	**343,638**	**122,610**	**19,322**	**136,915**	**64,791**
Special value:	not available				

*   Due to the possibility of having dual citizenship and to the fact that inhabitants of Kosovo and Metohija can have the citizenship of the Republic of Serbia, this number may include persons who are not usual population of the Republic of Serbia.

Source: Eurostat, First permits by reason, length of validity and citizenship [4]

During the observed period, first permits for education reasons showed extreme stability, with slightly more than 2,000 persons going to study in the European Union every year, except during the pandemic year when less than 1,500 Serbian citizens had the possibility to leave the country for education reasons.

Residence permits are classified into three groups based on validity length: 3-5 months, 6-11 months, and 12 months and more. Looking at the structure of total residence permits by validity length in Figure 1, permits issued for one year and longer prevail throughout the observed period, with their share in total issued permits not falling below 60% since 2015.

However, as far as residence permits for employment reasons are concerned (Table 2), permits issued for a period of 6 to 11 months were dominant until 2015. In 2013 and 2014, their share in the total issued residence permits based on employment accounted for 58% and 56%, respectively, while the number of residence permits issued for a period exceeding one year accounted for 26% and 27% of the total issued residence permits for employment reasons.

In 2015, the situation overturned, and the number of residence permits issued for employment reasons with a validity period longer than a year increased and became equal to the number of permits issued for a period of 6 to 11 months. In 2016, the share of permits with a validity period longer than a year reached 55% of the total residence permits issued for employment reasons, while those with a validity period of 6-11 months fell to 35%. This trend continued until the end of the observed period in 2021, with permits for a period longer than a year accounting for more than 50% (in 2018 even 60%) and those with a validity period of 6-11 months up to 35%. The proportion of residence permits issued for employment reasons with a validity period of 3-5 months accounted for 16% of the total residence permits issued for employment reasons in 2013, and it fell to 12% in 2021.

Unfortunately, data on first residence permits by age of emigrants are not available for the EU-27 as a whole but are available for most of the observed countries during the period. Available data indicate that more than 70% of Serbian citizens who received first residence permits for any reason were in the age group of 20-64 years and this age group accounted for approximately 85% of total residence permits issued in 2018 and 2019.

When examining the age structure of emigrants by reason for the residence permit, it can be observed that in the group of individuals who received a residence permit for family reasons, there were approximately 65% of individuals aged between 20 and 64 during the period from 2013-2021. The group of individuals with the first residence permit for other reasons consisted of 49% of individuals aged between 20 and 64. Hence, it is evident that a substantial number of individuals who did not declare that the reason for their stay abroad was employment belong to the working-age group. As for individuals who received a residence permit for the reason of employment, it is not necessary to establish whether they are in the usual

Figure 1: First residence permits issued to Serbian citizens in EU-27 according to length of validity
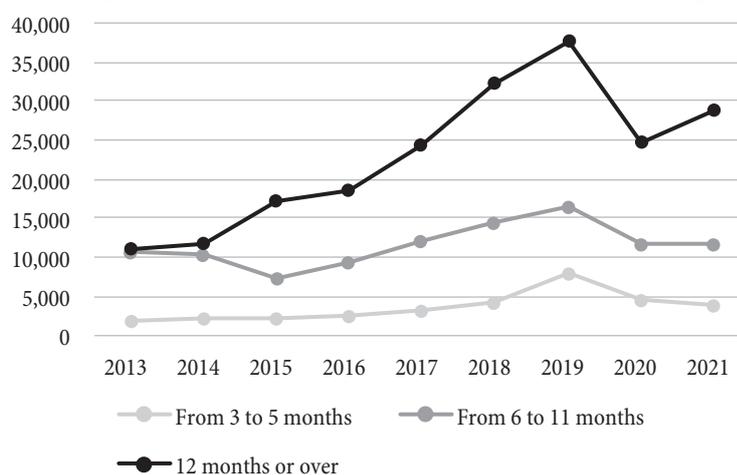
working-age group, having in mind that they declare that the reason for resident permit is work.

Table 2: First residence permits to Serbian citizens in EU-27 by reason and length of validity

TIME	Total	From 3 to 5 months	From 6 to 11 months	12 months or over
Employment reasons				
2013	5,293	828	3,091	1,374
2014	5,760	974	3,211	1,575
2015	6,367	1,039	2,641	2,687
2016	9,212	931	3,248	5,033
2017	17,215	1,622	5,713	9,880
2018	26,925	2,691	8,062	16,172
2019	32,639	4,917	10,435	17,287
2020	16,246	2,016	5,627	8,603
2021	17,258	1,559	5,655	10,044
Total in the period (employment reasons)	**136,915**	**16,577**	**47,683**	**72,655**
Education reasons				
2013	2,252	192	1,353	707
2014	2,086	163	1,245	678
2015	2,222	185	835	1,202
2016	2,249	307	1,042	900
2017	2,342	375	1,026	941
2018	2,359	335	1,052	972
2019	2,336	322	933	1,081
2020	1,462	156	731	575
2021	2,014	193	682	1,139
Total in the period (education reasons)	**19,322**	**2,228**	**8,899**	**8,195**
Family reasons				
2013	10,685	262	3,730	6,390
2014	10,762	331	3,500	6,551
2015	13,013	372	2,450	10,191
2016	12,663	308	3,147	9,208
2017	13,534	279	3,133	10,082
2018	15,293	365	3,204	11,696
2019	15,667	623	2,611	12,320
2020	13,644	640	2,924	10,064
2021	17,349	933	3,817	12,599
Total in the period (family reasons)	**122,610**	**4,113**	**28,516**	**89,101**
Other reason				
2013	5,540	605	2,399	2,536
2014	5,759	608	2,307	2,844
2015	5,001	531	1,242	3,228
2016	6,448	837	2,071	3,540
2017	6,616	797	2,266	3,553
2018	6,479	913	2,090	3,476
2019	11,731	2,185	2,657	6,889
2020	9,656	1,782	2,413	5,461
2021	7,561	1,262	1,474	4,825
Total in the period (other reasons)	**64,791**	**9,520**	**18,919**	**36,352**

Source: Eurostat, First permits by reason, length of validity and citizenship [4]

If we allow ourselves to sum up the number of first working permits issued to Serbian citizens for a period longer than a year[4] in the territory of the EU-27 from 2013 to 2020 for the purpose of calculating the lowest limit of labour force loss in the previous period, we come to the number of 72,600 (Table 2). *Therefore, over the period 2013-2021, 72,600 Serbian citizens found employment in the EU.*

It would not be unreasonable to add to this figure the estimated number of individuals within the usual working age range of 20-64 years who received a residence permit for a period longer than a year for reasons other than employment (such as family or other unspecified reasons). Between 2013 and 2021, the total number of residence permits issued for family reasons for a period longer than a year was 89,000, and assuming that 65% of these permits were granted to individuals aged 20-64 years, the number of such individuals would be 58,000. Similarly, there were 18,000 individuals within the same age group who received a residence permit for other unspecified reasons during the same period.

By summing up the aforementioned categories of individuals (i.e. all individuals with a residence permit for employment regardless of age, those aged 20-64 with a residence permit for family reasons, and those aged 20-64 with a residence permit for other reasons) who received their first residence permit for a period longer than a year, we come to the number of *148,000 that we will now consider as a minimum labour force loss in the period 2013-2021.*

Based on preliminary data from the 2022 Population Census, 6,690,000 persons live in the Republic of Serbia (of whom 6,470,000 were enumerated in a traditional way, by direct enumeration, and 218,000 who did not participate in the census for any reason were added to the Census database from administrative sources). In the 2011 Census, the number of inhabitants was 7,187,000, but due to non-coverage, this number needs to be adjusted. After adding an estimated non-enumerated population of 220,000 and non-enumerated Albanians in the municipalities of

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4   We start from the assumption that persons who received a residence permit in EU countries for a period longer than a year emigrate for a long period, that there is a number of duplications among them, i.e. there are those who apply again for a first residence permit (in EU-27 countries) 6 months after they returned from work abroad, is reduced to a minimum.

Bujanovac and Presevo (approximately 47,000), knowing that, unlike in 2011, in 2022 Albanians did not boycott the census, the adjusted number of inhabitants in 2011 was 7,470,000. Therefore, the number of inhabitants decreased by approximately 780,000 between the two censuses.

If we compare only the data from the traditional census (excluding imputations from administrative sources in 2022 and without the estimation of non-coverage from the same sources in 2011), the difference in the number of inhabitants between the two censuses was about 760,000. After subtracting the negative natural increase of approximately 470,000, the negative migration balance is approximately 300,000 inhabitants. When we add to this number the number of persons who immigrate to Serbia from abroad in the inter-census period, we obtain the estimation of emigration in the previous decade. The number of persons who moved in the current place of residence from abroad in the period between the two censuses amounted 82 000[5].

Therefore, the number of emigrants from Serbia in the period between Census 2011 and Census 2022 was slightly more than 380,000, which can be considered as an approximate upper limit of emigration in the period from 2011 to 2022.

In the mirror of the upper limit of emigration, based on the preliminary data of the Population Census, the sum of all residence permits issued for the first time to citizens of Serbia in the EU-27 from 2013 to 2021, which amounts to 343,000, seems quite reasonable (Table 1).

Population census collects data on absent household members, length, and reason of their absence. These data, besides numerous limitations concerning data coverage, still represent an important source of data on the emigration structure. The limitation referring to the coverage is that data on persons working abroad can be collected only for those persons having household members in Serbia who could provide data for them. Therefore, if an entire family has emigrated and there is no one to provide data

about them during the census in Serbia, those persons are not covered.

The preliminary data of 2022 Census on absent persons abroad confirm that EU countries are the prevailing countries of emigration among Serbian citizens, irrespective of the length of work, i.e. stay abroad. Namely, more than 50% of those persons working/residing abroad go to three European countries: Germany, Switzerland and Austria, and only slightly more than 11% of absent persons work/reside in non-European countries, i.e. 13% outside the EU+EFTA territory.

In this phase of census data processing, only data on the educational structure of absent persons are available, while data on occupations of the absent persons will be available later on, after the coding phase.

For the needs of this analysis, the absence length of persons abroad is divided into three groups: less than a year, 1-10 years and 11 and more years, and we will observe the persons who are absent from their place of enumeration for less than 11 years in order to eliminate those who emigrated before 2011.

The preliminary Census 2022 data (Figure 2) indicate that, irrespective of the absence length among persons working/residing abroad, the predominant group is made of persons with secondary educational level, with a growing tendency of their share in the last 11 years. The share of those with tertiary educational level in the last 12 months is considerably smaller when compared to the period 2011-2021, when they accounted for almost 30% of absent persons. Unlike persons with tertiary educational level, the share of those with lower educational level or without it started to rise again after a period of decrease (2011-2021).

The trend of finding employment outside Serbian borders has not stopped, it has started accelerating again after the two pandemic years (2020 and 2021), which is proved by the data of the recent census on the number of persons being absent from the usual place of residence less than a year. At the critical moment of the census (September 30, 2022), almost 45,000 persons were absent from their place of residence for less than a year due to work abroad, and slightly more than 18,000 resided abroad for less than a year as a household member of a person

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5   The question in the census refers to the last emigration – from where the person has immigrated in the place where she/he is enumerated (place of usual residence). This means that a person could have immigrated from abroad, i.e. in Novi Sad in 2012, and move to Belgrade in 2015, where she/he was enumerated. In such a case one cannot see whether a person immigrated from abroad.

Figure 2: Structure of absent household members aged 15-64, by the highest completed educational level and absence length, in %
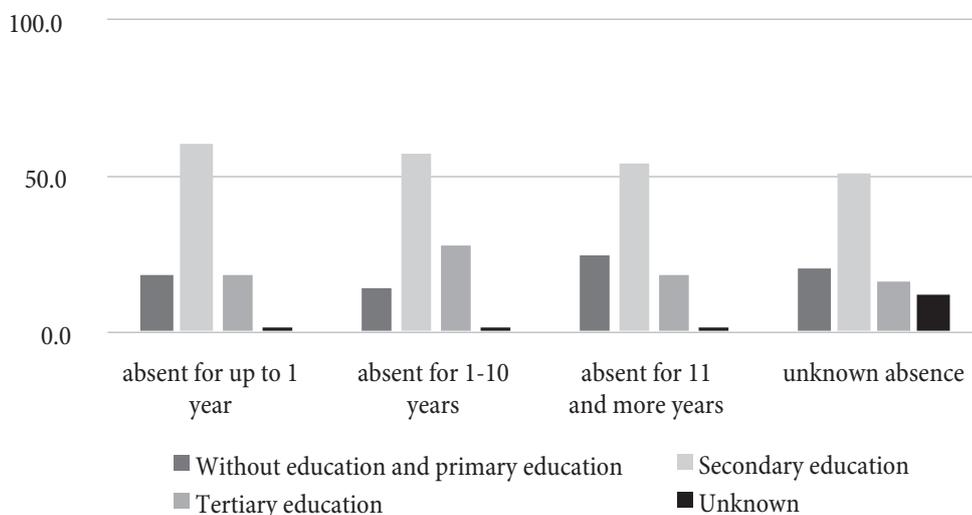
Source: 2022 Population Census (preliminary data)

working abroad. These data refer primarily to 2022 and it remains to wait what Eurostat statistics on first residence permits issued for 2022 will show when it is released at the end of 2023.

Employment trend in Serbia

There are two sources of data that can be used to monitor employment trends in Serbia. The first is the Labour Force Survey (LFS), which adheres to the standards and recommendations of the International Labour Organisation and regulations of the European Statistical Office (Eurostat). The LFS provides information on three main population groups – employed, unemployed, and persons outside the labour force – as well as their demographic, socio-economic, educational, and other characteristics. It is conducted on a random sample of households and includes both formal and informal employment. The survey covers all individuals who have performed paid work for an employer, are self-employed, or as contributing family member, as well as persons who have an employment from which they are absent, and for whom there is a guarantee that they will return.

The second source is the Survey on Registered Employment, which uses records from the Central Register of Compulsory Social Insurance (CRCSI) and Statistical Business Register (SBR). Registered employment is survey

that covers only formally employed individuals. It includes individuals with a status of employee (for a definite or indefinite period), those who work on a service contract or temporary/occasional jobs, those insured for self-employment activities, founders of enterprises or entrepreneur shops, and individual agricultural producers aged up to 65.

According to the Labour Force Survey, there were over 2.8 million employed persons in 2021, representing an increase of 418,400 or 17.1% compared to 2010. The years with the highest record of employment growth were 2014 and 2016, with a year-on-year increase of 112,000 and 139,000, respectively.

Between 2010 and 2021, the employment structure experienced both positive and negative changes.

When examining the types of employment among individuals aged 15-64, including permanent, fixed-term, seasonal, and occasional, there were not such positive changes from 2010 to 2021. The proportion of permanent employment, which remains the predominant type of employment, decreased from 88.5% in 2010 to 77.4% in 2021. Conversely, there was an increase in fixed-term employment, rising from 8.7% in 2010 to 19.1% in 2021, as well as a growth in temporary and occasional employment, from 1.3% in 2010 to 2.0% in 2021. The percentage of seasonal workers remained at around 1.5%.

One of the positive trends in employment is the decrease of informal employment, which is an important

characteristic in the world labour market with millions of workers, earning a living in circumstances of informality. Sustainable Development Goals (SDGs), which measure progress towards inclusive, sustainable economic growth, full and proactive employment, and decent work for all, include the share of informal employment in total employment as an indicator.

While data on formal and informal employment is only available for a shorter period than that observed, it is enough to demonstrate the trend of decreasing informal employment and increasing formal employment. Between 2015 and 2020, formal employment increased by just over 404,000, with most of the increase occurring outside agriculture (357,000). In contrast, informal employment decreased by nearly 69,000, with 67,000 of the decrease occurring in agriculture. Informal employment rates decreased from 20.4% in 2015 to 16.4% in 2020. Informality in employment is primarily concentrated in agriculture and disproportionately affects female workers. The informal employment rate in agriculture was 61.0% in 2015, decreasing to 57.4% in 2020. Among males, the informal employment rate decreased from 47.8% to 43.4% over the five-year period, while among females, the informal employment rate was 83.4% in 2015 and decreased to 77.7% in 2020.

The volume of informal employment outside agriculture is considerably smaller than that of informal employment in agriculture and affects mostly the male population. Informal employment rate outside agriculture in 2015 amounted to 9.3% and up to 2020 to 6.8%. In 2020, informal employment rate outside agriculture in male population was 8.5%, and in female population 4.7%, and when compared to 2015 they decreased by 2.3 pp. and 2.6 pp., respectively.

Formal employment can be measured from another data source as well. The data of the Survey on Registered Employment, based on CRCSI data, allow more precise monitoring of employment trend at lower levels of activities and, unlike with the Labour Force Survey, a longer comparable time series is available. Registered employment (without registered individual agricultural producers) increased by 311,400, i.e. 16.4% over the period 2010-2021. In this case, 2018 stands out as a key year,

when a year-on-year increase in registered employment of more than 75,000 was recorded. The largest employment growth in the period starting from 2010 was recorded in Manufacturing (88,405) which employed almost half a million people in 2021, i.e. accounted for more than 20% of total registered employment. Almost half of the growth of employment in Manufacturing in the last eleven years was concentrated in the division Manufacture of motor vehicles, trailers and semi-trailers, which employed 18,000 persons in 2010, and more than 57,000 in 2021. The section of activity where employment doubled in the previous decade is Administrative and support service activities which employed less than 50,000 persons in 2010 and more than 105,000 in 2021. This section includes activities such as temporary employment, security and investigation activities, services to buildings and landscape activities, office administrative, office support and other business support activities, etc. When referring to employment increase in this section of activities we refer to the increase in the short-term, to lowly qualified, insecure, and poorly paid employment. This is not only typical of Serbia. In European countries, this type of employment gained momentum quite earlier.

On the other side, expansive growth of employment was recorded in the activity Computer programming, consultancy and related activities, where highly qualified labour force with well paid jobs is employed. In 2010, slightly more than 6,000 employees were engaged in computer programming and a little bit more than 42,000 in 2021. The sections of Trade and Accommodation and food service activities saw growth of more than 30,000 employees each in the same period. The largest employment decrease was recorded in the section Agriculture, -15 000 in the period from 2010 to 2021 in enterprises dealing with agricultural activities. The number of registered individual agricultural producers in the period from 2015 to 2021, (since the day when those data became available from the CRCSI database) decreased by more than 30,000. The other source, Labour Force Survey, indicates that the number of employed in agriculture[6] went down considerably. A

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6 The activity of agriculture covers the entire section Agriculture, forestry and fishing, as well as a part of the section Activities of households as employers referring to agricultural work.

comparable data series by activity is available for the period 2016-2020 when, according to the Labour Force Survey, employment in agriculture decreased by almost 90,000, i.e. 13%, which suggests that there are fewer and fewer people and business subjects seeing economic interest to be engaged in agriculture.

Labour force characteristics

Unfavourable demographic movements, whether natural or mechanical, influenced population ageing in Serbia. The average population age was 41.4 in 2010 and 43.5 in 2021. Not all economic activities are equally affected by population ageing. Based on the 2021 Labour Force Survey bulletin, when examining the age distribution of employees across different sections of activity, it is observed that Information and Communications is the section with the largest share of young employees (age up to 34), 44.2%, and the smallest share of elderly age employees (aged over 55), 8.9%. The Arts, Entertainment and Recreation section is the only section where the percentage of employees aged under 34 exceeds 40%. Conversely, Agriculture, Forestry and Fishing is the "oldest" section of activity, where the share of employees aged over 55 amounts to 45.1%, while the share of younger employees in this section is the smallest, amounting to 16.3%.

In contrast to the age structure, there has been significant improvement in the educational structure of the Serbian population from 2010 to 2021, according to the Labour Force Survey. Among individuals aged 15-64, the percentage of highly educated population increased from 14.1% to 21.6%, while the proportion of people with low levels of education decreased from 27.4% to 20.4% during this period. The proportion of the population with secondary education remained constant at 57% throughout the entire period. This trend is also reflected in the employed population, where the number of highly qualified employees (aged 15-64) increased by over 200,000 from 2010 to 2021, accounting for 28.6% of total employment in 2021, a rise of 6 pp. compared to 2010. The number of employees with lower levels of education decreased by almost 90,000, and their share of total employment fell from 17.3% in 2010 to 12.2% in 2021. The relative proportion of employees with a secondary education level in total employment remained constant at 60% throughout the entire observed period, despite an increase of 170,000.

Higher levels of education among the population can have negative consequences on the labour market. The growth of education can result in real mismatches between the skills required by the labour market and the skills employees possess, which can cause emigration. According to a recent survey by the European Training Foundation (ETF) [2], the skills mismatch has increased from 2016 to 2019. The survey found that highly educated workers' skills mismatch rose from 21.2% in 2016 to 26% in 2019, while the skills mismatch of medium-skilled workers grew from 7.7% to 8.9% during the same period. Compared to other Western Balkan countries, Turkey had the highest skills mismatch of highly educated[7] workers at 33.2%, while Montenegro had the lowest at 15% in 2019. The highest skills mismatch of medium-skilled workers in 2019 was recorded in Bosnia and Herzegovina (10.7%), while North Macedonia had the lowest at 8%. Serbia was the only country to experience growth in the skills mismatch of medium-skilled workers, despite having the most favourable initial position.

Official statistics and indicators for measuring skills mismatch are not available. As an answer to the growing need for this type of statistics, Eurostat has produced experimental statistics by using existing data sources, e.g. [3]. The Over-qualification rate[8] is one such indicator used to measure the vertical gaps between the labour market supply and demand and is derived from data obtained from the Labour Force Survey for the age group 20-64. Serbia has recorded one of the fastest growth rates in the over-qualification rate, with an increase of 6.4 percentage points from 2013-2020. Eurostat's experimental statistics indicate that Serbia's over-qualification rate stood at 26.7% in 2020. Only North Macedonia (6.9 pp.) and Lithuania (6.6 pp.) have recorded faster growth rates in this period. On the EU-27 level, the over-qualification rate grew by 1.1 pp., reaching 21.5% in 2020. Estonia had the largest

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7 *Skills mismatch of highly educated* (ETF) – percentage of highly educated employees performing jobs requiring lower qualification.

8 *Over-qualification rate* (Eurostat) – The over-qualification rate shows the percentage of highly educated persons performing a job demanding low or secondary qualification.

decrease in over-qualification rate, with a reduction of 4.5 pp. from 2013-2020. However, the over-qualification rate in Estonia was still higher than the EU-27 average, standing at 22.8% in 2020. Spain had the highest over-qualification rate of over 35% in the entire observed period in the European Union, while Luxembourg had the smallest one (3.9% in 2020), being the only EU country with an over-qualification rate under 10% over the whole observed period. Structural imbalances in the labour market exist not only in Serbia, but also in other EU member countries and European countries. However, the open EU labour market has managed to control the gap between the labour supply and demand, whereas in Serbia, emigration, the gap between the labour market supply and demand and lack of sufficient information about labour force supply and demand have contributed to the overall growth of the mismatch.

Labour market supply and demand

Due to population emigration, negative natural increase, technological revolution, global economic trends, limited labour force mobility, insufficient investment of employers in employees' training, obsolete knowledge and skills, which are the result of the prolonged period of transition from school to employment, i.e. from the end of education to the first stable or satisfying employment, *Serbia has been recently facing a growing gap between labour market supply and demand.* As it is a serious obstacle to foreign direct investments and further acceleration of economic growth, the necessity to better understand labour market needs and to match the skills has been recently higher positioned on the political agenda.

There are no complete data on demand in the Serbian labour market, after the cancellation of employers' obligation to report to the National Employment Service demands for labour force in 2009. Also, information about skills that are available and required in the labour market is not available. In addition, there are also other systemic problems, such as slow implementation of the Law on Records in the Field of Labour, more precisely of the Decision on Uniform Codes for entering and coding data in labour evidence, which entered into force in 2019.

The essence of these documents is the implementation of the new coding of occupations that is harmonised with the International ISCO-08 Code List, and Code List of the Level and Type of Qualification, which has replaced the Code List of the Level of Acquired Qualification because the adopted Law on the National Qualifications Framework of the Republic of Serbia established a new system of regulating qualification levels and types.

All the above resulted in a vague situation that does not allow to correctly understand the situation in the Serbian labour market to be able to react adequately.

As an example, according to the data of the National Employment Service (NES), in January 2021 there were almost 9,000 persons on the list of unemployed person within the group of occupations related to road transport, and 140 registered job vacancies for employment in this group of occupations. In the same period, in the group of occupations Computer engineers and statisticians there were slightly more than 2,000 unemployed persons and 12 registered job vacancies. In 2011, there were 15,042 unemployed persons within the group of occupation related to road transport, and 57 registered job vacancies, while in the group Computer engineers and statisticians there were 3,816 unemployed persons and 13 registered job vacancies for this profile.

Therefore, based on the NES records it can be concluded that supply is rather higher than demand in the labour market

On the other hand, there are data from the Employers Survey [10], also carried out by the National Employment Service. The latest available data from this survey refer to 2019 and indicate that 36.7% of the total number of enterprises that provided answers to the question concerning the issues in employing labour force pointed out they had trouble finding persons with adequate qualifications. When looking at the reasons presented for each occupation, mentioned by the employers as to recruitment and frequency of their presence, the most frequent ones were: occupational deficit (35.4%), lack of knowledge and skills (24.1%), and lack of professional experience (17.1%). In the group of occupations Drivers and operators of mobile machinery there were by far the largest number of problems related to finding workers for

the occupation Driver of heavy trucks and lorry drivers, and the reason was occupational deficit; then for the occupation Car, taxi drivers and delivery drivers, also due to occupational deficit, as well as Bus drivers for reasons of both occupational deficit and lack of knowledge and skills. Therefore, the Employers Survey indicates a lack of labour force.

It is clear that it is impossible to conclude from the cited data whether an occupation is deficient or surplus, as it requires precise and more comprehensive data on supply and demand in the labour market.

As an example, it can be concluded from the mentioned NES data that there is a surplus of labour force in the group Computer engineers and statisticians, which is the opposite to the conclusion drawn from the statistics on registered employment that indicates that there is an expansive growth of employment in Information and communications over the last ten years. Figures 3 and 4 show how the expansive employment growth in the mentioned activity is followed by an increase in salaries

and wages, where in 2021 this section occupied the first place as far as salaries and wages are concerned. From this example we can see how the market has reacted to restricted qualified resources.

Naturally, IT specialists are not employed only in this section of activity and we do not try to equalize occupation and activity where the occupation is performed, but due to a lack of data on salaries and wages by occupation and according to the logic of the connection of activities and occupations for which employment is found in certain activities, we can draw some indicative conclusions from these substitute indicators.

Behind the section Information and communications, the largest increase in salaries and wages was recorded in Professional, scientific and technical activities, which also employs mainly highly qualified labour force.

Demand for labour force in Manufacturing, generally requiring secondary and lower qualifications, influenced the growth of salaries and wages in the previous decade to be above the average.

Figure 3: Rank of activities according to the level of salaries and wages to the average of RS, in 2010 and 2021

Source: Survey on Salaries and Wages, Statistical Office of the Republic of Serbia

On the other hand, in the sections of activity Education and Human health, also employing highly qualified labour force, market rules do not apply, and it is not possible to establish through salaries and wages the real need for employment.

Based on the over-average growth of salaries and wages in the section Administrative and support service activities, where so-called rented workers are mostly employed to perform generally less complex tasks that do not require specific knowledge and skills and have poor working conditions, it can be concluded that there might have been a lack of labour force if salaries and wages had not been raised.

The trends noticed in average salaries and wages in selected sections of activity make us conclude that one of the methods for resolving the problem of labour force shortage is higher salaries and wages, even for jobs that do not require specific or professional knowledge and skills.

Labour force in Europe and Serbia: Labour costs

Based on the data presented in the above sections, we can conclude that the labour market in the Republic of Serbia was marked in the second decade of the 21st century by strong employment growth, followed by a significant increase in the wages and salaries but there is an obvious enormous loss of labour force due to emigration.

Using the Labour Cost Survey, we will show the differences of labour costs levels borne by employers for employing labour force in Europe and Serbia. The Labour Cost Survey is carried out every four years, according to the uniform Eurostat methodology. The last reference year is 2020 (Figure 5).

Labour costs are defined as the total expenditure borne by employers in order to employ workers. Labour costs include remunerations for workers, generally made of gross salaries and wages, in cash and in kind, social contributions borne by employers, vocational training costs, and other costs, such as for the recruitment of new workers, and costs for occupational safety linked to the purchase of protective clothing, less received subsidies.

Labour costs, including social contributions borne by employees, have the largest share in total labour costs (75.6% for the whole EU), then social contributions borne by employers (23.4%). The remaining portion (1.0%) is absorbed by vocational training costs and other expenditure and taxes less subsidies.

In 2020, the largest share of wage costs (direct remuneration, *bonuses and allowances paid in each pay period)* in total labour costs was recorded in Malta (98.6%), Lithuania (96.3%) and Romania (94.6%), while the smallest was noted in France (67.9%) and Sweden (69%). In Serbia, wage costs that imply taxes and contributions borne by

Figure 4: Trend of salaries and wages and registered employment, 2010-2021, by section of activity
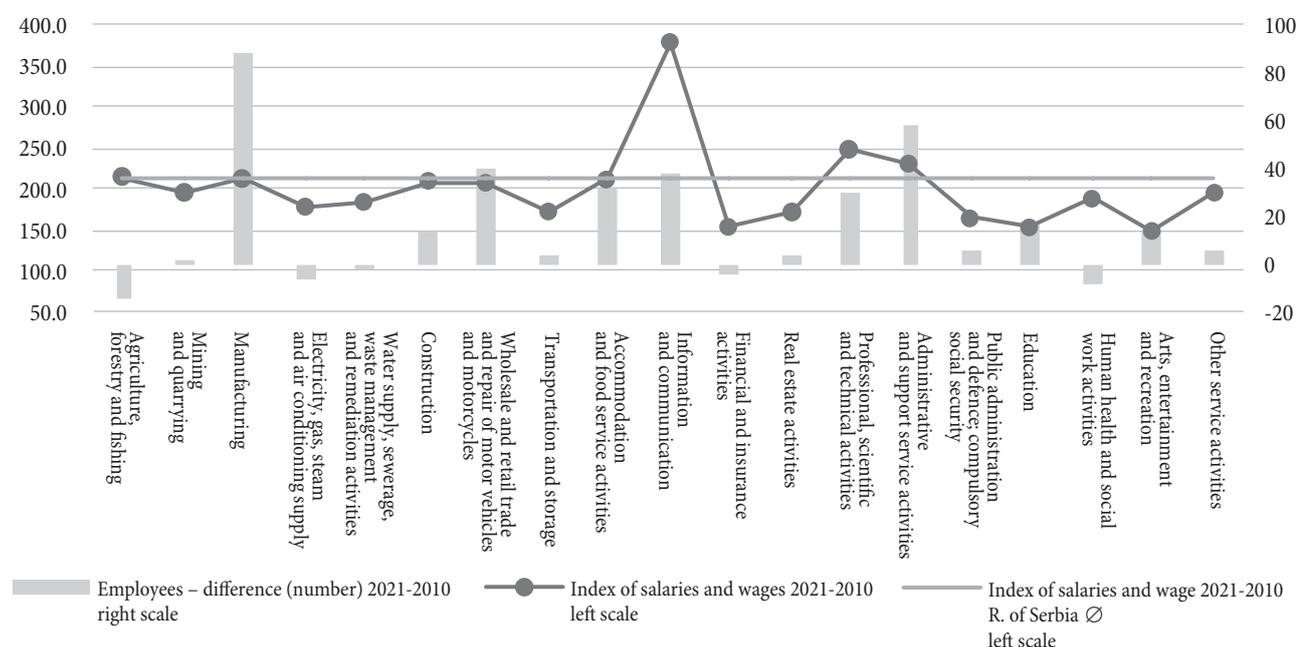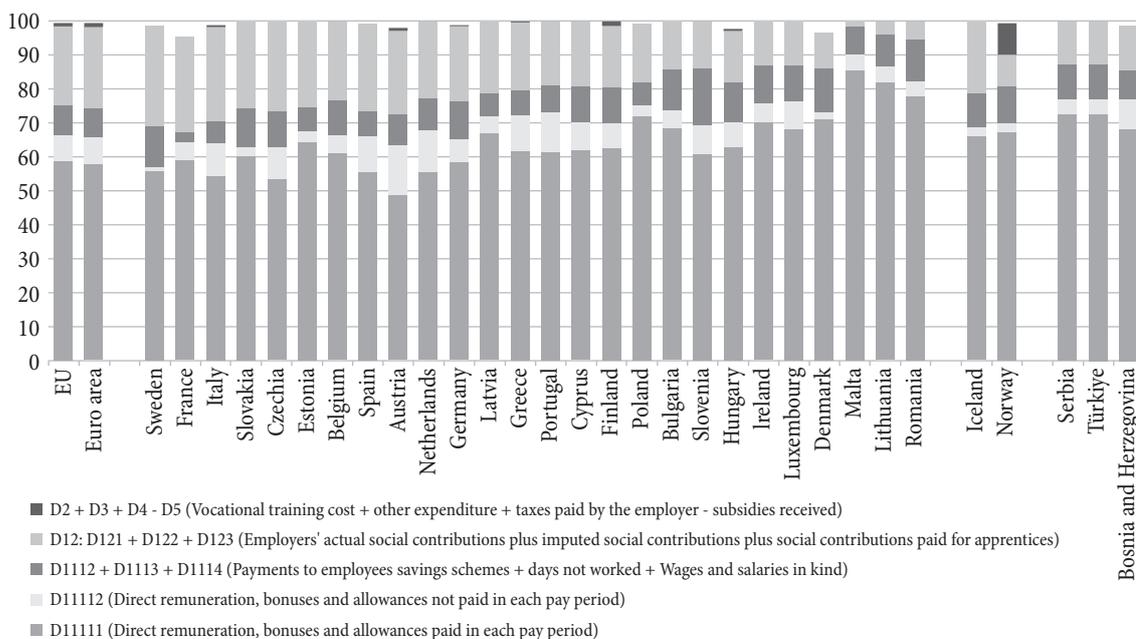

Source: Survey on Salaries and Wages, Survey on Registered Employment, Statistical Office of the Republic of Serbia

employees, but not also by employers, accounted for 87.5% of total labour costs. There are no specific features in the structure of labour costs in Serbia that drastically deviate from other European countries. Contrary to the structure,

the level of labour costs in Serbia differs considerably from the average of the European Union.

In 2020, the largest hourly labour costs (see Figure 6), expressed in euros, were recorded in Norway (€49), and

Figure 5: Structure of wage and non-wage costs - LCS 2020 (regular and non-regular wage costs, by country)

- ■ D2 + D3 + D4 - D5 (Vocational training cost + other expenditure + taxes paid by the employer - subsidies received)
- ▨ D12: D121 + D122 + D123 (Employers' actual social contributions plus imputed social contributions plus social contributions paid for apprentices)
- ■ D1112 + D1113 + D1114 (Payments to employees savings schemes + days not worked + Wages and salaries in kind)
- ▨ D11112 (Direct remuneration, bonuses and allowances not paid in each pay period)
- ▨ D11111 (Direct remuneration, bonuses and allowances paid in each pay period)

Source: Eurostat [8]

Figure 6: Hourly labour cost levels in euro and in PPS in 2020

■ Hourly labour costin euro   ▨ Difference (PPS vs euro)   ▬ Hourly labour cost in PPS
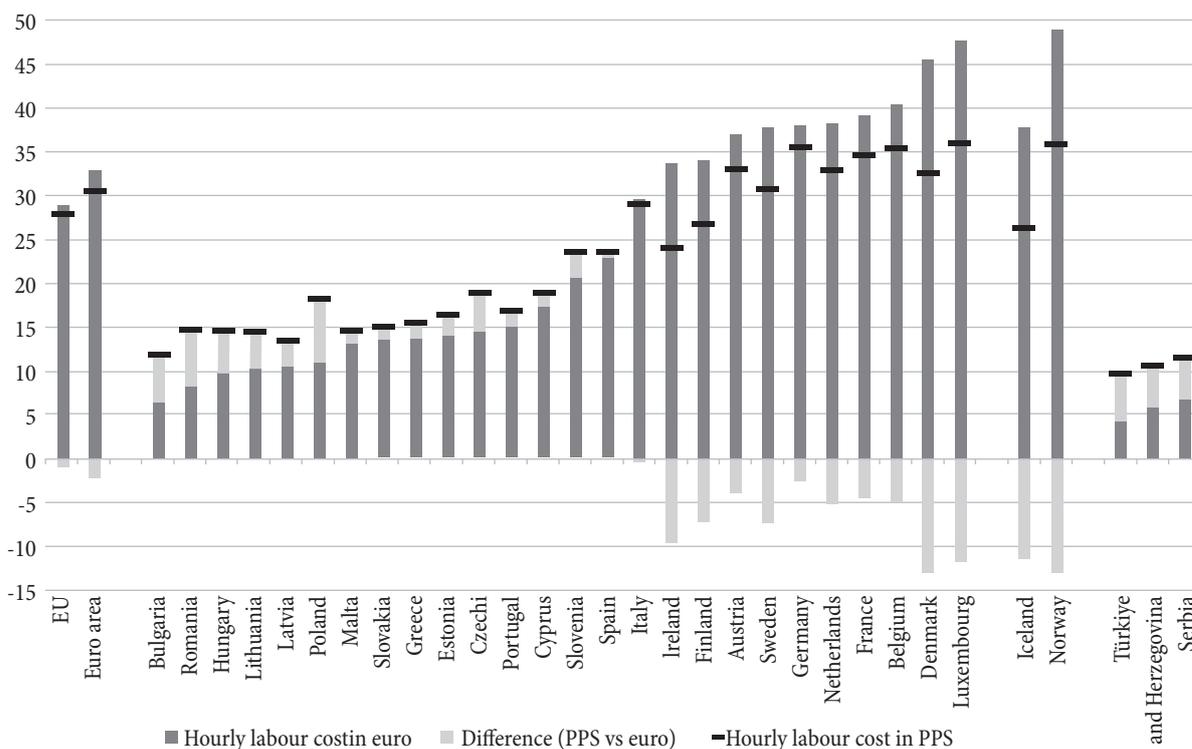
Data for Croatia, Switzerland, Nort Macedonia and Montenegro sre not available.
Data for Albania is confidential.

Source: Eurostat [5]

among EU member countries in Luxembourg (€47.7), then in Denmark (€45.7), Belgium (€40.5) and France (€39.2). The lowest hourly labour costs were noted in Bulgaria (€6.6), Romania (€8.2) and Hungary (€9.8). At EU-27 level, the highest labour costs were in Luxembourg, 7.3 times higher than the lowest labour costs registered in Bulgaria. In Serbia, hourly labour costs were far under the average of the European Union, amounting to €6.8.

If we observe labour costs, and indirectly wage costs (as they make up the largest part of labour costs), expressed in Purchasing Power Standard – PPS, the situation in Serbia is somehow more favourable than when observed in euros, but Serbia is also in this case at the bottom of the list of European countries. Average hourly labour costs expressed in PPS at the level of the European Union amount to 27.9, and in Serbia to 11.6. This means that labour costs in Serbia are almost 2.5 lower than the EU-27 average, even though it was the fifth country, over 2016-2020, in terms of increase in salaries and wages, according to the same survey (Table 3).

As long as there are better prospects for employment and higher earnings that function as the main *pull* factors of emigration, emigration will be inevitable. It is clear that reducing the difference of earnings between host countries and countries of origin is the key factor that should lessen the motive for emigration and augment the motive for return migration. However, as the current differences in earnings are very large between Serbia and European countries, their harmonization requires time and is only possible in the medium or long term.

Conclusion

In spite of the large labour force loss triggered by emigration and significant employment growth in the second decade of the 21st century, according to the administrative evidence of the National Employment Service at the end of 2021, Serbia still has 470,000 unemployed persons, i.e. 316,000 according to the Labour Force Survey, of whom almost a half consists of long-term unemployed persons, while employers at the same time have more and more trouble to find adequate labour force, which confirms structural imbalance that cannot be remediated in the short term.

Table 3: Wage costs, by hour worked, 2016-2020, in euros

TIME	2016	2020	Change 2020-2016, in %
GEO (Labels)			
European Union - 27 countries (from 2020)	**19.33**	**21.79**	**12.7**
Lithuania	5.31	9.9	86.4
Romania	4.29	7.78	81.4
Bulgaria	3.75	5.66	50.9
Czechia	7.51	10.70	42.5
Serbia	**4.19**	**5.96**	**42.2**
Latvia	6.06	8.39	38.4
Hungary	5.88	8.05	36.9
Slovakia	7.54	10.20	35.3
Estonia	7.98	10.50	31.6
Slovenia	14.13	17.92	26.8
Poland	7.13	8.99	26.1
Luxembourg	34.04	41.60	22.2
Bosnia and Herzegovina	4.80	5.54	15.4
Ireland	25.94	29.59	14.1
France	23.41	26.60	13.6
Portugal	10.90	12.35	13.3
Netherlands	26.82	30.13	12.3
Austria	24.32	27.28	12.2
Germany (until 1990 former territory of the FRG)	26.35	29.54	12.1
Denmark	36.53	39.85	9.1
Cyprus	12.94	14.05	8.6
Spain	15.83	16.96	7.1
Belgium	29.27	31.15	6.4
Finland	26.09	27.63	5.9
Italy	20.09	21.22	5.6
Iceland	28.92	29.80	3.0
Sweden	25.63	26.20	2.2
Norway	40.59	40.04	-1.4
Malta	13.35	12.98	-2.8
Greece	12.17	10.98	-9.8
Türkiye	5.47	3.77	-31.1
Croatia	8.09	:	:
Switzerland	45.23	:	:
United Kingdom	23.27	:	:
Montenegro	4.93	:	:
North Macedonia	3.55	:	:
Albania	2.15	:	:

Currency	Euro
Unit of measure	Per employee in full-time equivalents, per hour
Size classes in number of employees	10 employees or more
Statistical classification of economic activities in the European Community (NACE Rev. 2)	Industry, construction and services (except public administration, defense, compulsory social security)
Labour costs structure	Wages and salaries (excluding apprentices)

Source: Eurostat, Labour Cost Survey [6]

Without contemplating whether emigration is permanent or temporary, and without any pretence to establish the exact volume of emigration, we can notice that Serbia has been facing a great outflow of labour force, and there are indications that in the future this outflow will be even more massive. Starting from the standard classification of education, data confirm that there is no place for fear of brain drain "as the departure of highly qualified persons do not disturb considerably the educational structure of the population that remains". However, what does it mean "favourable educational structure" when what we conclude is based on the classic "socialist" triad (division into primary, secondary and tertiary education), which does not take into consideration the profile and reputation of schools, universities, etc., i.e. the learning outcomes that can realise a certain value in the labour market? The lack of transferable skills such as the focus on resolving problems, analytical thinking, critical opinion, adaptability, teamwork, readiness to acquire new knowledge, especially in IT, can be considered as the main shortages in the labour market. When these aspects are taken into account as the key elements of the circumstances of working age individuals in the current labour market, then the question of maintaining a favourable qualification structure in the domestic labour market has a different picture and perspective. Eurostat experimental statistics suggest that the gap between skills required in the labour market and skills acquired in the educational system in Serbia is growing wider.

One comes to the conclusion that the educational system takes time to adapt to fast and changeable skills required in the labour market, but that it also creates by itself structural imbalances. Even without precise data and surveys many weaknesses can be enumerated, both for the private and state education, but this paper is not dedicated to that topic, although education is the main factor in establishing balance between supply and demand in the labour market and creating more favourable economic climate that would slow down emigration.

In the next period, in order to support the educational system, it is necessary to set a mechanism for monitoring labour market supply and demand, based on precise and updated administrative and statistical data.

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