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Research Report

Wage developments in the Western Balkans, Moldova and Ukraine

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Abstract

In recent years, the general economic recovery has finally fed through to a significant increase in real wages in the Western Balkan countries, Moldova and Ukraine. Nevertheless, wage shares have barely picked up, and have even declined slightly in several places. Only in Kosovo has significant convergence with the Austrian wage level been registered. The improvement in labour market conditions in the countries covered has had only a moderately positive effect on wage developments. Despite recent declines, many countries continue to record double-digit unemployment rates, meaning that the bargaining power of employees has improved only slightly. The gradual decentralisation of wage-setting mechanisms has also slowed wage growth. In general, collective-bargaining mechanisms are much less developed than, for example, in Austria. Their scope is limited by the low share of employees in total (formal) employment. High unemployment and large wage gaps, especially in comparison with Western Europe, have led to considerable outward migration and population decline in many of these countries. This trend is expected to continue in the future. In the long run, this will result in the loss of an important share of the human capital of these countries, which might affect their prospects for convergence with Western European levels, including in terms of wages.

Keywords: wages, wage share, demographic trends, migration, Phillips curve, wage-setting mechanisms

JEL classification: J11, J31, J4, J50

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ABBREVIATIONS

Country codes

AT	Austria
MD	Moldova
UA	Ukraine

WB6 Western Balkans

AL	Albania	MK	North Macedonia
BA	Bosnia and Herzegovina	RS	Serbia
ME	Montenegro	XK	Kosovo

1. The general economic situation in the region

The economic situation in the Western Balkans, Moldova and Ukraine has been characterised by a general stabilisation in the past few years. Economic growth in the six Western Balkan countries examined in the study (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia) has gained momentum in recent years (Table 1.1). On average across the region, GDP expanded by 2.5% in 2017 and 4% in 2018 – the highest economic growth since 2008 (although growth subsided to 3.5% in 2019 in the face of external headwinds). This is due to several factors: fiscal easing after several years of austerity, progressive integration into international production networks, and slightly better EU accession prospects, which has been a stabilising factor.

Table 1.1 / Real GDP growth in 2013-2019

	2013	2014	2015	2016	2017	2018	2019
Albania	1.0	1.8	2.2	3.3	3.8	4.1	2.6
Bosnia and Herzegovina	2.4	1.1	3.1	3.1	3.2	3.7	2.7
Montenegro	3.5	1.8	3.4	2.9	4.7	5.1	3.3
North Macedonia	2.9	3.6	3.9	2.8	0.2	2.7	3.4
Serbia	2.9	-1.6	1.8	3.3	2.0	4.4	4.0
Kosovo	3.4	1.2	4.1	4.1	3.7	3.8	4.1
<i>WB6¹⁾</i>	2.6	0.3	2.6	3.3	2.5	4.0	3.5
Moldova	9.0	5.0	-0.3	4.4	4.5	4.3	4.6
Ukraine	0.0	-6.6	-9.8	2.4	2.5	3.3	3.3

Note: 1) wiiw estimation.

Source: wiiw, Eurostat.

In the Western Balkan countries, foreign direct investors are generally becoming more involved, especially in greenfield projects. These countries, especially Serbia and North Macedonia, are increasingly being viewed as an alternative location to the Central and Eastern European EU member states (EU-CEE) (where wages are rising relative to Western Europe) and are also pursuing generally FDI-friendly policies. The automotive industry, in particular, is playing an increasingly important role, which is also reflected in the export structure of several Western Balkan countries. In Serbia and North Macedonia, for example, 'machinery and vehicles' now represent the most important export item (according to the Standard International Trade Classification (SITC) at the 1-digit level) and account for 28% and 32%, respectively, of total goods exports (Figure A1 in the Annex). In Albania and Kosovo, FDI in the energy sector plays a major role: Shell is expected to invest more in oil production in Albania, and General Electric in a new power plant in Kosovo (Astrov and Grüber, 2019). In addition, infrastructure investments are slowly gaining momentum. On the one hand, they are financed from countries' own resources or by the EU. However, China is also playing a major role here, as it regards the region as an important transit route as part of its Belt and Road Initiative (BRI) (Grüber et al., 2018). More than half of all BRI funds made available to Central, East and Southeast European countries (in the form of loans) currently go to the Western Balkans (wiiw, 2019).

Ukraine's economic development, on the other hand, was marked by a deep crisis in 2014-2015. Real GDP shrank by about 16% within two years (adjusted for the de facto loss of breakaway areas in the Donbas and Crimea). The reasons for this were manifold: the military conflict in the Donbas, which led to the destruction of production and transport capacities; the trade war with Russia, which resulted in an enormous decline in exports to Russia; and the massive currency devaluation and restrictive fiscal policy, which resulted in large losses in the real purchasing power of the population. Although the situation has stabilised again since 2016, GDP still lags far behind the 2013 level, and foreign investment inflows remain very low (in Moldova they are low as well).

Despite the relatively positive dynamics, the Western Balkan countries, Moldova and Ukraine remain poor. Their GDP per capita in purchasing power parities (PPP) ranges from 48% of the EU average in Montenegro to 21% in Ukraine, and unemployment remains fairly high despite recent declines, especially in the Western Balkans. The structure of the economy and employment is also very backward in places: in Albania and Moldova, for example, the proportion of people employed in agriculture is still very high, at 38% and 36%, respectively (Figure A2 in the Annex), suggesting some similarity with developing countries. Overall, it is therefore hardly surprising that the region is characterised by a high level of emigration and high inflows of remittances from private individuals abroad (for more information, see Chapter 4).

In the long term, the prospect of EU accession is crucial for the region. This offers an anchor for foreign direct investment and the development of competitive export capacities – the long-standing weakness of many Western Balkan countries. The EU accession of the Western Balkan countries is officially planned for 2025. However, even for the most advanced countries (Serbia and Montenegro), compliance with this deadline does not really appear realistic, given the many problems (not least political). There have recently been several positive developments in the region, such as a decision to open EU accession negotiations with North Macedonia and Albania and ratification of the border agreement with Montenegro by the Kosovo Parliament. However, lack of progress in Serbia's recognition of Kosovo as an independent state remains the main obstacle to Serb accession to the EU.

The prospects of Ukraine and Moldova joining the EU are slim. Both of them have concluded a Deep and Comprehensive Free Trade Agreement (DCFTA) with the EU, which requires a gradual alignment of standards and regulations with EU norms, but offers no prospect of EU accession. In addition, the EU market for important export goods from those countries – primarily agricultural goods and foodstuffs – remains protected by tariff quotas. The political risks in these countries should not be underestimated either. On the one hand, the persistence of unresolved territorial conflicts (Transdniestria in Moldova and Donbas in Ukraine) represents a permanent security risk. On the other hand, the geopolitical and cultural divisions in both countries go far beyond the breakaway regions and have taken on a largely regional dimension. In combination with other political and institutional risks, such as a high level of corruption and the uncertainty of property rights, these factors are likely to continue to hamper the inflow of foreign direct investment into both countries – and thus their GDP growth – in the foreseeable future.

2. Wages and wage shares

2.1. METHODOLOGICAL ASPECTS OF WAGE STATISTICS

In contrast to the EU-CEE, for most of the countries in question there are no (or only very fragmentarily available) national accounts (NA) data on the compensation of employees, wages, the number of employees and hours worked. The data underlying this study are – unless otherwise stated – registered wage data based on enterprise surveys or increasingly replaced by wage tax data (except for Austria, for which data from national accounts are available).

Given the different country-specific definitions of wage statistics (for details see Table A1 in the Annex), their comparability across countries should be treated with caution. Another disadvantage of these wage data is that they usually refer not to hourly wages (which are a better indicator of the situation of employees), but rather to wages per employee. If the number of hours worked is not identical over time and across countries (which is usually the case), the wage data per employee show a somewhat distorted picture.

In some Western Balkan countries, hourly wages can only be recorded on the basis of labour cost surveys (LCS), which are carried out at regular intervals according to a uniform methodology. Unlike registered wages, LCSs also provide wage statistics for each sector or industry at the NACE 2-digit level. However, the disadvantage of this data source is that it is only available for four countries of the region (Albania, Bosnia and Herzegovina, North Macedonia and Serbia) and, in the period under review, only for the individual years 2012 and 2016.

Finally, some country-specific restrictions on wage data should be noted (for further details see Table A1 in the Annex). There are no general wage data for Kosovo up to and including 2011: wage statistics for this period refer to net wage data in public administration. In Albania, wage data up to 2013 refer to performance and structural statistics, which only reflect market-producing sectors. In Moldova and Ukraine, wage statistics refer only to the areas controlled by the respective governments. Thus, wage data on Transdniestria (a breakaway area of Moldova), the Crimea and parts of Donbas (breakaway areas of Ukraine, since 2014 and 2015, respectively) are completely missing.

These methodological particularities should always be borne in mind when interpreting wage data for the Western Balkans, Moldova and Ukraine.

2.2. WAGE DEVELOPMENTS IN GENERAL

Real wage developments in the Western Balkan countries and Moldova since 2007 have been characterised by steady growth, which has been almost consistently higher than in Austria (Table 2.1 and Figure 2.1). Wage growth has been strongest in Kosovo (+88%), Moldova (+73%) and Ukraine (+61%) – the poorest countries in the region, with the highest convergence potential in terms of

productivity and thus also wages. By contrast, real wages in Austria increased by only 2% over the same period.

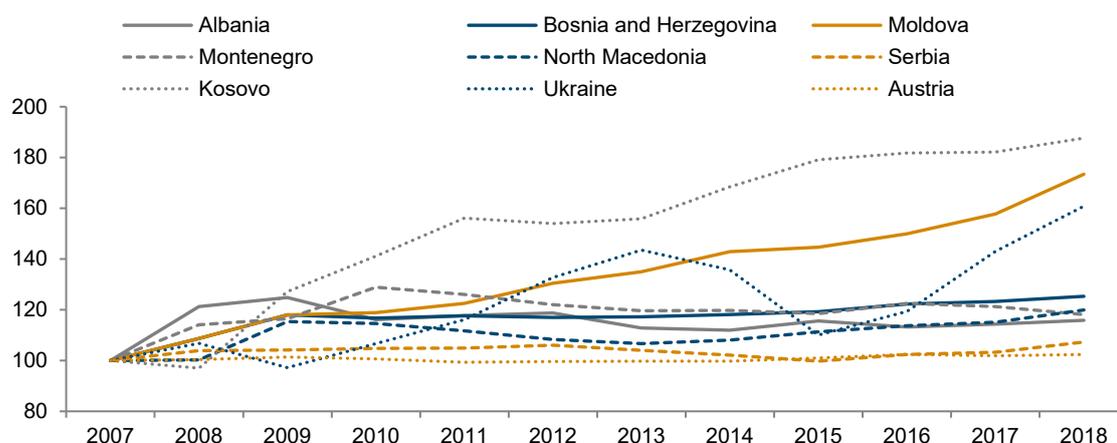
Table 2.1 / Real gross monthly wages, 2007-2018

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Real growth rates (%)												
Albania	21.6	21.3	2.9	-7.0	1.5	0.8	-5.0	-0.7	3.2	-2.0	1.0	1.3
Bosnia and Herzegovina	8.2	8.6	8.6	-1.0	0.7	-0.5	0.2	0.8	1.0	2.5	0.8	1.7
Moldova	8.4	8.7	8.6	0.7	3.1	6.4	3.5	5.9	1.2	3.7	5.2	9.9
Montenegro	10.2	14.1	2.1	10.6	-2.2	-3.2	-1.9	0.1	-1.1	3.5	-1.1	-2.6
North Macedonia	2.4	0.3	15.0	-0.6	-2.6	-3.0	-1.6	1.3	3.0	2.2	1.2	4.2
Serbia	14.1	3.9	0.2	0.7	0.1	1.0	-1.9	-1.7	-2.4	2.6	0.9	3.9
Kosovo	-2.2	-3.0	31.1	10.9	10.6	-1.4	1.2	8.1	6.3	1.5	0.2	3.0
Ukraine	15.0	6.8	-9.0	9.7	8.9	14.3	8.2	-5.4	-18.9	8.5	19.8	12.5
Austria	1.0	0.3	1.0	-0.7	-1.3	0.3	0.1	0.1	1.1	1.5	-0.6	0.5
Index 2007 = 100												
Albania	100.0	121.3	124.8	116.1	117.8	118.8	112.8	112.0	115.6	113.2	114.4	115.8
Bosnia and Herzegovina	100.0	108.6	118.0	116.8	117.6	117.0	117.2	118.1	119.2	122.3	123.2	125.3
Moldova	100.0	108.7	118.0	118.9	122.6	130.4	135.0	142.9	144.6	150.0	157.8	173.4
Montenegro	100.0	114.1	116.5	128.9	126.0	122.0	119.7	119.8	118.5	122.6	121.2	118.1
North Macedonia	100.0	100.3	115.3	114.7	111.7	108.4	106.6	108.0	111.3	113.7	115.1	119.9
Serbia	100.0	103.9	104.1	104.8	104.9	106.0	104.0	102.2	99.8	102.4	103.3	107.3
Kosovo	100.0	97.0	127.2	141.1	156.1	154.0	155.8	168.5	179.1	181.8	182.2	187.6
Ukraine	100.0	106.8	97.2	106.6	116.1	132.7	143.5	135.7	110.0	119.3	143.0	160.8
Austria	100.0	100.3	101.4	100.6	99.3	99.6	99.8	99.8	101.0	102.4	101.8	102.4

Note: For methodological notes, see Table A1 in the Annex.

Source: wiiw annual database.

Figure 2.1 / Real gross monthly wages (CPI deflated), index 2007 = 100



Note: For methodological notes, see Table A1 in the Annex. For Kosovo, only net public-sector wages until 2011.

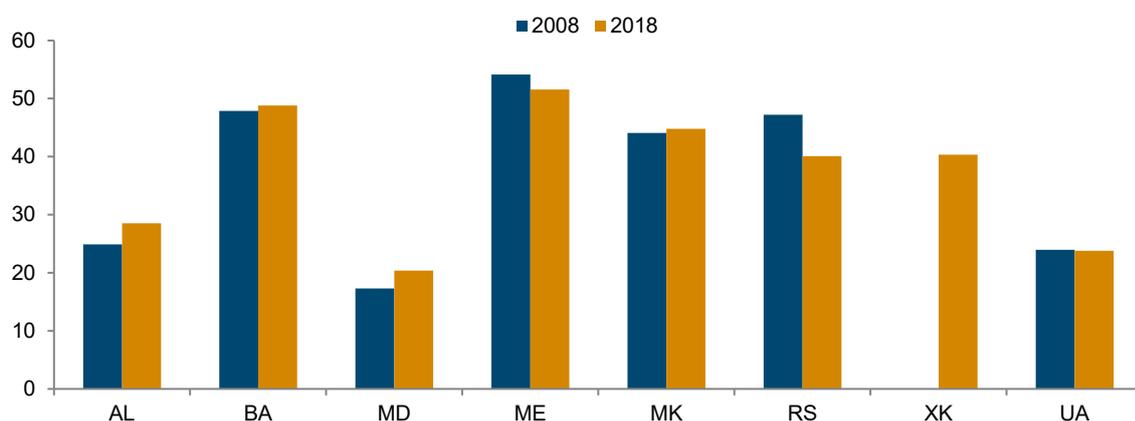
Source: Own calculations based on wiiw annual database.

Figure 2.1 also demonstrates that real wages in Ukraine have been much more volatile than in other countries of the region. On the one hand, Ukraine experienced strong currency devaluations during the

two crisis periods 2008-2009 and 2014-2015; both caused a surge in inflation and a loss of purchasing power. On the other hand, Ukraine has a higher proportion of informal wage payments than the Western Balkan countries (see Chapter 5), which allows for greater downward flexibility in de facto wage payments during periods of crisis. The particularly rapid rise in real wages in Ukraine since 2016 has been mainly due to the massive increase in the statutory minimum wage: in 2017 alone, it was doubled, which led to an automatic doubling of wages and salaries in the public sector in Ukraine.

Despite faster real wage growth, wages in most Western Balkan countries and Ukraine measured in EUR PPPs have hardly converged with the Austrian level. Among the countries of the region, only Albania, Moldova and Kosovo have achieved a significant convergence with the Austrian level. In Bosnia and Herzegovina, North Macedonia and Ukraine, there has been almost no convergence, while Serbia and Montenegro have even fallen back, relative to Austria (Figure 2.2).

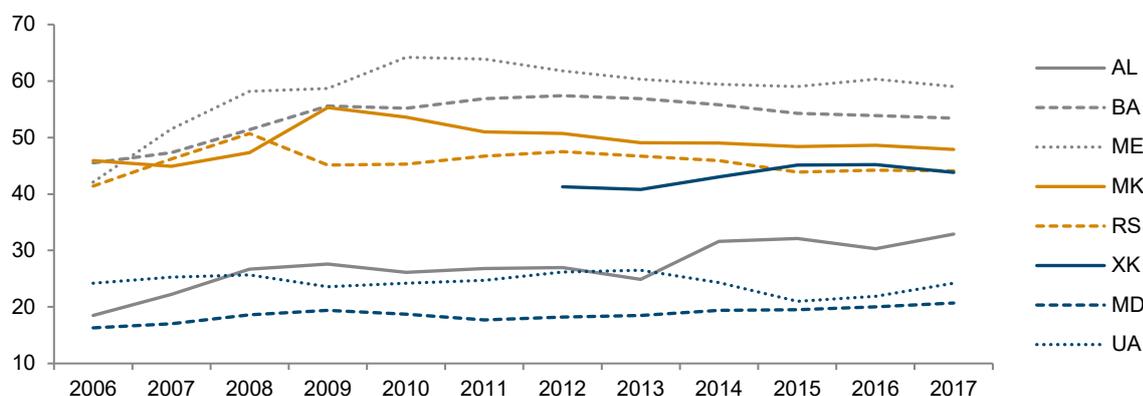
Figure 2.2 / Average gross monthly wage at EUR PPP, Austria = 100



Note: For methodological notes, see Table A1 in the Annex.
 Source: Own calculations based on wiiw annual database and Statistics Austria.

Figure 2.3 / Average gross monthly wage in EUR PPP

as % of the EU15 average



Note: For methodological notes, see Table A1 in the Annex. EU15 national accounts data.
 Source: Own calculations based on wiiw annual database and Eurostat.

Also in relation to the Western European average (EU15 in Figure 2.3), there was hardly any convergence in wage levels. Figure 2.3 shows that the wage catching-up process took place mainly before the 2008-2009 crisis. Since then, wage levels in many countries of the region have stagnated or even declined relative to the EU15 (with the exception of Albania). The phenomenon of a lack of wage convergence despite faster wage growth in the poorer countries only appears to be a paradox at first glance and can be explained statistically (for a detailed description see Box 2.1).

BOX 2.1 / NO CONVERGENCE DESPITE HIGHER GROWTH: STATISTICAL EXPLANATION OF THE PARADOX

How are purchasing power parities and incomes at PPP calculated?

For simplicity's sake, let us assume that we compare two countries: a low-income country (L) and a high-income country (H). It can also be assumed that the consumer basket in both countries consists of only two goods: food (f) and non-food (n). Knowing the quantities of goods consumed (Q_f and Q_n) and their prices (P_f and P_n), it is possible to calculate the share of food and non-food products in total expenditure in both countries. This is illustrated by a numerical example in Box Table 2.1.

Box Table 2.1 / Consumption quantities and prices in the initial situation

	Q_f	Q_n	P_f	P_n	Total expenditure at current prices	Share of food in total expenditure
Country L	11	1	1.5	1	17.5	0.943
Country H	20	10	5	8	180	0.555

The numbers in Box Table 2.1 are fictitious, but still realistic. They are consistent with the empirical observation that the share of food in total consumption expenditure is typically high in low-income countries and low in high-income countries. This regularity is referred to as 'Engel's Law'. On the one hand, the high proportion of food expenditure in poorer countries reflects the fact that a large proportion of their citizens simply cannot afford goods and services that go beyond their daily needs. On the other hand, the relatively high price of food in relation to goods and services also plays a role. Figure 2.4, for example, shows that although the Western Balkan countries are generally about half as expensive to live in as the EU average, this is mainly due to the very low price level of services;¹ for goods – and especially for food – the price gap with the EU is much smaller.

Box Table 2.1 also shows that food consumption in the high-income country is higher than in the low-income country (20:11), but less so than non-food consumption (10:1). Moreover, food (compared to non-food) is more expensive in the low-income country (1.5:1) than in the high-income one (5:8), which is largely in line with empirical observations. The volume and price ratios assumed in Box Table 2.1 are quite typical for countries at significantly different income levels.

Calculating the ratio of total nominal expenditure in both countries ($17.5/180 = 0.097$) makes little sense, as it compares values calculated at different prices. So how can we compare the real volumes of total consumption expenditure in both countries? For this purpose, aggregated quantity indices are calculated according to the PPP methodology: the Paasche Index and the Laspeyres Index. The two indices differ depending on which country's prices are used for the calculation.

¹ The reason for this is that many services are not tradable, so that price arbitrage is not possible in the course of cross-border trade.

The Paasche Index, which compares the volume of total expenditure in the two countries for the situation presented in Box Table 2.1 at low-income-country prices, is calculated using the following formula:

$$(11 \cdot 1.5 + 1 \cdot 1) / (20 \cdot 1.5 + 10 \cdot 1) = 0.4375$$

In contrast, the Laspeyres Index, which compares the volume of total expenditure at high-income-country prices, is represented by the following formula:

$$(11 \cdot 5 + 1 \cdot 8) / (20 \cdot 5 + 10 \cdot 8) = 0.350$$

Thus, depending on the index used, the volume of consumption expenditure in country L is between 35% and 43.75% of the level of country H. In practice, a geometric average of the Paasche and Laspeyres indices is used – the Fisher Index. In our case, the Fisher Index is equal to 0.391. Thus, the volume of consumption in country L is 39.1% of the level in country H.

Real growth and purchasing power parities

Let us now assume that Box Table 2.1 represents the starting position of the two countries L and H in a given year. The prices and consumption quantities change the following year, as shown in Box Table 2.2.

Box Table 2.2 / Consumption quantities and prices in the following year

	Q _f	Q _n	P _f	P _n	Total expenditure at current prices	Share of food in total expenditure
Country L	11.5	1.5	1.5	1	18.75	0.920
Country H	21	10.5	4	10	189	0.444

As one can see, consumption of both goods increased in both countries, but the increase in non-food consumption was much stronger in the low-income country (compare with Box Table 2.1). For simplicity's sake, we assume that prices in country L have remained unchanged, while they have changed slightly in country H. These changes have led to a shift in the share of food expenditure in total expenditure: it is decreasing in both countries.

It should be noted that country L shows a high growth (7.1%) of real consumption (i.e. consumption at the previous year's prices):

$$(11.5 \cdot 1.5 + 1.5 \cdot 1) / (11 \cdot 1.5 + 1 \cdot 1) = 18.75 / 17.5 = 1.071$$

In country H, real consumption growth is more modest (around 5%):

$$(21 \cdot 4 + 10.5 \cdot 10) / (20 \cdot 5 + 10 \cdot 8) = 189 / 180 = 1.05$$

However, if one compares the two countries by calculating the volume index, it appears that the low-income country has lost, relative to the high-income country. The Paasche Index, which describes the volume of total expenditure in country L compared to country H for the situation presented in Box Table 2.2, is calculated using the following formula:

$$(11.5 \cdot 1.5 + 1.5 \cdot 1) / (21 \cdot 1.5 + 10.5 \cdot 1) = 0.4464$$

The Laspeyres index is determined by the following formula:

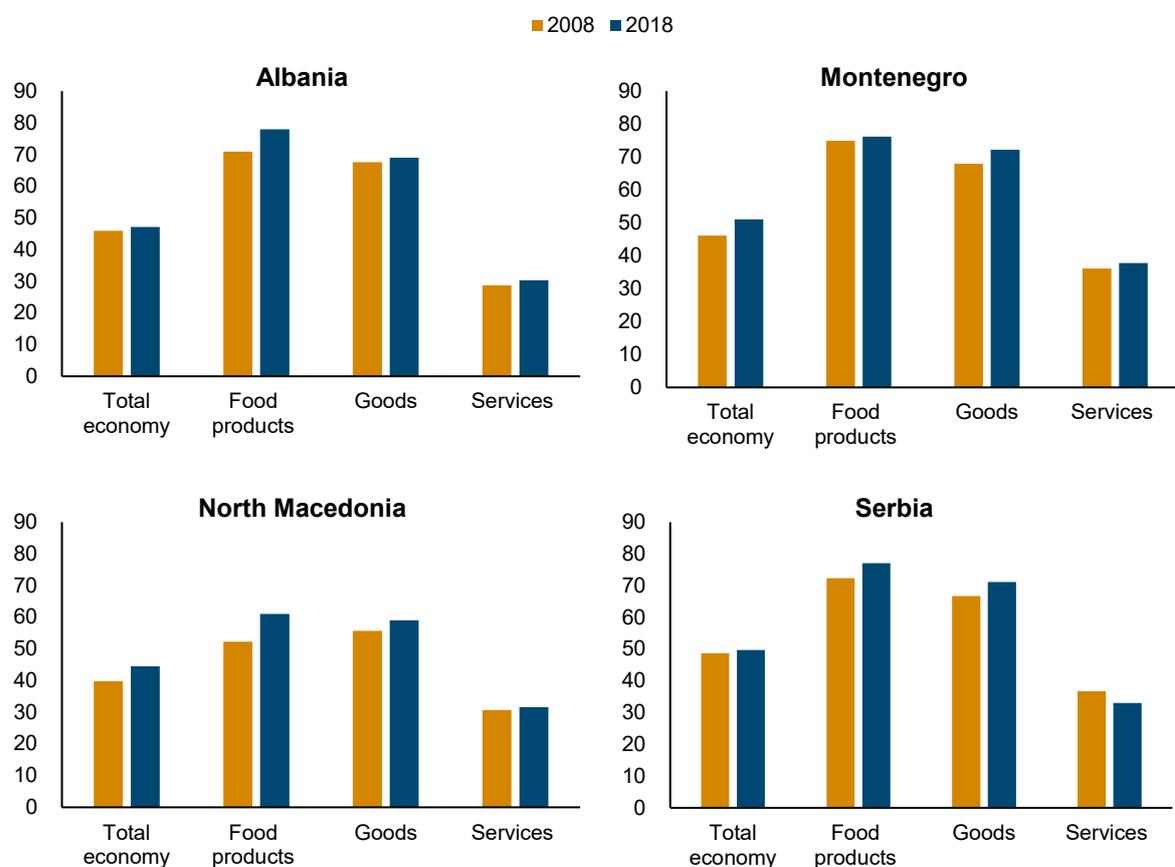
$$(11.5 \cdot 4 + 1.5 \cdot 10) / (21 \cdot 4 + 10.5 \cdot 10) = 0.3227$$

The Fisher Index (the geometric average of the Paasche and Laspeyres indices) is 0.3796, which means that the real volume of consumption in country L is about 38% of the level in country H.

In conclusion, real consumption growth in the low-income country was faster than in the high-income country: 7.1% compared to 5%. Nevertheless, the relative position of the low-income country (as measured by consumption expenditure relative to PPP) has declined from 39.1% to less than 38% of the high-income country.

The general conclusion from the above numerical example is that one should not be surprised at the discrepancies between the different growth rates on the one hand, and on the other at the shift in the relative PPP positions of countries with very different income levels. Such discrepancies occur in particular when countries with different income levels also differ structurally (i.e. in terms of price and volume structures). In the above example, countries L and H differ fundamentally in terms of the share of food expenditure in total expenditure. Although in country L this share has decreased from 0.943 to 0.92, in country H it has decreased even more: from 0.555 to 0.444. Thus, the discrepancy between the shares of food in the two countries has even widened over time. Structurally, the two countries have become even more unequal, which is reflected in the decrease in the relative PPP position of country L compared to country H – despite the fact that growth was faster in country L than in country H.

Figure 2.4 / Price level, EU28 = 100



Note: Data by product group are not available for Bosnia and Herzegovina, Kosovo, Moldova and Ukraine.

Source: Eurostat.

Table 2.2 shows that wages in the countries of the Western Balkans, Moldova and Ukraine are still much lower than in Austria: converted to PPP, they are between 20% of the Austrian level (in Moldova) and 50% (in Montenegro). Calculated at exchange rates, the gap is even wider. Despite the cheap labour force, many of these countries have serious problems in terms of productivity, and thus international competitiveness. This leads to persistently high current account deficits. Without substantial inflows of private remittances from citizens working abroad, the current account deficits of most of these countries would have been even higher.

Table 2.2 / Average gross monthly wage in EUR, 2008-2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EUR at exchange rate											
Albania	279	273	252	260	270	259	325	343	346	365	397
Bosnia and Herzegovina	569	615	622	650	660	660	659	659	665	676	697
Moldova	165	177	181	186	218	220	219	217	227	268	318
Montenegro	609	643	715	722	727	726	723	725	751	765	766
North Macedonia	428	488	491	497	498	504	508	522	533	547	579
Serbia	561	470	460	517	508	537	524	506	516	544	580
Kosovo	211	270	310	368	431	444	482	510	519	528	530
Ukraine	234	175	213	237	295	308	221	173	183	237	276
Austria	2 639	2 679	2 709	2 763	2 839	2 899	2 950	3 010	3 082	3 128	3 207
EUR at PPP											
Albania	608	619	602	628	650	605	783	843	801	828	825
Bosnia and Herzegovina	1 168	1 245	1 271	1 335	1 381	1 383	1 383	1 396	1 374	1 369	1 412
Moldova	422	435	432	415	436	449	480	500	511	531	589
Montenegro	1 322	1 316	1 479	1 497	1 486	1 465	1 473	1 515	1 536	1 513	1 492
North Macedonia	1 076	1 240	1 235	1 197	1 220	1 193	1 216	1 244	1 237	1 229	1 296
Serbia	1 152	1 010	1 042	1 095	1 143	1 134	1 138	1 128	1 126	1 130	1 159
Kosovo	.	.	.	.	993	992	1 065	1 159	1 151	1 160	1 167
Ukraine	585	529	558	578	629	643	604	540	558	619	689
Austria	2 441	2 415	2 461	2 507	2 637	2 672	2 722	2 832	2 840	2 830	2 894

Note: For methodological notes, see Table A1 in the Annex. For Kosovo until 2011, net wages in the public sector.
Source: wiiw annual database.

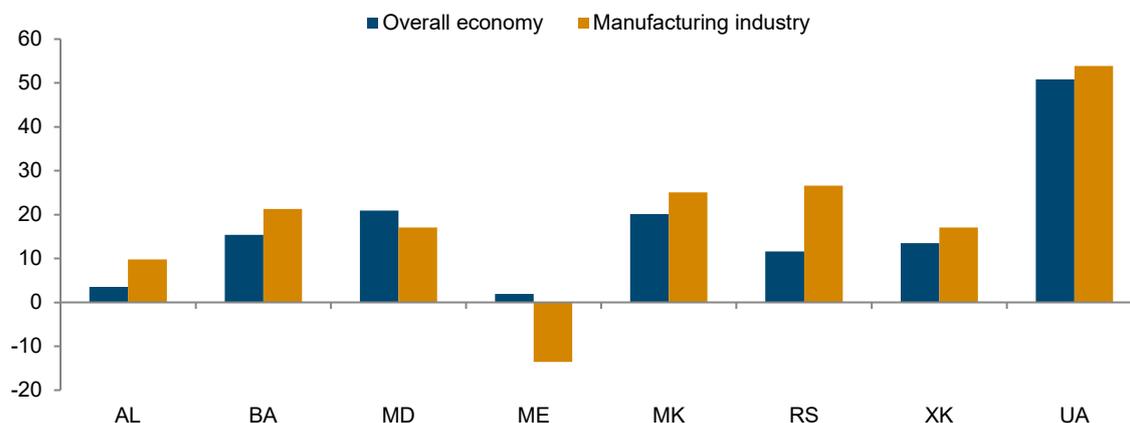
2.3. WAGE DEVELOPMENTS BY SECTOR AND SECTORAL WAGE STRUCTURES

The macroeconomic wage dynamics in the Western Balkans, Moldova and Ukraine are driven by a variety of sector-specific developments. This section analyses wage developments at the 1-digit level of the NACE classification.

In most countries of the region, wages in the manufacturing sector (C) have been rising at an above-average rate (Figure 2.5). This is in line with wage developments in EU-CEE over the same period (Astrov et al., 2018) and can be interpreted as a manifestation of the famous 'Balassa-Samuelson effect'. This means that productivity gains (and wage increases) in industry in the course of catching-up are generally greater than in the service sector, where for technological reasons the production factor of

labour can only be replaced to a limited extent by capital. Only Moldova and (especially) Montenegro recorded significantly slower wage growth in the manufacturing sector than in the economy as a whole.

Figure 2.5 / Cumulative real wage growth: total economy versus manufacturing industry, %



Note: Cumulative real wage growth: North Macedonia and Serbia 2008-2018, Bosnia and Herzegovina 2009-2018, Kosovo 2009-2017, Montenegro 2010-2018, Ukraine 2011-2018, Moldova 2014-2018, Albania 2015-2018.

Source: Own calculations based on wiiw annual database.

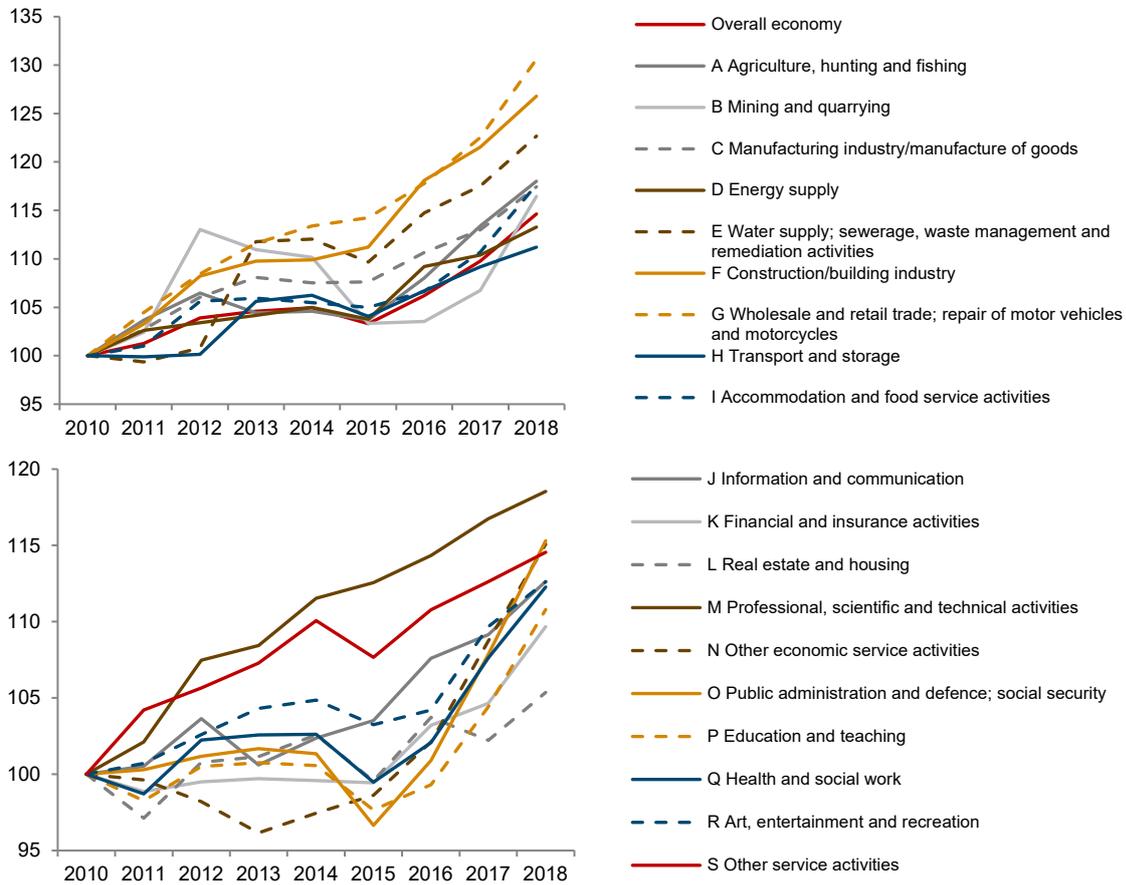
Figure 2.6 shows the dynamics of real wages by sector in the West Balkan countries, Moldova and Ukraine on a regional (unweighted) average since 2007. Trade (G) and construction (F) in particular have recorded above-average real wage increases of up to 30%. At the lower end of the spectrum is real estate (L), where real wages have risen by only 5% over the same period. However, real wages in the financial and insurance services (K) sector also grew at a below-average rate, by less than 10% overall, due to continued deleveraging and the associated contraction of the sector. For many years, wage dynamics were even worse only in 'other economic services' (N), although wage growth in this sector has recently accelerated.

The different growth rates of real wages per sector has led to shifts in sectoral wage structures over time. Figure 2.7 shows the sectoral wage structures (at the 1-digit level) for each country in the region. As can be seen, three sectors in particular typically offer the best-paid jobs: financial services (K), information and communication (J), and energy supply (D). Wages in these sectors are generally 60% to 80% higher than the national average.

The worst-paid jobs in these countries are usually to be found in hospitality (I), arts and entertainment (R); partly also in other economic services (N) (Bosnia and Herzegovina, Montenegro) and health and social services (Q) (Ukraine). Wages in these sectors account for only slightly more than 60% of the average wage in the country. Interestingly, wages in the manufacturing sector in Albania, Bosnia and Herzegovina, Montenegro and Kosovo are also among the lowest.

Figure 2.6 / Real wage dynamics on regional average, by sector

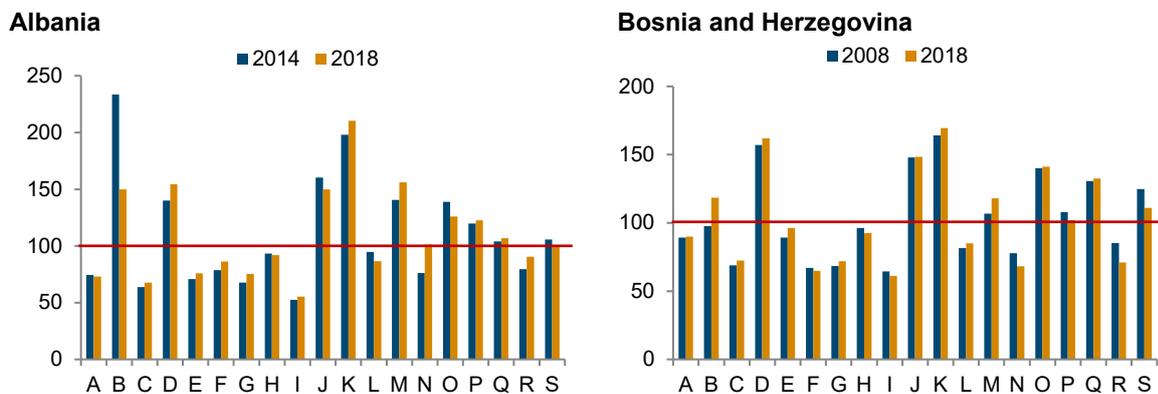
Index 2010 = 100



Note: For methodological notes, see Table A1 in the Annex. Data for Kosovo according to performance and structural data. Unweighted average of the countries for which data are available in a given year. Albania 2015-2018, Moldova 2014-2018, Kosovo 2011-2017.

Source: Own calculations based on wiiw annual database.

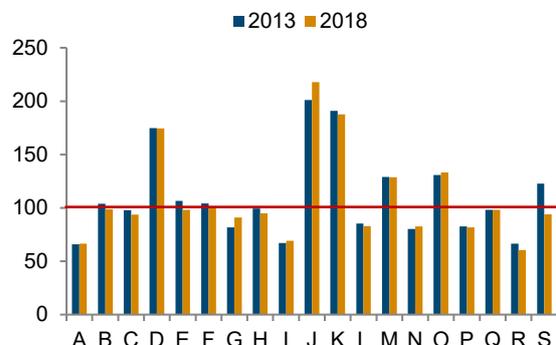
Figure 2.7 / Sectoral wage structures, total economy = 100



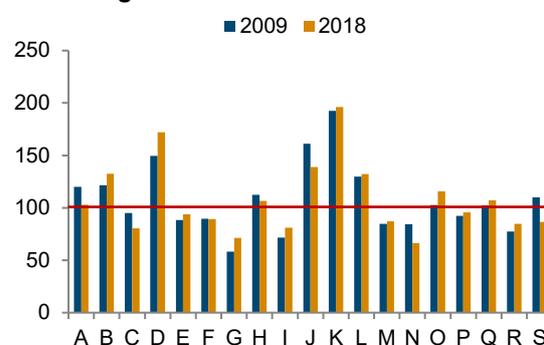
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Figure 2.7 / contd.

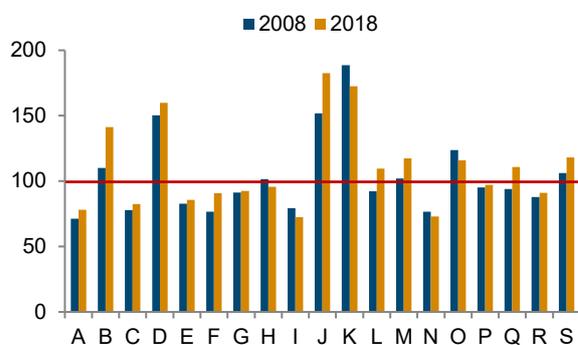
Moldova



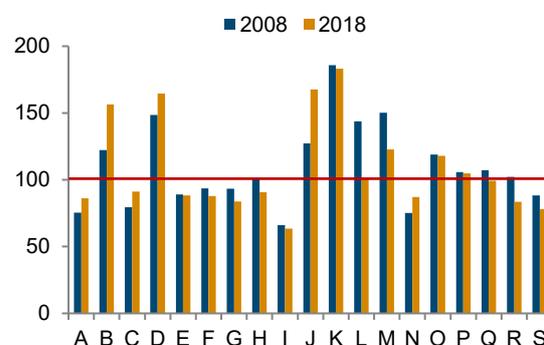
Montenegro



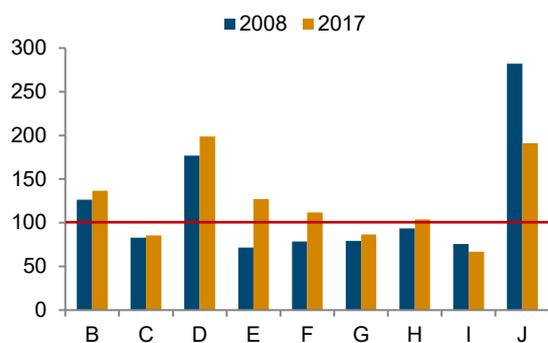
North Macedonia



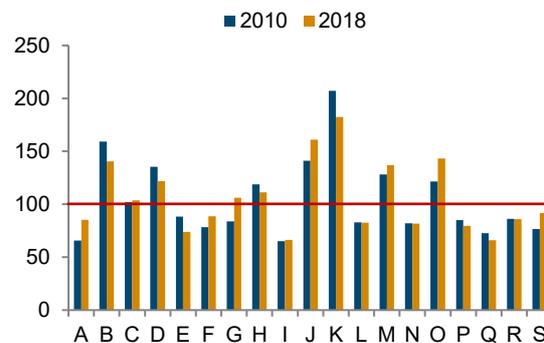
Serbia



Kosovo



Ukraine



Note: For methodological notes, see Table A1 in the Annex. Data for Kosovo according to performance and structural data. Economic sectors according to NACE Rev. 2:

A	Agriculture, hunting and fishing	K	Financial and insurance activities
B	Mining and quarrying	L	Real estate and housing
C	Manufacturing industry/manufacture of goods	M	Professional, scientific and technical activities
D	Energy supply	N	Other economic service activities
E	Water supply; sewerage, waste management and remediation activities	O	Public administration and defence; social security
F	Construction/building industry	P	Education and teaching
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	Q	Health and social work
H	Transport and storage	R	Art, entertainment and recreation
I	Hospitality and gastronomy	S	Other service activities
J	Information and communication		

Source: wiiw annual database.

Figure 2.7 also shows that sectoral wage differentials have tended to widen somewhat over time, as some high-wage sectors have experienced above-average wage increases. This applies above all to energy supply (D): with the exception of Ukraine, wages in this sector have risen at an above-average rate in all countries surveyed. The same applies to the information and communications sector (J), especially in Serbia, where the ICT sector has expanded rapidly. Only in Albania, Montenegro and Kosovo have wages in this sector fallen relative to the national average. At the same time, wages in the low-wage sectors, above all in hospitality (I), have either stagnated or increased at below average; only in Montenegro was there an above-average wage increase.

2.4. WAGE DEVELOPMENTS AND WAGE STRUCTURES IN MANUFACTURING

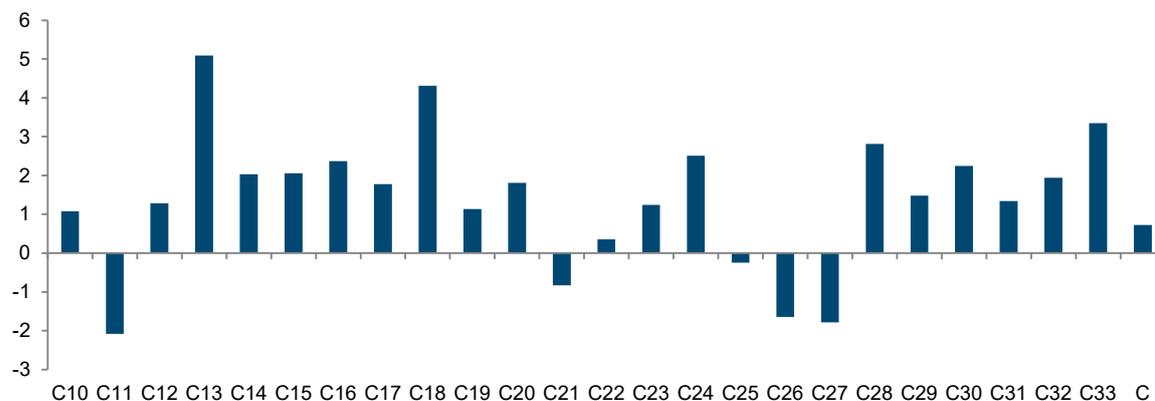
Wage developments in manufacturing (sector C) can be further disaggregated (at the 2-digit level of the NACE classification). However, these data over time are only available for four countries of the region: Albania, Bosnia and Herzegovina, North Macedonia and Serbia (see also Section 2.1).

Figure 2.8 shows the average annual growth rates of real wages in 2012-2016 in the individual manufacturing industries for the regional (unweighted) average of the four Western Balkan countries mentioned above. As can be seen from Figure 2.8, wages in the manufacture of textiles (C13) and printing products (C18) rose fastest, by around 4-5% per year. At the other end of the spectrum are four industries in which real wages have been falling significantly (by 1-2% per year): beverages (C11), electrical equipment (C27), computers (C26) and pharmaceuticals (C21). With the exception of beverages, these are industries with high value-added. Real wage losses in these industries are all the more surprising and possibly signal competitiveness problems.

Figure 2.9 shows wage structures and their development over time for the individual manufacturing sectors in the four Western Balkan countries examined here. The figure demonstrates the dominant position of the pharmaceutical industry (C21), which, with the exception of Albania, offers wages more than twice as high as the average for the manufacturing sector as a whole. Other sectors with the best-paid jobs include metals (C24) and printing (C18) (Albania), chemicals (C20) and repair of machinery and equipment (C33) (North Macedonia), tobacco (C12), and coke and refined petroleum products (C19) (Serbia). At the lower end of the wage spectrum are typically the manufacture of clothing (C14), leather goods (C15) and wood products (C16).

Wages in highly paid sectors (with the exception of the pharmaceutical industry) rose at an above-average rate, further widening the gap with the average wage in the manufacturing sector as a whole (Figure 2.9). At the same time, however, wages in the worst-paid sectors also rose at an above-average rate, leading to a compression of wages at the lower end of the wage spectrum.

Figure 2.8 / Real wage growth in 2012-2016 by manufacturing industry in % per year, regional average



Industrial sectors within manufacturing (C) according to NACE Rev. 2:

C10 - Manufacture of food products and animal feeding stuffs

C11 - Beverage production

C12 - Manufacture of tobacco products

C13 - Manufacture of textiles

C14 - Manufacture of wearing apparel

C15 - Manufacture of leather and leather products and footwear

C16 - Manufacture of wood and of products of wood and cork, except furniture

C17 - Manufacture of paper and paperboard and articles thereof

C18 - Manufacture of printed matter; reproduction of recorded sound, visual and data media

C19 - Manufacture of coke and refined petroleum products

C20 - Manufacture of chemicals and chemical products

C21 - Manufacture of pharmaceutical products

C22 - Manufacture of rubber and plastic products

C23 - Manufacture of glass and glass products, ceramics, stone and earth products

C24 - Metal production and processing

C25 - Manufacture of fabricated metal products

C26 - Manufacture of computers, electronic and optical products

C27 - Manufacture of electrical equipment

C28 - Mechanical engineering

C29 - Manufacture of motor vehicles, trailers and semi-trailers

C30 - Other transport equipment

C31 - Manufacture of furniture

C32 - Manufacture of other manufactured articles

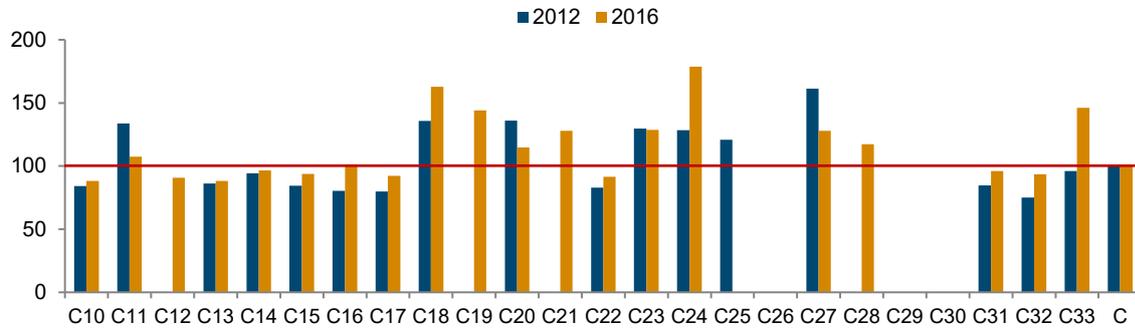
C33 - Repair and installation services of machinery and equipment

Note: Data based on labour cost surveys. Average growth rate per year, unweighted average of four countries: Albania, Bosnia and Herzegovina, North Macedonia and Serbia.

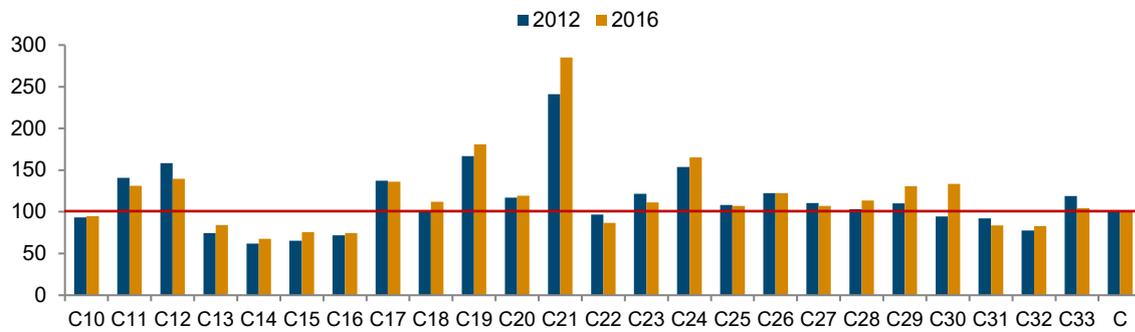
Source: Eurostat, wiiw calculations.

Figure 2.9 / Wage structure by industry, manufacturing industry (C) = 100

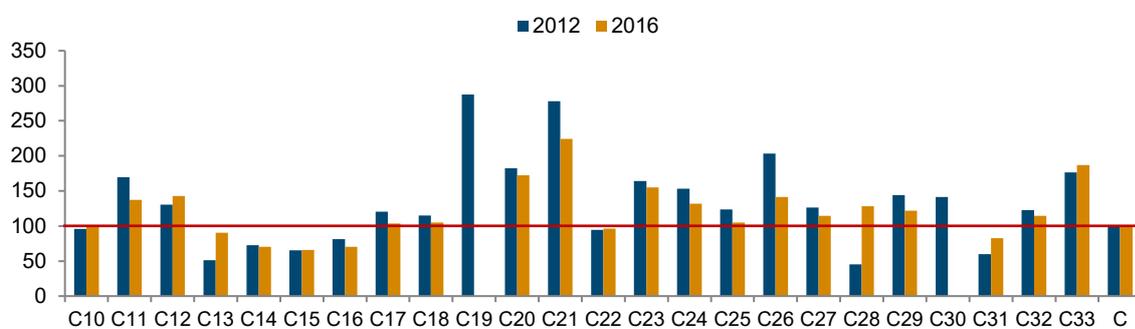
Albania



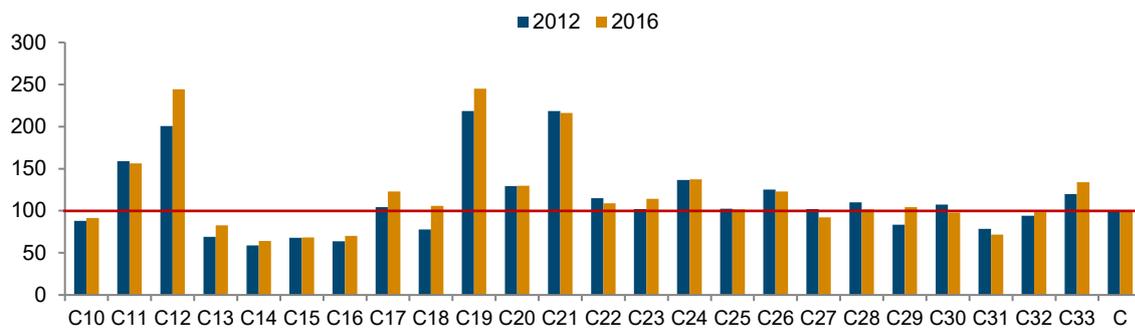
Bosnia and Herzegovina



North Macedonia



Serbia



Note: Data based on labour cost surveys. See Figure 2.8 for an explanation of NACE manufacturing activities.
Source: Eurostat, wiiw calculations.

2.5. WAGES, LABOUR PRODUCTIVITY AND WAGE SHARES

Here real wage developments in the Western Balkans, Moldova and Ukraine will be analysed against the background of productivity developments. Figure 2.10 shows the development of real wages and labour productivity for each individual country in the region in the period 2007-2018, whereby labour productivity was calculated on the basis of real GDP per employee (according to the Labour Force Survey (LFS) method). In most countries, with the exceptions of Albania and Serbia, real wages rose faster than labour productivity; in Bosnia and Herzegovina they rose at roughly the same rate. The difference was particularly striking in Kosovo and Ukraine: the cumulative increase in real wages in both countries was some 60 to 70 percentage points higher than that in labour productivity; in Ukraine, productivity even fell slightly during this period.

These developments contrast with those in EU-CEE, where real wages and labour productivity increased at roughly the same rate on a regional (unweighted) average. In the Visegrád countries, which recorded massive inflows of foreign direct investment, the opposite could even be observed: productivity gains tended to outstrip real wage growth (Astrov et al., 2018).

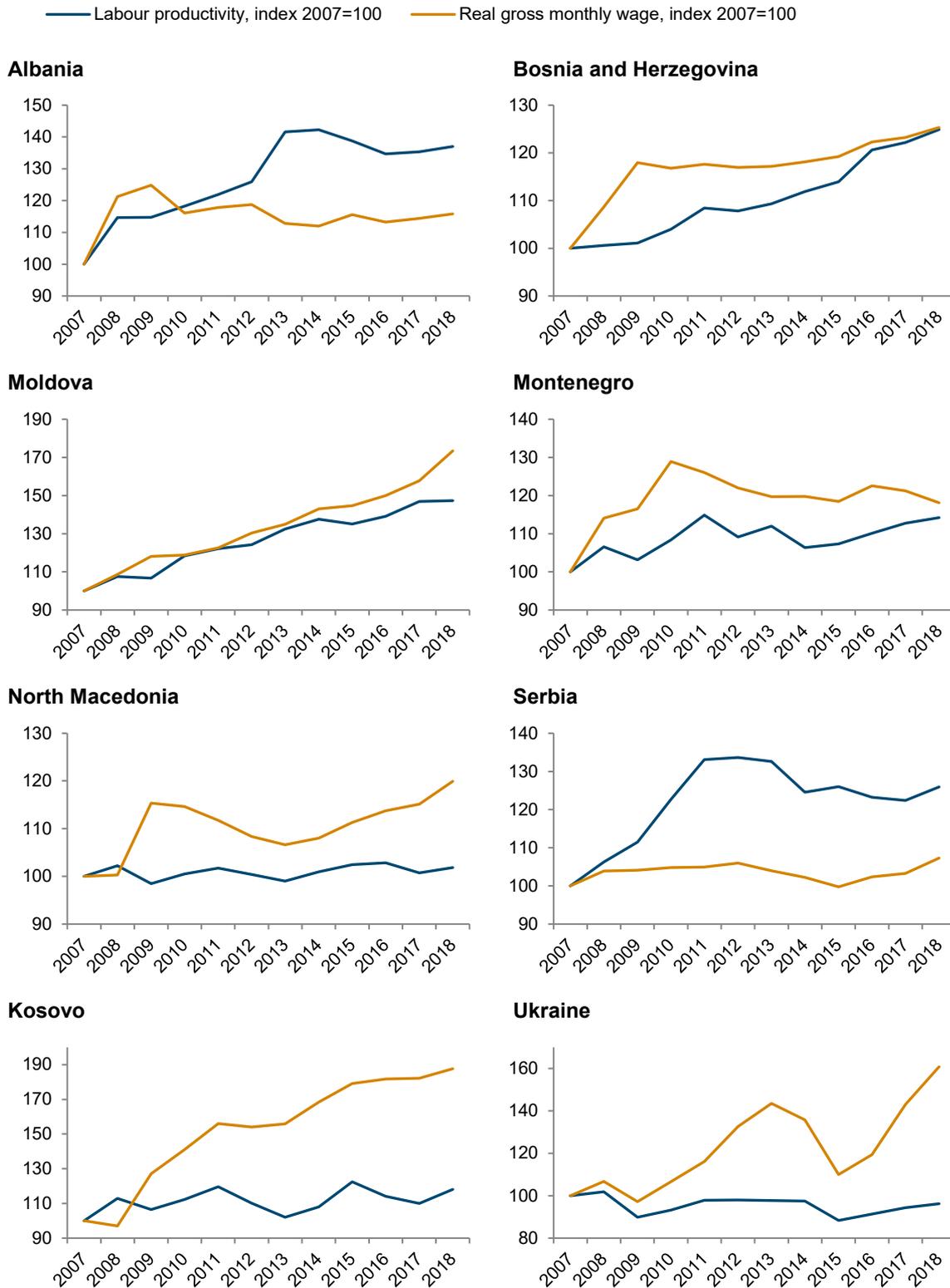
In theory, the relationship between real wage and labour productivity developments should have an impact on the wage share (defined as the share of total wages in GDP) in an economy. If both indicators keep pace with each other, the wage share remains constant and the competitiveness of the economy in terms of labour costs remains unchanged. Figure 2.11 shows, however, that this is not necessarily the case. Not only has the wage share not risen since 2007 in most countries of the region, with the exception of Kosovo and Albania, but in some cases it has even fallen.²

Wage shares in the Western Balkans, Moldova and Ukraine are relatively low by international standards (Figure 2.11). In the successor states of the former Yugoslavia, they amount to between 33% and 40% of GDP (at market prices). This means that most of these countries, with the exception of Bosnia and Herzegovina, are slightly below Austria's level (39%), but largely within the range of EU-CEE: wage shares in EU-CEE varied in 2016 between 29% in Romania and 42% in Slovenia (Astrov et al., 2018).

However, in the poorer countries of the region – Albania, Kosovo, Moldova and Ukraine – the wage shares are much lower and do not exceed 25%. However, it should be emphasised that these very low numbers are partly due to insufficient statistical coverage of employees in these countries. In Ukraine, for example, workers in enterprises with fewer than 10 employees have not been included in the statistics since 2010. This leads to an underestimation of employment in that country, which is the basis for calculating the wage share. A similar problem exists in Albania, where agricultural workers are not included in the statistics. Finally, the big size of the informal economy also plays a role. In principle, wages in the shadow economy are only included in national accounts, but such data are not available for most of the countries surveyed.

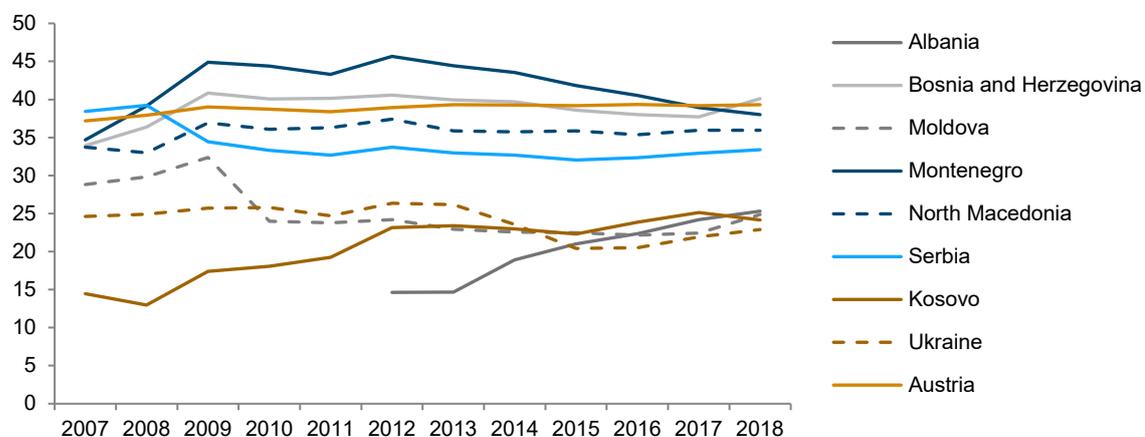
² This phenomenon appears to be a paradox only at first glance and can largely be explained by the different methods of deflating the two indicators presented in Figure 2.10: wages are deflated using the consumer price index (CPI), but real GDP and labour productivity are calculated using the GDP deflator. The GDP deflator was higher than the CPI in most of the countries examined here, which largely explains the phenomenon of high real wage growth (calculated on the basis of CPIs).

Figure 2.10 / Labour productivity and real wage, 2007 = 100



Note: Labour productivity: gross domestic product per person employed (LFS). Real gross monthly wage per employee. For methodological notes, see Table A1 in the Annex.

Source: wiiw annual database.

Figure 2.11 / Wage share in 2007-2018, as % of GDP

Note: Annual gross wages of employees as a percentage of GDP at market prices. For methodological notes, see Table A1 in the Annex.

Source: Own calculations based on wiiw annual database.

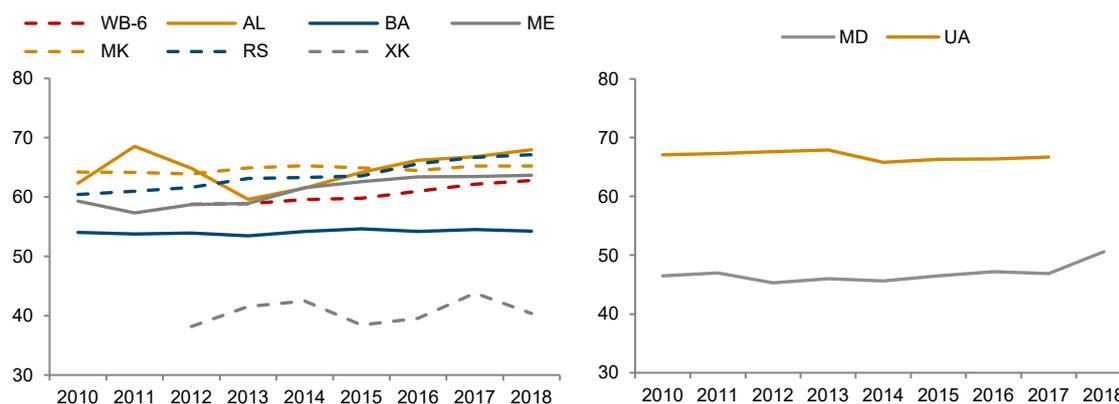
Finally, it should be noted that the wage shares presented above underestimate the actual share of GDP appropriated by workers for two reasons. First, they are calculated on the basis of *gross wages*, i.e. they do not take into account employers' social security contributions, which ultimately also benefit employees. Second, specifically in the Western Balkan countries, Moldova and Ukraine, the proportion of the *self-employed* is above average. Their incomes are not included in the (so-called 'unadjusted') wage shares described above. It is obvious that, if these two factors were taken into account, the wage shares in the countries surveyed would be significantly higher than those shown in Figure 2.10. For EU-CEE, for example, for which the data on these two factors are available, the difference is usually 15-20 percentage points of GDP (Astrov et al., 2018, Table A2 on p. 57).

3. Wages and labour market conditions

3.1. LABOUR MARKET DEVELOPMENTS

The labour markets of the Western Balkan countries are characterised by (in some cases very) low participation and employment rates (especially of women), compared with the rest of Europe. In 2018, the regional average employment rate was around 63% (Figure 3.1), although there were considerable differences from country to country. In Kosovo and Bosnia and Herzegovina, for example, only around 40% and 54%, respectively, actively participated in the labour market; in Albania and Serbia, however, the figure was around 68%. As in some Western Balkan countries, the employment rate in Moldova is also very low (51%), but in Ukraine (66%) it is similar to that in Albania and Serbia.

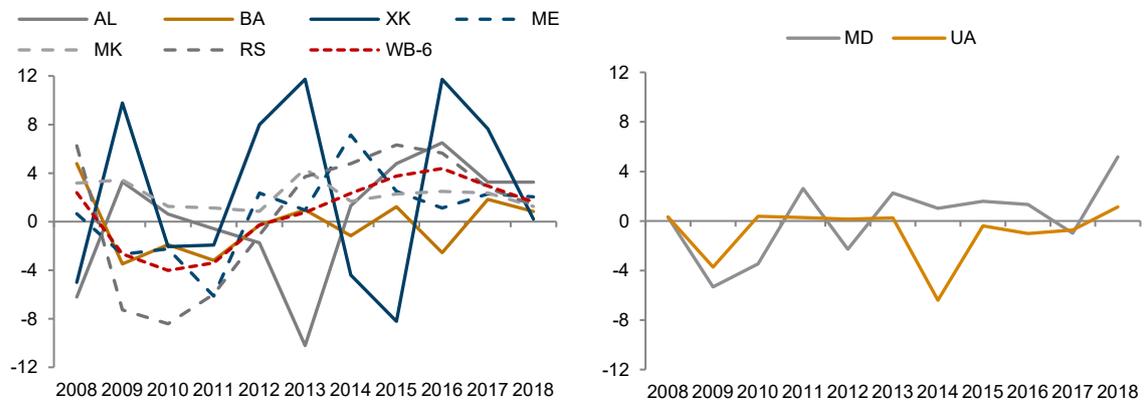
Figure 3.1 / Labour force participation rate in 2010-2018, in %



Source: wiiw annual database.

At the same time, most countries of the region have seen a continuous improvement in the employment situation in recent years. In the Western Balkan countries, for example, employment has risen steadily since 2013, after falling by 10% between 2008 and 2012 as a result of the crisis (Figure 3.2), and returned to pre-crisis levels in 2016. This trend is also largely reflected in Serbia, the largest country in the region. North Macedonia is the only country in the Western Balkans to have seen continuous employment growth, albeit starting from a very low level.

In Ukraine, employment fell by 8.5% between 2014 and 2017, after a period of stagnation up to 2013. It was not until 2018 that employment started growing slightly in the course of economic recovery. Finally, in Moldova employment has been rising steadily since 2013 (apart from in 2017); in 2018 it recorded an increase of 5.5%.

Figure 3.2 / Employment in 2008-2018, annual change in %

Note: The development of employment in Ukraine in 2014-2015 is adjusted for the effect of the de facto loss of the Crimea and parts of Donbas.

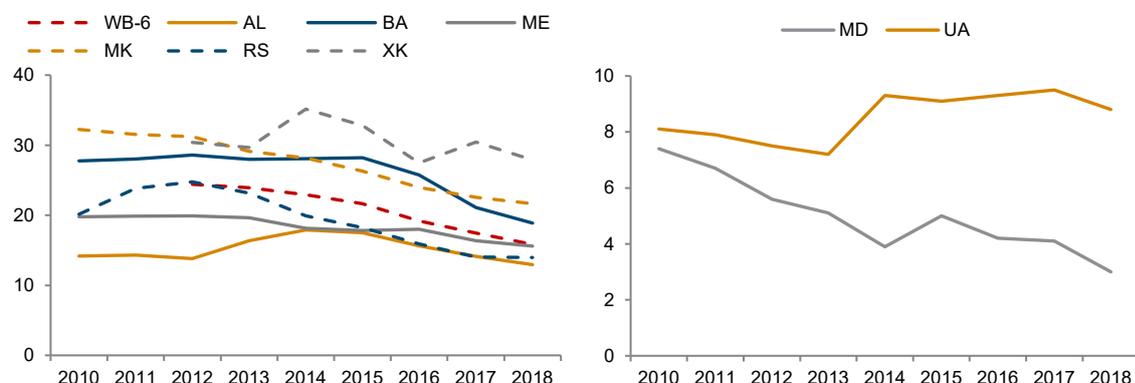
Source: wiiw annual database.

Despite these improvements, unemployment remains high in the Western Balkans, averaging nearly 16% in 2018 – more than twice the rate in EU-CEE or the EU as a whole. Again, there are clear differences between countries, with the figures ranging from 12-13% in Albania and Serbia to nearly 30% in Kosovo (Figure 3.3). In Ukraine and Moldova, unemployment tends to be much lower than in the Western Balkan countries. While unemployment in Moldova has been falling steadily since 2011, and reached 3% in 2018,³ Ukraine was confronted with an increase in unemployment in the wake of the economic crisis (after an improvement in 2010-2013). In 2017, the unemployment rate in Ukraine reached 9.5% and has only started declining slightly since 2018.

Youth and long-term unemployment is a particular problem in the Western Balkans: it is on a scale to be seen nowhere else in Europe. Although youth unemployment in the region fell from its peak (50%) in 2014 to 35% in 2018, it is still more than double the EU average. The youth unemployment rate ranges from 24% in Montenegro to around 55% in Kosovo. In Albania, Bosnia and Herzegovina and Serbia, it is highly qualified young people who are worst affected by unemployment, while in North Macedonia and Kosovo it is the low skilled who suffer most. One of the main causes of high youth unemployment in the Western Balkan countries is the education system, which cannot keep pace with the demands of the labour market. The precarious situation of young people is confirmed by the high NEET rate:⁴ the proportion of young people (aged 15-24) who are neither in employment nor in the school system nor in continuing vocational training. Despite a downward trend, the NEET rate in the Western Balkan countries in 2017 still averaged 22.3% (Austria: 6.5%), closely associated with the risk of impoverishment and social exclusion.

³ However, methodological changes introduced in 2019 resulted in a significant upward revision of the unemployment rate in Moldova, to 5.5%.

⁴ Not in employment, education or training.

Figure 3.3 / Unemployment rate (LFS) in 2010-2018, in %

Source: wiiw annual database.

Compared with the Western Balkan countries, youth unemployment in Moldova is much lower (2018: 7.8%) and has been falling steadily since 2016. The low unemployment rate in that country reflects the high employment rate in the informal sector, the high level of emigration and, above all, the low labour force participation of young people, which is even lower than in the Western Balkan countries. In Ukraine, after a slight recovery in 2017, youth unemployment has subsequently risen to 19.8%. In contrast to the relatively low unemployment rate, the NEET rate for 15-24-year-olds in Moldova stands at around 17%, which is similar to that found in Serbia, while in Ukraine it is somewhat lower, at 16.5%.

The number of long-term unemployed in the Western Balkan countries fell from a total of 1.3 million (or 18.6% of the labour force) in 2012 to 776,000 (10.5%) in 2018. Nevertheless, long-term unemployment remains a key problem for their labour markets. Serbia and Albania have long-term unemployment rates below the regional average (7.4% and 8.4%, respectively), while in Bosnia and Herzegovina and North Macedonia (15%) and especially in Kosovo (17.7%), the rates are significantly higher. The problem is also illustrated by the high proportion of long-term unemployed in the total number of unemployed. In 2018, the regional average was around 68%, ranging from 61% in Kosovo to 82% in Bosnia and Herzegovina. Moldova and Ukraine, on the other hand, have comparatively low long-term unemployment rates of 0.1% and 2.5%, respectively, which are even lower than the EU average. In 2018, the proportion of long-term unemployed was around 25% in Moldova and just over 20% in Ukraine.

In common with the labour markets of the Western Balkan countries, Moldova and Ukraine have a high proportion of employment in the informal sector of the economy (35% in Albania, about 20% in North Macedonia and Serbia, 22% in Ukraine and 35% in Moldova)⁵ and continued migration abroad (see chapters 4 and 5).

⁵ Labour Force Survey (LFS) of the respective countries, 2018.

3.2. UNEMPLOYMENT AND WAGE GROWTH: THE PHILLIPS CURVE

Wage dynamics in the six Western Balkan countries, Moldova and Ukraine must be seen against the background of the labour market developments described in the previous section. As discussed above, while unemployment has fallen almost everywhere in the region, it is still very high compared to EU-CEE. As a result, the bargaining power of workers remains generally low. Only Moldova recorded an unemployment rate comparable to that of the EU-CEE countries – but with a much lower employment rate. Therefore, wage growth in these countries could not – or cannot be expected to – be as significant as in EU-CEE.

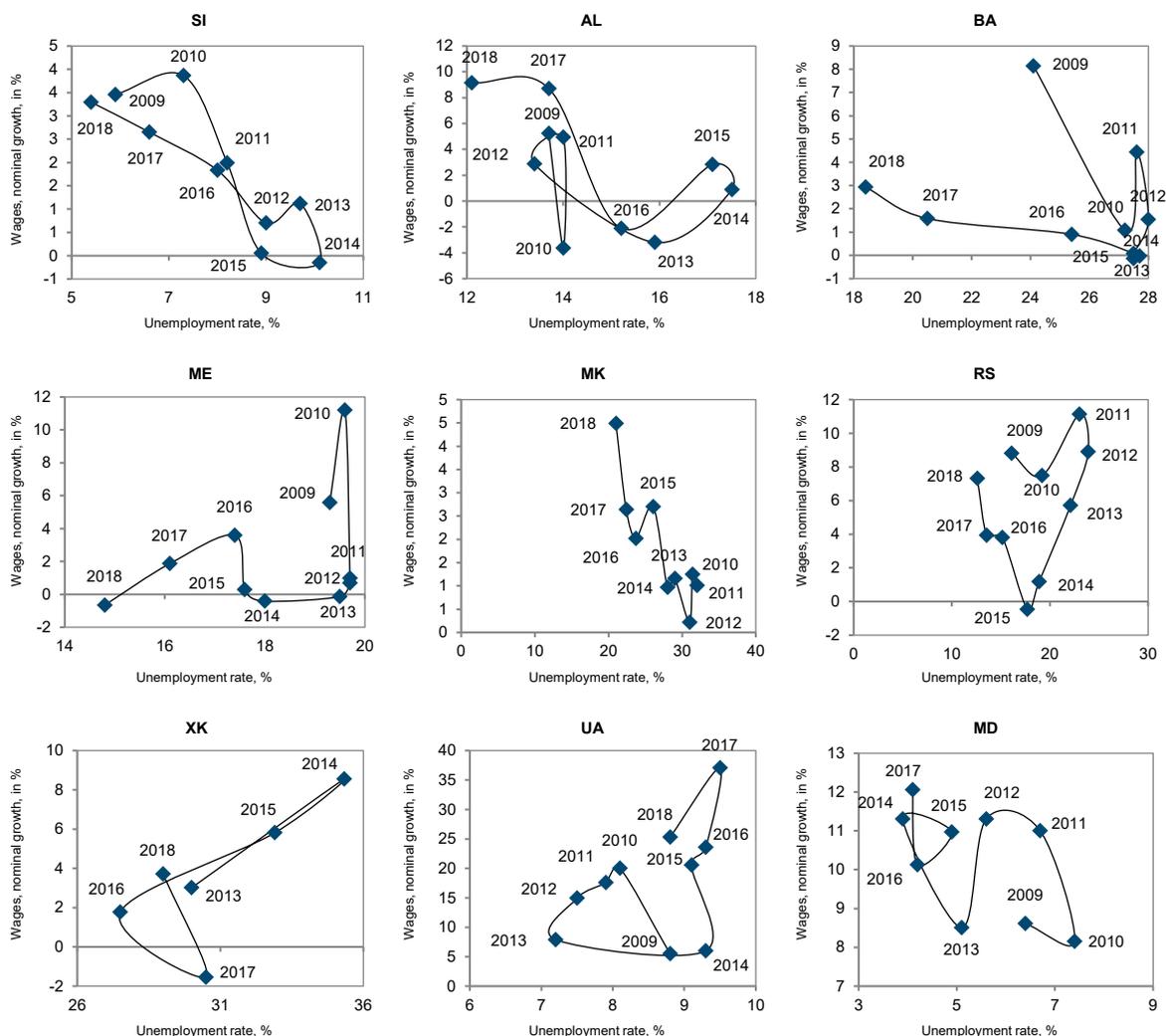
In the following, the so-called ‘Phillips curve’ shows the relationship between the level of unemployment and *nominal* wage growth (Phillips, 1958). It has been argued that the downward relationship between wage inflation and the unemployment rate may reflect the impact on inflation of changes in labour market conditions. Low unemployment points to tight labour market conditions, which may lead to higher wage increases. High unemployment is accompanied by a slump in the labour market – which can lead to lower wage increases (or even declining wages) for workers. However, this demand-side effect, which suggests a negatively sloping Phillips curve, can be countered by a supply-side effect, which may run in the opposite direction, i.e. even produce a positively sloping Phillips curve. It is conceivable, for example, that in the event of an increase in wage costs, entrepreneurs would be forced to cut costs and lay off workers, which could lead to an increase in unemployment.

Until the early 1970s, the Phillips curve in developed countries such as the USA and Western Europe had the ‘classic’ downward slope, suggesting a trade-off between wage growth/inflation and unemployment in practical economic policy. But in subsequent years – and especially after the oil crises of the 1970s – such a negative statistically significant correlation was not much in evidence. In recent years, the classic Phillips curve has been a rare phenomenon in developed countries (European Commission, 2017).

For the Western Balkans, Moldova and Ukraine (as well as for most EU-CEE countries), classic Phillips curves are also thin on the ground. Figure 3.4 shows the relationship between nominal wage growth and the unemployment rate for these countries, and also for Slovenia (the inclusion of Slovenia serves to illustrate the differences with an advanced EU-CEE country). As can be seen from Figure 3.4, the results for North Macedonia and (to a lesser extent) Moldova and Albania indicate the existence of a classic (downward-sloping) Phillips curve. The same is true of Slovenia (as well as of Slovakia and the Czech Republic – see Astrov et al., 2018, p. 35).

But the results for the remaining countries do not correspond to the expected patterns. In Serbia, Kosovo and Ukraine, the Phillips curve appears to be pointing upwards. Such a trend could only be plausible on the assumption that production and employment are constrained by insufficient demand. In these circumstances, rising wages may lead to an increase in demand and hence employment, resulting in a decline in the unemployment rate.

Figure 3.4 / Nominal wage growth and unemployment rate (LFS), in %, 2009-2018



Source: wiiw annual database.

Finally, in Bosnia and Herzegovina and Montenegro, the relationship between wage inflation and the unemployment rate seems to have changed around 2013. Since then, the unemployment rate has fallen sharply, with little change in the wage inflation rate. Previously, the opposite was the case: the unemployment rate was in a narrow range, despite quite large differences in wage growth rates. In these cases, the implied Phillips curve would have to be almost vertical.⁶

⁶ Since Milton Friedman’s ground-breaking address at the American Economic Association’s annual meeting in 1968, it has been widely believed that the Phillips curve is indeed vertical in the long run. It is quite often assumed that there is a natural unemployment rate at which an economy settles independently of monetary policy in the long run. This level is also known as NAIRU – non-accelerating inflation rate of unemployment.

3.3. UNEMPLOYMENT AND WAGE GROWTH: VECTOR AUTOREGRESSION ANALYSIS

The Phillips curves illustrated in Figure 3.4 are a rather poor guide to understanding the short-term dynamics of wage inflation and the unemployment rate. Econometric methods are therefore needed to analyse these dynamics. A simple regression analysis, in which the observed values of wage inflation are 'explained' by the observed values of unemployment rates, provides static regression and correlation coefficients. In general, however, such an analysis does not shed light on the *dynamics* of the system.

A deeper understanding can be gained by using sophisticated tools of dynamic econometrics. In view of the relatively limited number of observations and their properties, it makes sense to apply the so-called vector autoregression (VAR) method here (see Box 3.1). In the VAR models, the change in the unemployment rate $d(U)$ and the change in the nominal wage growth rate $d(W)$ are attributed to their past values and a constant. The optimal number of selected lags is determined by separate calculations.

BOX 3.1 / UNEMPLOYMENT AND WAGE GROWTH RATES: ECONOMETRIC METHODOLOGY

One way to capture the dynamics of the above-mentioned theoretical effects underlying the Phillips curve is the econometric vector autoregression (VAR) estimation, which takes account of endogeneity and dynamic effects.

The following VAR model was estimated:

$$d(U)_t = a_0 + a_1 d(W)_{t-1} + a_2 d(U)_{t-1} + u_t$$

$$d(W)_t = c_0 + c_1 d(U)_{t-1} + c_2 d(W)_{t-1} + v_t$$

Where $d(U)$ is the change in the unemployment rate and $d(W)$ is the change in the nominal wage growth rate. For the majority of countries, the optimal lag length proved to be 1, i.e. both $d(U)$ and $d(W)$ are best explained by $d(U(-1))$ and $d(W(-1))$ and the constant. The parameters a_1 and c_1 capture the (delayed) effects of $d(W)$ on $d(U)$ and $d(U)$ on $d(W)$, respectively. The parameters a_2 and c_2 measure the persistence of $d(U)$ and $d(W)$, respectively.

Table 3.1 summarises the results of the estimates for 2000-2018. The coefficient reflecting the impact of unemployment on the wage growth rate (in the following period) (c_1) is positive for most countries, with the exception of Bosnia and Herzegovina and North Macedonia. This contradicts the notion that a rising unemployment rate should 'cool' wage growth. Rather, it appears that rising unemployment tends to accelerate wage inflation. However, c_1 is statistically significant only in the case of Albania, Montenegro and Serbia. (In contrast, the coefficient c_1 is negative for Slovenia, although statistically insignificant. For Slovenia, a decrease in unemployment of 1 percentage point causes an increase in the nominal wage growth rate of 0.72 percentage points.) These results may indicate that the Phillips curve mechanism, which transmits declining unemployment to wage dynamics, is not yet mature in less-developed countries, such as the Western Balkans, Moldova and Ukraine.

Table 3.1 / Unemployment and nominal wage growth: VAR estimates for 2000-2018

	a_1	c_1
Albania	-0.04	0.09
Bosnia and Herzegovina	0.42	-1.46
Montenegro	-0.38	0.12
North Macedonia	0.12	-0.01
Serbia	-0.04	0.31
Kosovo	-0.54	0.67
Ukraine	0.00	3.8
Moldova	-0.15	2.1
Slovenia	0.01	-0.72

Note: The bold coefficients are statistically significant at 5%.

Source: Own calculations.

The second coefficient (a_1), which reflects the impact of the change in the nominal wage growth rate on the level of unemployment in the following period, is negative in most countries, but statistically significant only in Montenegro, Moldova and Kosovo. (For Slovenia, a_1 is approximately zero: a change in the nominal wage growth rate has no impact on the change in the unemployment rate.) A negative a_1 coefficient could be interpreted as confirmation of the above-mentioned supply-side mechanism, whereby wage increases generate higher aggregate demand, which in turn is conducive to an increase in employment.

In summary, the econometric analysis of the combined dynamics of wage inflation and the unemployment rates for the countries of the Western Balkans, Moldova and Ukraine does not support conclusions in line with traditional theories. The empirical analysis suggests that rising unemployment tends to accelerate wage inflation, while higher wage inflation tends to lower the unemployment rate. However, it must be stressed that in most cases the estimated parameters lack statistical significance.

3.4. UNEMPLOYMENT AND UNIT LABOUR COSTS

An alternative to the classical Phillips curve is to empirically find the relationship between unemployment and nominal *unit labour costs* (rather than wages) for each country over time. For example, it is conceivable that higher wages do not automatically translate into higher labour costs, if labour productivity increases and unit labour costs remain constant.

Similar to the model described in Box 3.1, the common dynamics of the unemployment rate and unit labour costs were examined using the following VAR model:

$$d(U)_t = a_0 + a_1 d(ULC)_{t-1} + a_2 d(U)_{t-1} + u_t$$

$$d(ULC)_t = c_0 + c_1 d(U)_{t-1} + c_2 d(ULC)_{t-1} + v_t,$$

where $d(U)$ is the change in the unemployment rate and $d(ULC)$ is the change in nominal unit labour costs. For almost all countries, the optimal lag length proved to be 1, i.e. both $d(U)$ and $d(ULC)$ are best explained by $d(U(-1))$ and $d(ULC(-1))$ and the constant.

Table 3.2 / Unemployment and nominal unit labour costs: VAR estimates for 2000-2018

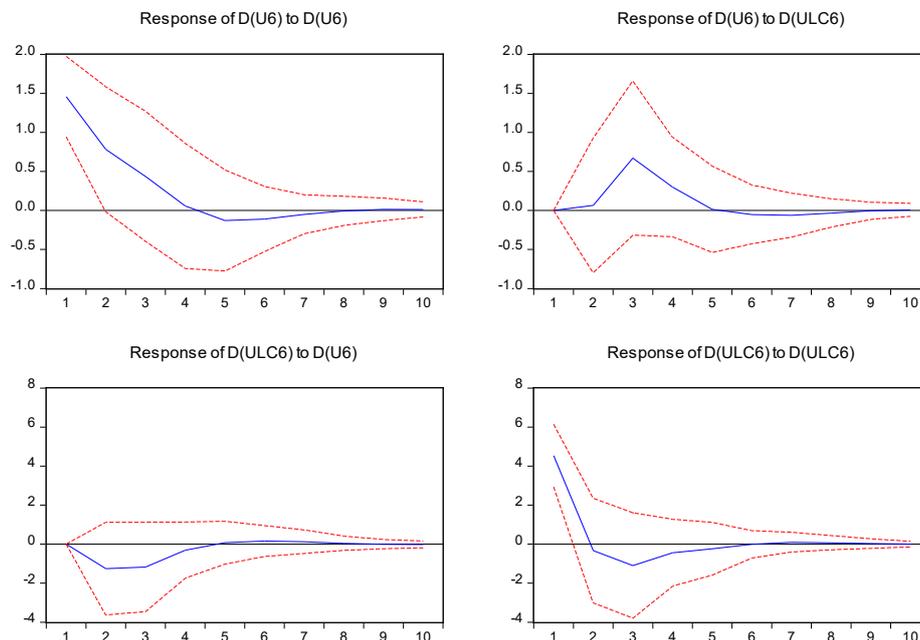
	a_1	c_1
Albania	-0.05	-0.8
Bosnia and Herzegovina	0.37	-0.5
Montenegro	0.14	0.12
North Macedonia*	0.15	-0.86
Serbia	-0.22	0.34
Kosovo	0.18	-1.13
Ukraine	0.00	6.7
Moldova	0.03	-1.99
Slovenia	0.14	-1.31

Note: The bold coefficients are statistically significant at 5%. * The optimal number of lags for VAR analysis for North Macedonia is 2, the a and c parameters are sums of the relevant regression coefficients for the first two lags.

Source: Own calculations.

BOX 3.2 / IMPULSE-RESPONSE FUNCTION USING THE EXAMPLE OF NORTH MACEDONIA

Box Figure 3.1 / Response to non-factorised one standard deviation innovations plus or minus two standard errors



Two panels are relevant for the current analysis: the upper right and the lower left. The upper-right panel shows that a positive shock to the nominal growth rate of unit labour costs in North Macedonia leads to an increase in unemployment in the three years thereafter, with the extent of the increase being greatest in the third year. The lower-left panel shows that a positive shock to the unemployment rate in North Macedonia has only a small, but otherwise widely dispersed, impact on the nominal growth rate of unit labour costs. Over time, shocks become smaller and eventually disappear altogether.

As can be seen from Table 3.2, VAR estimates are much more consistent with the usual theories if unit labour costs are used, rather than wages. The c_1 parameter is now negative for most countries, and so an increase in the unemployment rate is likely to slow nominal unit labour cost growth. Conversely, the parameter a_1 is positive for the majority of countries, which means that faster growth of nominal unit labour costs leads to an increase in the unemployment rate. For a detailed description of the dynamic effects within the model (i.e. the so-called impulse-response function) for an example country (North Macedonia), see Box 3.2.

3.5. CONCLUSION

Generally speaking, the transmission mechanism underlying the Phillips curve is rare in most Western Balkan countries, Moldova and Ukraine. The improvement in labour market conditions in recent years (falling, but still generally high, unemployment) has not led to higher wage settlements in those countries. The empirical analysis suggests that falling unemployment tends to slow, rather than accelerate, wage inflation. At the same time, higher wage settlements in most countries have probably reduced unemployment, thanks to positive demand-side effects.

The dynamics of nominal unit labour costs make it easier to interpret developments in labour market conditions. The falling unemployment rate tends to accelerate nominal unit labour cost growth (in line with the 'classical' Phillips curve), while accelerating unit labour cost growth leads to higher unemployment. The latter effect is in line with the standard assumption on enterprise behaviour, with enterprises tending to react to rising wage costs with employment cuts.

4. Migration, demographic developments and prospects for the future

4.1. MIGRATION AND DEMOGRAPHIC DEVELOPMENTS

In the past two decades, population growth in the Western Balkans, Moldova and Ukraine has been negative or close to zero. In a number of countries, both natural population trends – changes in birth and death rates – and outward migration have contributed negatively to population growth (Table 4.1 and Figure 4.1).⁷ On the one hand, the birth rates in several countries of the region have more or less converged with the EU average of 1.57 (Figure 4.2). In Moldova and Bosnia and Herzegovina, they are even lower (around 1.3). The natural population decline has particularly affected Ukraine and Serbia, where the population has shrunk by around 5% over the last 10 years. By contrast, in Albania and Kosovo natural population growth has been strongly positive and significantly higher than in other countries, thanks to higher birth rates. Kosovo, in particular, has a much higher birth rate than the EU average (over 2.0).

Table 4.1 / Average population, thousand people

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Albania	2,913	2,905	2,900	2,895	2,889	2,881	2,876	2,873	2,866
Bosnia and Herzegovina	3,843	3,840	3,836	3,531	3,526	3,518	3,511	3,504	3,500
Moldova ¹⁾	3,562	3,560	3,560	3,559	3,556	3,554	3,552	3,549	3,549
Montenegro	619	620	621	621	622	622	622	622	625
North Macedonia	2,055	2,059	2,061	2,064	2,067	2,070	2,072	2,075	2,095
Serbia	7,291	7,237	7,201	7,167	7,132	7,095	7,058	7,021	6,986
Kosovo	1,775	1,796	1,807	1,818	1,813	1,788	1,778	1,791	1,813
Ukraine ²⁾	45,871	45,706	45,593	45,490	43,001	42,845	42,673	42,485	42,270
Austria	8,361	8,389	8,426	8,477	8,544	8,630	8,740	8,795	8,838

Notes: 1) Without Transdnistria. 2) Starting from 2014, without Crimea and Sevastopol, but including Donbas (i.e. also the non-government-controlled area, with an estimated population of some 3 million).

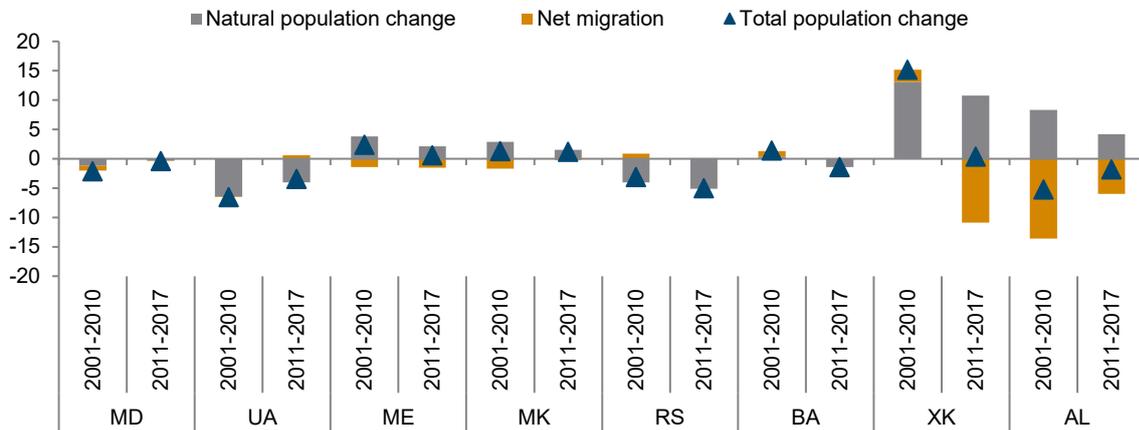
Source: wiiw annual database, Eurostat.

On the other hand, outward migration has also played an important role in the population dynamics, with varying impacts across countries. In general, the Western Balkans, Moldova and Ukraine have been net sending countries, and this has contributed to population loss. In Albania and Kosovo, high outward migration has offset – or indeed more than offset – the positive natural population growth. Figure 4.3 shows the estimated stock of migrants from these countries abroad. For Bosnia and Herzegovina, the

⁷ For Ukraine, the extent of emigration is almost certainly massively underestimated by the Eurostat statistics (as well as by the official Ukrainian statistics). This is suggested, among other things, by the high number of Ukrainian migrants abroad (Figure 4.3).

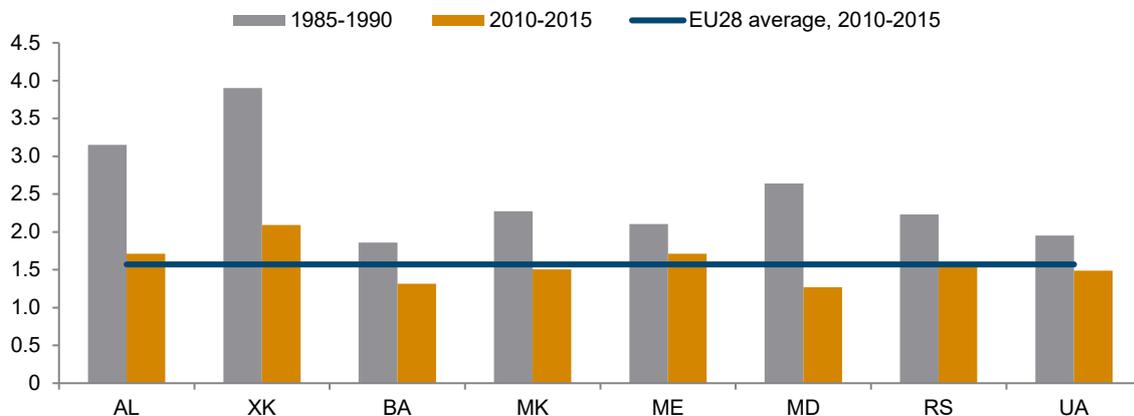
estimated stock of migrants abroad is around 1.6 million, or 47% of the country's population (Figure 4.4). In the case of Ukraine, it is almost 6 million, or about 14% of the Ukrainian population.

Figure 4.1 / Natural population change and net migration, cumulative in %



Source: Eurostat.

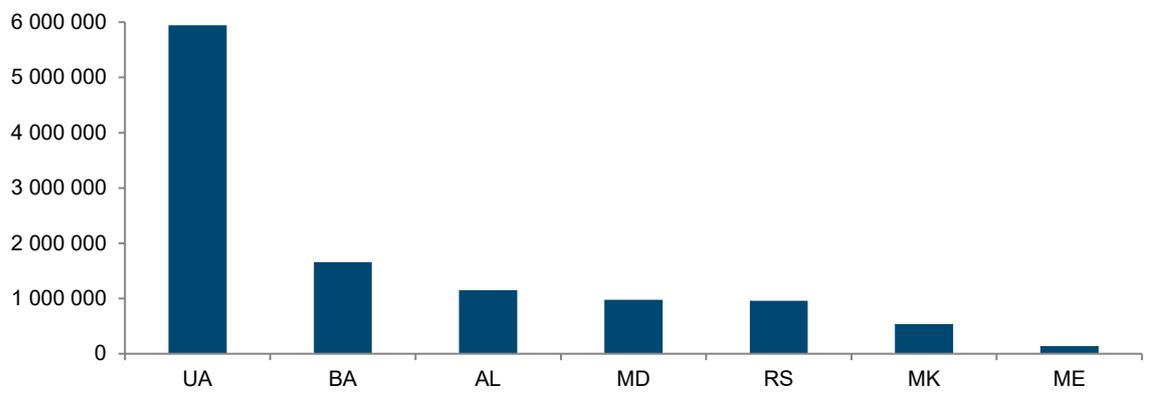
Figure 4.2 / Birth rate, 1985-2015



Source: United Nations (2017).

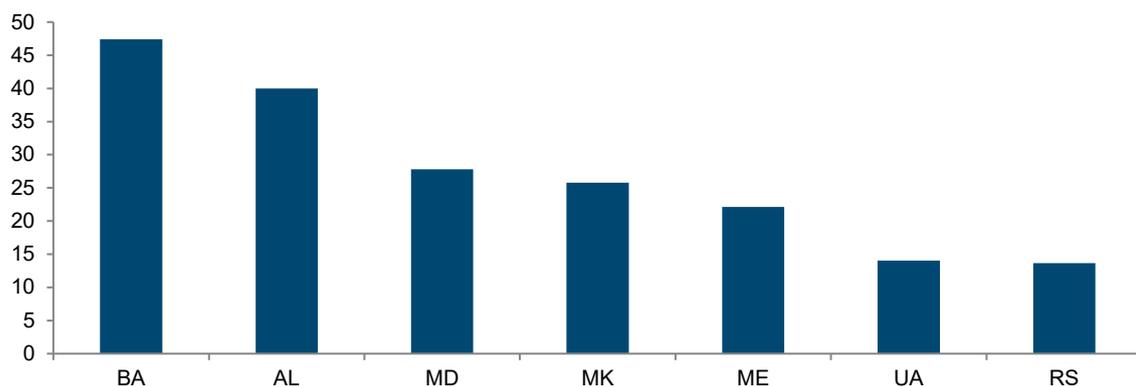
Figure A3 in the Annex shows the age and gender structure of immigrants from the Western Balkans, Moldova and Ukraine in the EU and EFTA Member States.⁸ As can be seen, migrants from these countries are generally relatively young: of all the age cohorts, people aged 25-39 form the largest immigrant group. However, there are big differences in the gender structure of migrants: while migration from the Western Balkan countries, particularly Bosnia and Herzegovina and Kosovo, is mainly dominated by men, in the case of Ukraine and Moldova it is mainly women who emigrate.

⁸ European Free Trade Association (EFTA) member states include four European states: Iceland, Liechtenstein, Norway and Switzerland.

Figure 4.3 / Estimated stock of migrants abroad, 2017

Note: Data on Kosovo are not available.

Source: United Nations (2017).

Figure 4.4 / Share of emigrants in total population in 2017, in %

Note: Data on Kosovo are not available.

Source: Own calculations, based on United Nations (2017).

The high unemployment in many countries of the region has been an important push factor for emigration. In the Western Balkans, in particular, emigration has been a way of avoiding an increase in unemployment. For example, the unemployment rate in Kosovo – despite recent improvements – is still close to 30%. It has also fallen in other Western Balkan countries, but remains twice as high as in EU-CEE or Western Europe, which will further encourage emigration from the region. In Moldova, however, the unemployment rate remains low, and its role as a push factor for emigration has been less pronounced.

The wage gap between the Western Balkan countries, Moldova and Ukraine, on the one hand, and the EU and Russia, on the other, is also an important pull factor for emigration from the region. Although real wage levels have increased in all countries of the region in recent years, in many cases the gap has barely narrowed. In Moldova and Ukraine, in particular, the wage gap with the EU15 remains very big: the wage level in those two countries (at PPP) is less than a quarter of the EU15 level. Higher earnings prospects abroad continue to be a strong pull factor for this group of countries.

4.2. DEMOGRAPHIC FORECASTS UP TO 2050

According to UN projections, the working-age population in the Western Balkans, Moldova and Ukraine is expected to decline up until 2050.⁹ Figure 4.5 shows two different scenarios for the UN population projections: (i) a constant natural population development and (ii) zero migration (for the assumptions underlying these scenarios, see Box 4.1). In both models, the working-age population aged 15-64 will shrink in all countries of the region.

BOX 4.1 / UN METHODOLOGY OF POPULATION FORECASTING

To produce population forecasts for individual countries, the UN uses a method based on forecasts for individual age cohorts. The population forecasts are based on three demographic components: birth rate, mortality rate and international migration, the future development of which may rest on various assumptions. The projections are always based on the population in 2015, as they are made for five-year age groups over a period of five years. Stochastic methods are used to predict the future development of the birth and mortality rates. Here we consider two population scenarios that differ depending on the assumption regarding the future development of the three demographic components mentioned above: the 'constant natural population development' scenario and the 'zero migration' scenario.

1. Scenario of a constant natural population development

- › The birth rate remains constant in all countries and corresponds to the 2010-2015 level.
- › The predicted mortality rates are based on the predicted development of life expectancy at birth (by sex), assuming that life expectancy increases over the forecast period.
- › The migration forecasts are based on past trends, taking account of the migration policies of the countries. In general, the projected net migration flows are assumed to be constant until 2050, without taking account of the recent large fluctuations due to refugee and temporary labour flows.

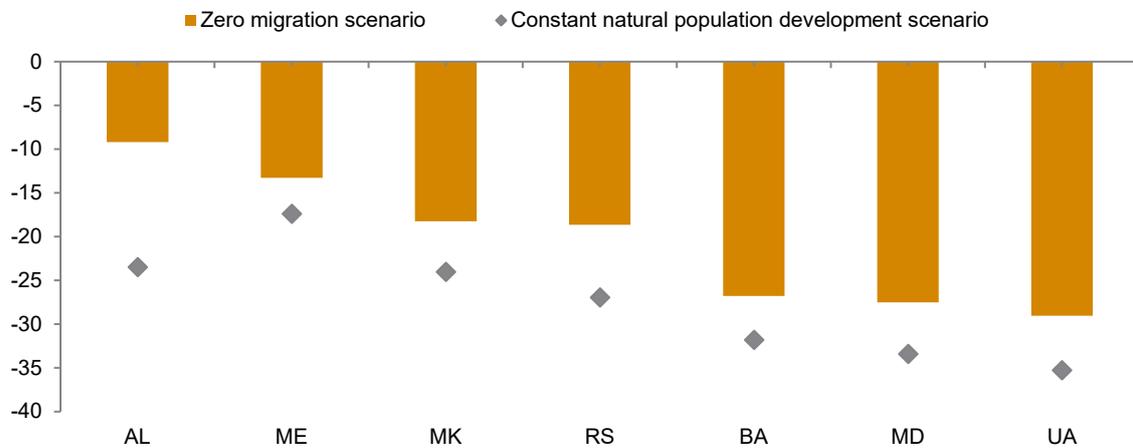
2. Zero migration scenario

- › A median future development of birth rates is assumed.
- › The predicted mortality rates are based on the predicted development of life expectancy at birth (by sex), assuming that life expectancy increases over the forecast period.
- › For each country, net migration is set to zero from the period 2015-2020.

Source: United Nations (2017).

In the first scenario, however, the population decline will be more pronounced, ranging from 17% (in Montenegro) to 35% (in Ukraine). In the second scenario, which assumes that there will be no outward migration, the decline would be less pronounced. For Albania, in particular, such a scenario would be very advantageous: without migration, the population would shrink by only 9%, instead of 24% as in the first scenario. For the other Western Balkan countries with currently high emigration rates, the result would be similar, i.e. the population decline would be significantly lower if emigration were close to zero.

⁹ UN forecasts for Kosovo are not available.

Figure 4.5 / Expected change in working-age population in %, 2015-2050

Note: Data on Kosovo are not available.

Source: Own calculations, based on United Nations (2017).

4.3. CONCLUSION

Overall, there have been significant demographic losses in the Western Balkan countries, Moldova and Ukraine, due to both the natural population development and the high outward migration. Migration will continue so long as the push and pull factors persist, so that the population of these countries is expected to shrink further in the coming few decades. In the short term, migration has positive effects, as it leads to higher private remittances from abroad and eases the domestic labour markets, benefiting the growth of wages. In the long run, however, demographic losses may affect the convergence prospects of these countries, including in terms of wages.

5. Institutional factors influencing wage developments

This chapter presents some of the institutional framework conditions of the labour markets in the countries of the Western Balkans, Moldova and Ukraine,¹⁰ compared with Austria and other EU countries. These conditions are important for wage setting. The possibility of collective wage setting improves the bargaining position of individual workers, reduces wage dispersion and results in more stable incomes, even in times of economic downturn (Sections 5.1 and 5.2). As in many other regions of Europe, collective wage setting based on social partnership took place in the countries examined here. The design of employment protection, welfare state security and active labour market policy (Sections 5.3, 5.4 and 5.5) have a decisive influence on the reserve wages of the active population, and thus on the trends in unemployment and wages. With lower social protection, unemployed people are more likely to take up employment, regardless of the conditions. This could be another reason why, thanks to economic recovery, unemployment in the countries studied has fallen more sharply in recent years than in Austria, for example, while wage increases have remained relatively subdued. In the countries of the Western Balkans, Moldova and Ukraine, the informal sector is much larger both than in Austria and than on average in EU-CEE (Section 5.6). This may have an impact on the documented relative wage dynamics.

5.1. SOCIAL DIALOGUE

In most Northern and Western European countries,¹¹ wage setting occurs in the framework of institutionalised, stable social dialogue (European Commission, 2015, 2016b, 2018; Visser, 2016). Employers' associations and trade unions conclude regular agreements on wages and working conditions in the form of collective agreements at the level of the economic sectors. By contrast, in the countries of the Western Balkans, a dichotomous system of social dialogue has developed. On the one hand, in some countries (Bosnia and Herzegovina and Montenegro) the national level is important for wage setting – here general collective agreements valid for all workers and employees are agreed between the social partners. On the other hand, an increasing decentralisation of wage setting – a shift from sectoral to company level – can be observed. In the course of the ongoing restructuring of the economy, the ability to conclude collective agreements has declined in many sectors. Collective wage setting at company level has also declined sharply over the past 10 years. In many countries, previously state-owned privatised companies have been affected by insolvency, while takeovers by foreign investors have reduced the trade union presence. In addition, the corporate landscape that emerged during the transition is mostly dominated by small firms, making it more difficult to organise workers'

¹⁰ Unless stated otherwise, data and information on social dialogue in the countries examined come from issues of the 'Annual Review of Labour Relations and Social Dialogue', a series of publications by the Friedrich-Ebert-Stiftung. For all countries surveyed, with the exception of Ukraine, a separate publication is available for each year of the period 2010-2017.

¹¹ Denmark, Finland, France, Italy, the Netherlands, Austria and Sweden (Visser, 2016).

interests. As a result, fewer and fewer employment contracts, especially in the private sector, are covered by collective agreements.

Social dialogue through economic and social councils (tripartite social dialogue between representatives of interest groups and the government), which is particularly recommended and promoted by the EU, is successful in a few countries (e.g. Montenegro), but is only rudimentary in most others; agreements are more declarative in nature.

In **Bosnia and Herzegovina**, the adoption of new, more liberal labour legislation in 2015 invalidated the previous general collective agreements for both the Federation of Bosnia and Herzegovina and the Republika Srpska; these were particularly important for a large proportion of private-sector employees. In the Republika Srpska, in particular, it took a long time for agreement to be reached on renewed general collective agreements, and there was a deterioration in employee protection and remuneration (in particular, regulated allowances). Within the entities, there are additional sectoral collective agreements in a number of sectors: these affect an estimated 50% of workers, but they are not observed in parts of the private sector. In the public sector, additional collective agreements are applied at cantonal level.

In **Serbia**, social dialogue is polarised. There are several trade union confederations, some of which compete with each other. In addition, the conditions for trade unions to be recognised as representative of an industry have been made more difficult. Only if 50% of the workers (formerly 30%) in a sector are members of a union can the negotiated collective agreement be declared universally valid for the entire sector. Furthermore, in the majority of sectors, the Serbian Federation of Enterprises represents only a few companies, so that collective agreements can only be concluded in a handful of sectors. At present, industry collective agreements exist almost exclusively in the public sector, while in the private sector only one exists in road construction and one in the entertainment industry. Collective agreements concluded in the chemical, construction and metal industries have not been applied.

In parts of the private sector, collective agreements are concluded at company level. In 2017, however, only 15% of individual employment contracts in the private sector were covered by collective agreements. Especially in many foreign-owned companies, trade union representation – and thus the negotiation of collective agreements – appears to be undesirable (if not officially, then at least de facto).

In **Kosovo**, there are valid collective agreements for public-sector workers, covering almost all employment relationships; but regular renegotiations do not take place. The agreed provisions, which represent an improvement on the legal provisions in the area of employee protection, have only been partially implemented. In the private sector, not only are there no collective agreements in force, but even labour law provisions are disregarded by a large number of companies. A general collective agreement adopted at the national level in 2014 was never implemented, due to its incompatibility with legal provisions. A functioning system of social dialogue therefore does not exist in Kosovo. In the public sector, too, improvements in working conditions and wages are usually implemented through ad hoc decisions following protests or strikes.

In **Montenegro**, institutionalised dialogue between the social partners takes place at the national level. Decisions on the general collective agreement are reached in this social council. This is the basis for all employment relationships in Montenegro and includes relatively detailed regulations on the structure of

minimum wages and allowances. In addition, the government consults with trade unions and employers' associations in the social council on planned labour legislation. Building on the general collective agreement, sectoral collective agreements apply to an estimated 50% of employment relationships, especially in the public sector. Additional collective bargaining at company level plays a subordinate role in Montenegro.

In **North Macedonia** there is a general collective agreement for the private sector, which theoretically covers all employment relationships. In small enterprises, however, it is actually applied only to a limited extent. In the public sector, no general collective agreement has yet been concluded. However, industry collective agreements exist for the majority of public-sector branches, though not for public administration and education. In general, sectoral collective agreements are only valid for companies that are members of a business association. Thus, the coverage rate in the private sector is relatively low.

Collective agreements in **Ukraine** are essentially simply guidelines at the sectoral level in the private sector. They may be a point of orientation, but they are not observed or sanctioned by companies. Sectoral collective agreements are important in the public sector, where they cover almost all employment relationships. In the private sector, only an estimated one third of employment relationships in the formal sector are covered by collective agreements. Here, relevant negotiations take place primarily at company level. Overall, in 2016 an estimated 46% of employment relationships were covered by collective agreements. Nevertheless, studies show that the salary premium earned through collective agreements is extremely low in Ukraine (Traub-Merz and Volynets, 2018).

In **Albania**, sector collective agreements covered 77% of public-sector employment in 2017. In the private sector, collective agreements exist in sectors such as transport, energy, construction and industry, especially in clothing and oil refining. About 30% of employees in the private sector (excluding agriculture) are covered by a collective agreement. However, only one third of these employment relationships are covered by industry collective agreements, while two thirds are covered by collective agreements at company level. Since 2008, the number of sectoral collective agreements has risen sharply – but so has the number of company collective agreements, and thus the overall coverage rate. Collective agreements are also valid in agriculture in some enterprises. However, most of the sector is structured on the basis of small enterprises, and employees are not formally employed, i.e. they mainly work on their own account or are family members.

A regular tripartite social dialogue takes place in **Moldova**, both on minimum wages and wage structures, as well as on social protection and other aspects of labour market legislation. Trade unions and employers are represented in one confederation each; sub-unions operate in 25 sectors. The political instability of recent years has made it difficult to conclude sectoral collective agreements, especially in the public sector. However, since the degree of union organisation is (still) relatively high (currently estimated at over 40%), it is possible to conclude around a thousand collective agreements at the company level each year. However, data on the coverage by collective agreements are not available for Moldova.

Table 5.1 gives an overview of the coverage by collective agreements since 2008. In Bosnia and Herzegovina and Montenegro there are generally applicable collective agreements covering all formal employment relationships; in addition, sectoral and company collective agreements offer improvements

for a smaller proportion of employees. In many of the countries surveyed, the coverage rate in the public sector is relatively high – in some cases (almost) 100% – whereas it is much lower in the private sector. When comparing the rates, it should be noted that within total employment, the share of those in formal employment is much lower in the Western Balkan countries than in most EU countries. Thus, the scope of collective agreements in relation to total employment is in reality much smaller than it appears at first glance.

Table 5.1 / Coverage by collective agreements

Share of employees in the formal sector whose employment contract is subject to a valid collective agreement, as %

	2008	2016
Albania	41	51
Bosnia and Herzegovina	(100/50)	(100/50)
Kosovo	35-40	30
Montenegro	(100/75)	(100/50)
North Macedonia	.	49
Serbia	30	25
Ukraine	55	46
Austria	98	98
Germany	61	56
France	98	99
United Kingdom	34	26
Romania	98	35

Note: Values in brackets indicate the degree of coverage by national general collective agreements of general application and the proportion of employees who are additionally covered by sectoral or works collective agreements. In some countries, the information for the next available year was used. No data are available for Moldova.

Source: Friedrich-Ebert-Stiftung (2010-2017), Visser (2016), ILO (2019).

Moreover, in recent years the proportion of those whose employment is based on a collective agreement has fallen steadily: only in Albania has the coverage rate increased. Whereas in Austria, sector-specific collective agreements cover almost all employment relationships, this is much less the case in the countries surveyed. Moreover, in most Northern and Western European countries, the coverage rate of collective agreements has remained relatively stable, compared to the Western Balkans, Moldova and Ukraine. However, a decline was observed in the UK in the wake of the economic crisis, as well as in some EU-CEE countries, such as Romania, Slovakia and Slovenia. This was also the case in Germany: the share of employment relationships covered by collective agreements fell from 68% at the beginning of the 2000s to 56% in 2016.

Even when employed in the formal sector, with collective-bargaining coverage, workers in the countries surveyed have repeatedly been confronted with wage arrears. This has affected workers in both the private and the public sectors at times of economic downturn and public debt crises, particularly in Ukraine. But this is no longer a universal phenomenon. Most companies (some of them privatised) resort to wage arrears in order to delay insolvency, but the stricter legislation on insolvency proceedings has limited this practice. Particularly in structurally weak regions, however, employees are always prepared to accept wage arrears, due to the lack of other employment opportunities.

5.2. DEGREE OF UNIONISATION

In all European countries, the strength of trade unions peaked in the 1980s in terms of membership and has been declining steadily ever since. In the Central and Eastern European countries which were formerly part of COMECON, union membership was mostly de facto compulsory before the change of regime, but the independent representation of workers was not possible. Then, in the 1990s, the level of unionisation fell rapidly – even in countries like Poland, where the union was part of the opposition to the communist party or the socialist state apparatus.

By contrast, trade unions in Yugoslavia enjoyed somewhat greater political independence and freedom of action overall. For example, employee representatives were actively involved in the management of self-governing companies. This may be one reason why the membership strength of trade unions in the successor states of former Yugoslavia fell more slowly than in Central and Eastern Europe (Crouch, 2017; Astrov et al., 2018; Gligorov et al., 2008). But here, too, the power of the trade unions has been weakening for various reasons. The political and economic transition led to a sharp decline in the industrial sector. In privatised, formerly state-owned enterprises, the degree of unionisation is still relatively high in many countries. However, in newly founded enterprises, in newly established service sectors and in small enterprises, unions are usually only present to a limited extent. In addition, the high level of unemployment in many Western Balkan countries over many years has weakened the position of the trade unions.

In some countries, the trade union landscape has been fragmented: Montenegro currently has two, North Macedonia four, Serbia and Albania six different confederations (as well as many independent individual unions). Taking all these countries together, only two of the confederations are considered representative (i.e. with sufficient membership) and play a part at the national level in the economic and social councils composed of social partners. In Ukraine, five umbrella organisations are considered representative. However, the oldest trade union confederation (the FPU), which represents 80-90% of all organised workers, remains de facto the dominant representative of workers' interests. In Moldova and Kosovo, sectoral unions are organised under a national umbrella. The same applies in Bosnia and Herzegovina, where there are separate independent trade unions, employers' associations and social dialogue structures for the entities of the Federation of Bosnia and Herzegovina and the Republika Srpska. There are no institutions at the national level of Bosnia and Herzegovina.

As in EU-CEE, an increasing shift in wage negotiations from the sectoral to the company level has led to a weakening of the bargaining power of trade unions in the countries of the Western Balkans. Raising the requirements for a trade union to be classified as representative of a sector (usually meaning a higher proportion of trade union members among employees) has had a similar effect. In practice, in many parts of the private sector there is no (representative) employers' organisation for trade unions to negotiate with: the overall level of organisation of employers is declining, so that collective agreements simply cannot be negotiated in some sectors. In addition, general declarations of the validity of agreements reached are becoming less likely for entire sectors in many countries. All this makes it increasingly difficult to conclude sector collective agreements. It is therefore not surprising that the trend towards a liberalisation of labour legislation is also accompanied by a decline in the level of trade union organisation in the countries surveyed.

Table 5.2 / Trade union density

Share of trade union members in employees, in %

	2004	2008	2017
Albania	.	32	21
Bosnia and Herzegovina	67	55	50
Kosovo	.	(90/1)	(80/1)
Montenegro	30	26	15
North Macedonia	45	(54/31)	.
Serbia	40	27	25 (60/20)
Moldova	.	57	46
Ukraine	.	57	44
Austria	35	29	26
Germany	22	19	17
France	8	8	8
United Kingdom	28	27	24
Slovakia	24	17	11
Slovenia	40	27	20
Czech Republic	21	17	11

Note: Values in brackets indicate the degree of organisation in the public and private sectors separately. In some countries the data for the nearest available year was used.

Source: Friedrich-Ebert-Stiftung (2010-2017), Visser (2016), Gligorov et al. (2008), ILO (2019), OECD (2019).

As Table 5.2 shows, the rate of organised labour has fallen in all countries surveyed since 2004. However, particularly in Bosnia and Herzegovina, Moldova and Ukraine, it is – at over 40% – still very high, compared to other European countries, especially those in EU-CEE (Astrov et al., 2018). In general, however, the data on union density presented in Table 5.2 are rough estimates: official figures are not available, and some of the data come directly from the unions, which try to overstate membership, since recognition of representativeness depends on the number of members. This status allows industry collective agreements to be negotiated and representatives to be sent to economic and social councils.

In the public sector, membership density in most Western Balkan countries is above average, compared to other European countries. According to the latest available data, between 54% and 65% of staff are organised in North Macedonia (2012), Serbia and Albania, while in Bosnia and Herzegovina the rate is likely to be similar. In Kosovo, the degree of unionisation in the public sector is as high as 80%, while in Montenegro only around 15% of public employees are members of a trade union. In North Macedonia, the proportion of unionised public-sector workers is likely to have increased since 2012, but more precise figures are not available.

Trade unions are much less in evidence in the private sector. In Serbia, Albania and (probably) North Macedonia, the degree of unionisation in the private sector is currently around 20%; in Bosnia and Herzegovina it is also much lower in the private sector than in the public sector. In Montenegro, it is about 15% in both sectors. In Kosovo, employee representation in the private sector is almost non-existent in enterprises, with an estimated degree of organisation of less than 1%. Trade unions are present in only a few privatised, formerly state-owned enterprises. In Ukraine, union density may have fallen significantly and steadily, but in 2015 it was still 44% of those employed in the formal sector. In Moldova, a similar development could be observed, with 46% of employees still considered unionised.

5.3. EMPLOYMENT PROTECTION

In the 1990s, employment protection in the successor states of former Yugoslavia was significantly higher than in many other transition countries, following the tradition of the self-governing economy. Even back in the early 2000s, however, this region also saw a significant reduction in notice periods and severance payments, for example. As a result of the economic crisis of 2008/2009, employment protection regulations were further liberalised in most countries of the Western Balkans. The reasoning behind the reduction in employment protection was that cutting the costs associated with terminating employment increases employer flexibility, which should lead to increased recruitment (European Commission, 2016a). In Albania, Bosnia and Herzegovina and Montenegro, employment protection against the individual dismissal of permanent employees is now on a par with that found in Austria and Germany (Table 5.3). In Serbia and North Macedonia, as well as in Kosovo, it is more liberal. In the area of mass redundancies, the regulations in the Western Balkan countries are about as strict as in Austria and Germany.

In some countries of the region, employment protection for temporary workers has been reduced in recent years. This has created an incentive for fixed-term contracts, especially for young workers; the proportion of temporary workers has risen by between 60% and 90% in Montenegro, Serbia and Croatia.

Table 5.3 / OECD employment protection indicators and the share of temporary employment

	Individual dismissals ¹⁾ permanent employment	Mass layoffs ¹⁾	Temporary employees as % of all employees	
	2015	2015	2010	2017
Albania	2.2	3.1	17	12
Bosnia and Herzegovina	2.6	2.6	14	18
Kosovo ²⁾	1.7	3.1	73	70
Montenegro ³⁾	2.6	3.6	18	30
North Macedonia	1.9	3.3	17	14
Serbia	1.7	3.6	12	23
Austria³⁾	2.1	3.3	9	9
Germany ³⁾	2.7	3.6	15	13
Croatia	2.3	2.3	13	21

Notes: No data available for Moldova and Ukraine.

1) The composite OECD indicators cover 21 aspects of employment protection. Their scale ranges from 0 (no restrictions on dismissals) to 6 (highly restricted possible); 2) Data for 2014 instead of 2015; 3) Data for 2013 instead of 2015.

Source: OECD (2019), ILO (2019).

A recent OECD analysis of the liberalisation of employment protection shows that a reduction in employment protection leads to an increase in unemployment in the short term, but in the medium term the share of permanent contracts in employment increases. Overall, the relaxation of employment protection leads to greater downward wage flexibility and weaker wage dynamics in phases of rising employment. In the medium term, the OECD anticipates positive effects arising from a relaxation of employment protection on the level of employment, albeit without taking into account secondary macroeconomic effects (OECD, 2016).

5.4. STATUTORY MINIMUM WAGES

Like EU-CEE, but in contrast to Austria or the Scandinavian countries, the Western Balkan countries, Moldova and Ukraine all have a statutory minimum wage. This is due not least to the weakness of their social partnership structures, and it serves as an instrument for controlling general wage developments. In Ukraine, wages and salaries in the public sector are legally tied to the minimum wage.

The monthly minimum wage in the countries studied varies between the equivalent of EUR 50 in Moldova and about EUR 280-290 in Montenegro, North Macedonia and Serbia – all successor states of the former Yugoslavia (Table 5.4). By and large, these differences reflect variations in general wage levels. In most countries of the region, the minimum wage is between 40% and 50% of the average monthly income; in EU-CEE, for example, this ratio is similarly high. However, in Kosovo – and especially in Moldova – the statutory minimum wage is very low, just around 16% of average monthly income, in the case of Moldova.

Table 5.4 / Gross monthly minimum wage

in EUR	2012	2013	2014	2015	2016	2017	2018	<i>as % of average</i>
								<i>gross monthly income</i>
								2018
Albania	144	150	157	157	160	163	188	47
Bosnia and Herzegovina	175	175	.	.	189	208	.	.
Moldova	84	84	75	48	45	48	50	16
Montenegro	.	.	288	288	288	288	288	38
North Macedonia	199	199	214	219	239	240	278	48
Serbia	230	239	235	235	234	248	286	49
Kosovo	170	170	170	170	170	170	170	32
Ukraine	108	109	77	55	52	107	116	42

in EUR in PPP	2012	2013	2014	2015	2016	2017	2018
Albania	304	311	327	347	326	329	391
Bosnia and Herzegovina	367	367	.	.	391	421	.
Moldova	168	171	164	110	102	95	93
Montenegro	.	.	528	546	536	518	561
North Macedonia	419	419	459	484	520	500	623
Serbia	430	458	455	488	468	486	571
Kosovo	338	328	333	343	335	326	374
Ukraine	231	228	211	170	159	279	289

Note: Data for Bosnia and Herzegovina refer to the net minimum wage in the Federation of Bosnia and Herzegovina.

Source: Eurostat, national sources and countryeconomy.com for Moldova.

In recent years, the need to raise overall wage levels (inter alia by raising the minimum wage) has become increasingly evident to governments in the countries surveyed, particularly in the light of labour shortages resulting from emigration and a declining working-age population (see Chapter 4). Moreover, setting a statutory minimum wage is an important fiscal policy instrument in countries where the 'envelope payment' of wages is widespread. In such circumstances, all other things being equal, a minimum wage increase results in a higher proportion of de facto wages being paid through legal channels, and thus taxed (World Bank/wiiw, 2019). As a result, the net fiscal effect of a minimum wage increase can be neutral or even positive – even if, in some cases, there is higher expenditure on public-sector salaries.

A particularly rapid increase in the nominal minimum wage has taken place in recent years in Ukraine: it doubled just in January 2017. By contrast, the minimum wage in Kosovo and Montenegro has remained constant: in the case of Montenegro, however, it last changed in July 2019, when there was an increase of 15%. Empirical studies show that minimum wage increases have generally had a positive effect on the general wage level, without resulting in employment losses (see e.g. Petreski and Mojsoska-Blazevski, 2018 for the case of North Macedonia).

5.5. PASSIVE AND ACTIVE LABOUR MARKET POLICIES

A system of unemployment benefits ensuring physical survival can significantly influence the reservation wage of the active population, and thus also have an impact on the fluctuation of wages and the stability of aggregate demand. Table 5.5 shows that in many of the Western Balkan countries, Moldova and Ukraine, only a very small proportion of those seeking employment receive unemployment benefits. The high level of long-term unemployment in the countries of the Western Balkans, combined with the short maximum duration of the benefits, means that only a few jobseekers are able to receive income replacement from unemployment insurance. In addition, relatively few unemployed people register with employment offices, a prerequisite for receiving unemployment benefits. The reasons for this are the usually low level of unemployment benefits and the low expectations of finding a job with the help of the employment office.

Table 5.5 / Unemployment assistance and active labour market policies

	Assistance recipients, as % of all unemployed		Expenditure on active labour market policies as % of GDP	
	2005	2015	2008	2017
Albania	6.7	6.9	0.02	0.05
Bosnia and Herzegovina	1.6	2.0	0.08	0.21
Kosovo	None	None	0.07	.
Montenegro	32.9	35.6	0.45	0.41
North Macedonia	10.7	11.5	0.06	0.12
Serbia	10.4	8.8	0.12	.
Moldova	6.5	10.5	.	.
Ukraine	40.3	21.9	0.11	0.03
Austria	89.4	100.0	0.50	0.58
Germany	92.1	100.0	0.55	0.26
Spain	65.1	45.3	0.59	0.44
Croatia	23.6	20.0	0.04	0.34
Romania	38.0	23.0	0.06	0.02

Source: ILO (2017), Kupets (2010), European Economic and Social Committee (2016), Numanović (2016), Oruč and Bartlett (2017).

In most countries of the Western Balkans and Moldova, only about 10% or even less of the unemployed receive unemployment benefits. Only in Montenegro and Ukraine is the figure much higher: 35% and 20% (as of 2015), respectively. By contrast, in Austria and Germany all unemployed persons are eligible for benefits, although in some other EU member states (including many EU-CEE countries and Spain) the situation has worsened since 2005. Kosovo did not introduce an unemployment insurance system after it gained sovereignty, and thus there is no corresponding support in the event of job loss. There is only a system of means-tested social assistance at a very low level (approx. EUR 50 per month for single-person households in 2015). The other countries of the region also have social assistance

systems in various areas: housing allowances, support for low-income families, etc.; but these benefits are usually too low to reduce poverty significantly. Of course, for households with little or no income from economic activity, they are essential for survival.

A significant difference between Austria and the Western Balkan countries, Moldova and Ukraine is that in the latter the maximum possible duration of unemployment benefit is much shorter: in those countries, unemployment benefit cannot be claimed for more than 12 months. Only in Serbia, the Federation of Bosnia and Herzegovina, Montenegro and Ukraine is an extension possible in exceptional cases, e.g. if retirement is imminent or for insurance periods of 35 years or more. The low level of protection for the unemployed in most of the countries surveyed – compared to Austria – has the effect of forcing the unemployed to take up employment more quickly, regardless of conditions.

In addition to passive labour market policy (income security in the event of unemployment or early retirement), active labour market policy also plays a role. Active labour market policy measures include activities to increase the training and further education of jobseekers, the mobility of workers and the direct creation of jobs, especially for people who are difficult to place. The funding of active labour market policies in many Western Balkan countries is much lower than the EU average. In Albania and Kosovo, in particular, few resources are available. The situation is different in Montenegro, where more than 0.4% of GDP has been spent on active measures in recent years. As in some EU-CEE countries, Bosnia and Herzegovina and North Macedonia have also seen a substantial increase in funds allocated for active labour market policies.

5.6. INFORMAL SECTOR

The term ‘shadow economy’ refers to legal and illegal economic activities that are carried out undeclared, and are therefore both exempt from taxation and outside the scope of labour law regulations. The larger the informal sector, the more difficult it is for trade unions to gain bargaining power or for there to be any functioning social partnership negotiation mechanisms at all. Medina and Schneider (2018) estimated the size of the shadow economy in Moldova and Ukraine at about 40% of the official gross domestic product in 2015 (Table 5.6). In the Western Balkans, the level of the shadow economy is also much higher than in the member states of the EU, ranging from 26% in Albania to 30% in North Macedonia and Bosnia and Herzegovina. Reforms of the tax, recording and control systems, as well as rising labour demand and emigration, are likely to have played a decisive part in the steady decline in the share of the shadow economy. However, in the Western Balkans it has been falling much more slowly than in EU-CEE.

The extent of the shadow economy differs from that of informal employment. The latter includes employees (including family workers) and the self-employed (entrepreneurs or persons working on their own account) who are economically active without an employment contract, and thus usually without social security. A high proportion of agriculture, micro-enterprises and sole proprietorships, especially in the service sector, favours informal activity. Besides agriculture, informal employment predominates in sectors such as services and tourism, construction and household services (Hazans, 2011).

Table 5.6 / Informal and formal sectors in a country comparison

	Shadow economy, as % of GDP		Workers in formal sector, as % of total employment	
	2000	2015	2008	2017
Albania	35	26	40	42
Bosnia and Herzegovina	34	30	73	75
Kosovo	.	.	75	69
Montenegro	37	29	80	78
North Macedonia	32	30	72	76
Serbia	33	28	66	69
Moldova	45	40	68	65
Ukraine	52	43	82	84
Austria	9	9	87	88
Germany	13	8	88	90
Spain	23	22	82	84
Bulgaria	35	21	88	88
Croatia	32	23	79	88
Romania	34	23	67	74

Sources: Shadow economy: Medina and Schneider (2018); North Macedonia and Serbia (2013 instead of 2015): Hassan and Schneider (2016); Employees – formal sector: ILOSTAT: ILO modelled estimates, March 2019; Kosovo (2012 instead of 2008): Labour Force Survey – Kosovo Agency of Statistics.

By contrast, Table 5.6 shows the share of formally employed persons in total employment. Only these people are directly protected by labour legislation and worker protection measures, and only they could potentially benefit from collective agreements and most social protection measures. In the countries of the Western Balkans and Moldova, the proportion of formally employed workers is significantly lower than the average for the EU countries, including the EU-CEE countries. Only Romania has a similarly low share – there, too, the high level of employment in agriculture is decisive. For the same reason, Albania is also an outlier: in 2017, only 42% of employees there were formally employed; moreover, in many sectors employees work on their own account or as family members without an employment contract. In Ukraine, the share of the formally employed is surprisingly high at 84%, despite an estimated 43% share for the shadow economy. This can be explained by the system of ‘envelope payments’ practised in Ukraine (and Moldova) by many companies – the official wage is low, and the rest is handed over in an envelope.¹² In most of the countries in question, the share of formal employees in total employment increased between 2008 and 2017, but not in Kosovo, Montenegro or Moldova.

The extent of informal activity has little impact on the unemployment rate, according to the EU Labour Force Survey. The latter only knows the question of the extent of employment; no supplementary questions are asked about whether the employment is in the formal or the informal sector. If economic agents switch between the two, this does not lead to any change in the unemployment rate. However, the documented wage evolution varies according to the relative share of income from formal work (see Chapter 2). This means that if there is a high proportion of the shadow economy or informal work, the development of labour supply and demand is decoupled to a greater extent from the dynamics of documented wages.

¹² At the same time, however, studies show that in most EU-CEE countries, this practice has decreased in the past decade (Horodnic, 2016).

5.7. CONCLUSION

An analysis of the institutional framework conditions of the labour markets in the Western Balkan countries, Moldova and Ukraine has shown that collective-bargaining mechanisms in those countries are much weaker than in Austria, for example. While the coverage rates in the public sector are usually relatively high, and collective agreements are still applied in a sizeable part of the privatised, formerly state-owned enterprises, the situation is different in the private sector. Due to the low organisation density of trade unions or employers' associations, collective agreements can usually only be concluded for a small number of sectors. Only Montenegro and Bosnia and Herzegovina still have general collective agreements. Tripartite social dialogue on labour legislation is often weak.

Employment protection regulations in the countries of the Western Balkans were substantially liberalised in the early 2000s, and further steps were taken in this direction following the economic crisis. As a result, the regulations on protection against dismissal in most countries are now approximately as strict as in Austria. In Serbia, North Macedonia and Kosovo, however, they are more liberal. The high level of long-term unemployment and the shorter maximum duration of unemployment benefits (compared to Austria) mean that only a small proportion of jobseekers in the Western Balkans, Moldova and Ukraine receive unemployment benefits. Thus, the reservation wage of jobseekers is much lower. In general, the lower social security for unemployed persons, especially for the long-term unemployed, favours a more rapid decline in unemployment rates. At the same time, wage increases are delayed during the upswing phase. Neither the passive nor the active labour market policy measures in these countries are as well designed as in most EU member states, including EU-CEE.

The extent of the shadow economy in the Western Balkans, Moldova and Ukraine is not only considerably greater than in Western Europe, but also than in EU-CEE. This has to do, on the one hand, with a higher share of agriculture in the economy and, on the other hand, with a high proportion of informal workers in the service sector. Since the beginning of the 2000s, though, the level of the shadow economy has declined slightly in these countries.

Conclusions

Wage dynamics in the six Western Balkan countries of Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia, as well as in Moldova and Ukraine, should be seen primarily against the background of general economic developments. For a long time after the 2008-2009 economic crisis, these were characterised by stagnation and sluggish GDP growth, accompanied by a stagnation in real wages. In Ukraine, there was even a second economic crisis after the Maidan revolution in 2014-2015, which led to massive currency devaluation, inflation and sharp real wage declines.

Only in recent years has there been a recovery in the countries of the region. This has led to an increase in real wages; this rise has generally been relatively subdued, but is still significantly higher than in Austria, for example. Only in low-wage countries such as Ukraine, Moldova or Kosovo have wages risen relatively quickly – helped particularly in the case of Ukraine by a massive increase in the statutory minimum wage. Nevertheless, in only a few cases has there been an – albeit only slight – convergence with the Austrian wage level. Currently wages in the region (converted to PPP) range from 20% of the Austrian level (Moldova) to 50% (Montenegro).

Wages in the manufacturing sector have risen at an above-average rate in most countries of the region, which is a natural consequence of the catching-up process. Nevertheless, manufacturing remains one of the worst-paid sectors in half of the region. The best-paid jobs, on the other hand, are typically found in the financial sector, information and communications, energy, mining and the pharmaceutical industry. These wage structures have changed only slightly over time, with the high-wage sectors tending to record above-average wage increases, while some compression has occurred at the lower end of the wage spectrum.

In many cases, real wages have risen faster than labour productivity. Nevertheless, wage shares have barely increased, and in some countries have even declined slightly. In the successor states of the former Yugoslavia, they range from 33% to 40% of GDP and are comparable to those in most EU-CEE countries and Austria. In the poorer countries of the region, however, they are significantly lower and account for less than 25% of GDP, although this is partly due to the high proportion of the self-employed and to the large informal sector.

The improvement in labour market conditions in the countries of the region has had only a moderately positive effect on wage developments. While employment has risen steadily since 2013 in most of these countries, with the exception of Ukraine, unemployment remains high, especially in the Western Balkans, where it is in double digits. As a result, the bargaining power of workers has improved only slightly. Against this background, it is hardly surprising that the transmission mechanism underlying the classic Phillips curve is scarce in the countries studied: (slightly) falling unemployment has generally *not* led to higher wage settlements. Econometric estimates suggest that the transmission mechanism has tended to move in the opposite direction: it was wage increases that tended to help reduce unemployment, probably thanks to positive demand-side effects.

Labour market institutions and their evolution over time have also slowed wage increases. In general, collective-bargaining mechanisms are much less developed in the countries of the region than, for example, in Austria. Although the coverage of employees by collective agreements – despite recent declines – is still relatively high, their reach is limited by the low share of employees in total employment. In addition, wage-setting mechanisms have been gradually decentralised over time. Only in Montenegro and Bosnia and Herzegovina are general collective agreements still in force; in other countries, collective agreements predominate at the company level, but are not always observed in practice. Finally, workers' bargaining power has been weakened by the relaxation of employment protection rules in the wake of the 2008-2009 economic crisis.

High unemployment and a large wage gap compared to Western Europe, many EU-CEE countries and Russia have led to a significant outflow of migrants from the region. Just the number of Ukrainians working abroad is currently estimated at almost 6 million. Combined with low birth rates (except in Albania and Kosovo), this has resulted in a decline in the population of many of these countries. A further population decline is expected, by up to 35% by 2050 in the case of Ukraine, according to UN forecasts. In the short term, emigration will have positive effects for the countries concerned, as it will lead to higher private remittances from abroad and will relieve the domestic labour markets, which among other things will also favour an increase in wages. In the long run, however, it will result in the loss of an important part of the human capital of these countries, and that is likely to affect their prospects for convergence with Western European levels, including in terms of wages.

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Annex

Table A1 / Definition of the gross wage data used on the basis of enterprise surveys and tax data

Valid from 2008			
	Origin of data	Coverage of enterprises and other economic entities	Definition of wages
AL	Until 2013: Performance and structural statistics Since 2014: General Directorate of Taxation i.e. based on wage tax data. Comprises all economic sectors	Until 2013: Only includes market-producing economic sectors Since 2014: Includes all employees in companies and other economic entities that pay wage tax	Basic salary plus co-payments, e.g. hardship allowance, management duties, for the length of service, etc. regular co-payments
BA	Regular monthly survey on employment and wages (RAD-1)	The survey covers employees in enterprises (legal persons of all forms of ownership), public bodies, institutions and other organisations. Craftsmen, freelancers and military employees are not included	Basic salary plus additional payments such as paid leave, public holidays and non-working days, illness, absence for professional training, etc.
MD	Annual income and labour cost survey All data exclude the areas on the left side of the river Nistru and the municipality of Bender	Up to 2010: Companies with more than 20 employees and all public bodies Since 2011: All companies, all public bodies	Basic salary (cash and non-cash benefits) also for unpaid periods, as well as annual or seasonal bonuses (13th month salary, overtime, performance-related bonuses, etc.)
ME	Monthly survey 'Employees and their income'	All companies, institutions, cooperatives and organisations	Basic salary including overtime, night work, national and religious holidays, length of service, etc.
MK	Monthly survey of employees and wages	All enterprises, public administrations and organisations	Basic salary plus additional payments such as overtime, profit-sharing, training and further education, work experience, etc. Data from 2009 include support for food and transport. Growth rates not fully comparable
RS	Until 2017: Monthly survey 'Employees and their incomes' Since 2018: Wage tax data (full-time equivalent)	All companies, institutions, cooperatives and organisations Since 2009 including employees of small sole proprietorships Since 2018 , including employees of the Ministry of the Interior and Defence and employees on fixed-term contracts	Remuneration for work performed and time worked by employees during regular working hours, increases and other income
XK	Until 2011: Net public-sector wages according to Ministry of Public Administration Since 2012: Gross wages according to Statistical Business Register (RSB, all public and private enterprises) and Ministry of Public Administration (MAP, public sector)	All enterprises and public administrations	Basic salary plus other statutory or collective-bargaining income
UA	Enterprise survey on labour statistics	Since 2010: Companies with more than 10 employees; before that without small companies Since 2014: Without Crimea and Sevastopol Since 2015: Without the occupied territories in Donetsk and Luhansk	Basic salary (cash and non-cash benefits), including remunerations, bonuses, premiums, allowances and other types of payments for unpaid time
AT	Annual wages according to national accounts divided by 12 months per employee	All business entities as defined in national accounts	x

Note: Compared to the EU-CEE member states, there are either no or only very fragmentary good national accounts data available for the Western Balkan countries, Moldova and Ukraine (wages, salaries, employees, hours worked). For this reason, the company surveys or wage tax data available for all countries were used in this study (with the exception of Austria, which refers to national accounts).

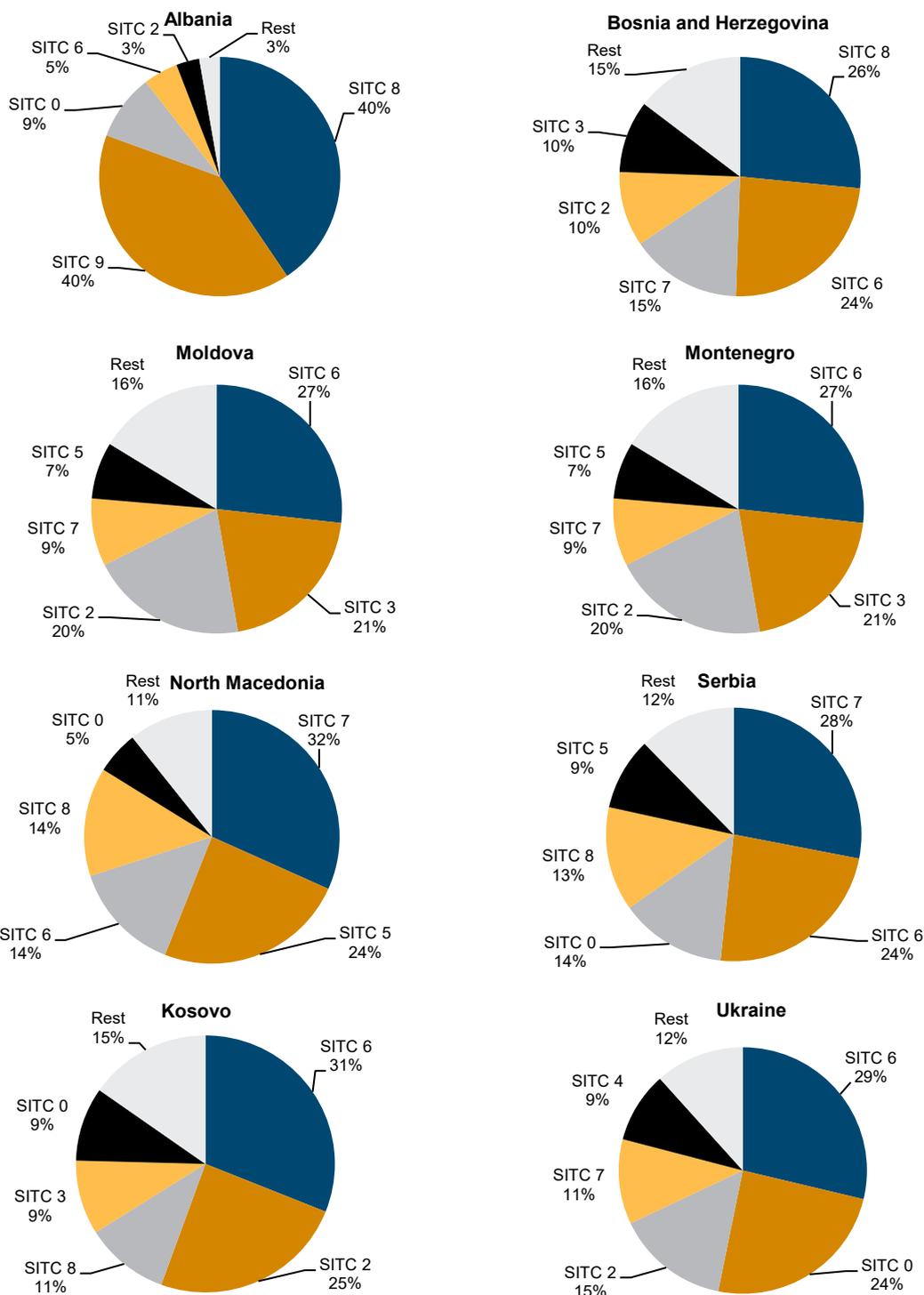
Source: Central statistical offices of the respective countries.

Table A2 / Population of migrants from the Western Balkans, Moldova and Ukraine in the top 10 destination countries, 2017

	Albania		Bosnia and Herzegovina		Montenegro		Moldova		Serbia		North Macedonia		Ukraine
Italy	455,468	Croatia	394,146	Serbia	70,735	Russia	294,522	Austria	214,925	Turkey	170,807	Russia	3,272,304
Greece	429,428	Serbia	333,687	Austria	24,052	Italy	169,753	Germany	107,032	Italy	74,317	Germany	262,027
North Macedonia	67,924	Germany	200,510	North Macedonia	9,246	Romania	151,249	France	85,988	Serbia	46,416	Italy	236,420
United Kingdom	30,157	Austria	170,864	Luxembourg	9,065	Ukraine	151,242	Croatia	49,828	Austria	24,139	Poland	209,001
Germany	18,102	Slovenia	103,663	Croatia	6,017	Germany	23,273	Italy	46,382	Croatia	9,788	Czech Republic	136,287
France	6,796	Sweden	58,372	Bosnia a. Herzegovina	4,229	Portugal	20,076	Hungary	41,428	Finland	8,963	Spain	82,392
Belgium	4,389	Montenegro	29,462	Italy	2,325	Spain	17,246	North Macedonia	17,963	Sweden	6,616	Moldova	62,728
Turkey	3,929	Denmark	21,492	France	1,424	Czech Republic	10,740	Montenegro	14,992	France	4,556	Hungary	50,253
Austria	3,465	France	14,150	Sweden	931	Greece	9,866	Sweden	10,208	Bulgaria	3,777	Portugal	47,360
Sweden	2,598	Italy	11,301	United Kingdom	920	France	6,658	Bosnia a. Herzegovina	9,831	Belgium	3,709	Latvia	34,697
Other in all instances	125,888	Other in all instances	322,205	Other in all instances	8,645	Other in all instances	118,993	Other in all instances	357,878	Other in all instances	181,632	Other in all instances	1,548,184
WORLD	1,148,144	WORLD	1,659,852	WORLD	137,589	WORLD	973,618	WORLD	956,455	WORLD	534,720	WORLD	5,941,653

Source: UN (2017).

Figure A1 / Structure of goods exports in 2018, share in % according to SITC classification



SITC Groups:

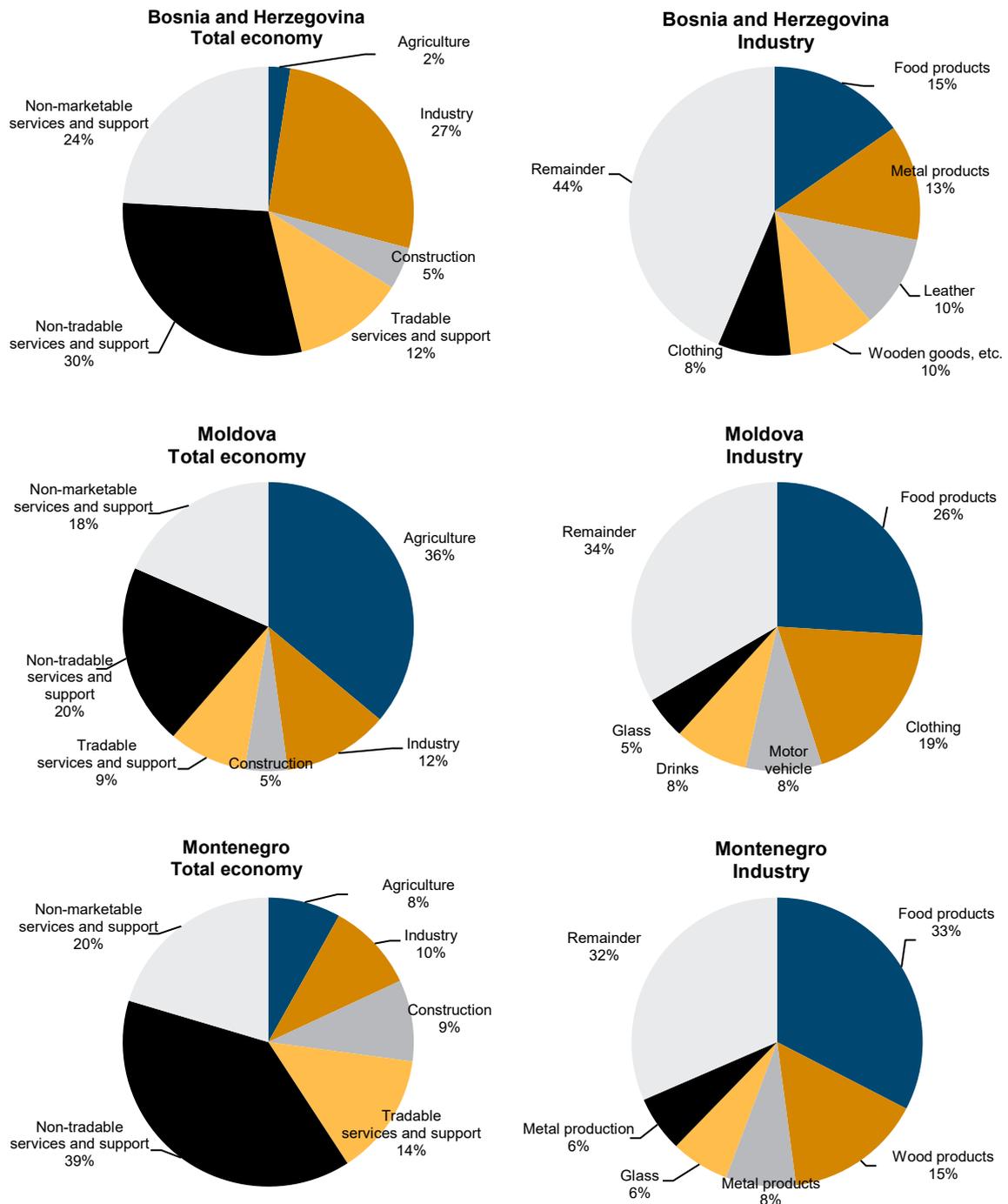
- 0 Nutrition
- 1 Beverages, tobacco
- 2 Raw materials
- 3 Fuels, energy
- 4 Oils, fats
- 5 Chemical products
- 6 Processed goods
- 7 Machinery, vehicles
- 8 Other manufactured goods
- 9 Other goods

Note: Data for Serbia and Kosovo as of 2017.

Source: wiiw annual database based on national statistics and Eurostat.

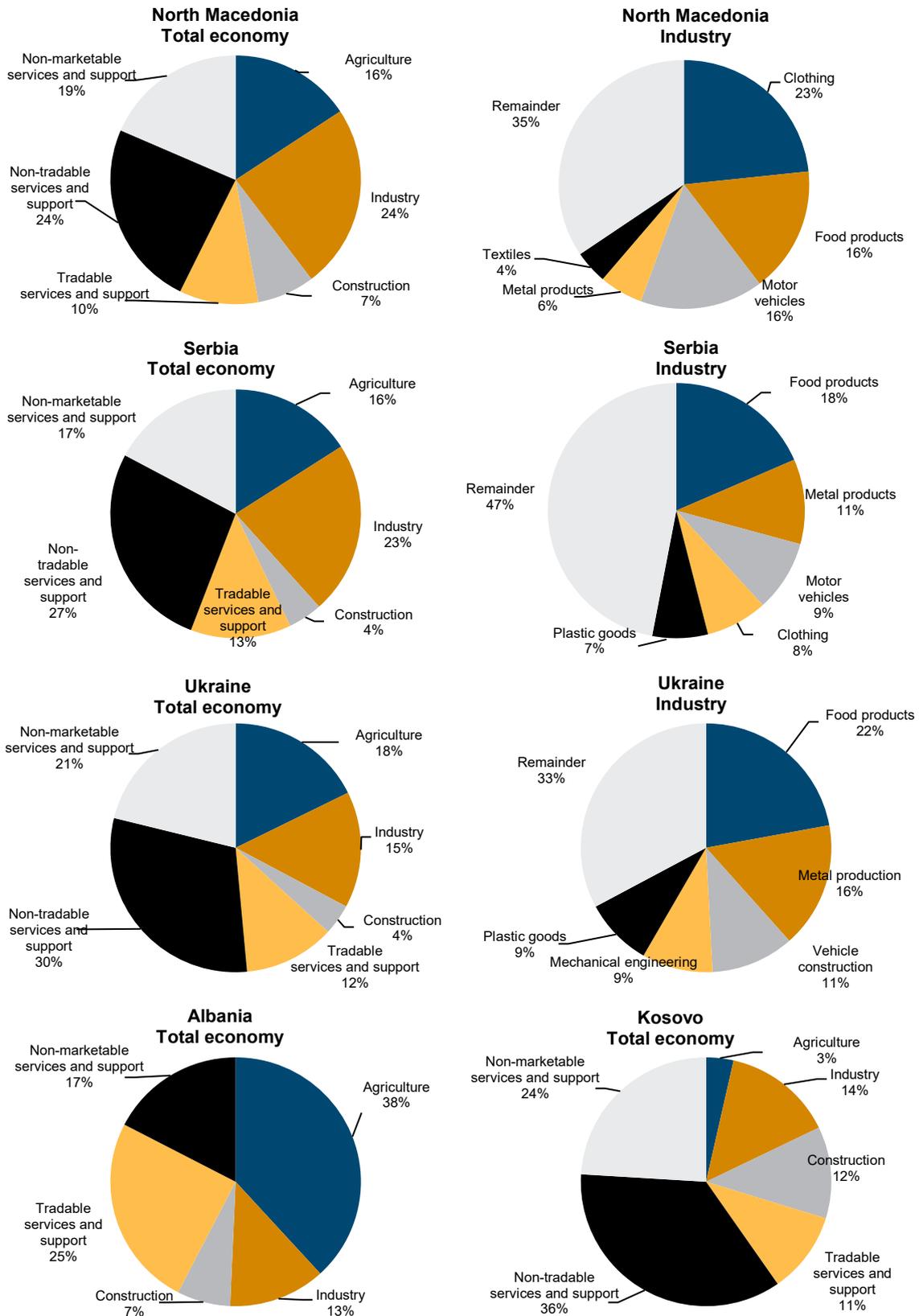
Figure A2 / Structure of the labour force (employees) in 2018

Share in % according to NACE classification



contd.

Figure A2 / contd.



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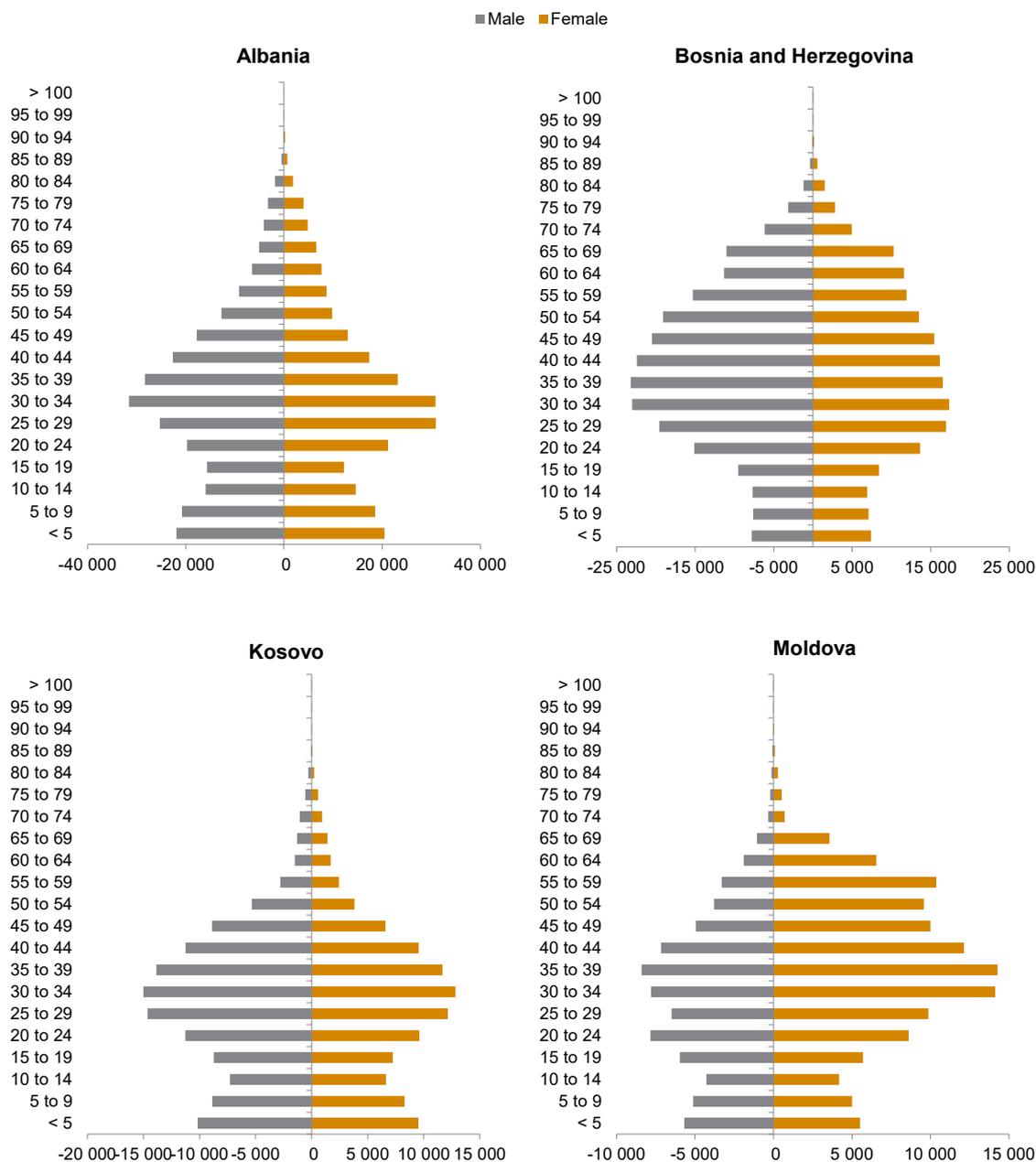
Figure A2 / contd.

Note: 2017 data for Albania and Ukraine, for industry for Moldova and Montenegro.

Employment data based on Labour Force Survey (LFS), with the exception of Bosnia and Herzegovina (employees according to register data). For industry, employees according to register data (enterprise surveys, tax data) for Bosnia and Herzegovina, Moldova, Montenegro and Ukraine.

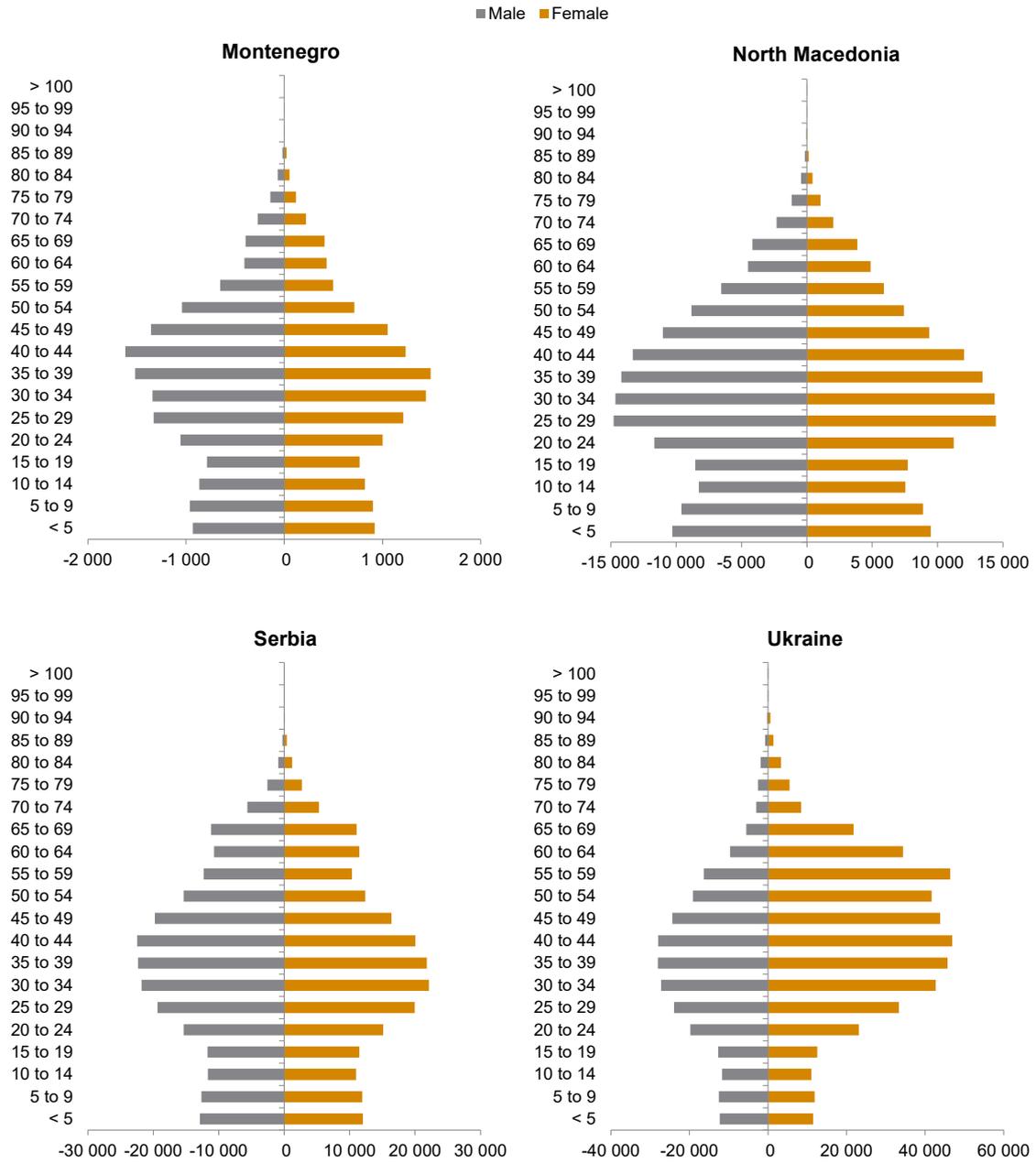
Source: wiiw annual database based on national statistics and Eurostat.

Figure A3 / Age and sex structure of migrants from the Western Balkans, Moldova and Ukraine in the EU and EFTA, 2018



contd.

Figure A3 / contd.



Source: Eurostat.

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