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Danube Region Monitor "People & Skills"
Report 2025

The Vienna Institute for International Economic Studies (wiiw)
Rahlgasse 3, A-1060 Vienna, Austria

`www.wiiw.ac.at`

Maryna Tverdostup

`tverdostup@wiiw.ac.at`

Scientific supervision: Robert Stehrer

`Robert.Stehrer@wiiw.ac.at`

Statistical support: Galina Vasaros and Nadya Heger

`vasaros@wiiw.ac.at`

`heger@wiiw.ac.at`

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Contents

III Objective 3: Increased Quality and Efficiency of Education, Training and Labour Market Systems 81

IV Objective 4: Ensuring Inclusive Education and Training and Promoting Inclusive Labour Markets 99

Conclusions and Recommendations 145

List of Figures

List of Tables

Abbreviations

COVID Corona Virus Disease
EU European Union
EUR Euro
ESCS Index of Economic, Social and Cultural Status
EUSDR European Union Strategy for the Danube Region
GDP Gross Domestic Product
ICT Information and Communication Technologies
ISCED International Standard Classification of Education
ITU International Telecommunication Union
LLL Life-Long Learning
LMP Labour market policies
NEET Not in Education, Employment, or Training
OECD Organisation for Economic Co-operation and Development
PISA Programme for International Student Assessment
TIMSS Trends in International Mathematics and Science Study

Country Codes

AT Austria
BA Bosnia and Herzegovina
BG Bulgaria
CZ Czechia
DE Germany
DR Danube Region
HR Croatia
HU Hungary
MD Republic of Moldova
ME Montenegro
RO Romania
RS Serbia
SI Slovenia
SK Slovakia
UA Ukraine

Region Codes

DR (EU) EU Member States of the Danube Region
DR (non-EU) EU candidate countries of the Danube Region

Introduction

This report is conducted within the framework of *Priority Area 9 "People and Skills" of the European Union Strategy for the Danube Region (EUSDR)*. It contributes to the main objectives of Priority Area 9 by providing an evidence-based assessment of sustainable and inclusive development goals in the Danube Region through education, training, labour market systems, and investments in human capital. By combining comparative statistics with policy-relevant insights, the report aims to strengthen the knowledge base for coordinated action and cross-country learning within the macro-regional framework.

By highlighting trends, similarities and differences in economic performance, societal welfare, and social protection across countries, the report delivers a comprehensive overview of disparities and convergence with respect to the four PA9 objectives. A special focus is placed on the effects of Russia's war of aggression against Ukraine and the related economic and energy crises on labour market and education outcomes in the Danube Region. The analysis captures not only the immediate shock of 2022 but also the medium-term adjustment and recovery observed in 2023-2024, allowing for a more nuanced perspective on resilience, vulnerabilities, and the longer-term implications for human capital development.

A set of key statistical indicators concerning the performance of labour markets and education systems over the period 2011-2024 are analysed in relation to the four objectives of *Priority Area 9 "People and Skills"* as defined in the EUSDR Action Plan[1]. These cover: (i) employment, (ii) educational outcomes and skills, (iii) quality and efficiency of education, training and labour market systems, and (iv) equal opportunities and inclusiveness. By structuring the evidence along these objectives, the report provides a consistent framework for tracking progress and identifying policy challenges.

The geographical scope includes all countries and regions participating in the EUSDR: nine EU Member States (Austria, Bulgaria, Croatia, Czechia, Germany, Hungary, Romania, Slovakia, and Slovenia) and five EU candidate countries (Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia, and Ukraine). In addition to the full member countries, the macro-region includes parts of Germany, namely the federal states of Baden-Württemberg and Bavaria, and regions of Ukraine, including the oblasts of Chernivtsi, Ivano-Frankivsk, Odessa, and Zakarpattia. This territorial composition reflects the geographical and functional interconnectedness of the Danube River Basin, which links countries and regions through shared economic, social, and environmental challenges and opportunities.

Throughout the report, country-specific statistics are complemented by three aggre-

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[1] https://danube-region.eu/projects-and-funding/thematic-implementation/

gate benchmarks: (i) the EU-27 average, (ii) the average for EU Member States of the Danube Region, and (iii) the average for candidate countries of the Danube Region. All averages are calculated as simple arithmetic means across available data for the respective group. Detailed information on each indicator, including definitions, sources, and data availability, is provided in the *Indicators and Data Description* appendix.

The Danube Region: Population and Socio-Economic Performance

Population

The Danube Region, one of the four macro-regions defined by the EU, includes 12 states and certain regions of Germany and Ukraine. Nine of these states are EU Member States (Austria, Bulgaria, Croatia, Czechia, Germany, Hungary, Romania, Slovakia, and Slovenia), while five are EU candidate countries (Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia, and Ukraine).

In 2024, the total population of the Danube Region was approximately 109.7 million (see Table 0.1). This reflects a continued trend of gradual demographic decline, which has persisted since 2011, when the population stood at over 112 million. While the broader EU-27 population has grown modestly, the Danube Region has seen a cumulative loss of more than 2.4 million people over the past decade, driven by declining fertility rates and emigration.[2]

Table 0.1: Population (in millions)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EU-27	441.56	442.23	442.69	443.26	444.18	445.19	445.91	446.70	447.64	448.04	447.87	448.79	451.02	452.23
DR	112.17	112.13	111.84	111.89	111.29	111.35	111.26	111.17	111.09	110.88	110.31	109.63	109.82	109.74
AT	8.39	8.43	8.48	8.54	8.63	8.74	8.80	8.84	8.88	8.92	8.95	9.05	9.13	9.18
BG	7.35	7.31	7.27	7.22	7.18	7.13	7.08	7.03	6.98	6.93	6.88	6.47	6.45	6.40
HR	4.28	4.27	4.25	4.24	4.21	4.17	4.13	4.09	4.07	4.05	3.96	3.86	3.86	3.85
CZ	10.50	10.51	10.51	10.53	10.55	10.57	10.59	10.63	10.67	10.70	10.51	10.67	10.86	10.85
DE	80.28	80.43	80.65	80.98	81.69	82.35	82.66	82.91	83.09	83.16	84.09	84.55	84.55	
HU	9.97	9.92	9.89	9.87	9.84	9.81	9.79	9.78	9.77	9.75	9.71	9.61	9.59	9.56
RO	20.15	20.06	19.98	19.91	19.82	19.70	19.59	19.47	19.37	19.26	19.12	19.05	19.06	19.07
SK	5.40	5.41	5.41	5.42	5.42	5.43	5.44	5.45	5.45	5.46	5.45	5.43	5.43	5.42
SI	2.05	2.06	2.06	2.06	2.06	2.07	2.07	2.07	2.09	2.10	2.11	2.11	2.12	2.13
BA	3.84	3.84	3.53	3.53	3.52	3.51	3.50	3.50	3.49	3.48	3.45	3.43	3.42	3.41
ME	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
RS	7.24	7.20	7.17	7.13	7.10	7.06	7.02	6.98	6.95	6.90	6.83	6.66	6.62	6.59
MD	3.56	3.56	3.56	3.56	2.84	2.80	2.76	2.71	2.67	2.62	2.62	2.53	2.46	2.40
UA	45.71	45.59	45.49	43.00	42.85	42.67	42.49	42.27	42.03	41.75	41.17			

Source: wiiw Annual Database and Eurostat.
Notes: Data refer to census 2011 if not otherwise stated. For Germany and Ukraine entire populations are considered. Bosnia and Herzegovina: From 2013 according to census October 2013, census 1991 before. Republic of Moldova: From 2015 usual resident population according to census May 2014, previously resident population and census October 2004.

Several long-term demographic drivers are shaping population trends across the Danube Region. Many countries, particularly EU candidate countries such as Serbia, Bosnia and Herzegovina, and Moldova, have experienced sustained population decline due to a combination of outward migration and persistently low birth rates. These patterns are rooted in deeper structural issues, including labour market fragmentation, limited access to services in rural areas, and declining fertility. The cumulative effect of these dynamics has led to demographic contraction, especially in less economically developed parts of the region.

In contrast, Austria, Germany, Czechia, Slovenia, and Slovakia have seen modest population growth between 2022 and 2024, largely driven by net migration. Labour mobility, economic opportunity, and the reception of refugees have all played a role in offsetting natural population decline.[3] In addition to net migration flows, the influx of

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[2]For more detailed analysis on the drivers of demographic decline in the Danube Region, refer to Savić, M., Dakić, S. (2016). Demographics, migration and brain drain in the Danube region. *Economic themes*, 54(4), 469-483.

[3]https://www.oecd.org/migration/international-migration-outlook-1999124x.htm

refugees from Ukraine, caused by the Russian invasion of Ukraine in 2022, has had a significant demographic impact in the Danube Region. As of mid-2024, over 6 million people from Ukraine had registered across Europe under Temporary Protection or other international protection mechanisms.[4] Major host countries in the Danube Region include Germany (ca 1.24 million) and Czechia (ca 0.37 million), while other Danube Region countries such as Romania, Hungary, Slovakia and Austria have also received substantial numbers. While not all these effects are fully reflected in Danube Region-specific statistics, these flows help explain temporary population increases in 2022-2023 and contribute to labour market and social developments.

Although only Bavaria and Baden-Württemberg are officially part of the Danube Region, the report uses data for Germany as a whole due to the lack of comparable sub-national statistics.[5] In 2024, Germany accounted for around 22% of the Danube Region's total population and nearly 77% of the region's population increase since 2021. Romania is the second-largest contributor with roughly 17%, followed by Austria, Hungary, and Czechia. Most other countries each account for less than 10% of the region's population, with Moldova and Montenegro remaining the smallest. These diverging demographic trajectories raise growing concerns for labour supply, economic resilience, and public service delivery, especially in ageing and depopulating areas where the burden on social infrastructure is projected to intensify.

Gross Domestic Product Growth

During the pre-COVID decade (2011-2019), the Danube Region showed steady but uneven convergence dynamics. Average annual GDP growth exceeded 3%, clearly above the EU-27 rate, with strongest performances in Bulgaria, Hungary, Montenegro, Romania, and Serbia (above 4% in 2019) and more moderate trends in Austria and Germany(around 1-1.5% in 2019). Growth was supported by export integration, domestic consumption, and inflows of EU funds in member states, while candidate countries benefited from remittances and structural reforms. However, structural vulnerabilities remained, including productivity gaps, demographic decline, and dependence on external demand.

The COVID-19 crisis in 2020 interrupted this trajectory sharply. GDP contracted by 5.5% on average in the Danube Region, broadly in line with the EU-27, but with strong cross-country variation. Montenegro experienced the steepest decline (-15.3%), reflecting its reliance on tourism, while Bosnia and Herzegovina (-3.2%) and Serbia (-

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[4]https://data.unhcr.org/en/situations/ukraine/location/10782

[5]Bavaria and Baden-Württemberg are the only German regions included in the EUSDR. However, for consistency across datasets and due to the unavailability of comparable regional-level statistics for key indicators, national-level data for Germany is used throughout the report.

0.9%) and proved relatively resilient. The rebound in 2021 was vigorous, as regional GDP expanded by over 7%, again outpacing the EU-27, with double-digit recoveries in Croatia, Montenegro, and Republic of Moldova, confirming the pattern that the deepest recessions were followed by the strongest rebounds.[6]

The war against Ukraine reshaped the economic outlook from 2022 onwards. Regional growth slowed markedly to below 1% in 2022, compared to 3.4% in the EU-27, as Ukraine's GDP collapsed by 28.8%. While several Western Balkan economies continued to grow robustly, Austria, Czechia, Germany, and Hungary slipped into recession in 2023 due to high energy costs, inflationary pressures, and tighter financing conditions. By 2024, average growth in the Danube Region stabilised around 2%, again above the EU-27, but with clear divergence. Solid expansion in Croatia and EU candidate countries such as Bosnia and Herzegovina, Montenegro, and Serbia contrasted with stagnation in Austria and Germany. Ukraine recorded a fragile recovery, but output remained far below pre-war levels, underlining the enduring economic costs of the war.[7]

Table 0.2: GDP growth (real) in %

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EU-27	1.8	-0.7	0.0	1.6	2.3	2.0	2.8	2.1	1.8	-5.9	5.4	3.4	0.5	1.1
DR	2.5	-0.5	1.6	1.3	1.9	3.0	3.8	3.7	3.3	-5.5	7.2	0.9	2.0	1.7
AT	2.9	0.7	0.0	0.7	1.0	2.0	2.3	2.5	1.5	-6.7	4.6	5.3	-1.0	-1.0
BG	2.1	0.8	-0.6	1.0	3.4	3.0	2.8	2.7	4.0	-4.4	7.6	4.0	1.9	2.8
HR	-0.1	-2.3	-0.4	-0.3	2.5	3.5	3.4	2.9	3.5	-8.1	13.1	7.3	3.3	3.9
CZ	1.8	-0.8	0.0	2.3	5.4	2.5	5.2	3.2	3.0	-5.8	3.5	2.8	-0.1	1.1
DE	3.9	0.4	0.4	2.2	1.5	2.2	2.7	1.1	1.1	-4.6	2.6	1.4	-0.3	-0.2
HU	1.9	-1.3	1.8	4.2	3.7	2.2	4.3	5.4	4.6	-4.7	7.1	4.3	-0.8	0.5
RO	1.9	2.0	3.8	3.6	3.0	4.7	7.3	4.5	4.2	-3.9	5.1	4.0	2.4	0.8
SI	2.6	1.4	0.7	2.7	5.2	1.9	3.0	3.8	2.6	-4.4	2.7	2.1	1.6	
SK	0.9	-2.6	-1.0	2.8	2.2	3.2	4.8	4.4	3.3	-4.2	8.2	0.4	2.2	2.1
BA	1.0	-0.8	2.3	1.2	3.1	3.1	3.2	3.7	2.8	-3.2	7.5	4.2	2.0	2.5
ME	3.2	-2.7	3.5	1.8	3.4	2.9	4.7	5.1	4.1	-15.3	13.0	6.4	6.3	3.0
RS	2.0	-0.7	2.9	-1.6	1.8	3.3	2.1	4.5	4.3	-0.9	7.5	2.6	3.8	3.9
MD	5.8	-0.6	9.0	5.0	-0.3	4.4	4.7	4.3	3.7	-7.0	13.9	-4.6	1.2	0.1
UA	5.4	0.2	0.0	-6.6	2.4	2.4	3.5	3.2	-4.0	3.4	-28.8	5.5	2.9	

Source: wiiw Annual Database and Eurostat.
Notes: Ukraine: From 2014 excluding the occupied territories of Crimea and Sevastopol and temporarily occupied territories in the Donetsk and Luhansk regions.

GDP Per Capita and Convergence

The most recent estimates (Figure 0.1) suggest an uneven convergence process within the Danube Region. Countries with lower GDP per capita levels, such as Ukraine, Bosnia and Herzegovina, Montenegro, and Serbia, recorded comparatively higher growth rates in 2024. In contrast, higher-income economies such as Austria and Germany posted

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[6]https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023

[7]https://wiiw.ac.at/the-crisis-is-over-but-its-scarring-effects-are-hindering-recovery-dlp-6842.pdf

stagnation or even mild contraction. This inverse relationship between income level and growth performance points to a short-term catching-up effect.

Figure 0.1: GDP convergence
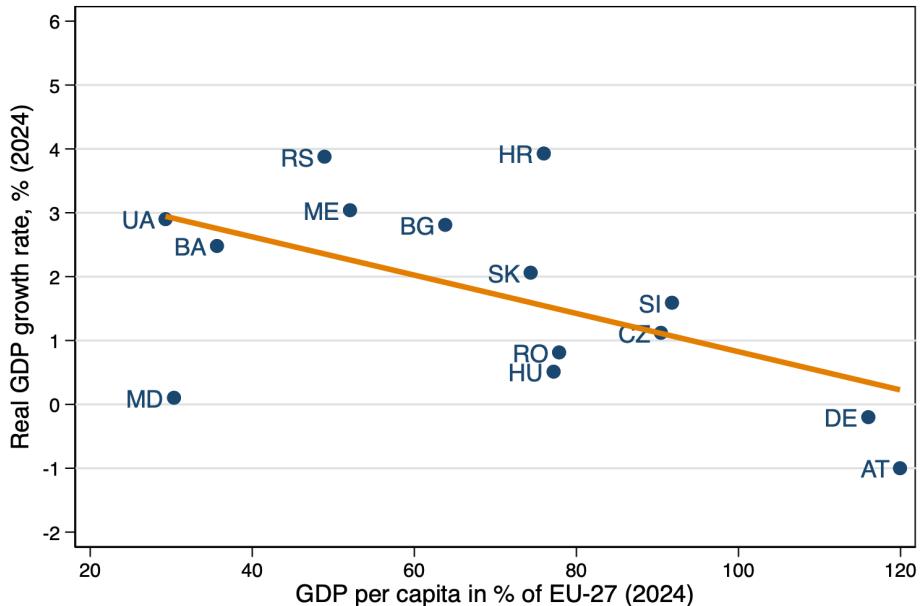
Source: wiiw Annual Database and Eurostat.
Notes: Bosnia and Herzegovina: From 2013 according to census October 2013, census 1991 before. Republic of Moldova: From 2015 usual resident population according to census May 2014, previously resident population and census October 2004. Ukraine: From 2014 excluding the occupied territories of Crimea and Sevastopol.

At the same time, differences across middle-income countries remain visible. Croatia and Serbia stand out with growth close to or above 4%, while Czechia, Hungary, Romania, Slovakia and Slovenia saw more modest gains of 1-2%. The Republic of Moldova represents an outlier with very low growth despite its low income level, reflecting the lingering impact of external shocks and structural fragilities. Overall, the region's growth pattern indicates that convergence continues, though at highly uneven speeds across different groups of countries. While lower-income countries currently enjoy a relative growth advantage, their structural vulnerabilities, ranging from demographic decline to institutional constraints, limit the sustainability of this trend. For higher-income Danube economies, weak growth signals the need for productivity-enhancing reforms to avoid divergence from both regional peers and the broader EU.

Objective I

Contribution to a Higher Employment Rate in the Danube Region, Especially Through Tackling Youth and Long-Term Unemployment

Contribution to a Higher Employment Rate

Enhancing employment prospects and increasing employment rates remain key priorities for achieving sustainable economic growth, social inclusion and territorial cohesion in the Danube Region. These goals lie at the heart of the *EU Strategy for the Danube Region (EUSDR)* Priority Area 9 (People and Skills), which emphasises the importance of well-functioning labour markets and inclusive access to quality employment opportunities.

While labour market trends in many countries showed positive momentum over the past decade, reflecting structural reforms, improved education outcomes, and increased labour mobility, this progress has been repeatedly tested by external shocks. The COVID-19 pandemic, followed by the economic repercussions of Russia's war of aggression against Ukraine and the resulting energy crisis, caused substantial disruption across the region. These shocks exacerbated existing labour market vulnerabilities, particularly among young people, low-skilled workers and those in rural or economically lagging areas.

This objective builds on earlier assessments and provides a timely evidence base for evaluating labour market developments during the post-pandemic recovery phase (2022-2024). It focuses on three interlinked questions: the extent to which employment rates have rebounded across countries; where persistent gaps, especially between EU Member States and EU candidate countries, remain; and how much progress has been made in addressing youth unemployment and long-term joblessness. These insights are crucial for informing future policy directions, particularly in the context of demographic decline, digital and green transitions, and the need to strengthen resilience through inclusive and adaptive labour market systems.

1.1 Employment Rate

Generally, countries of the Danube Region have experienced rising employment rates between 2011 and 2024, despite repeated periods of economic uncertainty and geopolitical disruption (see Figure 1.1). This broad-based improvement signals the region's ongo-

ing structural transformation, supported by economic reforms, labour market activation policies, and the gradual modernisation of education and training systems.[8]

Employment increased across all Danube Region countries, with the most pronounced gains recorded in the EU candidate countries. Between 2011 and 2024, the average employment rate in EU candidate countries of the region grew by approximately 23%, with Bosnia and Herzegovina and Serbia achieving particularly strong increases of 36.9% and 44.6%, respectively. These improvements reflect the positive effects of macroeconomic stabilisation, gradual formalisation of labour markets, and policy efforts to strengthen labour supply and reduce inactivity, particularly among young and low-skilled workers.

Figure 1.1: Employment rates from 2011 to 2024 and employment indices across countries for the population aged 20 to 64
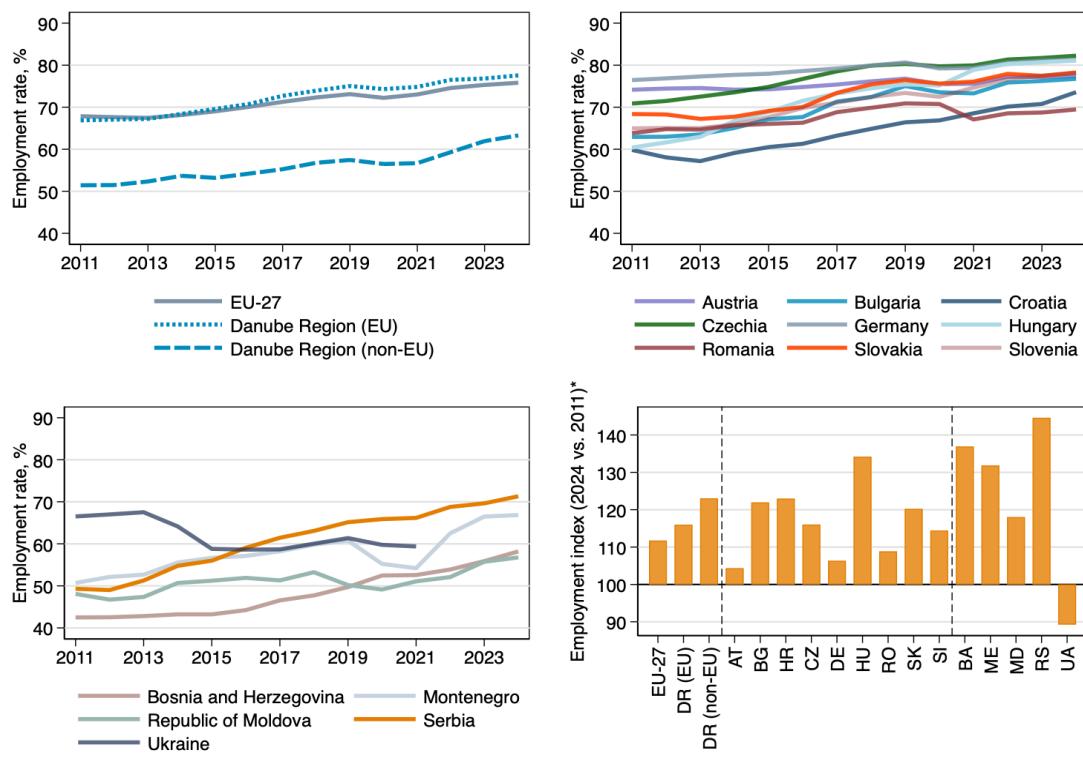
Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia – Eurostat database segment *lfsa_ergaed*. The Republic of Moldova and Ukraine – the national statistical offices.
Notes: Employment indices are estimated as employment rate in 2024 relative to employment rate in 2011 for all countries except Ukraine, where the index compares employment rate in 2021 to 2011.

Nevertheless, a considerable gap in employment levels persists between EU Member States and EU candidate countries of the Danube Region. In 2024, the average employ-

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[8]A methodological break occurred in 2021 following the implementation of the new EU Labour Force Survey (EU-LFS) framework under the Integrated European Social Statistics (IESS) Regulation. The revision introduced a harmonised questionnaire, updated definitions, and new weighting procedures, which improved cross-country comparability but limit the direct comparability of data before and after 2021. This change affects all indicators covered in objective 1. For details, see `https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_Labour_Force_Survey_-_new_methodology_from_2021_onwards`.

ment rate in EU candidate countries stood at 63.3%, compared to 77.6% in EU Member States. This reflects deep-rooted differences in labour productivity, education outcomes, institutional capacity, and the overall pace of economic convergence. While EU candidate countries have made progress in modernising labour market governance, disparities remain in the scale and effectiveness of public employment services, social protection coverage, and skills anticipation mechanisms.

At the same time, EU Member States of the region also achieved substantial employment gains, with an average increase of 16% over the same period. Bulgaria, Croatia, Hungary and Slovakia recorded the most significant growth, with employment rates rising by 21.9%, 23%, 34.4% and 20%, respectively. These results reflect the combined impact of rising labour demand, targeted national employment programmes, and EU-level support, such as through the *European Social Fund Plus (ESF+), the Youth Guarantee*, investment in labour market resilience under the *Recovery and Resilience Facility, Instrument for Pre-Accession Assistance* (IPA III) and the *Neighbourhood, Development and International Cooperation Instrument – Global Europe* (NDICI-Global Europe).

Furthermore, in all EU Member States of the Danube Region, except for Croatia and Romania, the 2024 employment rate exceeded the EU-27 average. This illustrates the relatively strong labour market performance of several countries in the region despite demographic challenges and sectoral shifts. It also highlights the effectiveness of coordinated policy efforts to foster participation, address skills gaps and increase labour mobility within the internal market.

Sluggish convergence in employment rates between EU Member States and EU candidate countries of the Danube Region can be attributed to persistent structural disparities, including differences in industrial competitiveness, labour market policies, and the pace of institutional reforms. Moreover, challenges such as labour market informality and lower foreign investment flows in EU candidate countries continue to hamper employment growth relative to the EU Member States.[9]

Gender-specific employment rate dynamics were relatively homogeneous across the region (see Figure 1.2). Between 2011 and 2024, the average female employment rate in the Danube Region increased more than the male rate, by 19.8% compared to 12.7% in the EU Member States of the region, and by 25.5% compared to 20.8% in the EU candidate countries. This mirrors broader trends across the EU-27, where female and male employment rates rose by 15.3% and 8.7%, respectively.

These results indicate a progressive narrowing of the gender employment gap across the Danube Region, driven by growing labour market participation among women, expanding

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[9]More on the employment and social developments in Europe and neighboring countries is available at `https://employment-social-affairs.ec.europa.eu/employment-and-social-developments-europe-addressing-labour-shortages-and-skills-gaps-eu-2023_en`

Figure 1.2: Employment indices by gender across countries for the population aged 20 to 64
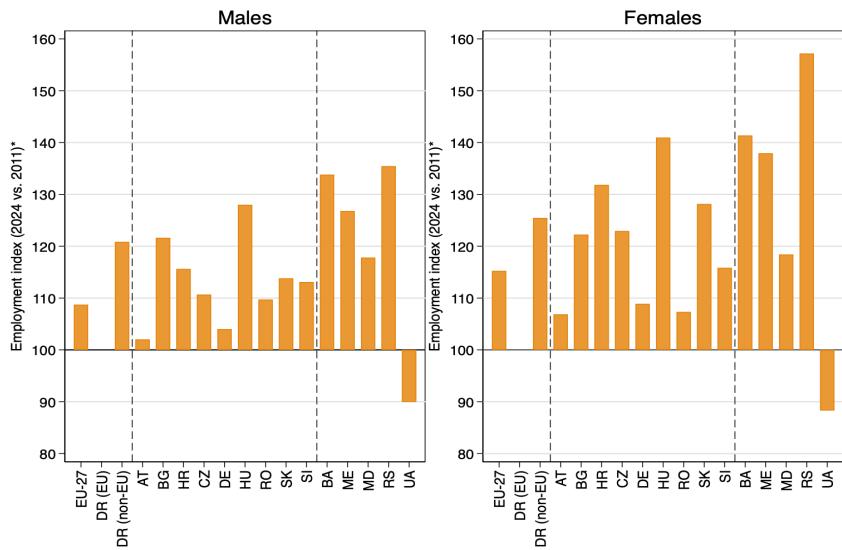
Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia – Eurostat database segment *lfsa_ergaed*. The Republic of Moldova and Ukraine – the national statistical offices.
Notes: Employment indices are estimated as employment rate in 2024 relative to employment rate in 2011 for all countries except Ukraine, where the index compares employment rate in 2021 to 2011. Indices are estimated separately for men and women.

access to childcare, improved parental leave policies, and active efforts to address gender segregation in education and employment. Romania stands out as an exception, where male employment growth (9.7%) slightly outpaced that of females (7.3%). Still, the overall convergence points to the increasing effectiveness of gender-sensitive employment policies and the broader societal shift towards more equitable participation.[10]

The employment dynamics across age groups (see Figure 1.3) reveal a polarised trend: younger workers (aged 20-29) and older workers (aged 50-64) experienced the most significant increases in employment, while middle-aged cohorts (30-49 years) showed more modest gains. This pattern was particularly evident in the EU Member States of the Danube Region, where the employment rate for older workers rose by 34.5% and youth employment increased by 11.5%, compared to just 7.8% for those aged 30-49. The trend is broadly consistent with that observed across the EU-27.

In the EU candidate countries of the region, a similar trajectory emerged, though with less pronounced age-group differences: employment rates increased by 28.4% among youth, 15.6% among middle-aged adults, and 32.8% among older workers. However, substantial cross-country variation persists. Youth employment rose by 32.5% in Hungary, 39.3% in Bosnia and Herzegovina, and by a remarkable 63% and 61% in Montenegro and Serbia, respectively. In contrast, Austria and Romania recorded marginal changes in youth employment during the same period. It is important to note, however, that Austria

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[10]For more elaborate discussion of the recent developments in gender equality at work and in society, please, refer to https://eige.europa.eu/publications-resources/publications/gender-equality-index-2024-tackling-violence-against-women-tackling-gender-inequalities

Figure 1.3: Employment indices by age groups across countries
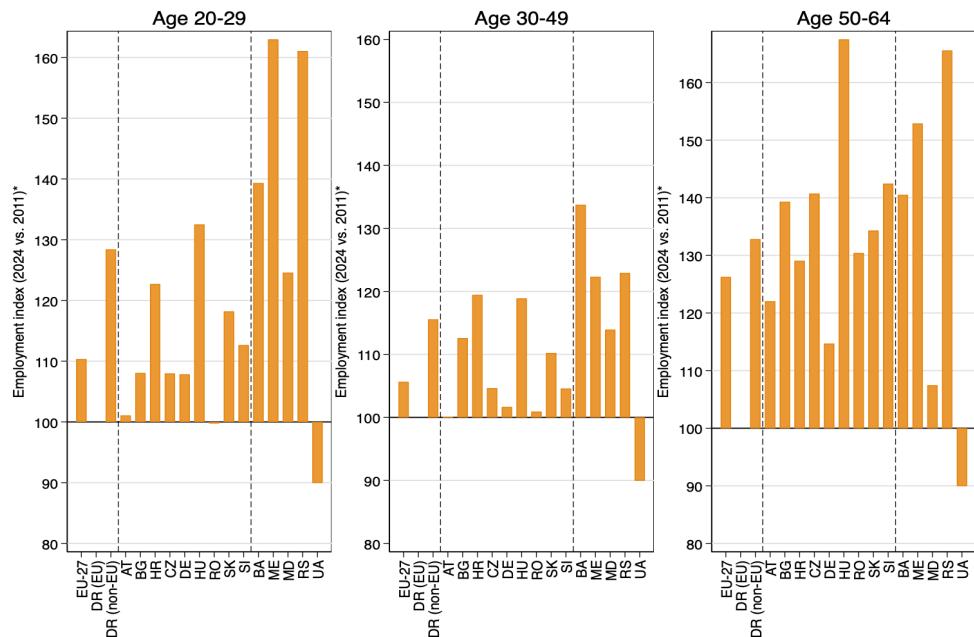
already had one of the highest youth employment rates in the EU, reflecting a long-established and well-functioning dual vocational education and training (VET) system that ensures smooth school-to-work transitions and stable labour market integration for young people.[11] Romania's persistently low youth employment levels, by contrast, are associated with a weaker linkage between education and labour market needs, regional disparities in economic activity, and limited availability of quality job opportunities for new entrants.[12]

Among older workers, employment gains were substantial: 39.3% in Bulgaria, 29.1% in Croatia, 40.7% in Czechia, 67.5% in Hungary, 42.4% in Slovenia, and 52.9% in Montenegro. The Republic of Moldova was the only country in the region where employment growth among older workers remained below 10%, highlighting the need for more robust activation measures in this demographic.

This age-polarised employment growth reflects broader structural shifts, including tightening labour supply, skills shortages, and pension system reforms that have extended

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[11]See European Commission (2023), *Youth Employment Support: Fostering the Next Generation of the Workforce*, which highlights Austria's dual training model as a best practice in youth employability. Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/economy-works-people/youth-employment-support_en#documents.

[12]OECD (2025), *Labour Market and Social Policies Review: Romania*, identifies youth unemployment and skills mismatch as key structural challenges. Available at: https://www.oecd.org/en/publications/oecd-reviews-of-labour-market-and-social-policies-romania-2025_f0532908-en/full-report/the-labour-market-and-social-situation-in-romania_0353986f.html.

working lives. Policy efforts to promote active ageing, such as flexible retirement schemes, training for older workers, and intergenerational workplace practices, have contributed to higher employment among older cohorts. At the same time, persistent barriers to labour market entry for young people, including skills mismatches, limited access to apprenticeships, and weak school-to-work transitions, continue to shape youth employment outcomes in several countries.[13]

1.2 Unemployment Rate

Unemployment remains one of the most pressing challenges to sustainable economic development and societal well-being in the Danube Region. High unemployment rates indicate that valuable labour resources are not being fully utilised, leading to losses in potential output and diminishing social cohesion. Prolonged unemployment also weakens individual employability by eroding work-relevant skills, lowering future earnings potential, and reducing labour force attachment. These dynamics increase the likelihood of individuals falling into long-term unemployment, defined as being without work for more than twelve months. At the same time, structural transformations across labour markets, driven by technological change, digitalisation and the green transition, are reshaping demand for skills and occupations. Without sufficient investment in upskilling, reskilling and inclusive labour market policies, these transitions risk exacerbating skills mismatches and reinforcing unemployment traps, especially among low-skilled, older or displaced workers. This underscores the importance of developing agile, forward-looking employment systems capable of supporting vulnerable groups and enhancing economic resilience.

All countries in the Danube Region, with the exception of Austria and Ukraine, recorded a decline in unemployment rates between 2011 and 2024, despite the significant disruptions caused by the COVID-19 crisis and the economic downturn triggered by the Russian war against Ukraine (see Figure 1.4). Over this period, unemployment rates have generally converged within both EU Member States and EU candidate countries. However, a persistent gap remains between these two groups. In 2024, the average unemployment rate in EU Member States of the region stood at 4.4%, well below the EU-27 average of 5.9%, while the average rate in EU candidate countries remained significantly higher, at approximately 9.2%.

The variation within both groups is also considerable. Among the EU Member States in the region, unemployment ranged from 2.6% in Czechia, 3.4% in Germany and 3.7% in Slovenia, to 5.2% in Austria, 5.0% in Croatia, 5.4% in Romania and 5.3% in Slovakia.

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[13]For more evidence on shifting age patterns on labour market, pleas, refer to Kuitto, K., & Helmdag, J. (2021). Extending working lives: How policies shape retirement and labour market participation of older workers. *Social Policy & Administration*, 55(3), 423-439.

Figure 1.4: Unemployment rates from 2011 to 2024 and unemployment indices across countries for the population aged 15 to 74
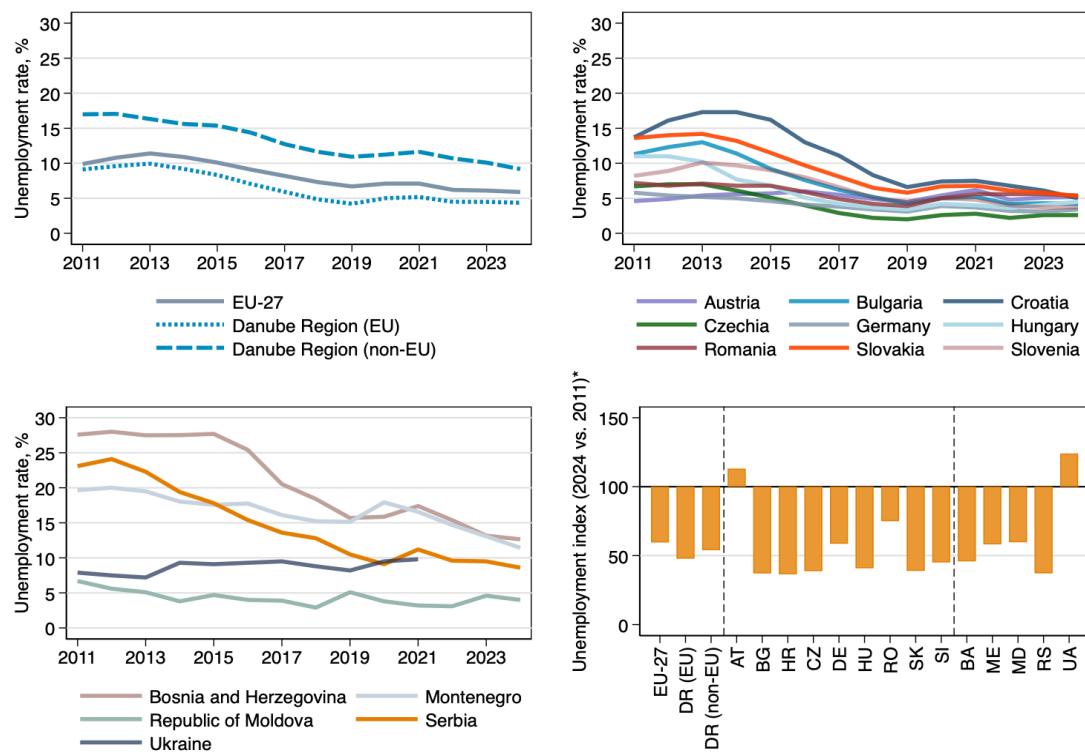
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_urgaed*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Unemployment indices are estimated as unemployment rate in 2024 relative to unemployment rate in 2011 for all countries except Ukraine, where the index compares unemployment rate in 2021 to 2011.

In the EU candidate countries of the Danube Region, the spread was wider, ranging from 4.0% in the Republic of Moldova to as high as 12.6% in Bosnia and Herzegovina.

This substantial variation reflects enduring structural differences in labour market resilience, the maturity of institutions, and the scale of investment in active labour market measures. In particular, weaker labour market institutions, limited unemployment benefit coverage and underdeveloped vocational education and training systems in some parts of the Western Balkans have contributed to higher levels of joblessness.[1415] In addition, informal employment, persistent skills mismatches and limited integration with EU labour mobility networks continue to shape labour market outcomes in the EU candidate countries.[16]

The Republic of Moldova presents a particular case, as both its employment and un-

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[14]https://employment-social-affairs.ec.europa.eu/employment-and-social-developments-europe-addressing-labour-shortages-and-skills-gaps-eu-2023$_e n$

[15]https://documents1.worldbank.org/curated/en/099082824082013360/pdf/P176230-fb8856e3-2c0d-47de-a728-02f93e3330b4.pdf

[16]For more inference on the recent labour market trends in the Western Balkan countries of the Danube Region refer to https://documents1.worldbank.org/curated/en/099082824082013360/pdf/P176230-fb8856e3-2c0d-47de-a728-02f93e3330b4.pdf

Figure 1.5: Unemployment indices by gender across countries for the population aged 15 to 74
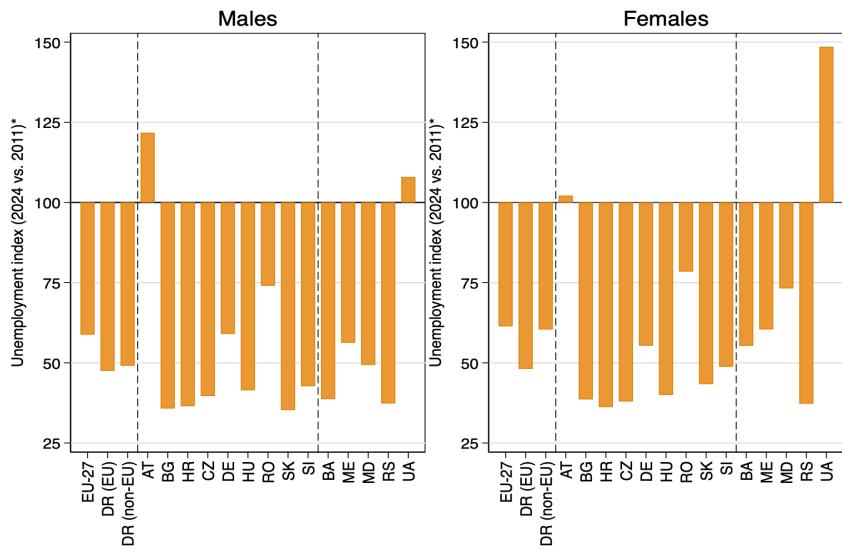
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_urgaed*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Unemployment indices are estimated as unemployment rate in 2024 relative to unemployment rate in 2011 for all countries except Ukraine, where the index compares unemployment rate in 2021 to 2011. Indices are estimated separately for men and women.

employment rates remain among the lowest in the entire Danube Region. While this may suggest strong labour market performance, the pattern is more plausibly explained by the country's sizeable informal sector. A large share of individuals engaged in informal work are classified as economically inactive in official labour force surveys.[17] Furthermore, many citizens of the Republic of Moldova are employed abroad, either temporarily or permanently. These labour migrants are not included in the domestic employed or unemployed population, which effectively lowers the official employment and unemployment rates. International migration remains a core component of the Moldovan economy, with remittances accounting for one of the highest shares of GDP in the region. This highlights the significant role of cross-border labour mobility in shaping national employment statistics.[18]

A closer examination of unemployment trends by gender between 2011 and 2024 reveals notable differences in the Danube Region (see Figure 1.5). Austria is the only country where unemployment increased during the period, and this rise was driven almost entirely by men. The male unemployment rate increased by 21.7%, while the rate for women rose by only 2.2%. This divergence is likely due to structural shifts affecting male-dominated sectors, such as construction and manufacturing, which were more severely impacted by

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[17]The size of "shadow economy" in Republic of Moldova is strikingly high - around 30% in years 2015-2016. For more details, please, see Putnins, T. J., Sauka, A., and Davidescu, A. A. M. (2019). Shadow Economy Index for Moldova and Romania, in *Subsistence Entrepreneurship*, Eds. Ratten et al., Springer, p. 89-130.

[18]https://moldova.iom.int/sites/g/files/tmzbdl1626/files/documents/2024-02/dtm_mda_returness-report-dec-2023.pdf

pandemic-related disruptions and the subsequent energy crisis.[19]

In most other countries of the region, the decline in unemployment was slightly more pronounced for men than for women. This pattern was particularly evident in Slovakia, Slovenia, Bosnia and Herzegovina, and the Republic of Moldova, suggesting that male workers in these countries benefited more from the recovery in labour demand. These gender-specific dynamics may also reflect occupational segregation, differing sectoral exposure to shocks, and variation in care responsibilities that continue to influence labour market participation among women.

1.3   Long-Term Unemployment Share

Unemployment is considered long-term when an individual remains unemployed for more than twelve months. While short-term unemployment often reflects temporary, cyclical downturns in the economy, long-term unemployment (frequently classified as structural unemployment) typically results from deeper, persistent barriers that hinder individuals from re-entering the labour market. These may include mismatches between workers' qualifications and evolving skill demands, regional disparities in job availability, or the erosion of labour force attachment over time. Economic shocks, technological disruptions and accelerated structural transitions can exacerbate these issues, pushing some jobseekers into extended periods of inactivity.

This risk has become particularly salient in the wake of recent crises. The COVID-19 pandemic, followed by economic disruptions triggered by the war in Ukraine and the energy crisis, intensified pressures on labour markets across the Danube Region. These events accelerated the pace of change in job profiles and skill requirements, raising the likelihood of structural unemployment, particularly in sectors undergoing rapid transformation.[20]

In line with broader unemployment trends, the share of long-term unemployed declined substantially across the Danube Region between 2011 and 2024. On average, the proportion of long-term unemployment fell by 24% in the EU Member States of the region, and by 10.7% in the EU candidate countries. These reductions are encouraging and reflect the impact of more active labour market policies, digitalisation of employment services, and rising demand for labour in certain sectors. However, long-term unemployment remains a persistent challenge, particularly in the non-EU countries of the region.

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[19]`https://www.oecd.org/en/publications/oecd-economic-surveys-austria-2024_60ea1561-en.html`

[20]For elaborate evidence on the effects of the COVID-19 pandemic on unemployment, including long-term, refer to Bermejo, L., Malmierca-Ordoqui, M., & Gil-Alana, L. A. (2023). Unemployment and COVID-19: an analysis of change in persistence. *Applied Economics*, 55(39), 4511-4521.

Figure 1.6: Long-term unemployment shares from 2011 to 2024 and long-term unemployment indices across countries for the population aged 15 to 74
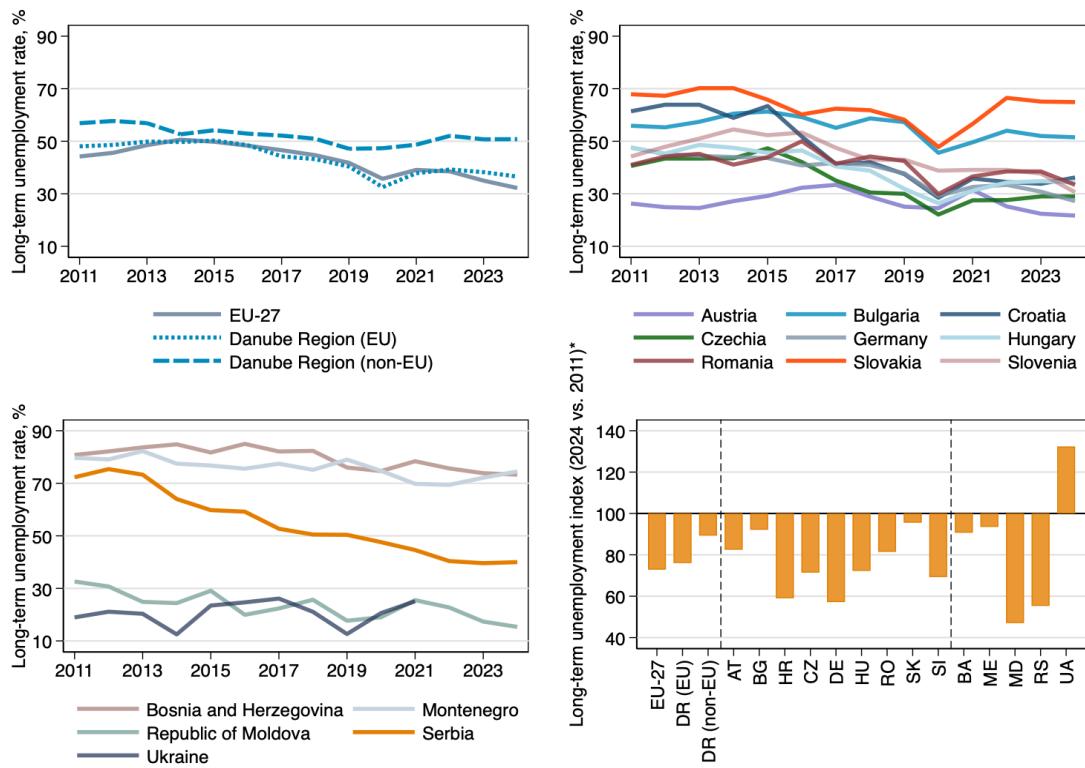
Source: EU Member States, Montenegro, and Serbia – the Eurostat database segment *lfst_r_lfu2ltu*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Long-term unemployment indices are estimated as long-term unemployment rate in 2024 relative to long-term unemployment rate in 2011 for all countries except Ukraine, where the index compares long-term unemployment rate in 2021 to 2011.

In 2024, the average share of long-term unemployment stood at 36.5% in the EU Member States of the Danube Region, compared to 50.8% in the EU candidate countries. These differences point to continuing disparities in the effectiveness of reintegration policies, the strength of social safety nets, and the capacity of training systems to address skills deterioration. Considerable variation is also evident within both country groups. Among the EU Member States, the long-term unemployment share ranged from over half of all unemployment in Bulgaria (51.5%) and Slovakia (50.8%) to just 21.7% in Austria, which reflects a more dynamic labour market with shorter unemployment durations and stronger re-employment services.

In the EU candidate countries, structural disparities were even more pronounced. The share of long-term unemployment reached 73.3% in Bosnia and Herzegovina and 74.5% in Montenegro, indicating entrenched barriers to labour market reintegration. By contrast, the Republic of Moldova recorded a significantly lower long-term unemployment share of 15.3%, potentially linked to statistical classification issues due to high informal employment and international migration.

Further disaggregation by gender reveals diverging trends across the Danube Region

Figure 1.7: Long-term unemployment indices by gender across countries for the population aged 15 to 74

Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfst_r_lfu2ltu*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Long-term unemployment indices are estimated as long-term unemployment rate in 2024 relative to long-term unemployment rate in 2011 for all countries except Ukraine, where the index compares unemployment rate in 2021 to 2011. Indices are estimated separately for men and women.

(see Figure 1.7). Among the EU Member States, gender differences in long-term unemployment dynamics varied considerably. In Austria, Romania and Slovakia, the share of short-term unemployment (i.e. less than 12 months) within total unemployment declined more markedly for men. Coupled with the increase in Austria's overall unemployment rate for men (see Figure 1.7), this suggests that a greater proportion of unemployed men are experiencing shorter unemployment durations, which may indicate a shift towards more cyclical, rather than structural, unemployment among this group.

In all EU candidate countries of the Danube Region, the share of long-term unemployment declined more sharply among men than among women. This suggests that the reduction in male unemployment observed during this period (see Figure 1.5) was largely driven by improved reintegration into employment for men previously affected by structural unemployment. Contributing factors may include shifts in labour demand in male-dominated sectors, such as construction or transport, or greater job mobility and flexibility among male workers.

However, the persistence of high long-term unemployment shares among women in many countries points to enduring gender-specific barriers. These include unequal access to reskilling and job placement services, continued concentration of women in less dynamic sectors, and insufficient support for work-life balance. Tackling these inequalities will require more targeted activation measures, gender-sensitive upskilling programmes, and

improved availability of childcare and eldercare services.[21]

1.4 Activity and Inactivity Rates

Activity and inactivity rates provide a crucial snapshot of the available labour force within an economy. The economically active population – individuals who are either employed or unemployed but actively seeking work – represents the core labour supply that supports productivity, competitiveness and inclusive economic growth. In contrast, those outside the labour force are considered economically inactive, meaning they are neither working nor actively searching for employment. This group may include students, early retirees, individuals with care responsibilities, or discouraged jobseekers who have exited the labour market.

The importance of monitoring activity and inactivity rates has grown significantly in recent years. The COVID-19 pandemic and the economic fallout from the war in Ukraine disrupted labour market participation across the region, especially among vulnerable groups.[22] At the same time, structural transformations, including digitalisation, automation, and the green transition, are reshaping demand for skills and participation patterns across sectors.[23] While these shifts can create new opportunities, they may also widen labour market participation gaps if groups such as older workers, women or individuals with lower qualifications continue to face barriers to entering or re-entering the labour market.

Between 2011 and 2024, the share of the economically active population steadily increased across the Danube Region, reflecting a broader mobilisation of labour market potential and the impact of structural reforms (see Figures 1.8 and 1.9). In 2024, the average activity rate among EU Member States in the region reached 75.6%, compared to 65.4% in the EU candidate countries. These figures signal not only the continued strength of labour market participation in many Member States but also the gradual, though uneven, convergence of labour supply conditions across the region.

Among EU Member States, Austria (78.2%), Germany (80.2%) and Hungary (78.6%) recorded the highest activity rates in 2024. In the EU candidate countries, Montenegro (72.6%) and Serbia (72.7%) showed the strongest performance. Particularly notable is the more than 20% increase in activity rates in Hungary, Montenegro and Serbia over

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[21]https://employment-social-affairs.ec.europa.eu/quarterly-review-employment-and-social-developments-europe-esde-april-2024_en

[22]For an elaborate overview of the labour market tools of the COVID-19 please refer to https://www.eurofound.europa.eu/en/publications/2021/impact-covid-19-young-people-eu

[23]For an overview of the effects of digitalisation, AI and the green transition in reshaping labour demand, job quality, and skills needs refer to https://www.oecd.org/en/publications/oecd-employment-outlook-2023_08785bba-en.html

Figure 1.8: Activity rates from 2011 to 2024 and activity indices across countries for the population aged 15 to 64
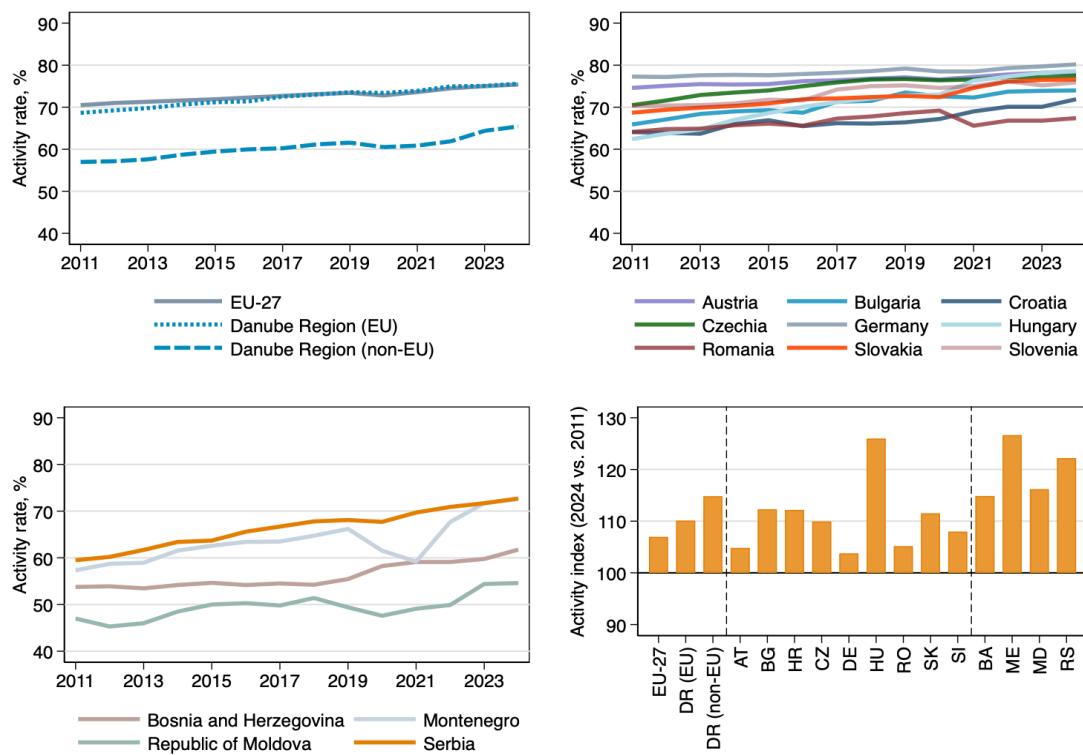

Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_argaed*. The data for Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Activity indices are estimated as activity rate in 2024 relative to activity rate in 2011.

the period, suggesting successful policy efforts to improve access to employment, reduce inactivity and activate underutilised groups, including older workers and low-skilled individuals.[24]

The Republic of Moldova, while also recording a 17% increase in activity between 2011 and 2024, continued to report the lowest activity rate in the region at 54.6% in 2024. This comparatively low figure highlights the persistent challenges posed by a large informal economy and high levels of emigration among the working-age population. Both phenomena reduce the size and visibility of the active labour force in official statistics, complicating efforts to design effective labour market and social protection policies.

In line with these increases in activity, inactivity rates declined across most Danube Region countries. The most substantial decreases were observed in Bulgaria (23.8%), Czechia (23.7%), Hungary (43.1%), Slovakia (25.2%), Montenegro (35.8%) and Serbia (32.6%). These improvements coincided with strong employment growth and falling unemployment, particularly in Hungary, Serbia and Bulgaria (see Figures 1.1 and 1.4). They

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[24]For relevant policy actions, see https://op.europa.eu/webpub/empl/lmwd-annual-review-report-2024/chapter3/the-labour-force-participation-and-employment.html
https://data.consilium.europa.eu/doc/document/ST-8076-2025-INIT/en/pdf

Figure 1.9: Inactivity rates from 2011 to 2024 and inactivity indices across countries for the population aged 15 to 64
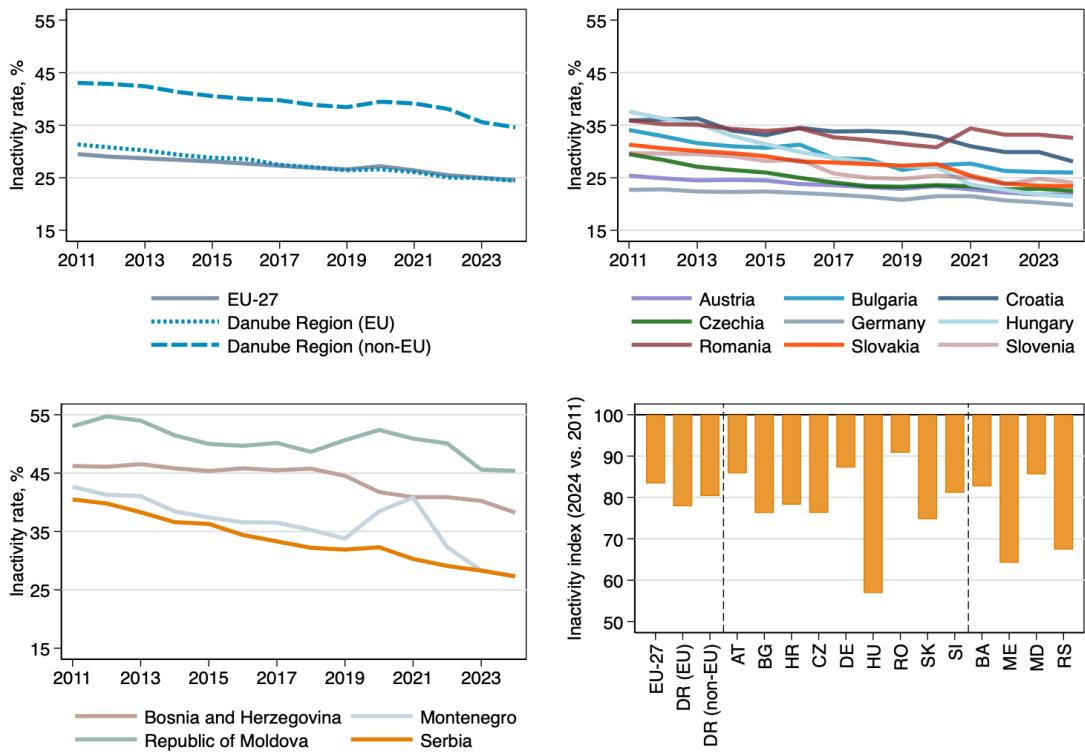
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_ipga*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine– the national statistical offices.
Notes: Inactivity indices are estimated as inactivity rate in 2024 relative to inactivity rate in 2011.

also indicate a broader trend toward convergence with the EU-27 average, reflecting improvements in labour market institutions and policy frameworks.

Several key policy drivers have supported these dynamics. Increased labour demand in industry, construction and services, particularly in countries experiencing post-crisis recovery or benefiting from foreign direct investment, has absorbed a significant share of previously inactive individuals. At the same time, reforms aimed at removing barriers to work, such as more flexible working conditions, improved access to early childhood education and care, and the introduction of financial incentives to return to work, have contributed to lowering inactivity rates.

Several key policy drivers have supported these dynamics. Increased labour demand in industry, construction, and services—particularly in countries undergoing post-crisis recovery or benefiting from foreign direct investment—has absorbed a substantial share of previously inactive individuals. At the same time, reforms aimed at removing barriers to work, such as more flexible working arrangements, improved access to early childhood education and care, and the introduction of financial incentives to return to work,

Figure 1.10: Activity indices by gender across countries for the population aged 15 to 64
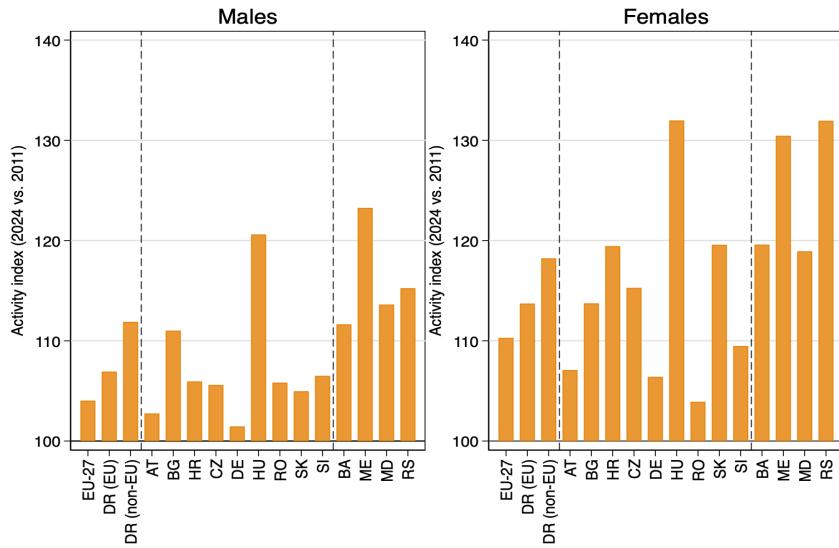
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_argaed*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Activity indices are estimated as activity rate in 2024 relative to activity rate in 2011, with both indices estimated separately for men and women.

Figure 1.11: Inactivity indices by gender across countries for the population aged 15 to 64
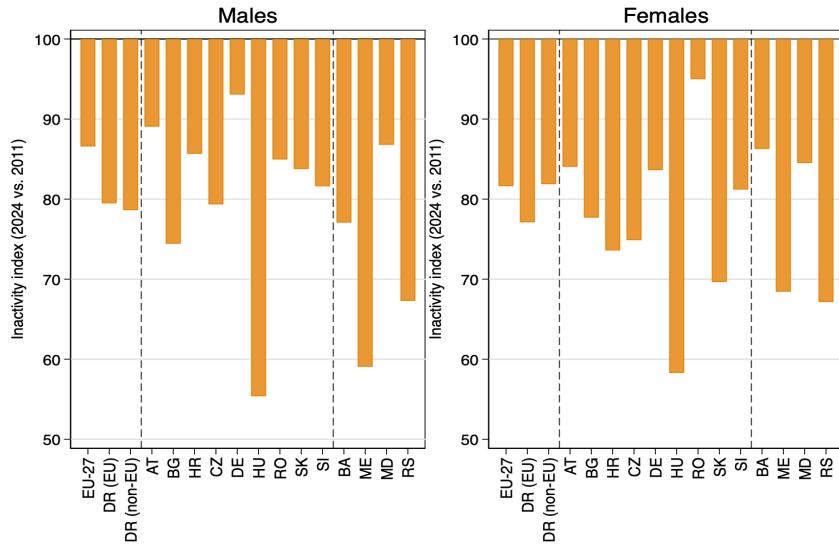
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_ipga*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.
Notes: Activity indices are estimated as activity rate in 2024 relative to activity rate in 2011, with both indices estimated separately for men and women.

have helped reduce inactivity rates.[25] Such incentives include targeted wage subsidies for long-term unemployed persons, tax credits for low-income workers, and benefit reforms that make part-time or gradual return-to-work arrangements more attractive.[26] These

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[25]For more elaborate analysis of how FDI, particularly in IT and manufacturing, has driven job creation and increased activity in the Danube Region, refer to `https://www.econstor.eu/bitstream/10419/307688/1/1910328375.pdf`

[26]For example, the "Kurzarbeit" short-time work scheme in Austria and Germany and the "In-work

measures, when combined with supportive childcare systems and active labour market policies, have encouraged higher participation among parents, older workers, and other groups traditionally at risk of labour market exclusion.

Despite these gains, structural challenges persist. Skills mismatches, regional labour market imbalances, and socioeconomic inequalities continue to limit labour market participation in parts of the Danube Region. Many rural and remote areas face ongoing obstacles such as low job density, insufficient transport infrastructure, and limited access to re-skilling opportunities. These issues underscore the importance of place-based, inclusive employment policies that address the specific needs of disadvantaged regions and social groups.[27]

There were also important gender-based differences in the evolution of activity and inactivity rates across the Danube Region (see Figures 1.10 and 1.11). Between 2011 and 2024, activity rates rose more for men in nearly all countries, with the exception of Romania, where the increases were modest for both genders but still slightly higher for men. This trend may seem at odds with the broader gains in female employment (see Figure 1.2) and the similar pace of unemployment decline for both men and women (see Figure 1.5).

In the EU Member States of the region, inactivity rates declined more substantially among women, with a 22.6% decrease on average, compared to a 20.5% decline among men. This reflects the positive outcomes of gender-responsive employment strategies, including enhanced access to flexible working arrangements, the promotion of work-life balance, and dedicated support for female entrepreneurship and return-to-work schemes.

By contrast, in the EU candidate countries, inactivity fell more sharply for men (21.4%) than for women (18.1%). These diverging patterns may reflect persistent structural and cultural barriers faced by women in some parts of the region, including unequal care responsibilities, limited access to career guidance and re-skilling programmes, and gender-based segregation in the labour market. Addressing these challenges will require a continued focus on inclusive employment policies, the systematic integration of gender mainstreaming in labour market institutions, and stronger cross-sectoral collaboration between education, employment and social services.

Benefit" in Hungary offer financial support to individuals re-entering employment, while Romania has introduced activation bonuses for unemployed persons who resume work before the end of their entitlement period. See European Commission (2023), *Employment and Social Developments in Europe 2024 (ESDE)*, available at: https://employment-social-affairs.ec.europa.eu/employment-and-social-developments-europe-2024-upward-social-convergence-eu-and-role-social_en.

[27]https://op.europa.eu/en/publication-detail/-/publication/680d6391-2142-11ee-94cb-01aa75ed71a1/language-en

1.5 Not in Education, Employment or Training Rate

The Not in Education, Employment or Training (NEET) rate measures the share of young people who are neither working nor participating in any form of education or training during the four weeks preceding the survey, expressed as a percentage of the total population in the relevant age group. This indicator is critical for highlighting a broad spectrum of vulnerabilities faced by young people, including early leaving, labour market discouragement and barriers to labour market entry. Persistently high NEET rates signal untapped human capital and raise concerns about skills underutilisation at a time when changing labour market demands make continuous skills development increasingly vital.

Figure 1.12: NEET rates from 2011 to 2024 and NEET indices across countries for the population aged 15 to 29
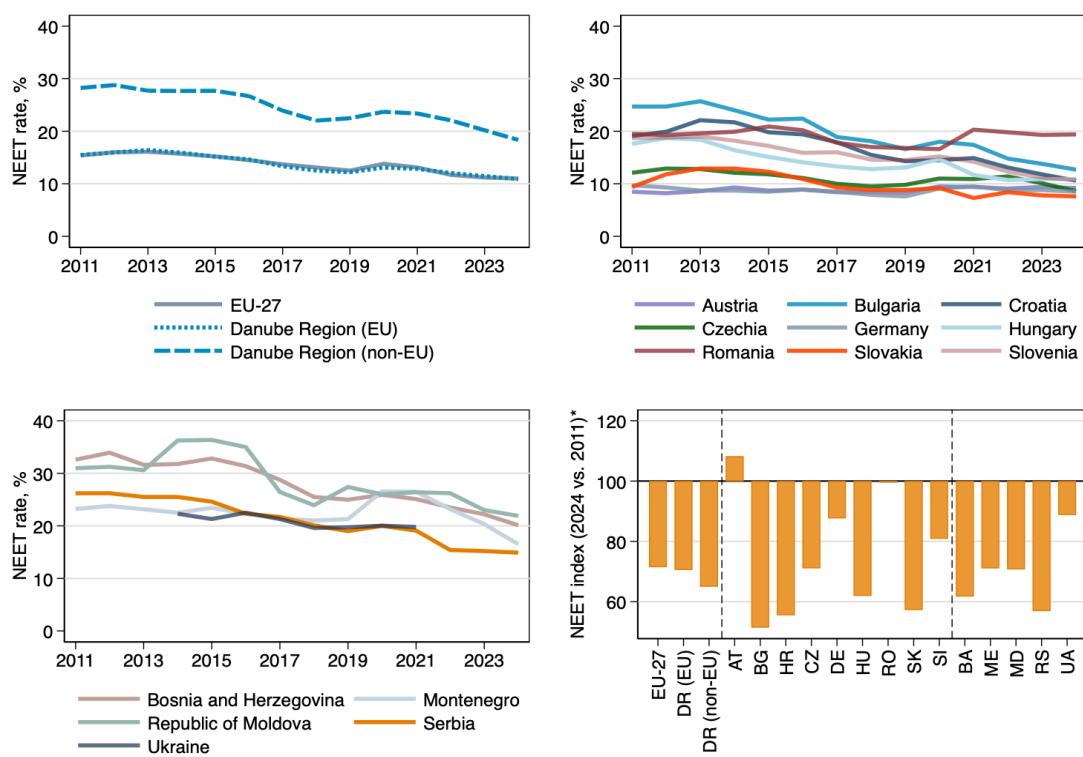
Source: EU Member States – the Eurostat database segment *yth_empl_160*. Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine – the national statistical offices.
Notes: NEET indices are estimated as NEET rate in 2024 relative to NEET rate in 2011 for all countries except Ukraine, where NEET index compares NEET rate in 2021 to 2014.

Addressing NEET rates has therefore remained a core priority for both EU-27 and Danube Region strategies aiming to promote inclusive and sustainable economic growth. Reducing NEET levels is key to strengthening the region's human capital base, mitigating long-term social exclusion risks, and building a resilient, future-ready workforce. Within this framework, a wide range of policy instruments, such as the Youth Guaran-

tee, ESF+-funded interventions, targeted skills programmes and improved school-to-work transitions, have been deployed across the region to engage inactive youth and enhance their employability.

Over the period 2011-2024, NEET rates declined in all countries of the Danube Region except Austria (see Figure 1.12). The overall decline in the EU Member States of the region was 29.5%, broadly in line with the EU-27 average, while in the EU candidate countries NEET rates fell by an average of 35%. Austria was the only outlier, with its NEET rate rising by 8.2% over this period. Among the EU Member States of the Danube Region, the most pronounced declines in NEET rates were recorded in Bulgaria (48.6%), Croatia (44.5%), Hungary (38.1%) and Slovakia (42.8%). Despite these improvements, absolute NEET levels remained uneven. In 2024, the NEET rate ranged from 19.4% in Romania to just 7.6% in Slovakia.

Over the period 2011-2024, NEET rates declined in all countries of the Danube Region except Austria (see Figure 1.12). The overall decline in the EU Member States of the Region was 29.5%, broadly in line with the EU-27 average, while in the EU candidate countries NEET rates fell by an average of 35%. Austria was the only outlier, recording an 8.2% increase in its NEET rate over this period. However, this rise must be interpreted with caution: Austria already had one of the lowest NEET rates in the Region at the beginning of the period, leaving less room for further reduction. Moreover, the recent increase is largely attributable to a higher share of young people with a migrant background who face greater barriers to education and employment integration.[28] Among the EU Member States of the Danube Region, the most pronounced declines in NEET rates were observed in Bulgaria (48.6%), Croatia (44.5%), Hungary (38.1%), and Slovakia (42.8%). Despite these improvements, absolute NEET levels remain uneven: in 2024, the NEET rate ranged from 19.4% in Romania to just 7.6% in Slovakia. These figures underscore persistent structural challenges, including regional disparities, differing education-to-work transition systems, and varying effectiveness of youth employment policies across the Region.

Among EU candidate countries, all registered substantial NEET rate reductions between 2011 and 2024. The largest declines were seen in Serbia (43.1%), followed by Bosnia and Herzegovina and Montenegro. These improvements reflect the cumulative effects of economic recovery, labour market reforms and targeted activation measures focused on youth. However, persistent structural challenges meant that NEET rates in EU candidate countries remained significantly above those of the EU Member States. In 2024, the average NEET rate was 18.4% in candidate countries, compared to 10.9% in Member States,

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[28]https://national-policies.eacea.ec.europa.eu/youthwiki/chapters/austria/41-general-context#:~:text=In%202021%2C%20the%20NEET%20rate,to%20and%20retention%20in%20employment..

resulting in a gap of 8 percentage points. Contributing factors include lower educational attainment, high rates of early leaving, and limited access to quality vocational pathways. Furthermore, weak alignment between education systems and labour market needs, insufficient employer engagement, and uneven support structures for job placement continue to hinder effective school-to-work transitions.[29]

Figure 1.13: NEET indices by gender across countries for the population aged 15 to 29
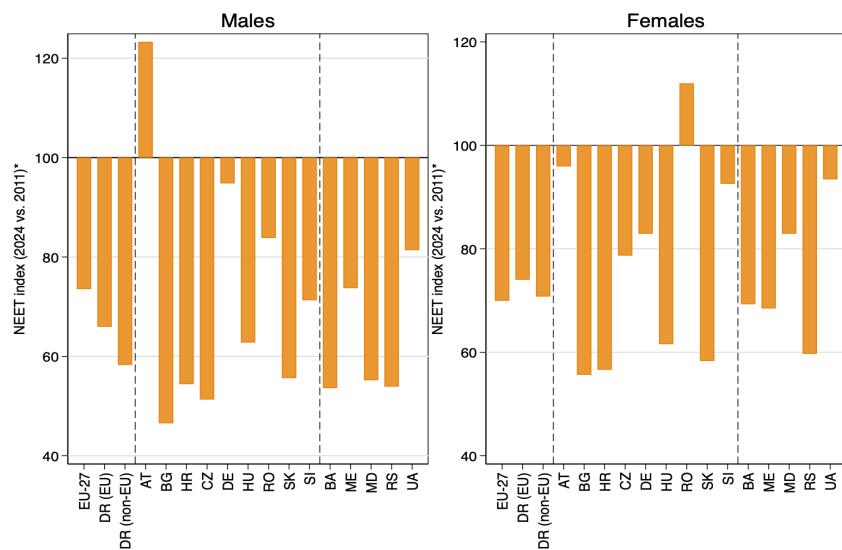
Source: EU Member States – the Eurostat database segment *yth_empl_160*. Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine – the national statistical offices.
Notes: NEET indices are estimated as NEET rate in 2024 relative to NEET rate in 2011 for all countries except Ukraine, where NEET index compares NEET rate in 2021 to 2014. Indices were estimated separately for men and women.

Further disaggregation of NEET rate dynamics by gender (see Figure 1.13) reveals a more pronounced decline among young men than among young women. The average reduction for women was 26% in EU Member States and 29.2% in EU candidate countries, while for men the figures were notably higher at 34% and 41.7%, respectively. Austria again diverged from this trend, with an increase in the NEET rate largely concentrated among young men, whose rate rose by 23.3% over 2011-2024, compared to a 4.1% decline for women. Gender-based patterns across the region may reflect differentiated access to training programmes, the persistence of gender norms in career pathways, and varying exposure to labour market risks such as informality or precarious employment. Germany, Hungary and Montenegro were the only countries in the region where the NEET rate declined more for young women than for men, suggesting comparatively stronger gender-responsive outreach and activation strategies in these contexts.

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[29]For more elaborate analysis of the trends and factors of NEET rate in Europe refer to (i) Karma, E. (2024). NEET youth in central and eastern European countries: a panel model approach. *Journal of Youth Studies*, 1-18; (ii) Caroleo, F. E., Rocca, A., Mazzocchi, P., & Quintano, C. (2020). Being NEET in Europe before and after the economic crisis: An analysis of the micro and macro determinants. *Social Indicators Research*, 149(3), 991-1024.

Figure 1.14: NEET indices by age groups across countries
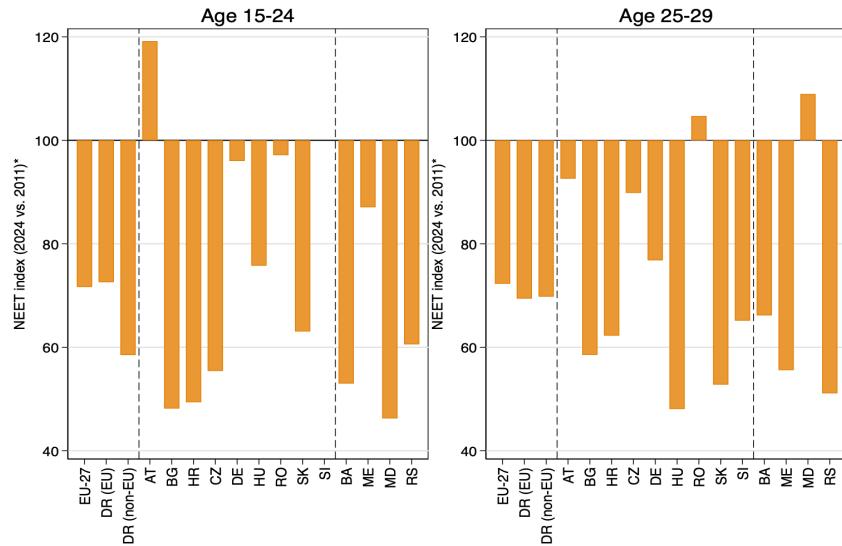
Source: EU Member States – the Eurostat database segment *yth_empl_160*. Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine – the national statistical offices.
Notes: NEET indices are estimated as NEET rate in 2024 relative to NEET rate in 2011, with indices estimated separately for two age groups.

With respect to age differences in NEET rate dynamics (see Figure 1.14), no uniform trend was observed across the Danube Region. On average, the NEET rate in the EU Member States of the region declined by 30.6% among younger youth (aged 15-24) and by 27.4% among the older group (aged 25-29). By contrast, in the EU candidate countries, the older age group experienced stronger improvements, with an average decline of 41.5%, compared to 30.2% for the younger cohort. These patterns suggest that older youth in candidate countries may have benefitted more directly from targeted re-integration efforts, second-chance education and employment subsidies tailored to their needs.

Austria once again diverged from this trend. The NEET rate for youth aged 15-24 declined by 7.4%, while it increased by 19.2% among those aged 25-29. As a result, Austria's overall NEET rate rise over the period was primarily driven by older young men. This trend may be partly explained by a combination of persistent barriers in accessing vocational education, integration challenges faced by young adults with migrant backgrounds, and the relatively high incidence of early leaving in certain disadvantaged regions. Broader structural issues, including skills mismatches and the scarcity of stable entry-level employment opportunities, may further prolong young people's detachment from both education and the labour market.[30]

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[30]For more details on labour market developments with the focus on youth refer to European Commission Country Report Austria 2023 https://economy-finance.ec.europa.eu/publications/2023-european-semester-country-reports_en

1.6 Appendix: Additional Results

1.6.1 Employment rate

Employment rates from 2011 to 2024 by gender across countries for the population aged 20 to 64
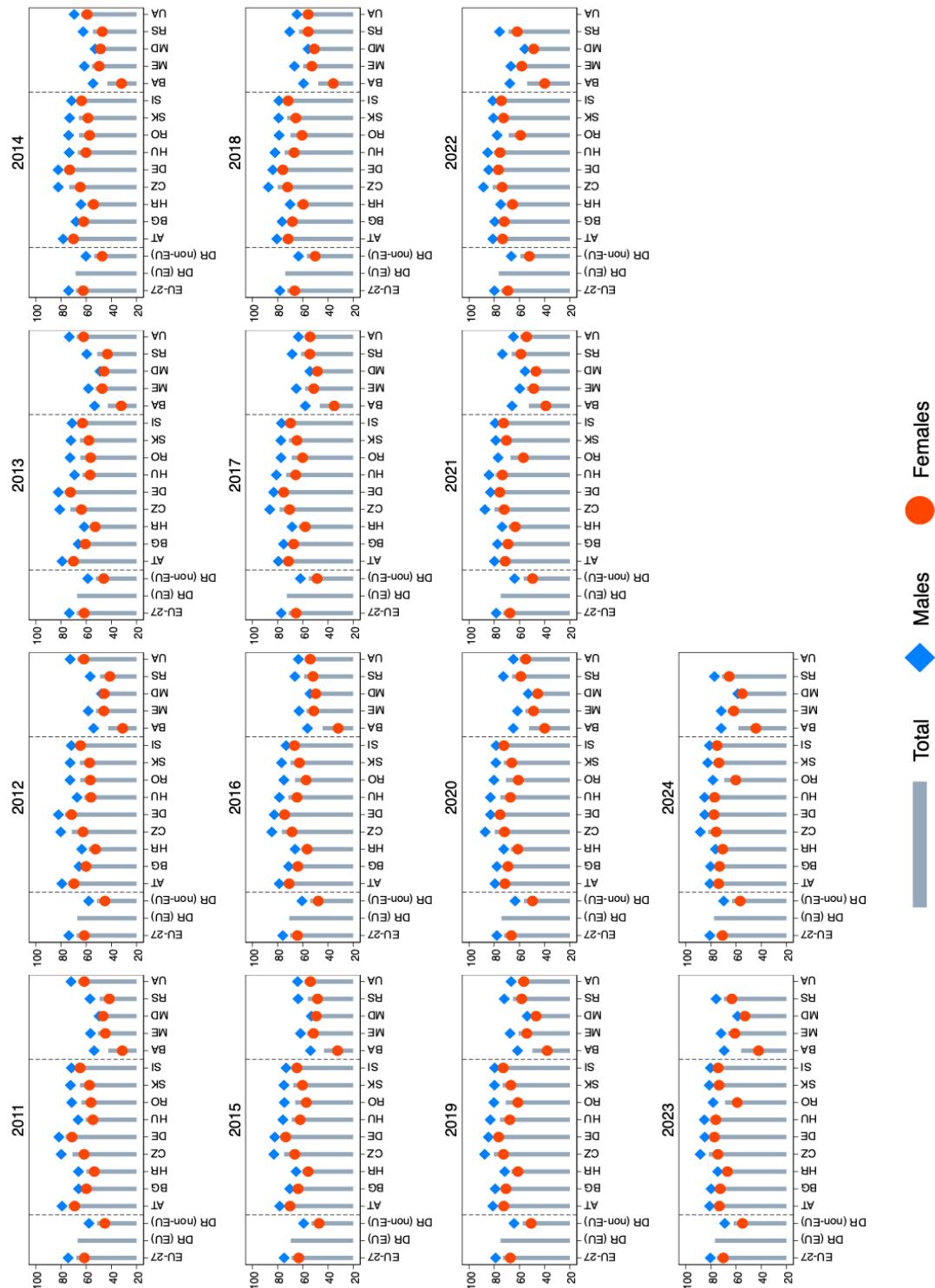
Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia – Eurostat database segment *lfsa_ergaed*. The Republic of Moldova and Ukraine – the national statistical offices.

Employment rates from 2011 to 2024 by age across countries for the population aged 20 to 64
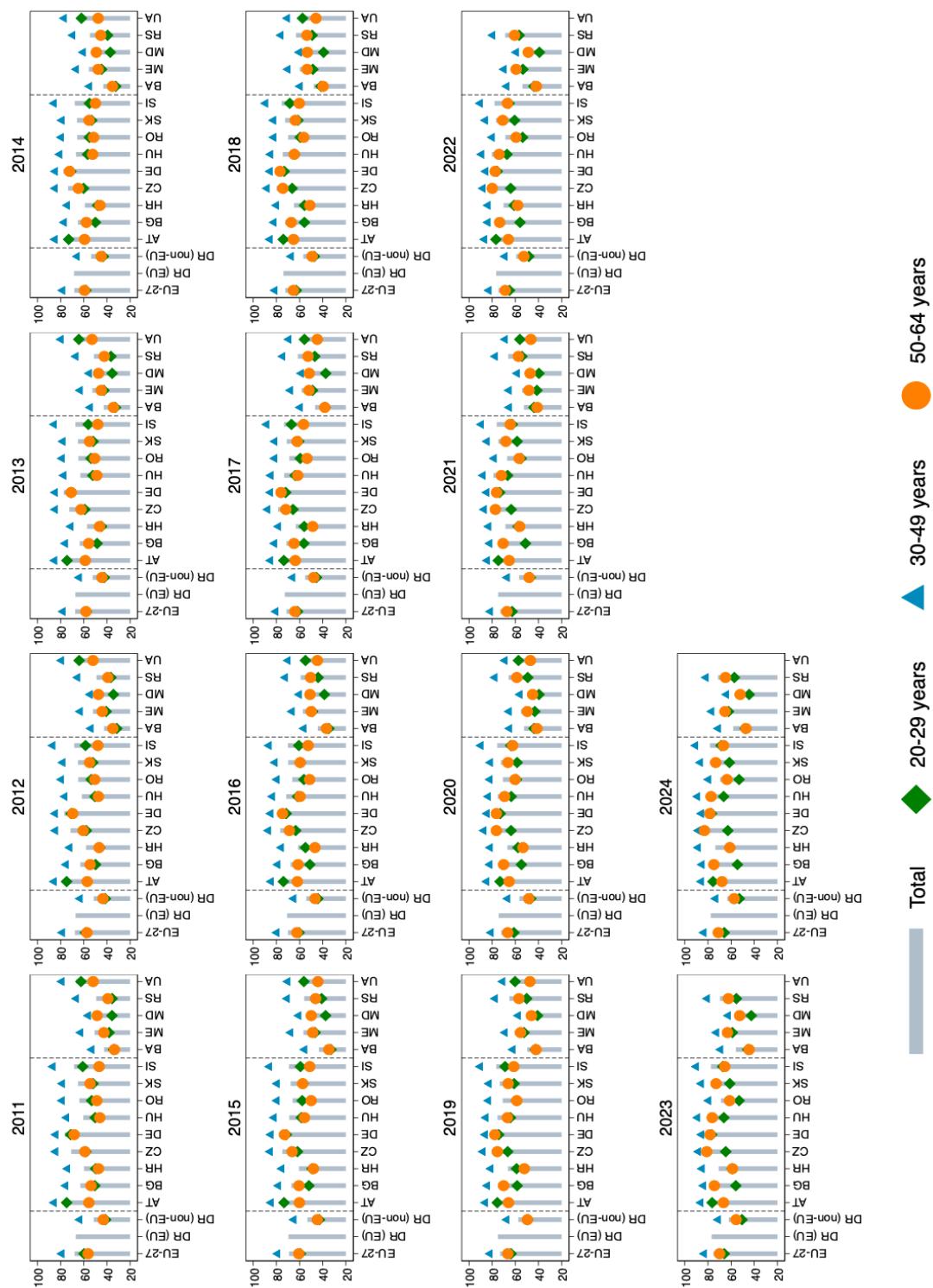
Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia – Eurostat database segment *lfsa_ergaed*. The Republic of Moldova and Ukraine – the national statistical offices.

1.6.2 Unemployment rate

Unemployment rates from 2011 to 2024 by gender across countries for the population aged 15 to 74
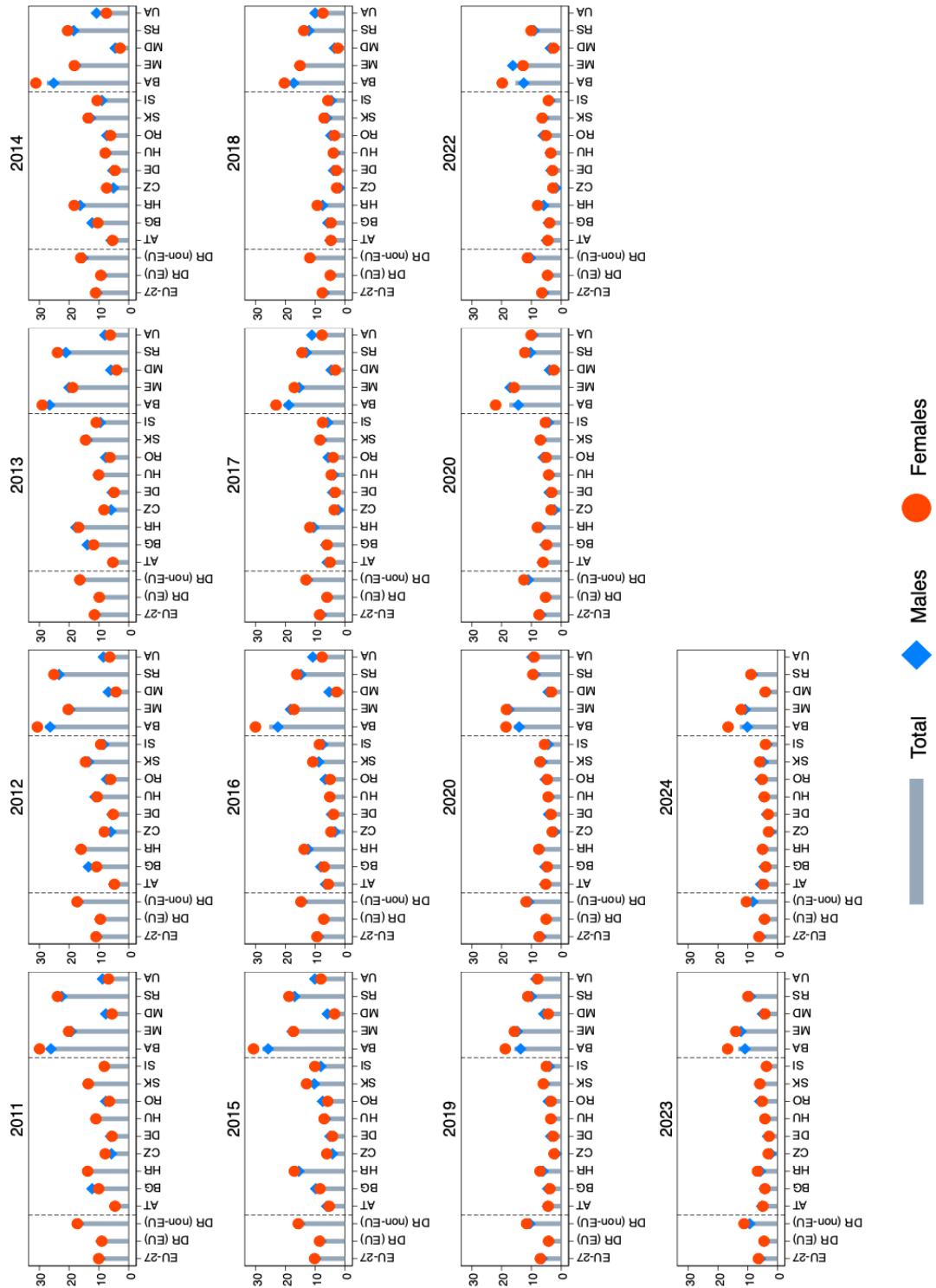
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_urgaed*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.

1.6.3 Long-term unemployment share

Long-term unemployment shares from 2011 to 2024 by gender across countries for the population aged 15 to 74
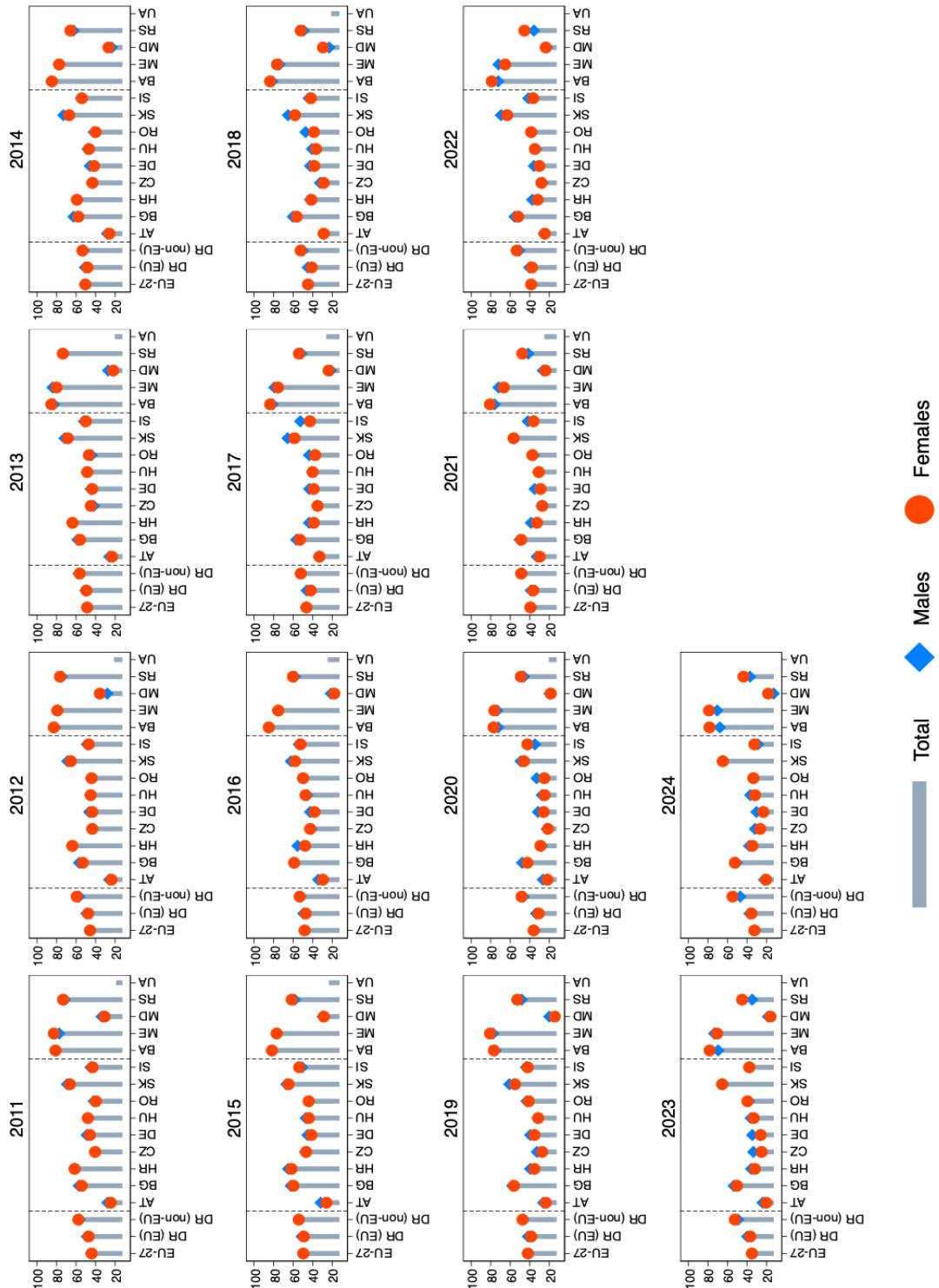
Source: EU Member States, Montenegro, Serbia – the Eurostat database segment *lfst_r_lfu2ltu*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.

1.6.4 Activity and inactivity rates

Activity rates from 2011 to 2024 by gender across countries for the population aged 15 to 64
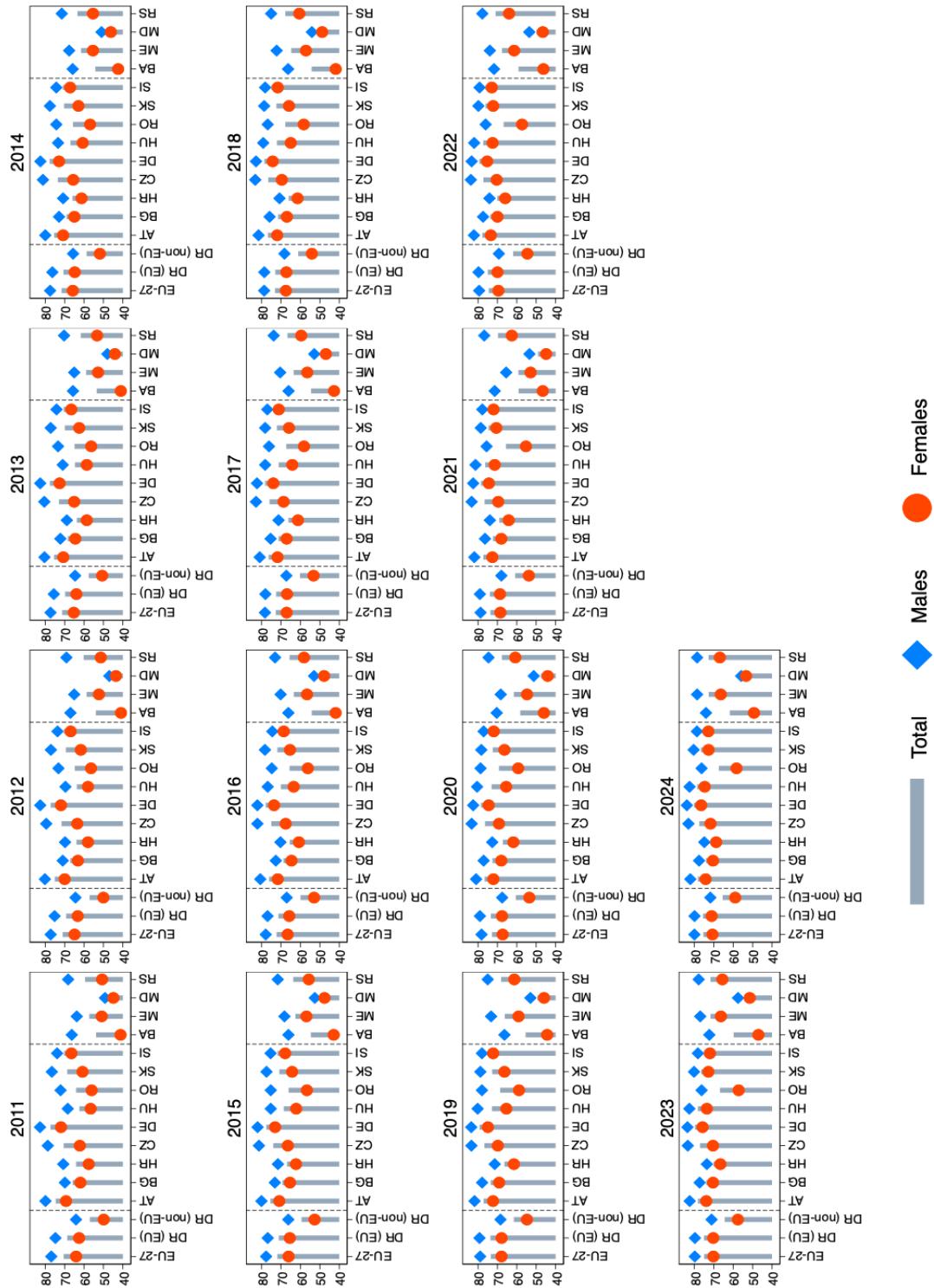
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_argaed*. The data for Bosnia and Herzegovina, the Republic of Moldova and Ukraine – the national statistical offices.

Inactivity rates from 2011 to 2024 by gender across countries for the population aged 15 to 64
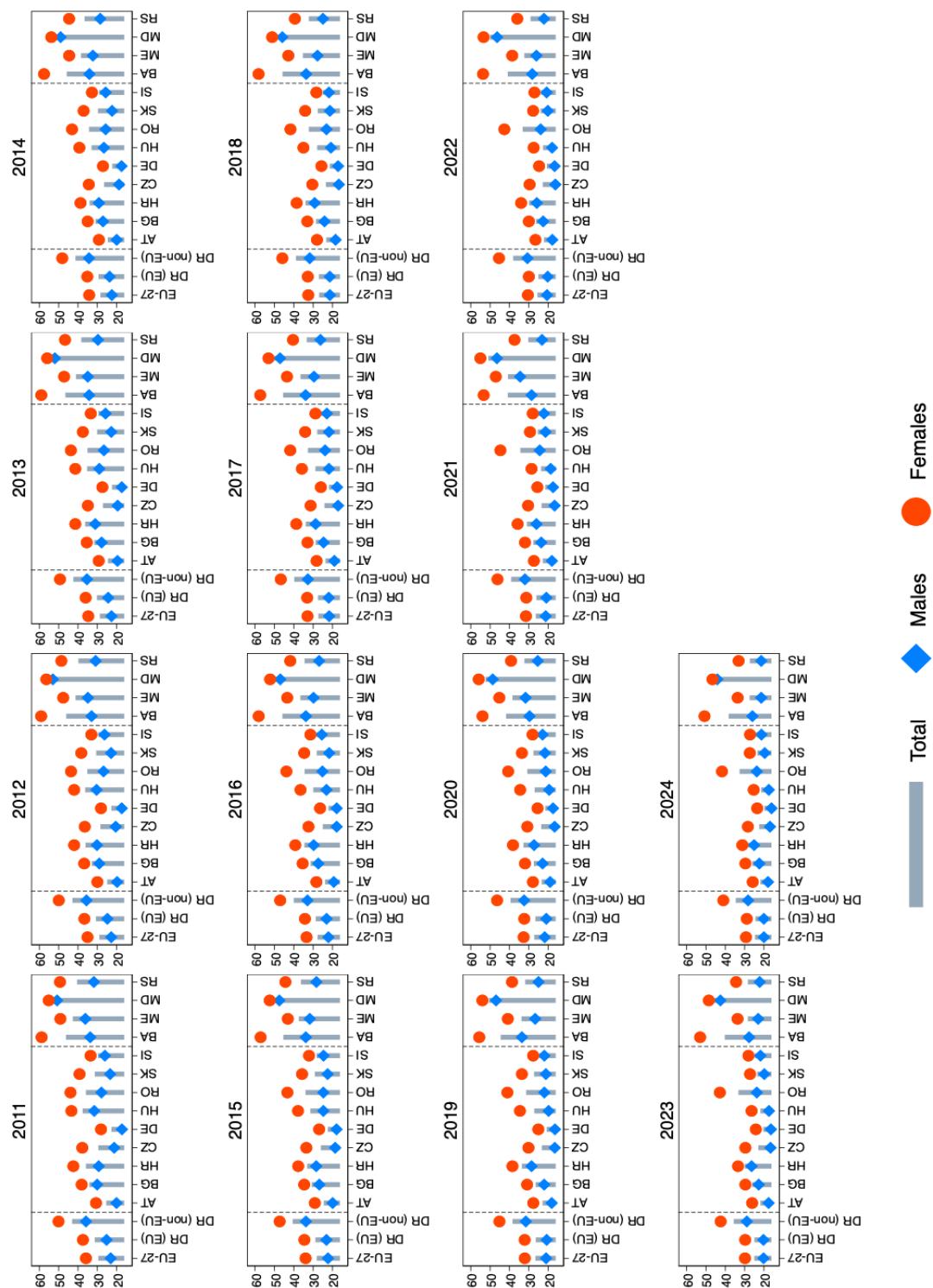
Source: EU Member States, Montenegro and Serbia – the Eurostat database segment *lfsa_ipga*. Bosnia and Herzegovina, the Republic of Moldova and Ukraine– the national statistical offices.

1.6.5 NEET rates

NEET rates from 2011 to 2024 by gender across countries for the population aged 15 to 29
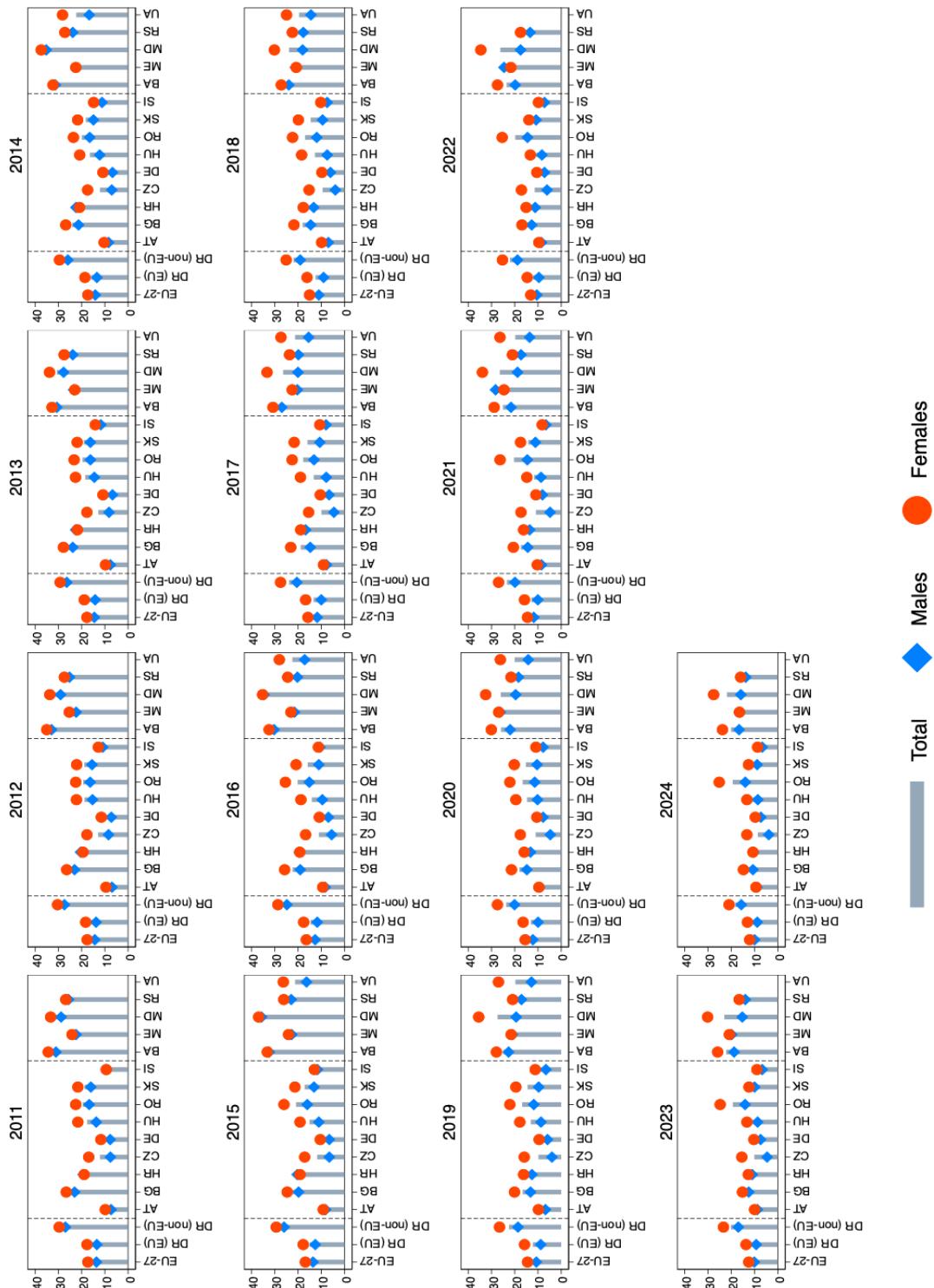
Source: EU Member States – the Eurostat database segment *yth_empl_160*. Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine – the national statistical offices.

NEET rates from 2011 to 2024 by age groups across countries for the population aged 15 to 29
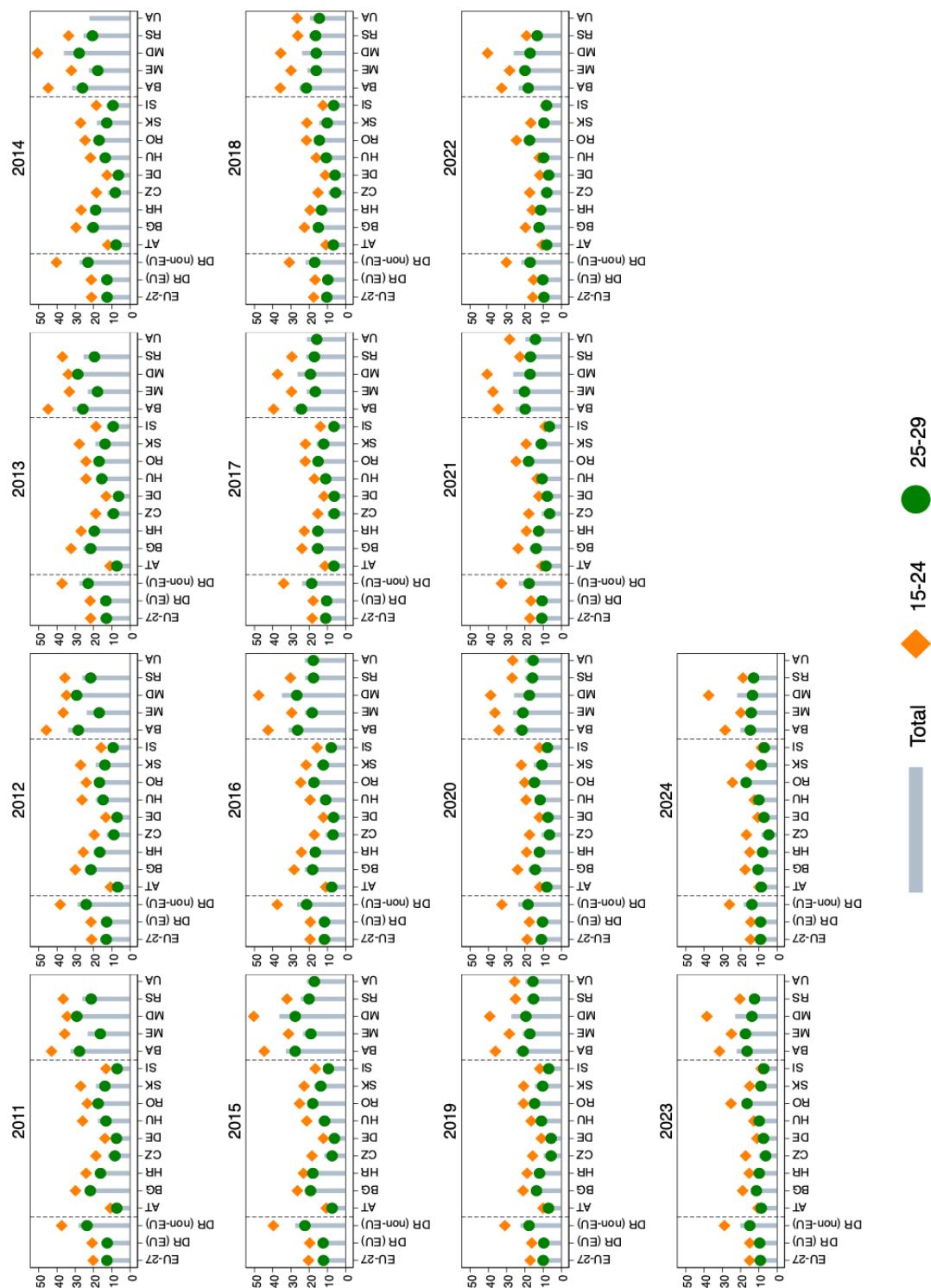
Source: EU Member States – the Eurostat database segment *yth_empl_160*. Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine – the national statistical offices.

1.7   Appendix: Indicators and Data Description

Employment rate

Definition: The employment rate is measured as the percentage of employed persons in the working-age population.

Source: The data for the EU Member States, Bosnia and Herzegovina, Montenegro and Serbia came from the Eurostat database segment *lfsa_ergaed*. The data for the Republic of Moldova and Ukraine came from their national statistical offices.

Data availability: The data for Ukraine is only available until 2021. For all other countries the data were available for the years 2011-2024.

Unemployment rate

Definition: The unemployment rate is the percentage of unemployed persons in the total labour force. A person is referred to as unemployed when he/she is not employed in a reference week, is willing to start working within two weeks or is actively looking for work.

Source: The data for the EU Member States, Montenegro and Serbia came from the Eurostat database segment *lfsa_urgaed*. The data for Bosnia and Herzegovina, the Republic of Moldova and Ukraine came from their national statistical offices.

Data availability: The data for Ukraine is only available until 2021. For all other countries the data were available for the years 2011-2024.

Long-term unemployment

Definition: Long-term unemployment is measured as the percentage of long-term unemployed people (those who did not work in the 12 months preceding the survey but are actively looking for work) in the total unemployed population.

Source: The data for the EU Member States, Montenegro, and Serbia came from the Eurostat database segment *lfst_r_lfu2ltu*. The data for Bosnia and Herzegovina, the Republic of Moldova and Ukraine came from their national statistical offices.

Data availability: The data for Ukraine is only available until 2021. For all other countries the data were available for the years 2011-2024. For Ukraine no data on long-term unemployment rates by gender are available.

Activity and inactivity rates

Definition:

(i) The activity rate is measured as the percentage of labour force in the working-age population. A person is referred to as a part of the labour force when he/she is actively participating in a labour market by either (a) being employed or (b) looking for a job (unemployed).

(ii) The inactivity rate represents a share of the working-age population (15 to 64 years old) who are neither working, nor looking for gainful employment. The economically inactive population includes students, early retired or long-term sick individuals, those taking care of responsibilities and housewives/househusbands.

Source: The data for the EU Member States, Montenegro and Serbia came from the Eurostat database segment *lfsa_argaed* for the activity rate and *lfsa_ipga* for the inactivity rate. The data for Bosnia and Herzegovina, the Republic of Moldova and Ukraine came from their national statistical offices.

Data availability: No data for Ukraine is available. For all other countries the data were available for the years 2011-2024.

NEET rate

Definition: The NEET rate is measured as the young population not taking part in employment, education or training in the four weeks preceding the survey as a percentage of the total population of respective age.

Source: The data for the EU Member States came from the Eurostat database segment *yth_empl_160*. The data for Bosnia and Herzegovina, Montenegro, the Republic of Moldova, Serbia and Ukraine came from their national statistical offices.

Data availability: The data for Ukraine is only available for 2014-2021. For all other countries the data were available for the years 2011-2024. For Ukraine no data on NEET rates by gender and age groups are available.

Objective II

Contribution to Improved Educational Outcomes and Relevant Skills and Competences in the Danube Region, Focusing on Learning Outcomes for Employability, Entrepreneurship, Innovation, Active Citizenship and Well-Being

Improved Education Outcomes and Relevant Skills and Competences

Improving education outcomes and strengthening skills development are essential building blocks for achieving inclusive growth, upward social mobility, and long-term resilience in the Danube Region. As highlighted by the *EU Strategy for the Danube Region (EUSDR)* and particularly Area 9 (People and Skills), equal access to quality education at all stages of life is key to unlocking individual potential and ensuring the competitiveness of national economies across the region. High-quality education not only supports labour market integration but also fosters civic participation, social cohesion, and innovation capacity.

Over the past decade, countries in the Danube Region have made measurable progress in expanding access to early childhood education, raising levels of upper secondary and tertiary attainment, and improving basic digital skills across generations. However, significant disparities remain, including those between EU Member States and EU candidate countries, between urban and rural areas, and between different age and gender groups. These gaps risk entrenching inequalities and limiting the region's capacity to respond effectively to digital, green and demographic transitions. This chapter provides a timely overview of education and skills trends, offering evidence to guide policy choices that can ensure more inclusive and future-ready education systems throughout the Danube Region.

2.1 Participation in Early Childhood Education and Care

Participation in early childhood education and care (ECEC) for children below the mandatory schooling age (International Standard Classification of Education – ISCED 0) plays a critical role in ensuring a successful start to formal education and in fostering long-term academic and personal achievements. High-quality ECEC not only introduces children to foundational concepts in literacy, numeracy, and other core disciplines, but also nurtures essential non-cognitive and socio-emotional skills such as cooperation, empathy, self-regulation, and problem-solving. These early developmental gains have a lasting impact

on employability, lifelong learning, and active citizenship.

The participation rate in ECEC is measured as the proportion of children between the age of four and the official starting age of compulsory primary education who are enrolled in formal early childhood education programmes. This indicator reflects both the accessibility and inclusiveness of early learning systems, as well as the prioritisation of early education in national policy frameworks.

Despite the well-documented benefits, participation rates in the Danube Region display significant disparities. While some countries have achieved near-universal enrolment through well-developed kindergarten networks and supportive policy measures, others face structural and socio-economic barriers that limit access. These include insufficient infrastructure in rural or disadvantaged areas, affordability constraints, lack of trained staff, and varying levels of parental awareness regarding the importance of early learning. Addressing these gaps is essential for promoting equal opportunities, reducing educational inequalities, and ensuring that all children in the Danube Region have the best possible start in life.

Following the *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*, at least 96% of children between the ages of four and the legal starting school age should participate in early childhood education and care (ECEC) by 2030. While the EU-27 average already reached 96.4% in 2023, participation in the Danube Region remains below this benchmark. In 2023, the average ECEC participation rate in the EU Member States of the region stood at 91.4%, compared to only 78.5% in the EU candidate countries (Figure 2.1).[31]

A sizeable participation gap between EU Member States and EU candidate countries therefore persists. Nonetheless, gradual convergence has been observed over the past decade: the gap narrowed from 18.5 percentage points in 2011 to 12.9 percentage points in 2023, largely driven by a 10 percentage points increase in average participation among the EU candidate countries.

The variation among EU Member States of the region in 2023 was considerable. Austria (96.4%), Germany (97.1%), Hungary (97.7%), and Slovakia (94.5%) maintained participation rates close to or above the EU benchmark. By contrast, Romania lagged significantly behind, with only 79.4% of children aged three to the compulsory school age enrolled in ECEC institutions. Differences in participation rates are closely linked to policy frameworks, particularly the extent to which pre-primary education is mandatory, the age at which compulsory schooling begins, and the provision of universal or subsidised

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[31]One should note that the data used here cover children aged four up to the legal starting age of compulsory schooling, whereas the official EU benchmark refers to children aged three until the legal starting age.

Figure 2.1: Participation in early childhood education and care of children aged four and up and the index change of the participation rate across countries from 2011 to 2023
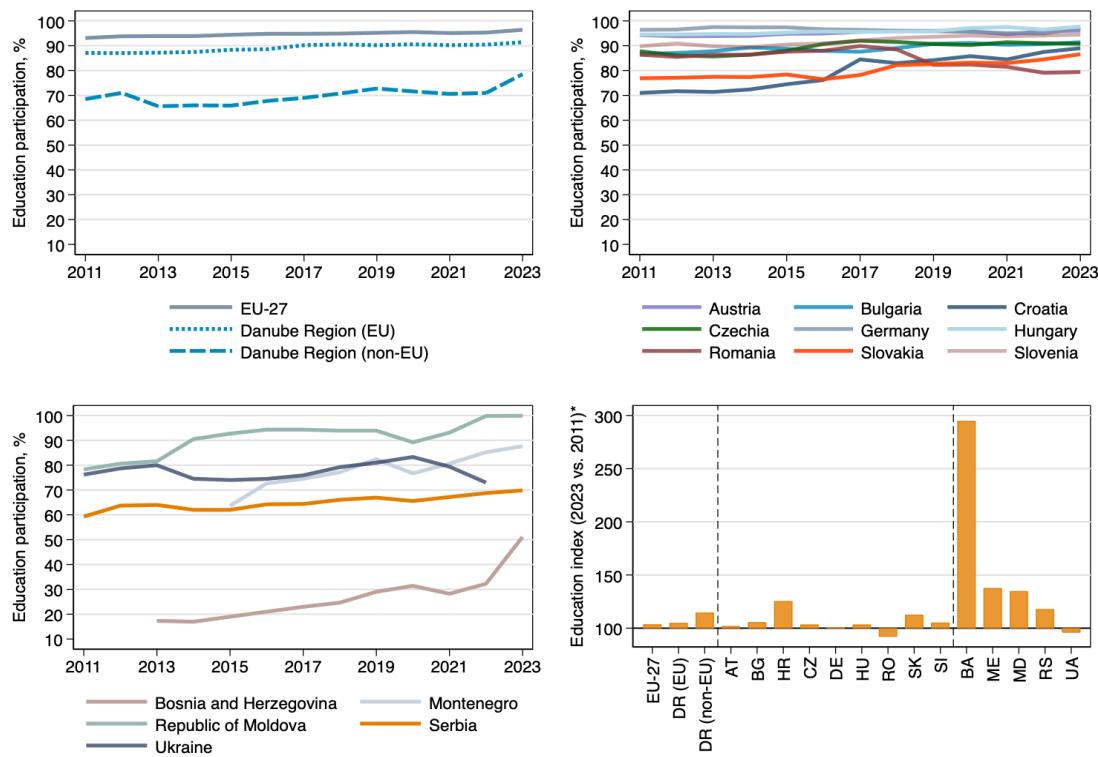
Source: EU Member States, Montenegro – Eurostat dataset *SDG_04_30*. Bosnia and Herzegovina – 2011-2017: RCC (`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); from 2018 onwards – Ministry of Civil Affairs. Serbia – 2011-2016: RCC (`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); 2017: Eurostat dataset *SDG_04_30*; 2018-2019: Ministry of Education, Science and Technological Development of the Republic of Serbia. The Republic of Moldova and Ukraine – the national statistical offices.
Notes: Indices are estimated as a share of children involved in early education in 2023 relative to a share of children involved in early education in 2011 for all countries except Bosnia and Herzegovina, where the index compares 2023 to 2013; Montenegro, where the index compares 2023 to 2015; Ukraine where the index compares 2022 to 2011.

access. In countries where at least one year of pre-primary education is mandatory, such as Austria, Germany, and Hungary, ECEC participation rates tend to be higher, reflecting both policy enforcement and social expectations. Moreover, sustained public investment, alignment with national early learning curricula, and targeted outreach to disadvantaged groups contribute to higher enrolment.[32]

High participation rates in countries such as Austria, Germany, Hungary, and Slovenia can be attributed to a combination of generous public financing, well-developed infrastructure, a sufficient supply of qualified staff, and relatively low costs for parents. Another structural factor is the level of female labour market participation: higher maternal employment often correlates with higher ECEC enrolment, as families rely more on formal childcare arrangements.[33]

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[32]For example, the *European Child Guarantee* and national early childhood strategies in several EU Member States promote inclusive and affordable ECEC as part of broader efforts to reduce educational inequalities.

[33]Conversely, adequate ECEC provision can itself stimulate maternal employment by reducing the

Figure 2.2: Participation in early childhood education and care of children aged four and up - index change by gender across countries

Among the EU candidate countries, Bosnia and Herzegovina recorded a remarkable increase in ECEC participation, from 17.3% in 2011 to 51.1% in 2023. This growth was equally pronounced among girls and boys (Figure 2.2). Although Bosnia and Herzegovina's participation rate remains far below that of other EU candidate countries, the substantial rise reflects a positive catch-up dynamic. This progress can be linked to recent policy initiatives, including the gradual expansion of public kindergarten networks, donor-supported investment in early childhood infrastructure, and pilot programmes introducing mandatory pre-school preparation for children in the final year before primary school.[34] Such developments underscore the potential for rapid improvement when ECEC expansion is embedded in broader education reform strategies.

2.2 Proportion of the Population Aged 20-24 Having Completed at Least Upper Secondary Education

The proportion of the population aged 20-24 having completed at least upper secondary education (ISCED Levels 3 to 8) is a core measure of educational attainment among

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"care penalty" and facilitating the labour market reintegration of mothers with young children.

[34]For example, UNICEF-supported initiatives and municipal-level reforms in Bosnia and Herzegovina have focused on expanding access to rural and underserved communities, addressing both capacity and affordability barriers. For more information, refer to ff

young adults. It captures the share of the cohort that has reached a critical qualification threshold, providing the skills and competences generally considered necessary for active participation in economic, social, and civic life. Completion of upper secondary education enhances employability, enables access to higher education, and strengthens adaptability in an evolving labour market.

This indicator is also directly relevant to the objectives of the *European Education Area* and the *Strategic Framework for European Cooperation in Education and Training (2021-2030)*[35], which aim to reduce early school leaving and ensure that all young people acquire relevant and future-oriented skills. In the Danube Region, attainment levels reflect both progress and disparities, shaped by the structure of national education systems, the balance between vocational and general pathways, and the effectiveness of measures to support students at risk of leaving education and training early. Analysing these differences provides important insights into the preparedness of young adults to contribute to the region's competitiveness, innovation capacity, and social cohesion.

Figure 2.3: Proportion of the population aged 20 to 24 having completed at least upper secondary education across countries from 2011 to 2024
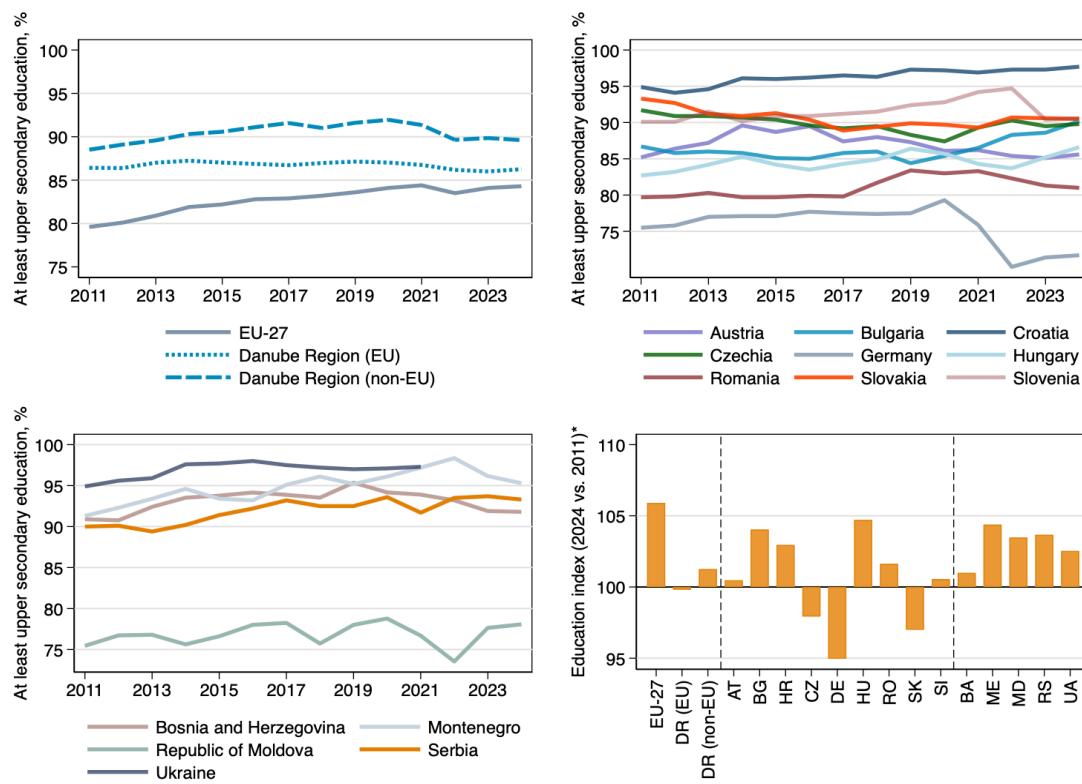
Source: EU Member States, Montenegro and Serbia – Eurostat segment *edat_lfse_03*. Bosnia and Herzegovina and Republic of Moldova – Eurostat segment *enpr_siinr*. Ukraine – the national statistical office.
Notes: Indices are estimated as a proportion of people aged 20-24 holding at least secondary education in 2024 relative to a proportion of people aged 20-24 holding at least secondary education in 2011 for all countries except Ukraine, where the index compares 2021 to 2011.

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[35]https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj%3AJOC_2021_066_R_0001

Figure 2.4: Proportion of the population aged 20 to 24 having completed at least upper secondary education - index change by gender across countries

Source: Source: EU Member States, Montenegro and Serbia – Eurostat segment *edat_lfse_03*. Republic of Moldova – Eurostat segment *enpr_siinr*. Ukraine – the national statistical office.
Notes: Indices are estimated as a proportion of people aged 20-24 holding at least secondary education in 2024 relative to a proportion of people aged 20-24 holding at least secondary education in 2011 for all countries except Ukraine, where the index compares 2021 to 2011. Indices are estimated separately for men and women.

Figure 2.3 depicts the percentage of the population aged 20 to 24 who have completed at least upper secondary education. In 2023, the average share of youth with at least upper secondary education among the EU Member States of the Danube Region stood at 86.3%, while in the EU candidate countries of the region it reached 89.6% in 2024, both exceeding the EU-27 average of 84.3% (Figure 2.3). Over the period 2011-2024, the share of young people with at least upper secondary education increased on average in both the EU-27 and the Danube Region. However, this improvement was driven primarily by progress in the EU candidate countries, as the average in the EU Member States of the region remained largely stable, with only marginal change.

This comparatively higher attainment in the candidate countries can be explained by structural differences in education systems, notably the prevalence of compulsory upper secondary schooling or strong vocational pathways integrated into national curricula, which limit early leaving.[36] In many candidate countries, the labour market places a strong emphasis on formal educational qualifications, with even entry-level positions often requiring completion of upper secondary education or its vocational equivalent. This demand, coupled with limited opportunities for informal entry into skilled occupations, reinforces the incentive for young people to complete upper secondary schooling before seeking employment, thereby sustaining high attainment rates in this age group.[37]

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[36]https://www.cedefop.europa.eu/files/4223_en.pdf

[37]https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/07/building-future-ready-vocational-education-and-training-systems_3dd46aae/28551a79-en.pdf

Across the EU Member States of the region, variation in the share of 20-24 year-olds with secondary education in 2024 was substantial, ranging from 97.7% in Croatia to 71.7% in Germany. The notably low completion rate in Germany was largely driven by men (Figure 2.4), as the share of young men holding a secondary degree declined by 7.1 percentage points over 2011-2024. This trend is partly linked to demographic changes, in particular migration inflows. Many recent immigrants arrive without having completed upper secondary education in their country of origin, and while Germany's education system provides opportunities for formal qualification, these pathways often require time to complete and may be taken up after the age of 24, thereby lowering the attainment rate for this age group in the statistics.[38]

Among the EU candidate countries of the region, the percentage of the population aged 20 to 24 who completed at least upper secondary education was relatively high in 2024: 91.8% in Bosnia and Herzegovina, 95.3% in Montenegro, and 93.3% in Serbia. The Republic of Moldova stands out as the only non-EU country in the region with a persistently low share of young people with at least upper secondary education, at 78% in 2024. Nonetheless, the trajectory in the Republic of Moldova over the past decade has been positive, with significant improvements, particularly among men (Figure 2.4). These gains can be attributed to recent reforms aimed at modernising secondary education, expanding access to vocational training, and increasing the retention of students in rural areas, supported by targeted donor-funded initiatives and national education strategies prioritising completion of the upper secondary cycle.[39]

2.3 Proportion of the Population Aged 30-34 Having Completed Tertiary Education

People with tertiary education, those holding higher education degrees, play a pivotal role in driving sustainable development, competitiveness, and inclusive growth. They possess advanced skills, specialised knowledge, and the capacity for critical thinking and problem-solving that underpin research, innovation, and the transfer of new technologies. Higher education graduates are often at the forefront of developing and implementing innovations that can elevate economies to higher levels of technological and scientific advancement, enabling countries to adapt to rapid global changes and to participate effectively in the

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[38]https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/migration/Sii2024--Germany%20%28ENG%29%20%20v6%20%28FINAL%20with%20bookmarks%29.pdf

[39]https://eurydice.eacea.ec.europa.eu/eurypedia/moldova/national-reforms-vocational-education-and-training-and-adult-learning

knowledge-based economy.[40]

In the European policy context, expanding access to quality tertiary education is a key priority of the *European Education Area* and the *Strategic Framework for European Co-operation in Education and Training (2021-2030)*. These frameworks emphasise not only increasing participation rates in higher education, but also ensuring the relevance of study programmes to labour market needs, fostering excellence in research and innovation, and reducing barriers for underrepresented groups. In the Danube Region, enhancing tertiary attainment is directly linked to broader socio-economic goals, such as boosting regional competitiveness, supporting green and digital transitions, and strengthening social cohesion. As such, promoting and facilitating access to higher education is not merely an educational objective, but a strategic investment in the region's long-term prosperity and resilience.

According to the *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*, the proportion of 25- to 34-year-olds with a tertiary educational qualification should be at least 45% by 2030.[41] All countries in the Danube Region recorded a notable increase in the share of the population with tertiary education between 2011 and 2024 (see Figure 2.5). In 2024, the average share in the EU Member States of the Danube Region reached 39.0%, while among the EU candidate countries it increased to 35.8%. Despite these substantial gains, the Danube Region as a whole still lags somewhat behind the EU-27 average of 44.8% in 2024.

The gap in tertiary attainment between the Danube Region and the EU-27 can be partly explained by structural and institutional factors. While the region often performs comparatively well in upper secondary attainment (see Figure 2.3), reflecting the strong tradition of compulsory upper secondary education and comprehensive vocational systems, its tertiary participation rates are affected by more limited higher education capacity, lower public and private investment per student, and less diversified programme offerings in some countries. In addition, labour markets in parts of the region still provide relatively favourable employment opportunities for those with upper secondary or post-secondary non-tertiary qualifications, reducing the immediate economic incentive to

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[40]For an in-depth analysis of the association between higher education, innovation, and growth, see: (i) Brunello, G., Garibaldi, P., and Wasmer, E. (2007). Higher education, innovation and growth. In *Education and Training in Europe*. Oxford University Press; (ii) Kruss, G., McGrath, S., Petersen, I. H., and Gastrow, M. (2015). Higher education and economic development: The importance of building technological capabilities. *International Journal of Educational Development*, 43, 22–31; (iii) European Commission (2022). *Higher Education for Smart Specialisation: Linking innovation and skills policies*. Publications Office of the European Union.

[41]The present analysis is based on the 30-34 age group, whereas the Council Resolution target refers to the 25-34 age group.

Figure 2.5: Proportion of the population aged 30 to 34 having completed tertiary education across countries from 2011 to 2024
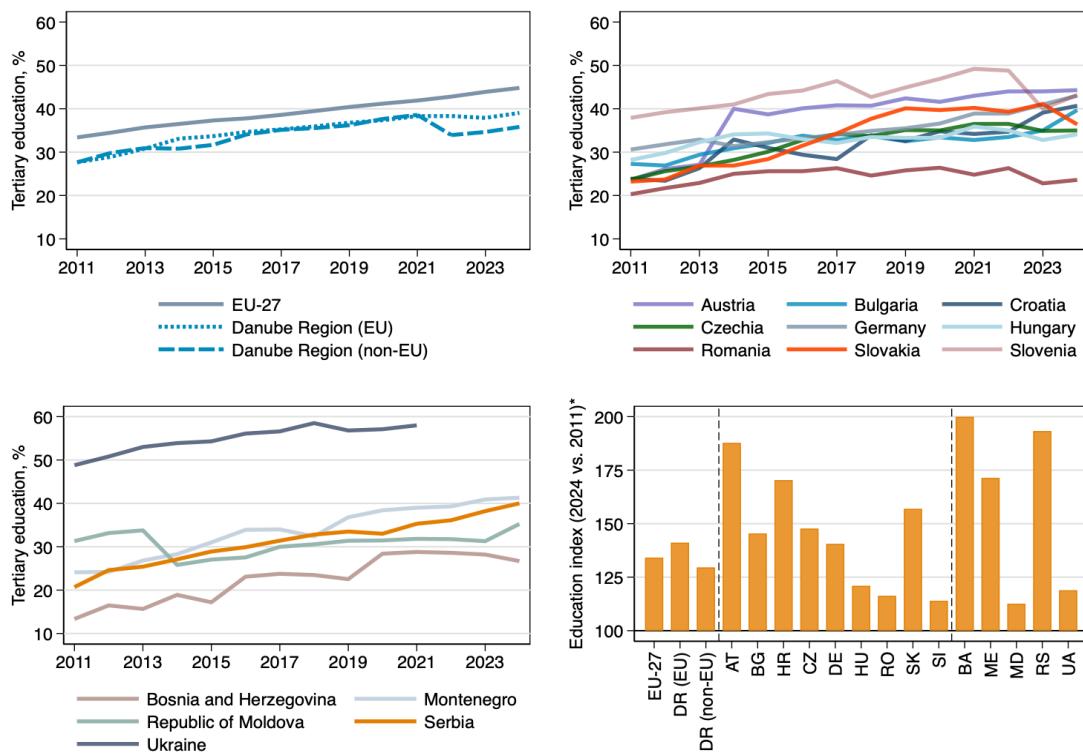
pursue higher education.[42] In several EU candidate countries, demographic decline and outward migration of young people further constrain tertiary enrolment growth, while the pace of higher education reform and alignment with European Higher Education Area standards varies across national contexts.[43] Strengthening financial support schemes, expanding study places, particularly in STEM and innovation-relevant fields, and deepening university-industry linkages are key policy levers for raising tertiary attainment in the years ahead.

Amid the steady increase in tertiary education attainment between 2011 and 2024, all Danube Region countries remain below the policy objective of a 45% tertiary education rate as of 2024. Among the EU Member States, Austria came closest to the target, with 44.3% of 30–34-year-olds holding a tertiary degree, followed by Germany (43.0%) and Slovenia (43.0%). Romania recorded the lowest tertiary attainment in the entire

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[42]For a comprehensive research on motivations to pursue tertiary education, refer to Green, F., & Henseke, G. (2021). Europe's evolving graduate labour markets: supply, demand, underemployment and pay. *Journal for Labour Market Research*, 55(1), 2.

[43]https://www.bruegel.org/analysis/economic-convergence-demography-labour-markets-what-progress-have-eu-candidate-countries

Figure 2.6: Proportion of the population aged 30 to 34 having completed tertiary education -
index change by gender across countries

Source: Source: EU Member States, Montenegro and Serbia – Eurostat segment *edat_lfse_03*. Republic of Moldova –
Eurostat segment *enpe_edat_lfse_03*. Ukraine – the national statistical office.
Notes: Indices are estimated as a proportion of people aged 30-34 holding tertiary education in 2024 relative to a proportion
of people aged 30-34 holding tertiary education in 2011 for all countries except Ukraine, where the index compares 2021 to
2011. Indices are estimates separately for men and women.

Danube Region at 23.6% in 2024. This comparatively low figure reflects a combination of
structural and institutional factors: historically low higher education participation rates,
persistent rural-urban disparities in access to universities, high rates of early school leaving
in disadvantaged regions, and limited financial aid for low-income students.[44] Moreover,
the Romanian labour market continues to offer employment opportunities in sectors that
do not require tertiary qualifications, which can reduce the perceived economic return to
higher education, particularly among men from vocational tracks.

The gender gap in tertiary education attainment is pronounced across the Danube
Region: in every country, women aged 30-34 are more likely than men to hold a tertiary
degree. Furthermore, this gap widened between 2011 and 2024 in all countries except
Bulgaria, Montenegro, and Serbia, as the growth in tertiary attainment was relatively
stronger among women (see Figure 2.6). In Austria, Croatia, Czechia, and Slovakia, the
notable overall increase in tertiary attainment during this period was largely driven by
women. The gender gap in formal education is already visible at the level of upper sec-
ondary attainment. Male students are more prone to early leaving, while female students
have a higher likelihood of continuing to tertiary education, partly because men tend to
enter the labour market earlier, often through vocational or apprenticeship routes. This
pattern aligns with broader EU trends, where targeted policies to reduce early leaving,

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[44]Rural students face particularly high barriers to tertiary enrolment, compounded by socio-economic
disadvantage and limited outreach measures. For more details, refer to https://op.europa.eu/webpub/
eac/education-and-training-monitor/en/country-reports/romania.html

such as mentorship programmes, second-chance education, and improved career counselling, have had more pronounced uptake among girls than boys.[45]

2.4 Employment Rates by Educational Attainment Level

Education and youth employment are closely interconnected, forming the foundation for sustainable careers, social inclusion, and individual well-being throughout life. The employment rate of young graduates who have completed at least upper secondary education (ISCED Levels 3 to 8) serves as a key indicator of how effectively education systems prepare youth for labour market integration. It reflects not only the availability of jobs but also the alignment of skills acquired in education with labour market needs. Within the European policy framework, this indicator is directly linked to the objectives of the *EU Youth Strategy*[46], which aim to improve employability, reduce youth unemployment, and promote smooth school-to-work transitions. In the context of the Danube Region, tracking this measure is particularly relevant for identifying disparities between countries, evaluating the effectiveness of vocational and higher education systems, and informing targeted reforms to support young people's entry into quality employment.

Figure 2.7 presents the employment rates of youth aged 20 to 24 who have completed at least upper secondary education between 2011 and 2024. In nearly all Danube Region countries, the past decade has seen a general upward trend, though the pace and scale of improvement have varied considerably. A clear divide persists between the EU-27 and the Danube Region EU Member States, on the one hand, and the EU candidate countries of the region on the other. In 2024, the average employment rate for young upper secondary graduates in the EU-27 was 54.3%, compared to 50.1% in the Danube Region EU Member States. In the EU candidate countries, the average stood significantly lower at 39.4%, despite a remarkable 57.5% increase since 2011. Notably, this growth in the candidate countries was driven disproportionately by rising employment among those with upper secondary or post-secondary non-tertiary education (ISCED Levels 3 and 4), compared to those with tertiary education (ISCED Levels 5 to 8) (see Figure 2.9).

The persistent EU/non-EU gap can be attributed to structural labour market differences, including higher rates of informal employment, weaker job-matching institutions, and slower school-to-work transition mechanisms in many candidate countries.[47] Fur-

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[45]For more details on gender differences in early leaving and continuation to higher education across Europe, refer to https://www.oecd.org/en/topics/sub-issues/gender-equality-in-education.html

[46]https://youth.europa.eu/strategy_en

[47]Delays in labour market entry are often linked to limited formal job opportunities and the prevalence of informality in candidate countries. For more details, refer to https://www.eurofound.europa.eu/

Figure 2.7: Employment rate of people aged 20 to 24 who have completed at least upper secondary education and the index change of the employment rate across countries from 2011 to 2024
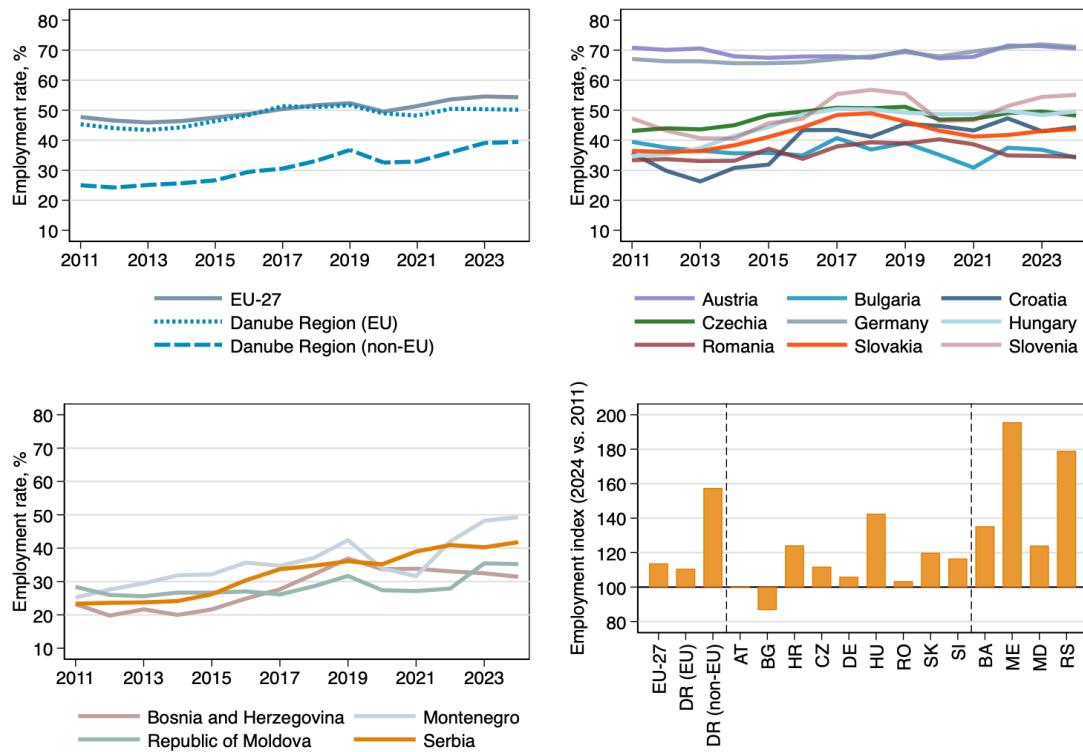
thermore, lower levels of foreign direct investment and slower economic diversification in non-EU countries limit the availability of high-quality entry-level jobs for educated youth. Restricted access to EU mobility programmes also reduces opportunities for gaining cross-border work experience, further constraining early career prospects.

The EU-non-EU divide is not the only employment disparity shaping the Danube Region. Within the EU Member States themselves, the employment rates of 20- to 24-year-olds with at least upper secondary education varied considerably in 2024, from 71.1% in Germany to just 34.0% in Bulgaria and Romania. Noteworthy, employment rates of young women with at least secondary education have deteriorated both in Bulgaria and Romania over recent decade (see Figure 2.8).

The strong performance in Germany reflects a robust dual vocational training system, high employer engagement in youth training, and well-established pathways from education into stable employment.[48] In contrast, low employment rates in Bulgaria and

en/publications/2024/young-people-western-balkans

[48]https://www.bmftr.bund.de/EN/Education/ContinuingEducationAndTraining/
ContinuingVocationalEducationAndTraining/NationalSkillsStrategy/
nationalskillsstrategy_node.html

Figure 2.8: Employment rate of people aged 20 to 24 who have completed at least upper secondary education - index change by gender across countries
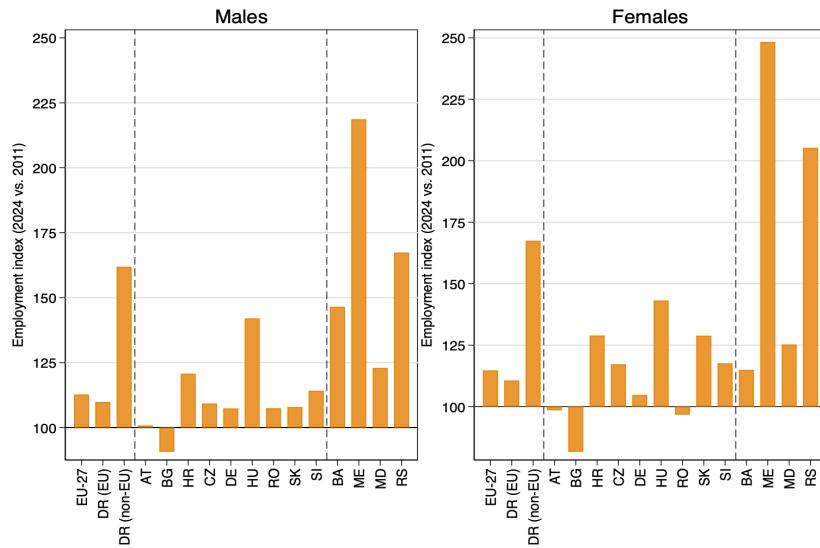
Source: EU Member States, Montenegro and Serbia – Eurostat segment *lfsa_ergaed*. Bosnia and Herzegovina – the national statistical office.
Notes: Indices are estimated as employment rate in 2024 relative to employment rate in 2011. Indices are estimated separately for men and women.

Figure 2.9: Employment rate of people aged 20 to 24 who have completed (i) upper secondary education and (ii) tertiary education - index change across countries
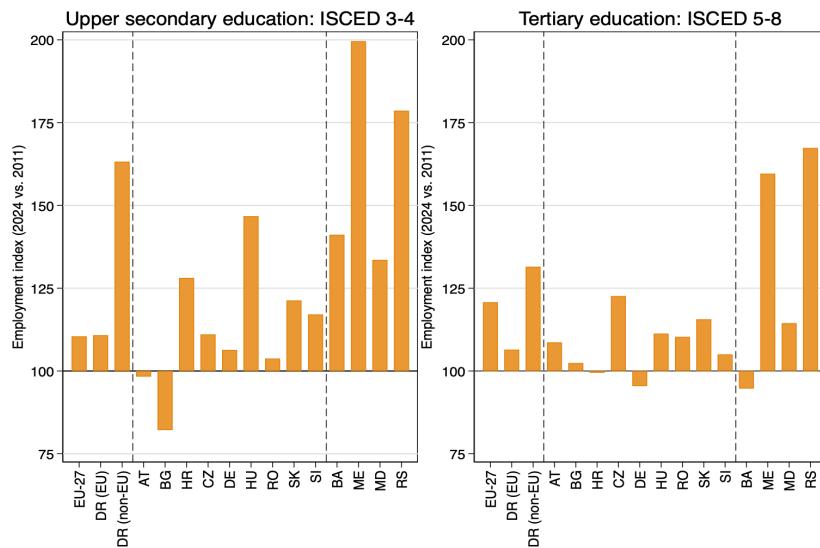
Source: EU Member States, Montenegro and Serbia – Eurostat segment *lfsa_ergaed*. Bosnia and Herzegovina – the national statistical office.
Notes: Upper secondary education includes also post-secondary non-tertiary education. Indices are estimated as employment rate in 2024 relative to employment rate in 2011. Indices are estimated separately for two education groups.

Romania are linked to structural mismatches between skills and labour market demand, underdeveloped career guidance services, and limited employer involvement in vocational training.[49] Economic conditions also play a role: in countries with weaker economic

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[49]https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/06/oecd-skills-strategy-bulgaria_eb96bc20/c2eb2f34-en.pdf

growth or more volatile labour markets, employers may be less willing to hire young workers with limited experience, even if they hold upper secondary qualifications.[50]

2.5 Information and Communication Technologies Skills: Individuals Who Have Basic or Above Basic Overall Digital Skills

The indicator on information and communication technologies (ICT) skills measures the share of the population in a given age group and gender possessing basic or above basic overall digital skills. These skills are defined as the minimum ability to carry out activities on the internet across four domains: information, communication, problem solving, and content creation, as assessed in the EU survey on ICT usage in households and by individuals. In the context of rapid technological change and the pervasive digitalisation of everyday life, ICT skills have become a fundamental competency, comparable in importance to literacy and numeracy, for participating effectively in economic, social, and civic spheres.

From a policy perspective, this indicator is closely aligned with the priorities of the *Digital Decade Policy Programme 2030*[51], which sets the EU target for at least 80% of adults to have basic digital skills by 2030, and with the *European Digital Skills and Jobs Coalition*[52] that supports the upskilling and reskilling of citizens and workers. It also reflects the objectives of the *Digital Education Action Plan 2021-2027*[53], which emphasises enhancing digital literacy and fostering the development of advanced digital competences across all levels of education and training. In the Danube Region, tracking progress on ICT skills is essential not only for supporting the digital transformation of economies, but also for ensuring that no group, by age, gender, or socio-economic status, is left behind in accessing the opportunities of the digital era.

The estimates of the population share with basic or above basic overall digital skills are available disaggregated by gender and age. Figure 2.10 presents the shares of the total population (men and women combined) with such skills across three age groups: 20-24, 25-54, and 55-75. Several notable patterns emerge. Firstly, there has been a marked improvement in ICT skills across all countries and age groups in the Danube Region between

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[50]https://www.oecd.org/en/publications/oecd-reviews-of-labour-market-and-social-policies-romania-2025_f0532908-en/full-report/lifting-romania-s-workforce-potential_ea063b7c.html

[51]https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

[52]https://digital-strategy.ec.europa.eu/en/policies/digital-skills-coalition

[53]https://education.ec.europa.eu/focus-topics/digital-education/plan

Figure 2.10: Share of population with basic or above basic overall digital skills by age groups across countries
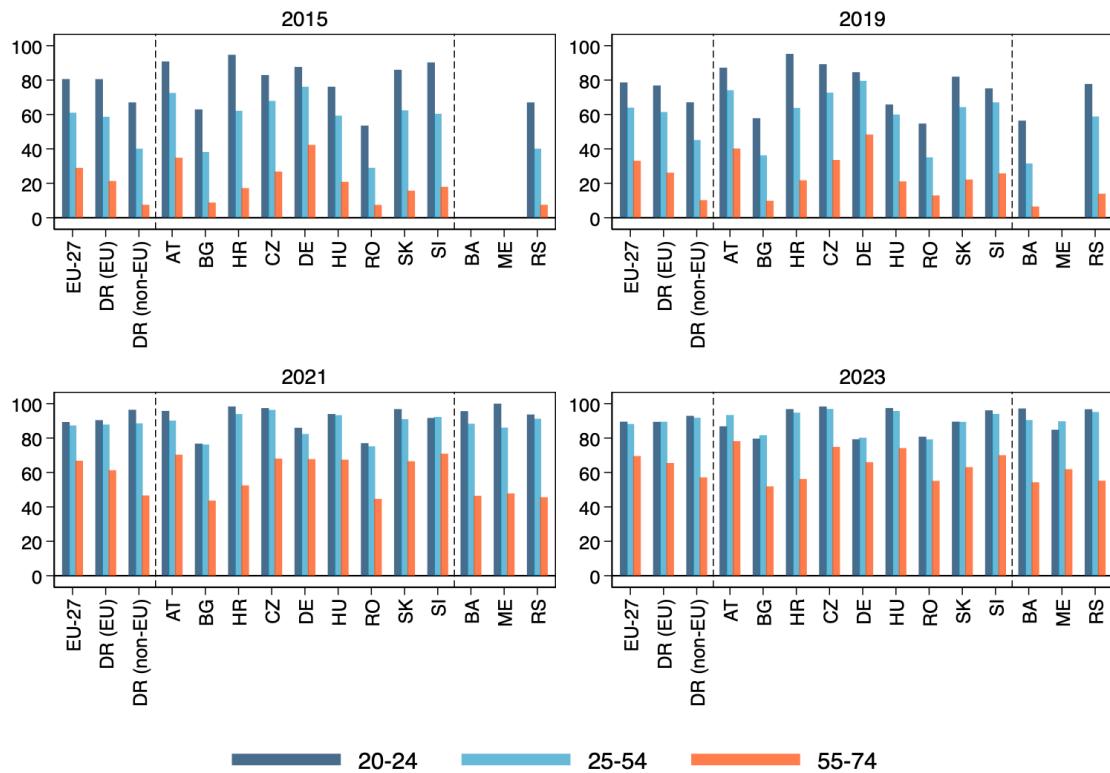
Source: EU Member States, Bosnia and Herzegovina, Montenegro, and Serbia – Eurostat segment *isoc_sk_dskl_i*. Ukraine – the national statistical office.

2015 and 2023. This growth is driven by a combination of factors, including increased internet penetration, the expansion of digital public services, the integration of digital competence frameworks into education systems, and the proliferation of smartphones and affordable broadband access.[54] The COVID-19 pandemic also acted as a catalyst for digital skills development, accelerating the use of digital tools for remote work, education, and public service access, thereby prompting individuals across all age groups to acquire and strengthen their ICT competences.

Secondly, despite these advances, an EU/non-EU divide in ICT skills persists among older workers aged 55-75. In 2023, the average share of individuals with basic or above basic ICT skills in the EU-27 was 89.5% for the 20-24 age group and 69.5% for the 55-75 age group. Danube Region EU Member States reported similar averages, 89.4% and 65.5%, respectively, while EU candidate countries averaged 92.2% and 57.1% in 2024. Diminished EU/non-EU gap in younger cohorts reflects the near-universal integration of ICT skills into formal education and training systems, as well as widespread access to

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[54]Improved digital skills are largely linked to infrastructure expansion, policy integration in education, and greater availability of affordable digital devices. For more details, refer to `https://digital-strategy.ec.europa.eu/en/policies/desi`.

Figure 2.11: Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2015
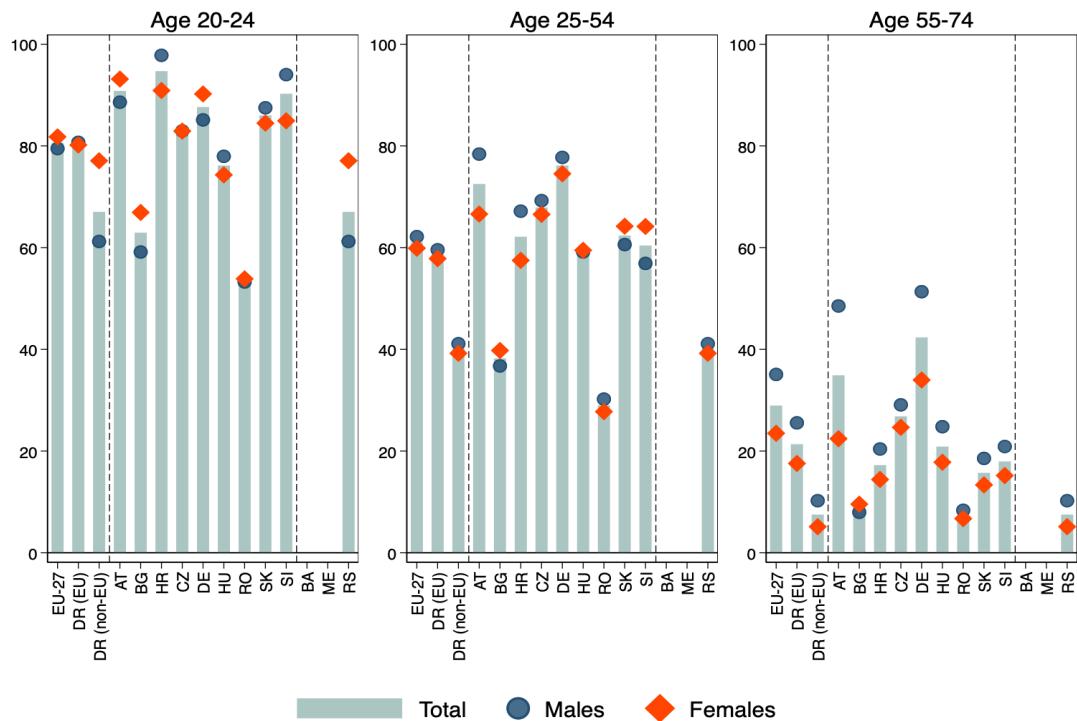
Source: EU Member States and Serbia – Eurostat segment *isoc_sk_dskl_i*.

digital devices from an early age. In contrast, the wider gap among older workers is linked to lower participation in adult learning, more limited workplace training opportunities, and less exposure to digital technologies earlier in life in many candidate countries.[55]

The gender differences in ICT skills were less systematic than the age-related disparities, with substantial variation across countries (see Figures 2.11 and 2.12). On average, the gender gaps in ICT skills in the EU-27 and the Danube Region were closely aligned across the observation period. In the younger age groups (20-24 and 25-54), differences between men and women were marginal or statistically insignificant. In contrast, among the oldest cohort (55-74), a consistent male-favouring gap emerged, amounting to between 4 and 7 percentage points in the EU-27, the Danube Region EU Member States, and the EU candidate countries on average in 2024. Higher ICT skills among men in this older group were observed in all countries of the region, except in Bulgaria, Czechia, and Slovakia, where gender differences were negligible.

This persistent male advantage in ICT skills among older adults is rooted in both structural and historical factors. Older men are more likely to have had careers in sectors where digital technologies were introduced earlier and more intensively, such as manufacturing,

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[55]Low adult learning rates and limited employer-provided ICT training in parts of the Western Balkans is one of the factors attributing to the trend. For more detailed analysis, refer to https://www.cedefop.europa.eu/en/tools/european-skills-index.

Figure 2.12: Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2023
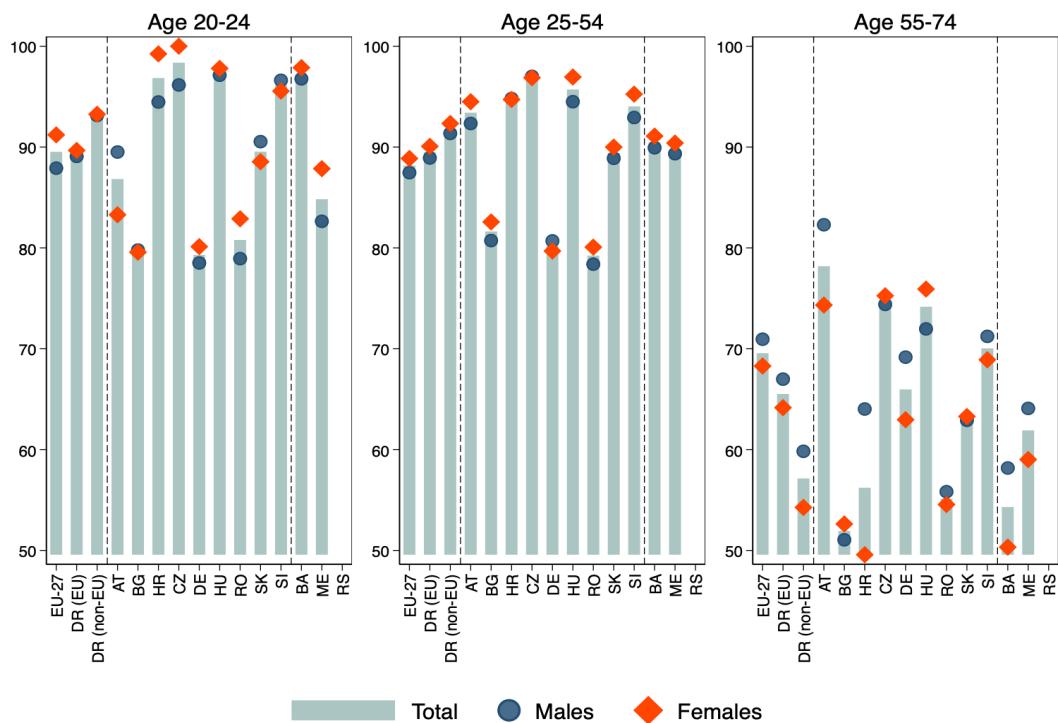
Source: EU Member States, Bosnia and Herzegovina and Serbia – Eurostat segment *isoc_sk_dskl_i*.

engineering, or technical services, whereas women in the same generation were overrepresented in occupations that traditionally involved less ICT use. Longer average working lives for men in this cohort, combined with greater exposure to job-related ICT training, have reinforced these differences over time.[56] Addressing this gap requires targeted digital upskilling opportunities for older women, particularly through community-based training programmes, public libraries, and non-formal adult learning initiatives. Local actions in several Danube Region countries, such as intergenerational learning projects in Slovenia, municipal digital literacy workshops in Romania, and NGO-led "Women Go Digital" programmes in Serbia, demonstrate effective approaches to bridging the gender divide in ICT competences among older adults.

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[56]https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/11/oecd-skills-outlook-2023_df859811/27452f29-en.pdf

2.6 Appendix A: Additional Results

2.6.1 Participation in early childhood education and care

Participation in early childhood education and care of children aged four and up from 2011 to 2023 by gender across countries
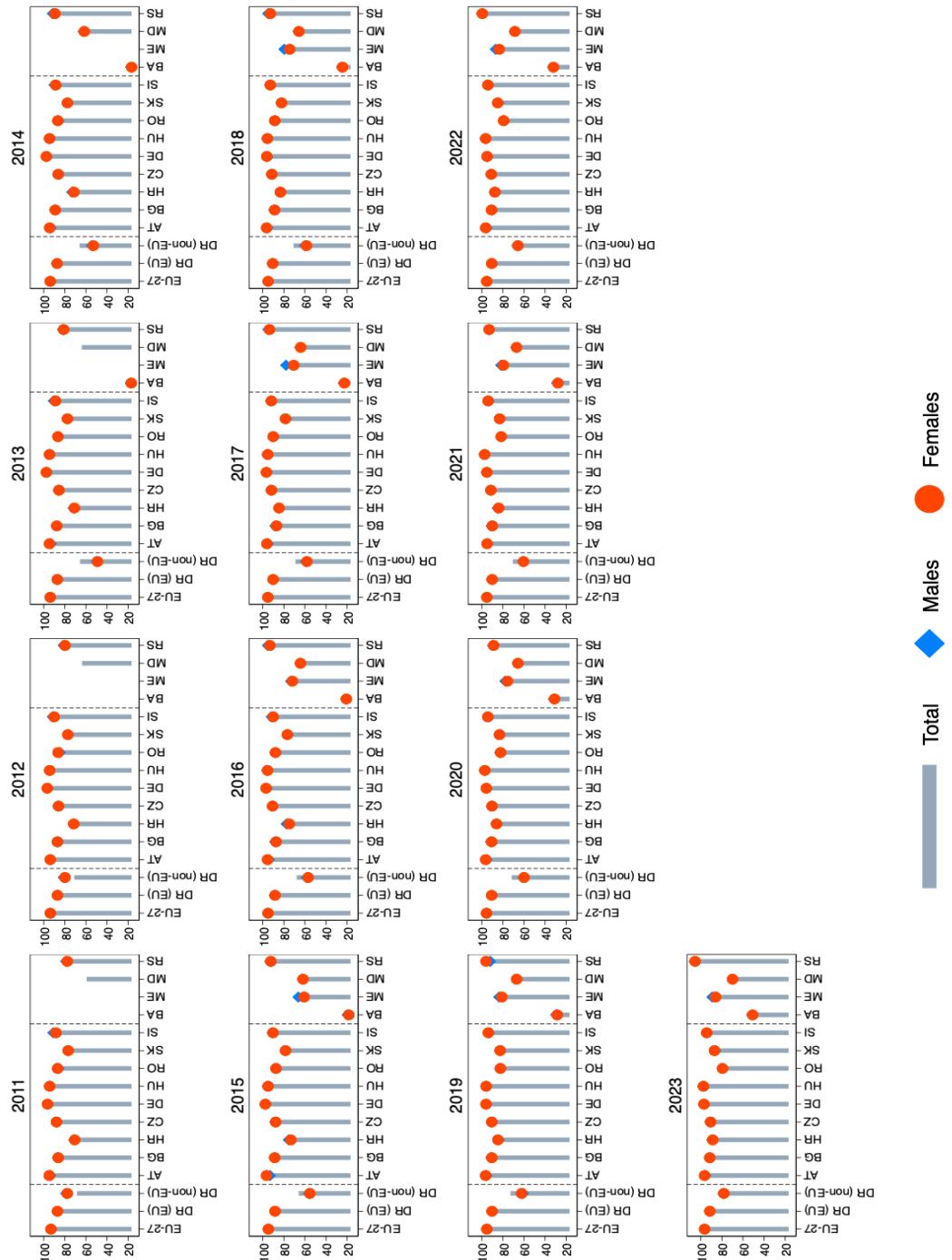
Source: EU Member States, Montenegro – Eurostat dataset *SDG_04_30*. Serbia – 2011-2016: RCC (`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); 2017: Eurostat dataset *SDG_04_30*; 2018-2023: Ministry of Education, Science and Technological Development of the Republic of Serbia. Bosnia and Herzegovina – 2013: RCC (`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); 2019-2023: World Bank (`https://databank.worldbank.org/reports.aspx?source=2&series=SE.PRE.ENRR`).The Republic of Moldova – the national statistical offices.

2.6.2 Proportion of the population aged 20-24 having completed at least upper secondary education

Proportion of the population aged 20 to 24 having completed at least upper secondary education from 2011 to 2024 by gender across countries
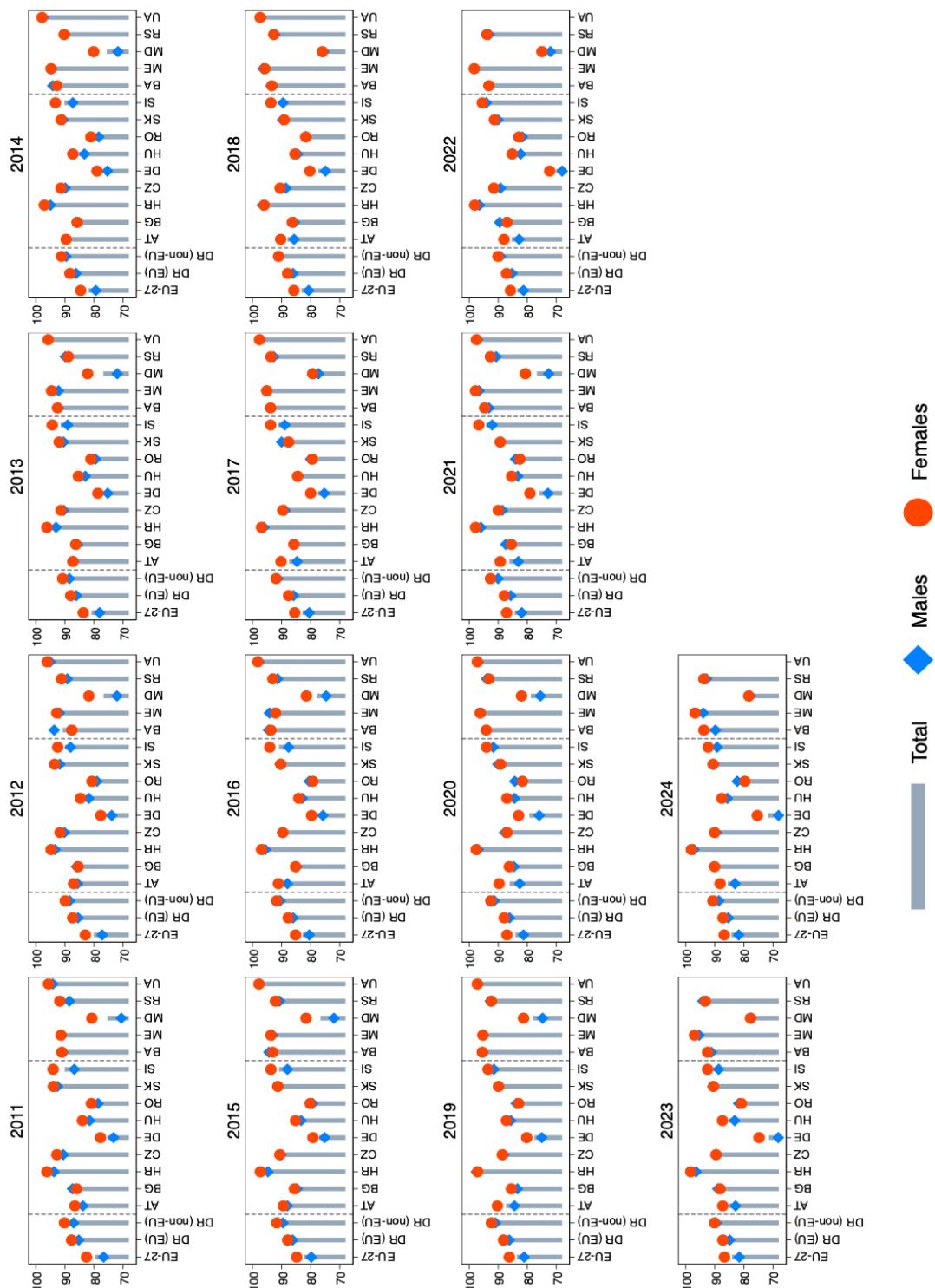
Source: EU Member States, Montenegro and Serbia – Eurostat segment *edat_lfse_03*. Bosnia and Herzegovina and Republic of Moldova – Eurostat segment *enpr_siinr*. Ukraine – the national statistical office.

2.6.3 Proportion of the population aged 30-34 having completed tertiary education

Proportion of the population aged 30 to 34 having completed tertiary education from 2011 to 2024 by gender across countries
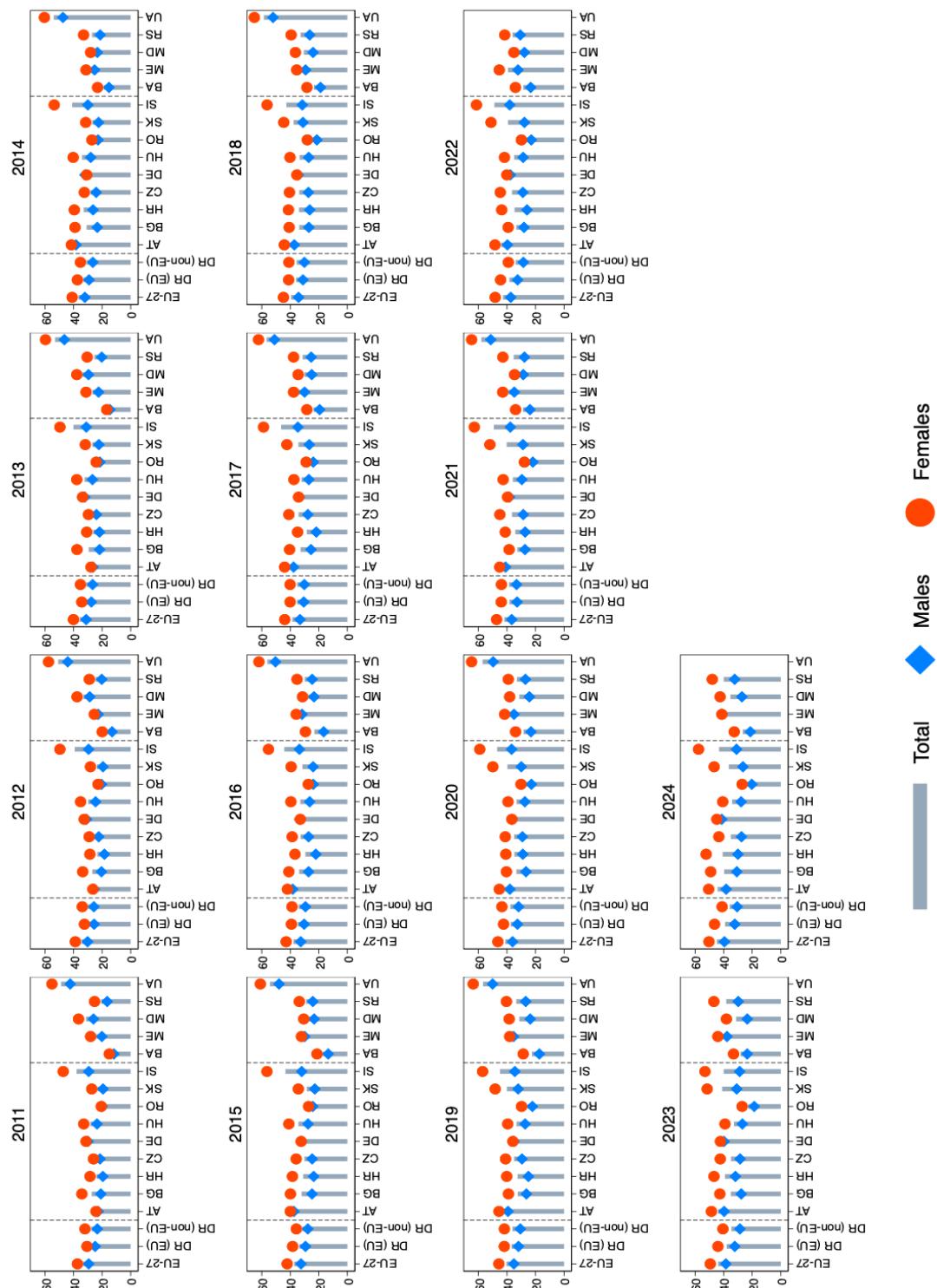
Source: EU Member States, Montenegro and Serbia – Eurostat segment *edat_lfse_03*. Republic of Moldova – Eurostat segment *enpe_edat_lfse_03*. Ukraine – the national statistical office.

2.6.4 Employment rate by educational attainment level

Employment rate of people aged 20 to 24 who completed at least upper secondary education from 2011 to 2024 by gender across countries
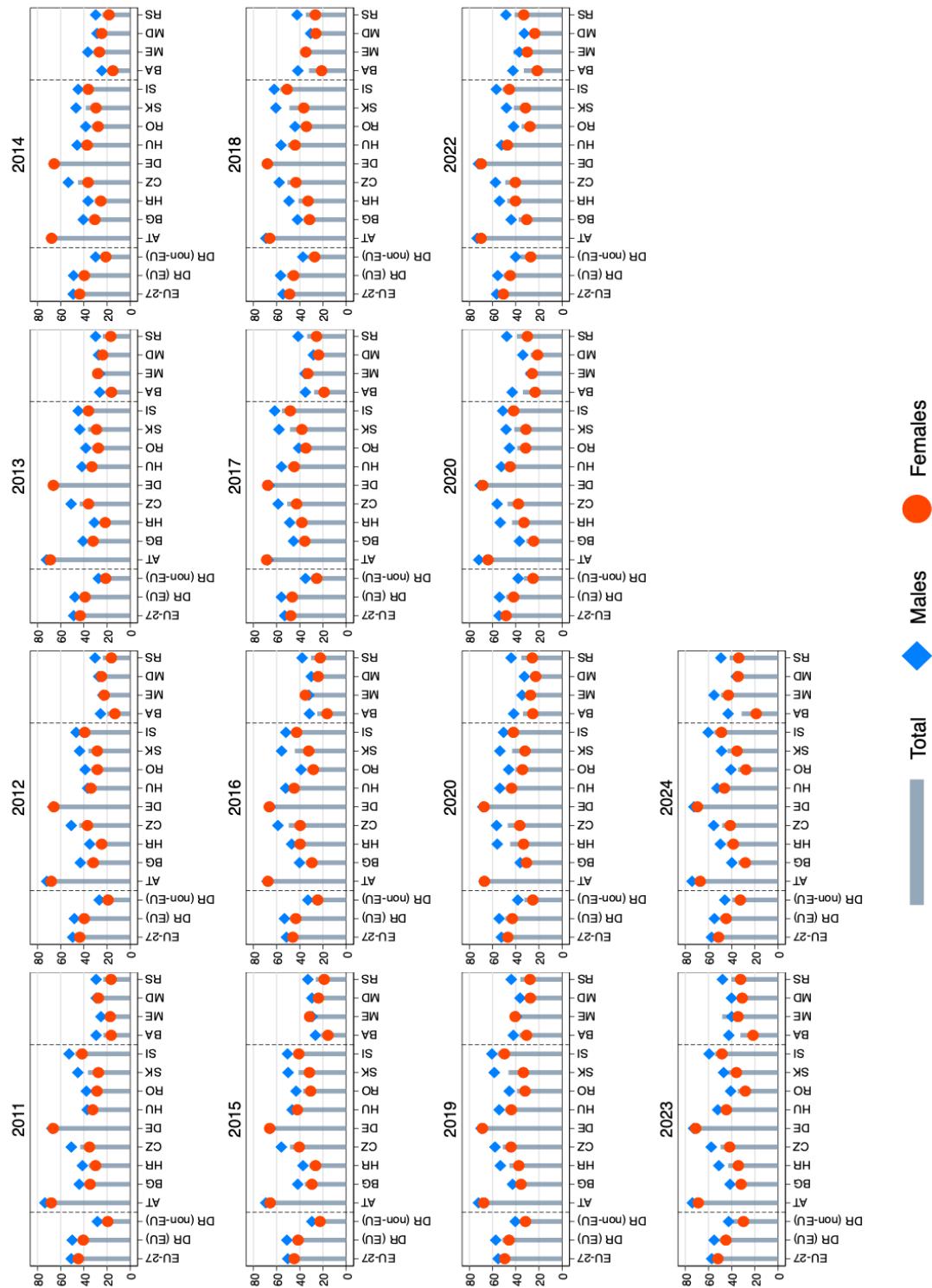
Source: EU Member States, Montenegro and Serbia – Eurostat segment *lfsa_ergaed*. Bosnia and Herzegovina, Ukraine – the national statistical office.

Employment rate of people aged 20 to 24 who completed (i) upper secondary education and (ii) tertiary education from 2011 to 2014 across countries
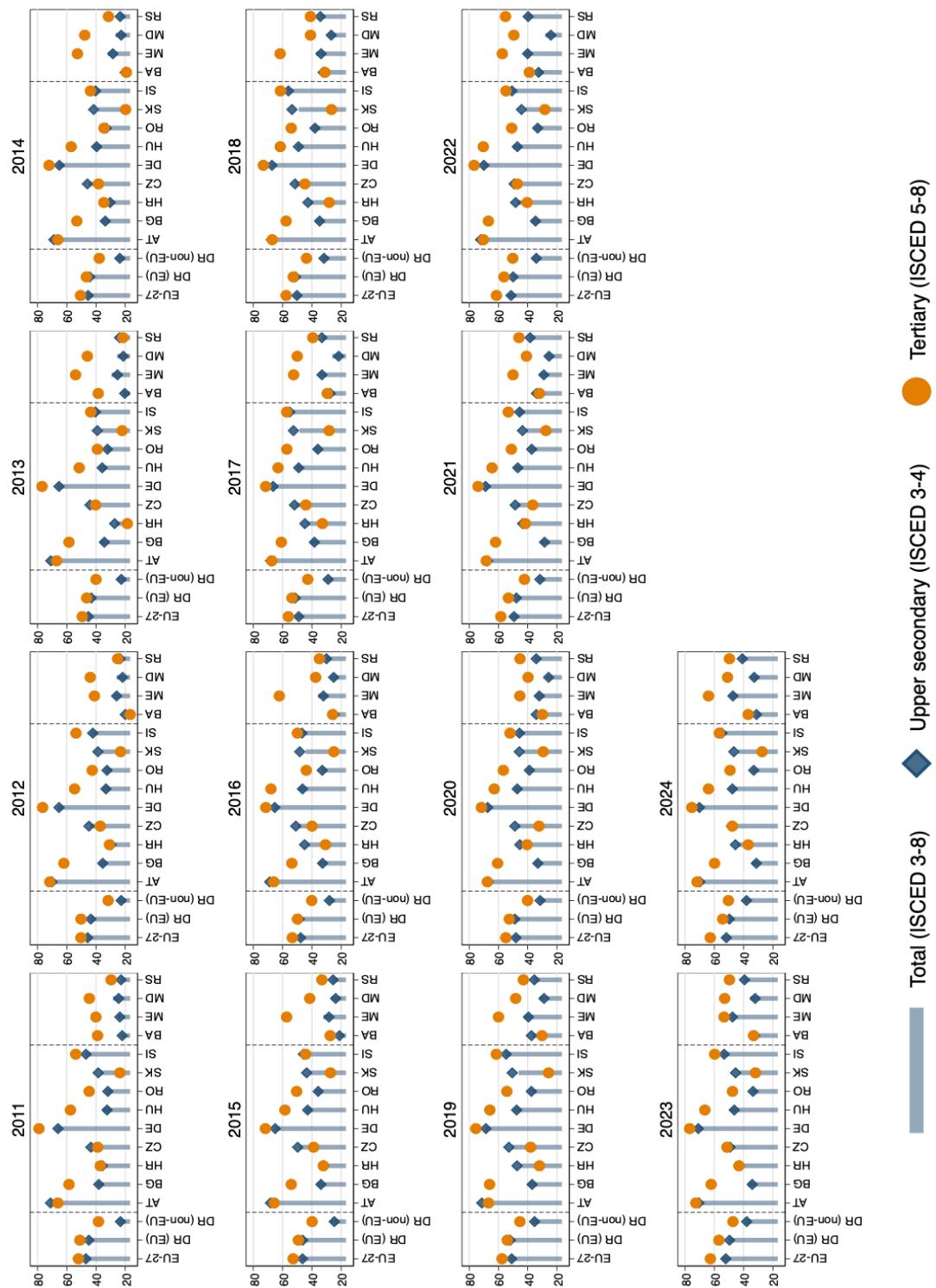
Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2016
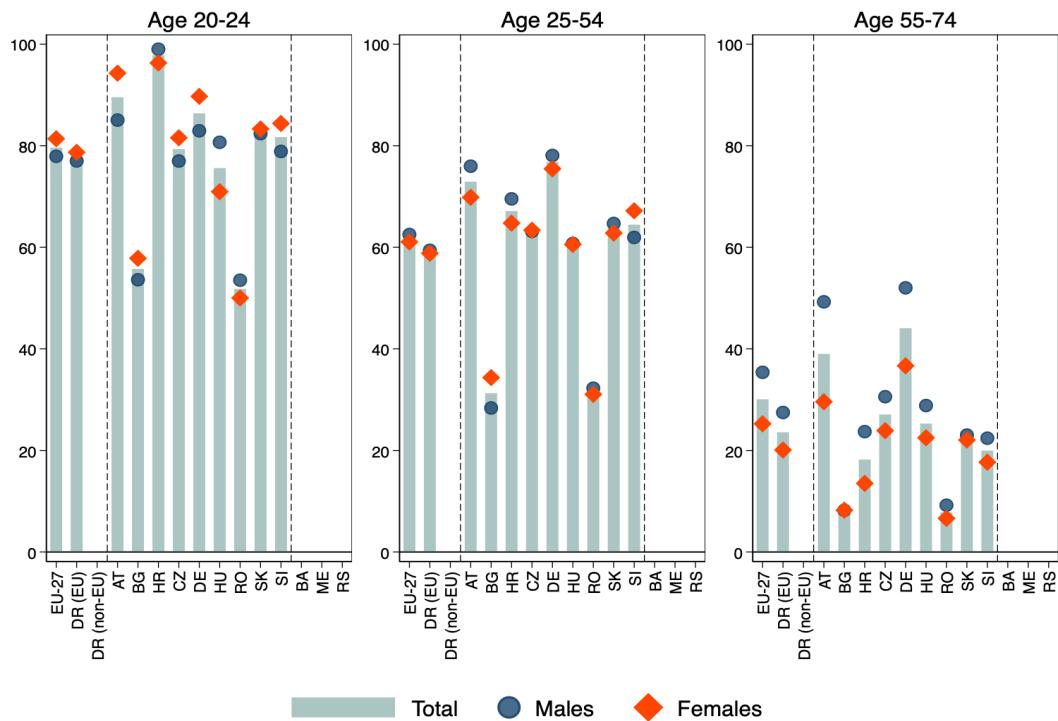
Source: EU Member States – Eurostat segment *isoc_sk_dskl_i*.

Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2017
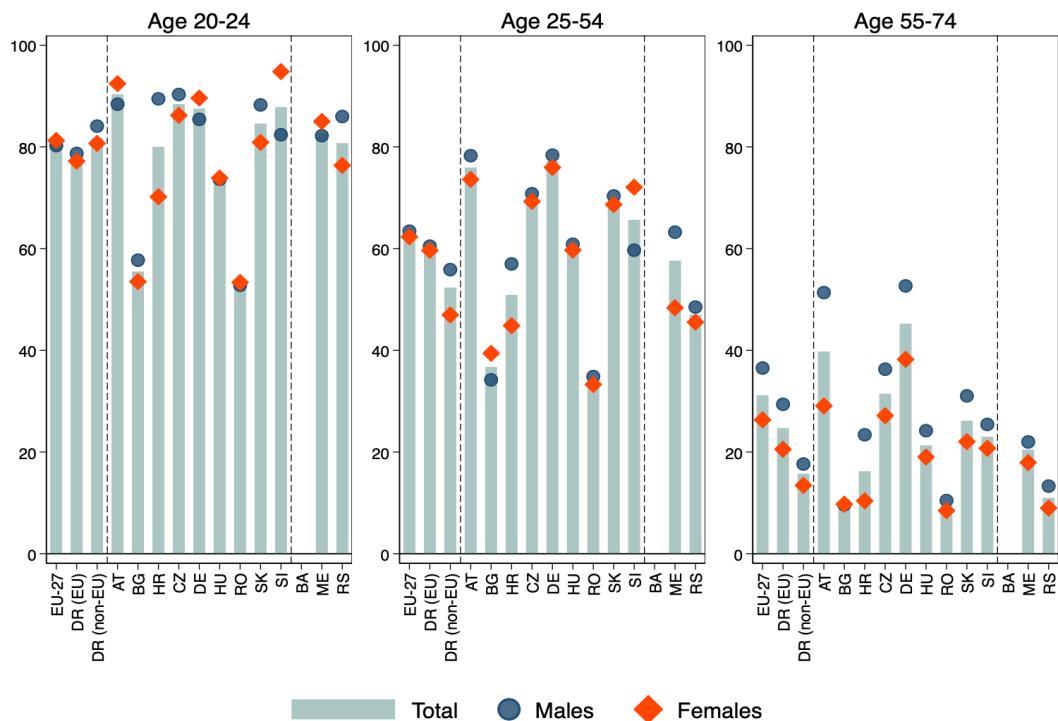
Source: EU Member States, Montenegro and Serbia – Eurostat segment *isoc_sk_dskl_i*.

Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2019
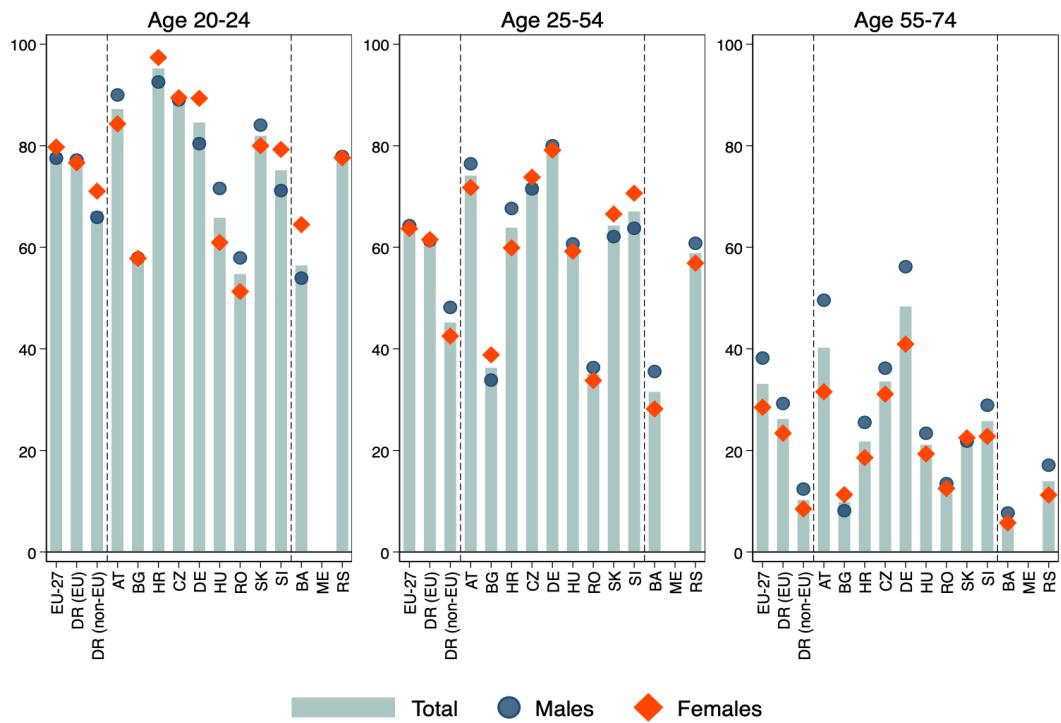
Source: EU Member States, Bosnia and Herzegovina and Serbia – Eurostat segment *isoc_sk_dskl_i*.

Share of population with basic or above basic overall digital skills by gender and age groups across countries, 2021
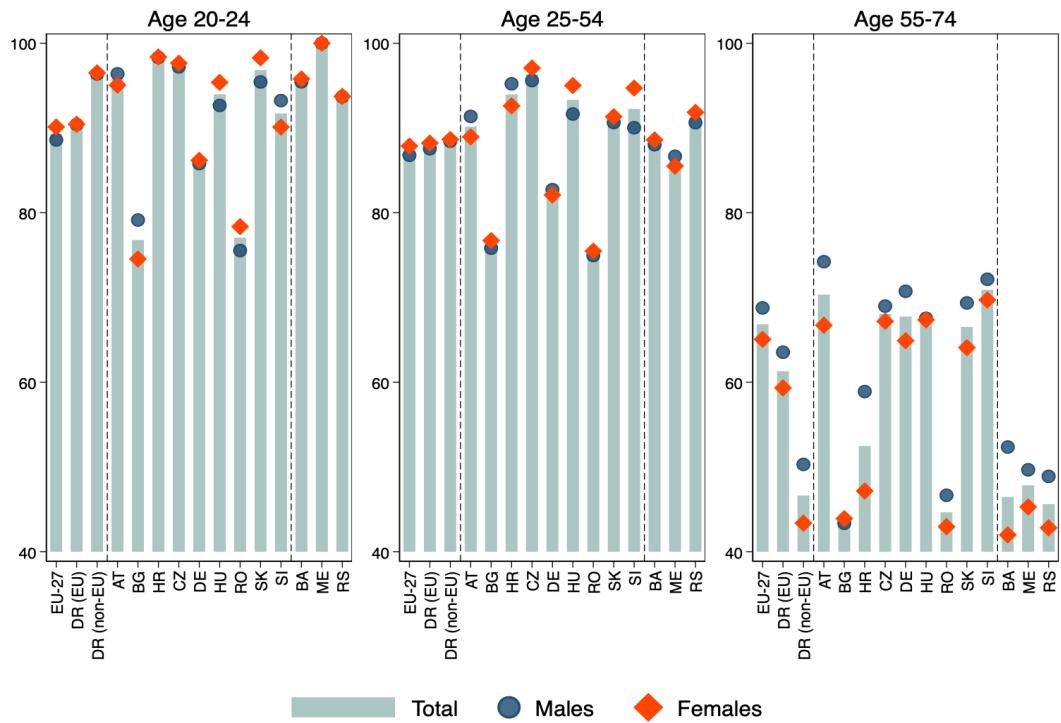
Source: EU Member States, Bosnia and Herzegovina and Serbia – Eurostat segment *isoc_sk_dskl_i*.

2.7 Appendix: Indicators and Data Description

2.1 Participation in early childhood education and care

Definition: The indicator measures children between the age of four and the starting age of compulsory primary education participating in early childhood education as the percentage of the total population of respective age.

Source: The data for the EU Member States and Montenegro came from Eurostat dataset *SDG_04_30*. Serbia - 2011-2016: RCC.
(`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); 2017: Eurostat dataset *SDG_04_30*; 2018-2019: Ministry of Education, Science and Technological Development of the Republic of Serbia. Bosnia and Herzegovina - 2013: RCC
(`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`); 2019: World Bank
(`https://databank.worldbank.org/reports.aspx?source=2&series=SE.PRE.ENRR`).
The Republic of Moldova and Ukraine - the national statistical offices.

Data availability: For the total population, the data are available for Bosnia and Herzegovina for years 2013-2023; for Montenegro for the years 2015-2023; for Ukraine, data are available for the entire time period from 2011 to 2022. For the remaining countries, the data on the total population are available for the years 2011-2023.
For gender division, the data on Ukraine are not available. For Bosnia and Herzegovina, only data for years 2013-2023 are available; for Montenegro, only data from the years 2015-2023 are available; for Serbia, only data from the years 2017-2023 are available. For the remaining countries, the data on gender division are available for the years 2011-2023.

2.2 Proportion of the population aged 20-24 having completed at least upper secondary education

Definition: The indicator is defined as the percentage of people aged 20-24 who have successfully completed at least upper secondary education. This educational attainment refers to ISCED 2011 Levels 3-8 for data from 2014 onwards and to ISCED 1997 Levels 3-6 for data up to 2013. The indicator is based on the EU Labour Force Survey. It should be noted that completion of upper secondary education can be achieved in European countries after varying lengths of study according to different national educational systems.

Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_03*. Bosnia and Herzegovina and the Republic of Moldova – Eurostat segment *enpr_siinr*. Ukraine - the national statistical office.

Data availability: The data for Ukraine are only available for 2011-2021. For all other countries of the Danube Region, the data for the years 2011-2023 (both the total

and by gender) are used.

2.3 Proportion of the population aged 30-34 having completed tertiary education

Definition: The indicator is defined as the percentage of people aged 30-34 who have successfully completed tertiary or equivalent education. This educational attainment refers to ISCED 2011 Levels 5-8 for data from 2014 onwards and to ISCED 1997 Levels 5-6 for data up to 2013. It should be noted that completion of tertiary education can be achieved in European countries after varying lengths of study according to different national educational systems.

Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_03*. Bosnia and Herzegovina - Eurostat segment *cpc_pseduc*. The Republic of Moldova - Eurostat segment *enpe_edat_lfse_03*. Ukraine - the national statistical office.

**Data availability:** The data for Ukraine are only available for 2011-2021.. For all other countries of the Danube Region the data for the years 2011-2023 (both the total and by gender) are used.

2.4 Employment rate by educational attainment level

Definition: The employment rate of people aged 20-24 with (i) upper secondary or post-secondary non-tertiary education and (ii) tertiary education was measured as the percentage of employed persons in the population of a given age range and education level.

**Source:** The data for the EU Member States, Montenegro and Serbia came from Eurostat segment *lfsa_ergaed*. Bosnia and Herzegovina - the national statistical office.

Data availability: The data for Ukraine are only available for 2011-2021. For all other countries of the Danube Region, the data for the years 2011-2024 are used.

2.5 ICT skills: individuals who have basic or above basic overall digital skills

Definition: The indicator refers to the share of individuals who have basic or above basic overall digital skills. The basic or above basic overall digital skills represent the two highest levels of the overall digital skills indicator, which is a composite indicator based on selected activities performed by individuals aged 16-74 on the internet in four specific areas (information, communication, problem solving and content creation). It is assumed that individuals having performed certain activities have the corresponding skills; therefore, the indicator can be considered as a proxy of the digital competences and skills of individuals. The indicator is based on the EU survey on the ICT usage in households and by individuals.

Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia - Eu-

rostat segment *isoc_sk_dskl_i*.

Data availability: For the Republic of Moldova and Ukraine, no data are available. For all other countries, the data on the total population, gender and age division are available as follows: Bosnia and Herzegovina - only for the years 2019, 2021 and 2023; Montenegro - only for years 2017, 2021 and 2023; and Serbia - for the years 2015, 2017, 2019, 2021 and 2023. For all other countries of the Danube Region, the data for the years 2015-2017, 2019, 2021 and 2023 are available.

Objective III

Contribution to Increased Quality and Efficiency of Education, Training and Labour Market Systems

Increased Quality and Efficiency of Education, Training and Labour Market Systems

Education and labour market policies lie at the heart of social cohesion, economic resilience, and human capital development – the core objectives of *Priority Area 9 (People and Skills) of the EU Strategy for the Danube Region (EUSDR)*. Monitoring public and private investments in education, the distribution of educational staff, and expenditure on labour market policies (LMP) provides essential insights into national efforts to build inclusive education systems and adaptable labour markets. These indicators are particularly relevant in the Danube Region, which faces complex demographic dynamics, skill mismatches, and varying institutional capacities that affect education outcomes and employment transitions.

Through a structured and comparative lens, this chapter analyses trends across four key dimensions: public and private expenditure on education, pupil-to-teacher ratios, and public LMP investment. Together, these dimensions reflect countries' ability to respond to long-term structural challenges, including digitalisation, depopulation, inequality, and youth unemployment, as well as to external shocks such as the COVID-19 pandemic and the war in Ukraine. By benchmarking performance across EU and non-EU countries in the region, the Danube Region Monitor supports evidence-based policymaking that strengthens the foundations of inclusive growth and sustainable human development.

3.1   Public Expenditure on Education

Public spending on education, expressed as a percentage of GDP, reflects a government's prioritisation of education within its broader investment strategy. It covers direct funding to educational institutions as well as subsidies to households for education-related expenses. In the EU and across the Danube Region, sustained and well-targeted investment in education is considered essential for fostering inclusive growth, innovation, and social

cohesion. The EU's strategic framework for *European cooperation in education and training* (ET2020 and its successor ET2030)[57] highlights the need for adequate and efficient funding to improve access, quality, and equity in education systems.

In the context of *Priority Area 9 (People and Skills) of the EU Strategy for the Danube Region*, monitoring education expenditure provides insight into national capacities to strengthen lifelong learning, reduce inequalities, and respond to digital and demographic change. Cross-country differences in public expenditure on education remain notable both within and across EU Member States and EU candidate countries of the region. These reflect not only divergent fiscal capacities, but also differences in policy priorities, institutional arrangements, and reform progress. Assessing trends in public education spending supports evidence-based policymaking aimed at building resilient and future-ready education systems across the region.

Figure 3.1: Public expenditure on education in % of GDP from 2011 to 2023 for selected countries
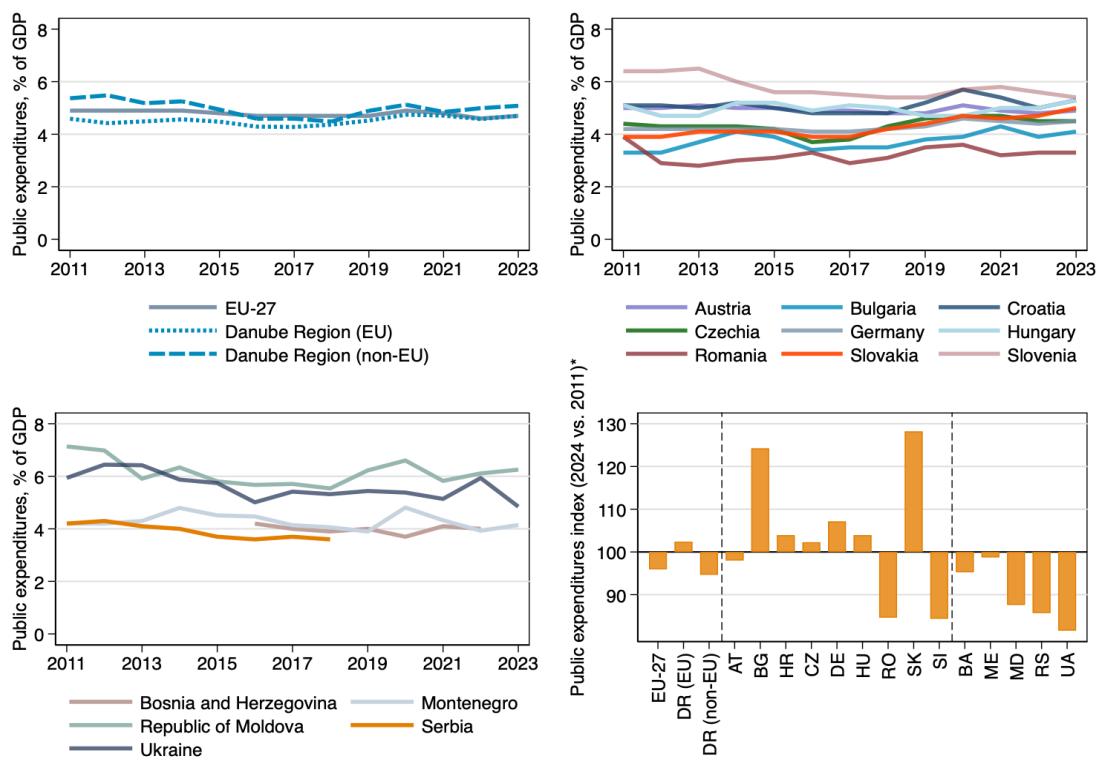
Source: EU Member States – Eurostat segment *gov_10a_exp*. Serbia – Eurostat segment *cpc_pseduc*. Montenegro – RCC (https://www.rcc.int/seeds/results/1/see2020-progress-tracker). The Republic of Moldova and Ukraine – GFS (https://data.imf.org/regular.aspx?key=61037799).
Notes: Index is estimated as public expenditures on education as % of GDP in 2023 relative to public expenditures on education as % of GDP in 2011 for all countries except Serbia, where the index is estimated comparing 2018 to 2011 and Bosnia and Herzegovina, where year 2022 id compared to 2016.

Figure 3.1 depicts average public expenditure on education across the Danube Region between 2011 and 2023. Over this period, public spending as a share of GDP in

the EU Member States of the Danube Region remained relatively stable, increasing only marginally from 4.6% in 2011 to 4.7% in 2023. Similarly, the average level in the EU candidate countries declined slightly, from 5.4% to 5.1% of GDP. Throughout the observation period, these averages remained largely in line with the EU-27 average, but no significant upward trend was recorded in either group. This relative stagnation reflects a broader structural challenge: despite growing demands for investment in education due to digitalisation, demographic shifts, and skills shortages, competing fiscal priorities and constrained public budgets in many countries have limited the space for expanding education funding. Additionally, education systems in the region continue to struggle with inefficiencies and underperformance, which may reduce the political urgency for scaling up public investment without broader system reforms.[58]

While cross-country variation in the absolute level of spending on education remained moderate, significant differences exist. In 2023, Slovenia recorded the highest share of education spending at 5.4% of GDP, while Romania reported the lowest, at just 3.3%. However, the trends over time reveal much sharper divergence. Bulgaria and Slovakia increased their investment considerably, with public education expenditure rising by 34% and 28% respectively between 2011 and 2023. By contrast, Romania, Slovenia, and Ukraine experienced notable declines of 15.4%, 15.6%, and 18.4% respectively. These differences are rooted in varying national policy agendas, demographic pressures, and macroeconomic conditions. For instance, Bulgaria's growing investment reflects a national strategy to modernise its education infrastructure and boost teacher salaries,[59] whereas in Romania[60] and Ukraine[61], fiscal consolidation and competing budgetary demands have weighed down on education funding. Moreover, smaller and more affluent countries tend to maintain higher relative investments in human capital development, such as in the case of Slovenia despite the observed decline, partly reflecting stronger social policy frameworks and higher political prioritisation of education.[62]

The COVID-19 pandemic and Russia's war of aggression against Ukraine have had further impacts on education budgets across the region. During the pandemic, many governments mobilised temporary resources for digital infrastructure, distance learning, and health-related adjustments in schools, but these expenditures often did not translate into lasting increases in education budgets. At the same time, rising inflation, emergency

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[58] https://education.ec.europa.eu/about-eea/education-and-training-monitor

[59] https://www.oecd.org/en/publications/education-and-skills-in-bulgaria_ac0229da-en/full-report/education-and-skills-in-bulgaria-unlocking-inclusive-economic-and-social-development_d541a6ce.html

[60] https://economy-finance.ec.europa.eu/document/download/c5b5a8cb-6114-46e6-b7be-e47c689022c4_en?filename=ip275_en.pdf

[61] https://www.opendemocracy.net/en/odr/ukraine-war-austerity-teachers-wages/

[62] https://op.europa.eu/webpub/eac/education-and-training-monitor/en/country-reports/slovenia.html

spending on healthcare and energy support, and in the case of Ukraine, large-scale destruction of infrastructure and budget reallocation to defence and humanitarian aid, all diverted resources away from long-term education investments.

3.2 Private Expenditure on Education

Private expenditure on education represents a critical but often underexplored component of total investment in human capital. It encompasses out-of-pocket payments by households for formal education services, such as tuition fees at public and private institutions, excluding public subsidies. It does not include ancillary costs like textbooks, study materials, or private tutoring. At the institutional level, private spending can also include contributions to the financing of schools and universities through fees, donations, or other means.

While public expenditure continues to represent the cornerstone of education financing across the Danube Region, private contributions are increasingly significant in many countries, particularly in higher education. This trend is shaped by both structural and policy-driven factors, including the diversification of educational provision, cost-sharing reforms, and differences in access to public funding. The growing role of private spending raises important considerations in terms of equity and efficiency – core priorities of the EU's strategic framework for *European cooperation in education and training* (ET2030) and the *EUSDR Priority Area 9 (People and Skills)*. Monitoring these patterns is essential for understanding the balance of responsibility between the state and individuals, and the potential implications for access, quality, and affordability of education across the region.

Figure 3.2 presents the total private expenditure on education as a share of GDP for countries in the Danube Region. Between 2012 and 2021, private spending followed a downward trend across the region. The EU-27 average declined slightly from around 0.5% to 0.4%, while EU Danube countries saw private expenditure fall nearly to zero by 2021. Non-EU countries recorded a sharper decline, from roughly 0.8% in the early 2010s to below 0.2% in 2021. This broad convergence at a low level reflects both expanded public investment in education and reduced household capacity to finance learning amid economic pressures and pandemic-related disruptions[63].

The decline in private investment in education in the EU candidate countries of the region was largely driven by the sharp reduction of private expenditures in Ukraine, where levels fell steadily throughout the entire observation period. This sustained drop may re-

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[63]https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/09/the-state-of-global-education_f3f08b36/1a23bb23-en.pdf

Figure 3.2: Private expenditure on education (by households) from 2011 to 2022 in % of GDP for selected countries
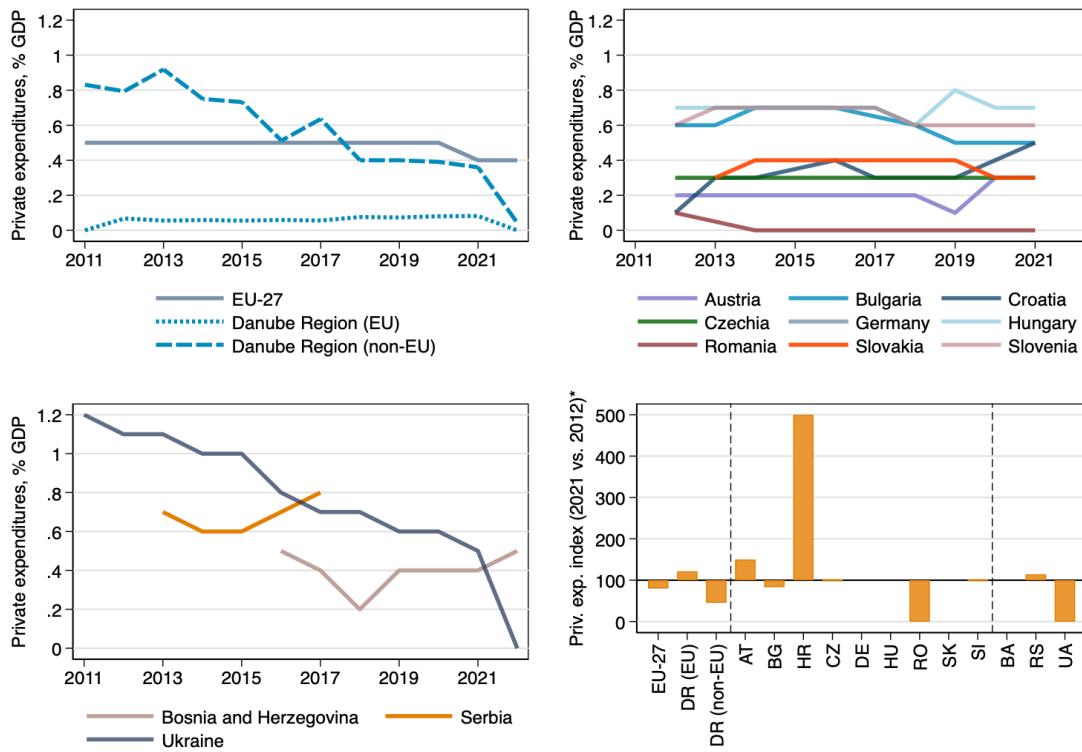
Source: EU Member States and Serbia – Eurostat segment *educ_uoe_fine03*. Ukraine – the national statistical office.
Notes: Index is estimated as private expenditures on education as % of GDP in 2021 relative to private expenditures on education as % of GDP in 2012 for all countries except Serbia, where the index is estimated comparing 2017 to 2013, Bosnia and Herzegovina, where year 2022 id compared to 2016 and Ukraine, where years 2022 and 2011 are compared

flect a combination of factors, including prolonged economic instability, a shift towards more publicly funded models at some levels of education, and structural reforms aimed at reducing informal payments and private tutoring, especially in light of efforts to align the Ukrainian education system with EU standards under the Association Agreement framework[64]. More recently, the war has further devastated Ukraine's education infrastructure, deprioritised household spending on education, and diverted public and private resources towards basic needs and humanitarian relief.

At the country level, the most pronounced increase in private education spending occurred in Croatia, where the share rose more than fivefold compared to 2012. This surge can likely be attributed to a combination of growing demand for early childhood education and the expanding role of private universities and fee-paying tertiary programmes, as well as increased enrolment in supplementary and remedial education services. Croatia has also seen the emergence of new private providers in early education, sometimes operating

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[64]https://eurydice.eacea.ec.europa.eu/eurypedia/ukraine/national-reforms-vocational-education-and-training

Figure 3.3: Private expenditure on education (by households) in million EUR in 2012 for selected countries
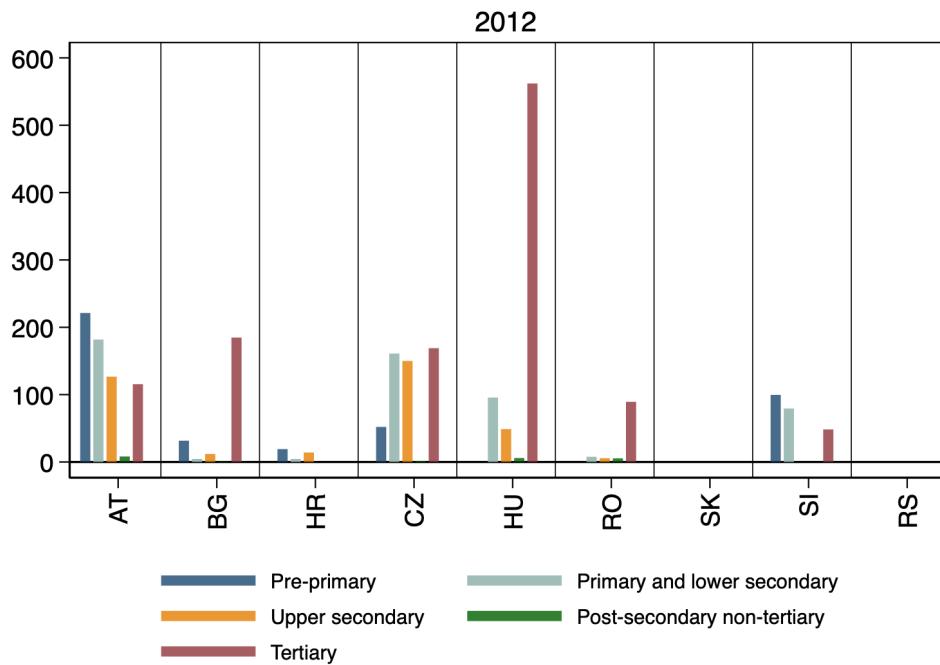
Source: EU Member States and Serbia – Eurostat segment *educ_uoe_fine03*.

Figure 3.4: Private expenditure on education (by households) in million EUR in 2021 for selected countries
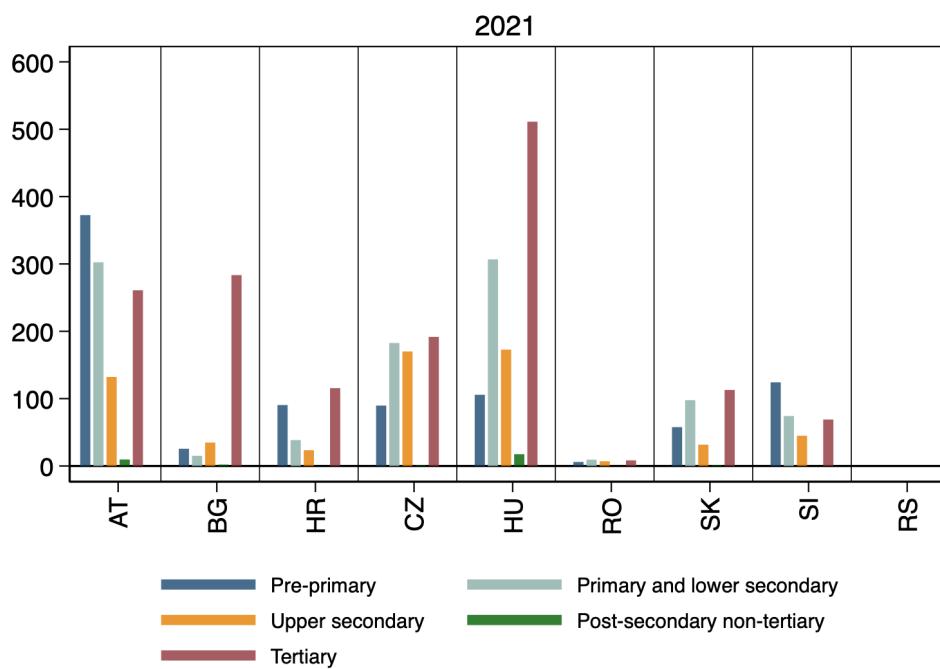
Source: EU Member States and Serbia – Eurostat segment *educ_uoe_fine03*.

in areas underserved by the public system.[65] Conversely, countries such as Bulgaria, Romania, and Ukraine posted declining private expenditure levels, which may indicate stronger access to publicly funded education, tighter regulation of tuition fees, or more limited availability of private schooling options.

The breakdown by education level in Figures 3.3 and 3.4 reveals more nuanced patterns of private spending. In 2012, household investments were concentrated in tertiary education in Bulgaria, Czechia, and Hungary, suggesting a reliance on tuition fees and private provision at higher education levels. Austria and Slovenia, on the other hand, exhibited the highest shares of private expenditure in pre-primary, primary and lower secondary education, possibly due to gaps in public childcare capacity or higher enrolment in private kindergartens. By 2021, Hungary displayed increased private spending across also across the other education levels, reflecting a growing market for private services, both within and outside formal education systems. Austria maintained its strong private spending on early education and showed a marked rise in household financing of tertiary education, likely linked to enrolment in private universities or international programmes not fully covered by public support.

In contrast, countries such as Romania and Slovakia continued to report marginal household expenditures across all educational levels. This may stem from a combination of persistently low household income levels and a relatively comprehensive public education system, especially at the primary and secondary levels. In Romania, this low private investment may also reflect regional disparities in education access and low levels of participation in early childhood education, particularly in rural areas. Meanwhile, Croatia saw a steady expansion in private contributions to pre-primary and tertiary education, likely reflecting both rising household incomes and increased parental demand for quality or flexible alternatives. These shifts may also be shaped by institutional features, such as limited public childcare coverage or expansion of private universities, and by the regulatory environment governing tuition fees and private sector involvement in education. Across the region, the allocation of private resources appears strongly influenced by national policy frameworks, public expenditure priorities, and broader socioeconomic factors that shape the capacity and willingness of households to invest in education.

3.3 Distribution of Teachers and Staff

The quality of education systems across the Danube Region depends heavily on the availability and qualifications of teachers, as well as their equitable distribution across education levels. Alongside teacher competences, the pupil-to-teacher ratio is a key indicator

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[65]https://www.herdata.org/in-focus/higher-education-in-croatia-introduction/6

of education quality. Larger class sizes limit teachers' ability to provide individual attention, particularly in early childhood and primary education, where small group settings are crucial for supporting learning and development.[66].

The European Union's strategic education framework ET2030 emphasises that strengthening the education profession and ensuring equitable access to high-quality teaching are central to improving learning outcomes and system efficiency. *Priority Area 9 (People and Skills) of the EU Strategy for the Danube Region* echoes this goal, underlining the need to address regional disparities in staffing levels, qualifications, and working conditions across all education levels. Monitoring teacher distribution indicators such as pupil-teacher ratios helps to identify systemic bottlenecks and guide investments in human resources. These efforts are essential for ensuring that all learners, regardless of geography or socio-economic status, benefit from a supportive and high-quality learning environment.

Figure 3.5: Ratio of pupils and students to teachers and academic staff in 2013 for selected countries
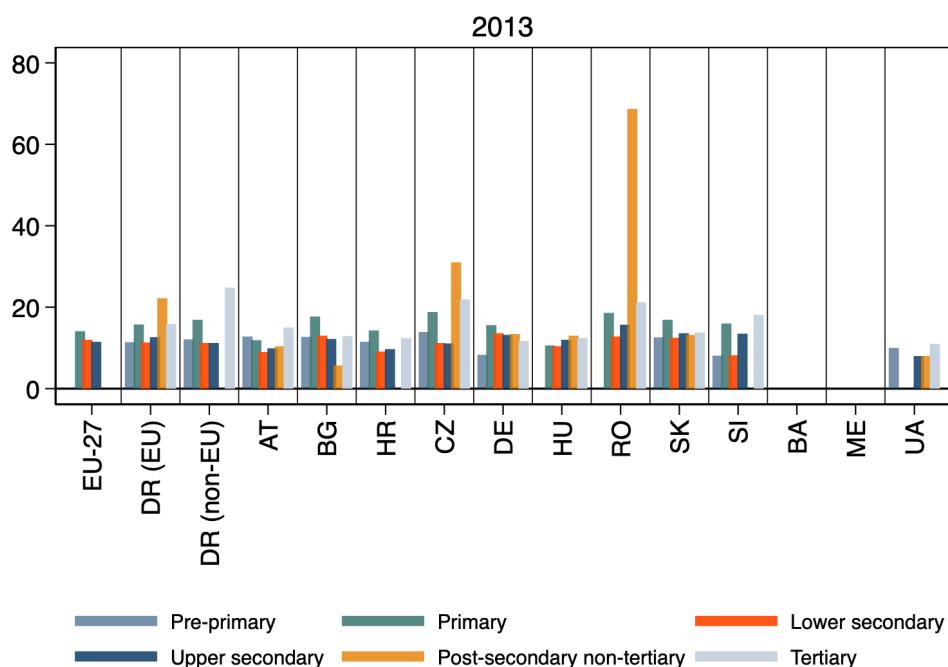
Source: EU Member States and Serbia – Eurostat segment *educ_uoe_perp04*.

Figures 3.5 and 3.6 present the ratio of pupils or students to teaching staff across six levels of education in Danube Region countries for the years 2013 and 2021. These

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[66]For an empirical assessment of the effect of class size on student performance, please refer to (i) Arias, J. J., and Walker, D. M., Additional evidence on the relationship between class size and student performance, *The Journal of Economic Education 35, no. 4* (2004): 311-329; (ii) Borland, M. V., Howsen, R. M., and Trawick, M. W., An investigation of the effect of class size on student academic achievement, *Education Economics 13, no. 1* (2005): 73-83; (iii) McEwan, P. J., Improving learning in primary schools of developing countries: A meta-analysis of randomized experiments, *Review of Educational Research 85, no. 4* (2015): 353-394.

Figure 3.6: Ratio of pupils and students to teachers and academic staff in 2021 for selected countries
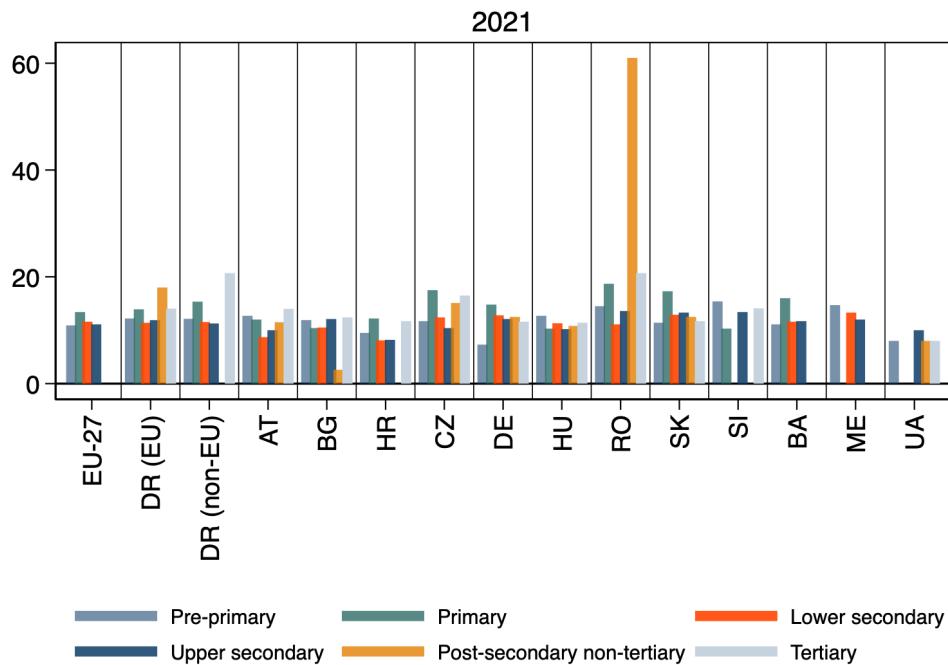
Source: EU Member States and Bosnia and Herzegovina – Eurostat segment *educ_uoe_perp04*.

levels include: (i) pre-primary, (ii) primary, (iii) lower secondary, (iv) upper secondary, (v) post-secondary non-tertiary, and (vi) tertiary education. As a key structural indicator, the pupil-teacher ratio reflects the extent of available teacher support per learner and is often associated with the potential for individualised instruction and overall teaching quality, particularly at early education levels.

Between 2013 and 2021, the average pupil-teacher ratios in the Danube Region remained largely stable in EU Member States. In pre-primary education, the ratio ranged from 12 to 14 pupils per teacher, while in primary and secondary education, the ratios fluctuated between 13 and 17 depending on the country. At the tertiary level, student-to-staff ratios were somewhat lower and more uniform, generally ranging between 13 and 16 across most systems. This relative stability suggests limited structural shifts in staffing patterns, although country-specific variations remain substantial.

In 2021, majority of the Danube Region countries maintained relatively balanced pupil-teacher ratios across education levels, reflecting consistent investment in teacher recruitment and sustained public education funding. Romania stood out with a particularly high ratio of over 60 students per teacher in post-secondary non-tertiary education. This indicates either significant under-resourcing or classification issues in this specific segment, with implications for education quality and access.[67] Similarly, Austria, Germany,

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[67]https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/46846.pdf

and Hungary recorded higher ratios in upper and post-secondary education, suggesting growing systemic pressures in these levels.[68]

By contrast, Ukraine reported relatively low pupil-teacher ratios across all levels. This may reflect demographic trends, such as population decline and outmigration, or supply-side factors such as overcapacity in certain educational institutions. While these lower ratios might indicate the potential for more individualised attention, they can also signal inefficiencies in staffing or underutilised capacity in education systems.

Importantly, the COVID-19 pandemic does not appear to have caused major disruptions in staff distribution across education levels, as the 2021 figures remain largely consistent with pre-pandemic levels. While schools in many Danube Region countries operated in hybrid or online formats in 2020 and early 2021, there is no evidence of substantial cuts in teaching staff during this time. However, potential longer-term effects on staff demand and student engagement may still emerge in subsequent years, especially if early leaving rates increase.

3.4   Public Expenditure on Labour Market Policies

Labour market policy (LMP) refers to public interventions designed to support individuals in accessing, retaining, or improving their employment prospects. These policies are particularly important for helping unemployed or inactive individuals transition into work and for addressing structural barriers that affect labour market participation. Public LMP measures encompass both passive support, such as unemployment benefits, and active labour market policies (ALMPs), including job training, wage subsidies, and employment services.

In the context of the Danube Region, public investment in labour market policies (LMPs) is a critical instrument for fostering inclusive labour markets, reducing long-term unemployment, and enhancing workforce resilience, especially in the face of demographic shifts, technological transitions, and global economic disruptions. The EU's strategic framework for employment and social inclusion, including the *European Pillar of Social Rights* and the priorities of the *European Semester*, underlines the importance of targeted, efficient, and well-funded LMPs. In line with Priority Area 9 (People and Skills) of the *EU Strategy for the Danube Region (EUSDR)*, monitoring the scope and structure of labour market policy expenditure provides essential insight into how countries allocate resources to promote employment and social cohesion. For EU candidate countries, the development and financing of active labour market policies are also closely linked to progress under *Chapter 19 – Social Policy and Employment* of the EU accession negotiations, which

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[68]https://gpseducation.oecd.org/revieweducationpolicies

requires alignment with the EU goals on employment, labour law, and social inclusion.

Figure 3.7: Public expenditure on labour market policies in % of GDP from 2011 to 2023 for selected countries
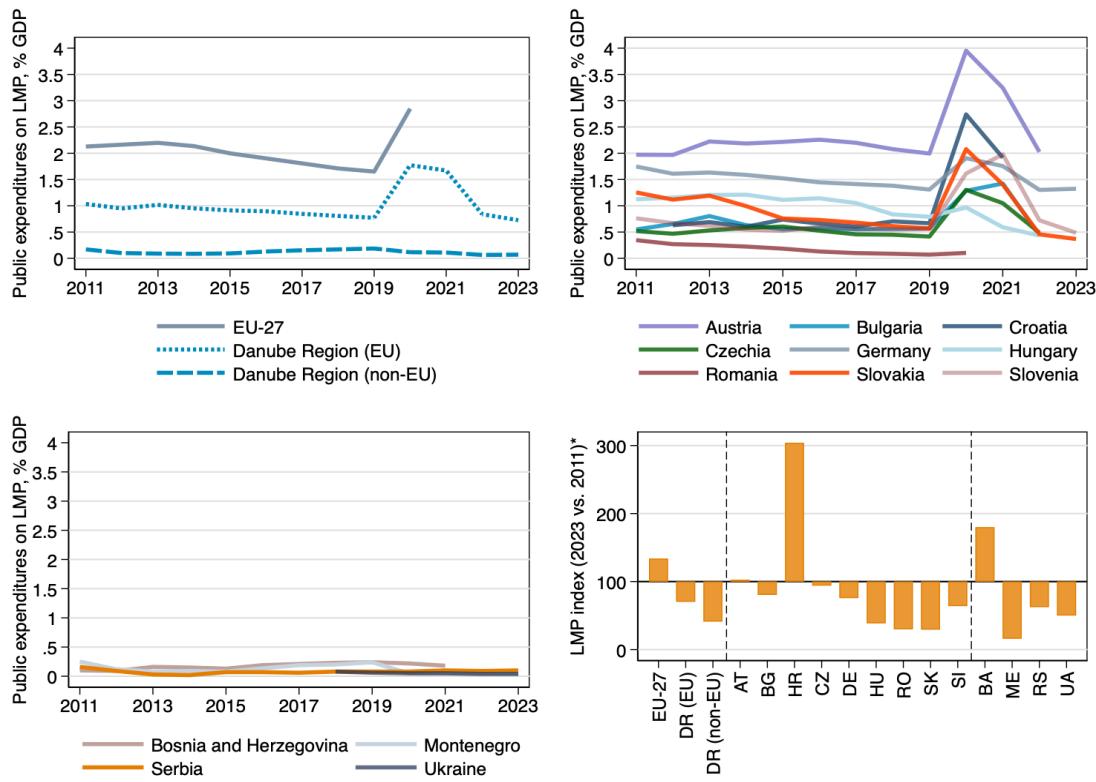
Source: EU Member States – Eurostat database *LMP_IND_EXP*. Bosnia and Herzegovina, Montengro and Serbia – RCC (`https://www.rcc.int/seeds/inc/get_indic.php?id=191&cat_id=1`).
Notes: Indices are estimated as public expenditures on labour market policies as % of GDP in 2022 relative to public expenditures on labour market policies as % of GDP in 2011 for Austria, Bulgaria, Czechia and Hungary. For Croatia, the index is based on comparison of 2021 and 2012. For Germany, Slovakia, Slovenia, Montenegro and Serbia years 2011 and 2023 were compared. For Romania years 2011 and 2020 were compared. For Bosnia and Herzegovina the index is based on years 2011 and 2021. For Ukraine years 2018 and 2023 were compared.

As shown in Figure 3.7, public expenditure on labour market policies (LMP) as a share of GDP varied widely across the Danube Region. While the EU-27 average rose by approximately 30% relative to 2011, EU Member States within the Danube Region recorded a decline in average LMP spending, reflecting a growing divergence from broader EU standards. This downward trend was especially pronounced in Hungary, Romania, Slovakia, and Slovenia, where LMP expenditures fell significantly below early-2010s levels. These reductions may reflect shifting policy priorities, post-crisis fiscal consolidation, or limited institutional capacity for active labour market interventions. In contrast, Croatia stands out with a nearly threefold increase in LMP spending compared to 2012, a surge largely attributable to the implementation of expansive job retention schemes and emergency employment support measures during the COVID-19 pandemic. Croatia's accession to the European Union in 2013 also played a key role by enabling access to the European Social Fund (ESF) and other EU financial instruments, which substantially expanded the country's capacity to design and co-finance active labour market measures

and institutional reforms.[69]

Among the EU candidate countries of the Danube Region, the contraction in LMP spending was even more marked. Bosnia and Herzegovina was the only country where LMP expenditure nearly doubled between 2011 and 2023. This increase is likely linked to the progressive alignment of Bosnia's labour market frameworks with EU employment and social policies, alongside international financial and technical support targeting unemployment and social inclusion.[70]

The COVID-19 pandemic triggered a temporary but substantial spike in LMP expenditures across much of the Danube Region. Emergency policies such as wage subsidies, furlough schemes, and short-time work programmes were rapidly deployed to preserve jobs and mitigate income losses. Countries such as Croatia and Slovenia posted some of the largest increases in LMP expenditure in 2020 and 2021, although these expenditures gradually declined by 2023 as pandemic-era programmes were phased out.[71] The crisis underscored the importance of flexible, well-resourced LMP systems capable of adapting quickly to sudden labour market disruptions.

Nonetheless, despite these short-term increases, long-term trends highlight persistently low and in some cases declining investment in LMP across the Danube Region. In several non-EU countries, such as Serbia, Bosnia and Herzegovina, and Ukraine, public expenditure on LMP remained below 0.1% of GDP throughout the period. These low levels reflect broader structural constraints, including limited fiscal space, weak institutional capacity, and underdeveloped employment services. Strengthening LMP systems remains a critical challenge for ensuring more inclusive, responsive, and resilient labour markets, in line with the objectives of the *Guidelines for the Employment Policies of the Member States*[72] and the EUSDR PA9 strategic framework.

Nonetheless, despite these short-term increases, long-term trends highlight persistently low and in some cases declining investment in LMP across the Danube Region. In several non-EU countries, such as Serbia, Bosnia and Herzegovina, and Ukraine, public expenditure on LMP remained below 0.1% of GDP throughout the period.[73] These low levels reflect broader structural constraints, including limited fiscal space, weak institutional capacity, and underdeveloped employment services. Strengthening LMP systems remains

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[69]Following EU accession, Croatia gained access to the European Social Fund and subsequently to the European Social Fund Plus (ESF+), which support employment, social inclusion, and skills development in line with the EU's cohesion and employment policies.

[70]https://enlargement.ec.europa.eu/system/files/2022-10/Bosnia%20and%20Herzegovina%20Report%202022.pdf

[71]https://www.oecd.org/en/publications/2020/10/job-retention-schemes-during-the-covid-19-lockdown-and-beyond_5002bb9f.html

[72]https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025PC0230

[73]For Serbia, the reported data refer only to public expenditure on active labour market policy measures, as defined by the indicator "Allocations for ALMP as a proportion of GDP" established by the *Employment Strategy of the Republic of Serbia 2021-2026* and its preceding strategy.

a critical challenge for ensuring more inclusive, responsive, and resilient labour markets in line with the objectives of the EU Employment Guidelines and the EUSDR PA9 strategic framework.

3.5 Appendix: Indicators and Data Description

3.1 Public expenditure on education

Definition: General government expenditure on education in % of GDP.

Source: EU Member States - Eurostat segment *gov_10a_exp*. Serbia - Eurostat segment *cpc_pseduc*. Montenegro - RCC (`https://www.rcc.int/seeds/results/1/see2020-progress-tracker`). The Republic of Moldova and Ukraine - GFS (`https://data.imf.org/regular.aspx?key=61037799`).

Data availability: For Bosnia and Herzegovina, only data for the years 2016-2022 were available; for Serbia, data for the years 2011-2018 were available. For the rest of the Danube Region countries, the data for the years 2011-2023 were used.

3.2 Private expenditure on education

Definition: Private (household) spending on education in % of GDP for the total expenditure and in million EUR for education-level specific expenditures.

Source: EU Member States and Serbia - Eurostat segment *educ_uoe_fine03*. Ukraine - the national statistical office.

Data availability: The data for Montenegro and the Republic of Moldova were not available. For the remaining countries, the data were mainly available for the years 2012-2021, with several exceptions. For Bosnia and Herzegovina the data was available for years 2016-2022; for Serbia the data for yers 2013-2017 were used; for Ukraine years 2011-2022 were available.

3.3 Distribution of teachers and staff

Definition: The ratio of pupils and students to teachers and academic staff by education level.

Source: EU Member States, Bosnia and Herzegovina, Montenegro and Serbia - Eurostat segment *educ_uoe_perp04*

Data availability: The data for the Republic of Moldova and Serbia were not available. For Bosnia and Herzegovina the data was available for years 2019-2021 only. For the remaining countries, the data were mainly available for the years 2013-2021.

3.4 Public expenditure on labour market policies

Definition: The LMP refers to labour market interventions, which are government actions to help and support the unemployed and other disadvantaged groups in the transition from unemployment or inactivity to work. Public expenditures on LMP are measured as the % of GDP.

Source: EU Member States - Eurostat database *LMP_IND_EXP*. Bosnia and Herzegovina, Montengro, Serbia - RCC (`https://www.rcc.int/seeds/inc/get_indic.php?`

`id=191&cat_id=1`). Ukraine - the national statistical office.

Data availability: The data for the Republic of Moldova were not available. For Austria, Bulgaria, Czechia and Hungary years 2011-2022 were used. For Croatia, years 2012-2021 were available. For Germany, Slovakia, Slovenia, Montenegro and Serbia years 2011-2023 were used. For Romania years 2011-2020 were available. For Bosnia and Herzegovina years 2011-2021 were used. For Ukraine years 2018-2023 were used.

Objective IV

Contribution to Ensuring Inclusive Education and Training and Promoting Inclusive Labour Markets, Equal Opportunities and Non-Discrimination as well as Promoting Civic Competences and Life-Long Learning Opportunities for All

Ensuring Inclusive Education and Training and Promoting Inclusive Labour Markets

In line with the *EU Strategy for the Danube Region (EUSDR)*, and specifically the objectives of *Priority Area 9 (People and Skills)*, improving access to learning opportunities and addressing barriers to labour market participation are fundamental to promoting fairness, equality, and sustainable growth. Strengthening inclusiveness in these areas not only enhances individual well-being and social mobility, but also supports broader goals of reducing poverty, fostering social cohesion, and enabling active citizenship.

Despite progress in several domains, countries across the Danube Region continue to face persistent and sometimes widening gaps in income, employment, education, and digital access. These disparities are shaped by structural economic divides, differing institutional capacities, and uneven implementation of social and education policies. This chapter draws on a set of key indicators to assess the extent to which education systems and labour markets in the region are becoming more inclusive, paying particular attention to gender, socio-economic background, and territorial inequalities. The analysis provides a deeper understanding of the forces driving divergence and convergence across countries and population groups, offering a foundation for evidence-based approaches to ensure that no one is left behind.

4.1 Gender Pay Gap

The gender pay gap captures the average difference in earnings between women and men and serves as a core indicator of gender equality within the labour market. It reflects a range of factors, from differences in occupation and working time to deeper structural inequalities such as occupational segregation, unequal access to senior roles, and the unequal division of unpaid care responsibilities. Beyond its economic implications, the gender pay gap also signals broader social norms regarding the value of women's work,

both within and outside formal employment.

Addressing gender-based wage disparities is not only a question of fairness, but a necessary step for fostering inclusive growth, maximising human capital utilisation, and ensuring equal opportunities in line with the *EU Gender Equality Strategy 2020-2025*[74] and the *European Pillar of Social Rights*[75]. Persisting pay gaps may reduce the economic security of women over the life course, increase their risk of poverty in old age, and limit broader societal resilience by weakening female labour market attachment. For the Danube Region, where skills shortages and demographic pressures are intensifying, closing the gender pay gap is also a strategic imperative.

Figure 4.1: Gender pay gap from 2011 to 2024 and the index change of the gap across countries
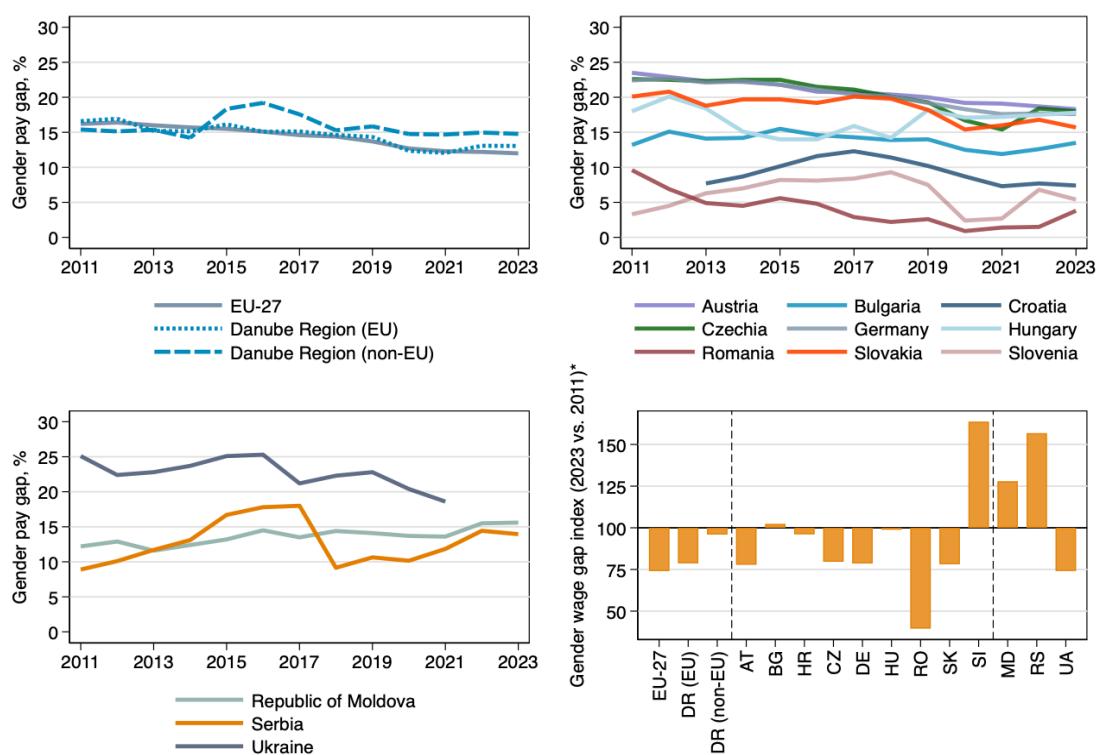
Source: EU Member States – Eurostat segment *earn_gr_gpgr2*. The Republic of Moldova, Serbia and Ukraine – United Nations Economic Commission for Europe (UNECE) Statistical database (https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT__30-GE__03-WorkAndeconomy/017_en_GE_GPG2_r.px).
Notes: Indices are estimated as gender wage gap in 2023 relative to gender wage gap in 2011 for all countries, except for Croatia, where the index is based on a share of early leavers in 2023 relative to 2013, and Ukraine, where the index is based on a share of early leavers in 2021 relative to 2011.

Measurement approaches vary across countries in the Danube Region, affecting data comparability. In EU Member States, the gender pay gap is calculated using differences in gross hourly earnings, which accounts for gender disparities in part-time work, working hours, and labour market participation patterns. In contrast, EU candidate countries

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such as Serbia, Ukraine, and the Republic of Moldova calculate the gap using monthly wage averages, which are less precise and may obscure differences driven by working time or employment status. As a result, comparing data across these two groups should be done cautiously. Moreover, due to data limitations, no estimates are available for Bosnia and Herzegovina and Montenegro.

Among EU Member States in the Danube Region, the average gender pay gap decreased by 21%, slightly below the EU-27 average reduction of 25% over the same period. The strongest improvement occurred in Romania, where the gap declined from 9.6% to 3.8%, representing a 60% decrease. Austria and Czechia followed with reductions of 22% and 20%, respectively. These gains are generally linked to structural shifts in wage-setting institutions, rising female educational attainment, and targeted equality measures. However, Slovenia experienced a notable reversal, with the gap increasing by 56%, from 3.3% to 5.4%. Despite Slovenia's relatively strong legacy of gender equality and collective bargaining, this reversal may reflect a growing polarisation in earnings between high-skilled men and women, as well as the disproportionate concentration of women in lower-paid service sectors that have experienced wage stagnation relative to higher-paying industries.[76]

Country-level differences reflect a combination of institutional, cultural, and economic factors. In countries with highly gender-segregated labour markets or high concentrations of women in low-paid sectors such as health, education, and retail, the wage gap tends to be larger or more persistent. Cultural expectations surrounding women's roles in caregiving and family life, particularly in more traditional or conservative contexts, can reduce women's full-time labour market participation, which in turn affects their earnings trajectories. These effects are compounded in settings where part-time work is prevalent but not accompanied by proportionate pay or promotion opportunities. Wage-setting mechanisms and collective bargaining also influence pay disparities. Countries with stronger collective agreements and compressed wage structures, such as Austria or Slovenia, often exhibit lower gender pay gaps, though, as seen in Slovenia, this is not guaranteed in the face of sectoral change or shifting wage dynamics. Additionally, the presence and capacity of gender equality bodies, labour inspectorates, and monitoring institutions vary significantly across the region, affecting how effectively pay equity is assessed and enforced.[77]

In EU candidate countries, the overall trend was more uneven. The average decline was marginal, at just 4%. Serbia saw a rise in the gender pay gap from 8.9% to 14.0%, amounting to a 57% increase. The Republic of Moldova reported a 28% increase, while

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[76] For more detailed analysis, refer to Křížková A., Kanjuo-Mrčela, A., Poje, A., & Penner, A. M. (2025). Strong Gender Contract, Weak Institutions: Gender Pay Gap in Slovenia and Czechia. *Social Politics: International Studies in Gender, State & Society*, 32(1), 174-197.

[77] https://www.oecd.org/en/publications/the-pursuit-of-gender-equality$_9$789264281318 $- en.html$

Ukraine achieved a reduction of 26%. These shifts occurred in the context of already relatively low initial wage gaps, suggesting that volatility may partly reflect changes in sectoral wage structures, informal employment dynamics, or methodological differences in wage data reporting. In candidate countries, where labour markets are often more informal and institutional enforcement of equality provisions is less robust, wage disparities may also be shaped by unobserved factors such as underreporting of part-time work, low union coverage, or weak integration of gender equality principles into wage-setting processes.[78]

4.2 People at Risk of Poverty

Reducing poverty and social exclusion is a core objective of the European Union and a key concern of *Priority Area 9 (People and Skills)* of the *EU Strategy for the Danube Region (EUSDR)*. The EU has committed, under the *European Pillar of Social Rights* and the *2030 Social Target*, to lifting at least 15 million people out of poverty or social exclusion. This goal is supported through initiatives such as the *European Social Fund Plus (ESF+)* and the *European Semester*, which coordinates Member States' economic, employment, and social policies. For EU candidate countries, comparable policy guidance and monitoring are provided through the *Economic Reform Programmes (ERPs)* and the *EU Economic and Financial Dialogue with the Western Balkans and Türkiye*, which promote macroeconomic stability, employment, and social inclusion in line with EU priorities.[79]

The indicator on people at risk of poverty measures the share of the population living below 60% of the national median income, capturing both relative income deprivation and social vulnerability. In the Danube Region, risk of poverty measures reflect deep structural differences in labour markets, income distribution, and the reach of welfare systems. In several EU candidate countries, such as the Republic of Moldova, Serbia, and Ukraine, poverty is compounded by limited access to social transfers and essential services, making inclusive growth and targeted social investment crucial for fostering social cohesion and resilience.

Households whose equivalised disposable income falls below 60% of the national median are classified as being at risk of poverty. This indicator does not measure absolute poverty but instead identifies individuals with significantly lower income relative to oth-

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[78]For further analysis, refer to `https://commission.europa.eu/system/files/2023-04/annual_report_GE_2023_web_EN.pdf`

[79]For details, see European Commission (2024), *European Semester Overview*, available at: `https://employment-social-affairs.ec.europa.eu/policies-and-activities/coordination-employment-and-social-policies/european-semester_en`.

Figure 4.2: Share of people at risk of poverty from 2011 to 2024 and the index change in the proportion of people at risk of poverty across countries
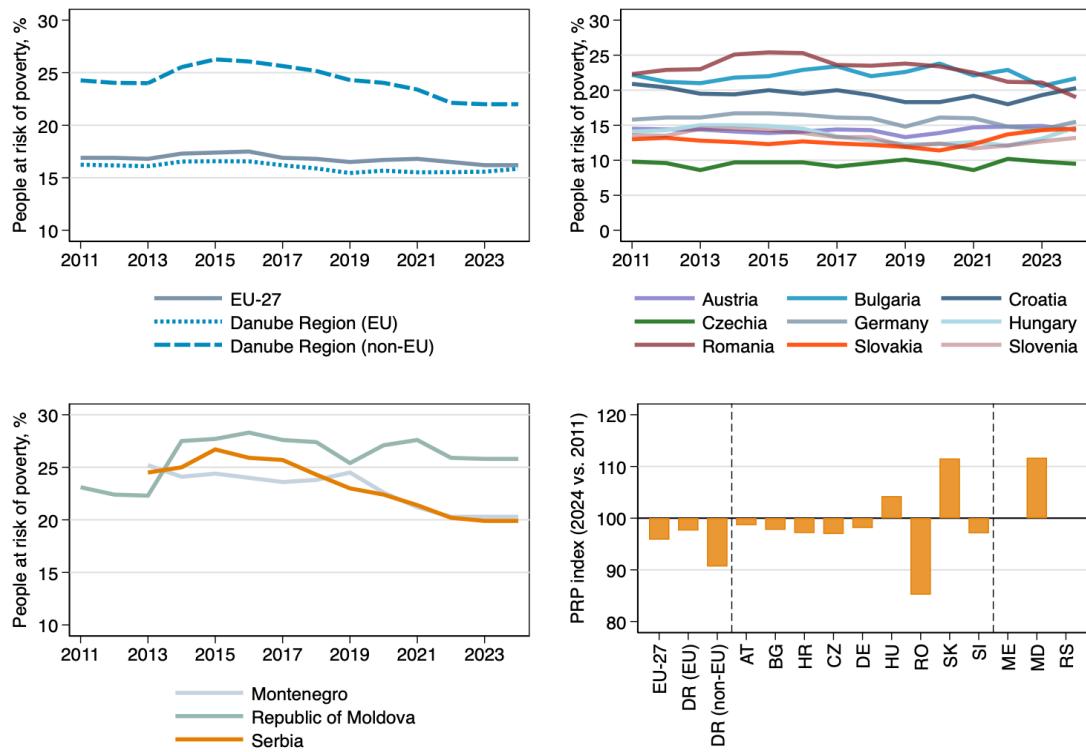
Source: For all countries except the Republic of Moldova – Eurostat segment *ilc_li02*. For the Republic of Moldova – *enpe_ilc_li09*.
Notes: Indices are estimated as a share of people at the risk of poverty in 2024 relative to a share of people at the risk of poverty in 2011.

Figure 4.3: People at risk of poverty indices by gender across countries
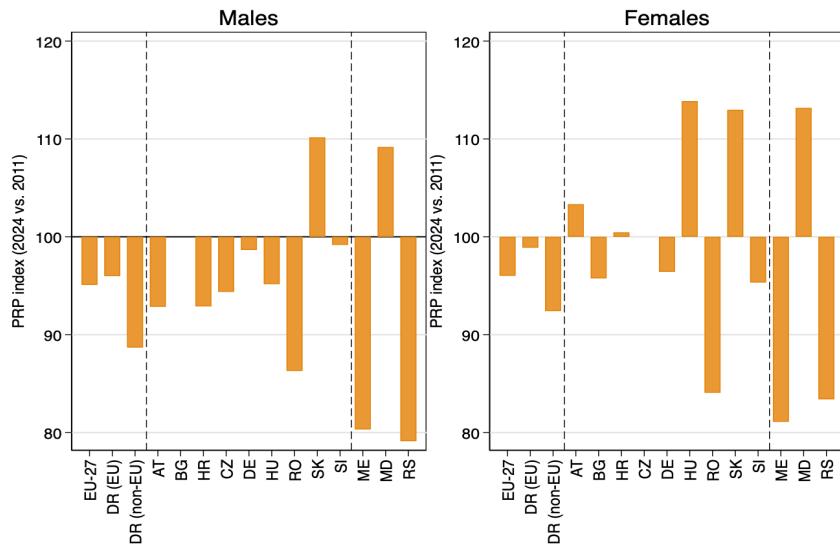
Source: For all countries except the Republic of Moldova – Eurostat segment *ilc_li02*. For the Republic of Moldova – *enpe_ilc_li09*.
Notes: Indices are estimated as a share of people at the risk of poverty in 2024 relative to a share of people at the risk of poverty in 2011.

ers in their country. As such, it captures the extent of income inequality and economic vulnerability, providing important insights into social exclusion and disparities in living standards.

A striking pattern emerging from Figure 4.2 is the persistent divide in the proportion of people at risk of poverty between the EU Member States and EU candidate countries of the Danube Region. In 2024, the average risk of poverty stood at 15.8% for the EU Danube countries, compared to 22% for the EU candidate countries. This divide has remained stable throughout the period under review, reflecting broader socio-economic inequalities and a lack of convergence in social cohesion and economic security across the region. Within the EU Member States, dynamics were mixed: Hungary and Slovakia recorded increases of 4.3% and 11.5% respectively, while other countries experienced gradual declines, most notably Romania, where the share of individuals at risk of poverty dropped by 14.8%. Among EU candidate countries, Montenegro and Serbia made notable progress, with poverty risk declining by 19.4% and 18.8% respectively. By contrast, the Republic of Moldova saw a sharp increase of 11.7%.

These EU/non-EU differences reflect deeper institutional and structural divergences. EU Member States typically benefit from stronger social protection systems, more established welfare institutions, and broader access to redistributive instruments supported by EU cohesion funds and the European Social Fund Plus (ESF+). In contrast, EU candidate countries often face constraints in delivering targeted social transfers, partly due to limited fiscal capacity, underdeveloped public administration, and weaker labour market institutions. Moreover, informality in employment is more widespread in the candidate countries, diminishing access to contributory benefits and amplifying the risk of poverty, especially during periods of economic disruption.[80] The absence of comprehensive poverty reduction strategies, together with less robust monitoring and enforcement mechanisms, further limits the effectiveness of anti-poverty policies in these contexts.

Among those at risk of poverty, women consistently represent a larger share across most Danube Region countries. Moreover, poverty dynamics have generally been less favourable for women than for men (see Figure 4.3). This is particularly evident in the unequal pace of improvement: between 2011 and 2024, the decline in poverty risk for men was approximately twice that for women in both EU Member States and candidate countries. In some cases, the risk of poverty among women actually rose significantly, by 13.9% in Hungary, 13.2% in Slovakia, and 13.0% in the Republic of Moldova. These disparities point to entrenched structural inequalities that disproportionately affect women, particularly in single-adult households or in families with dependent children.

The persistent gender gap in poverty rates is driven by a constellation of factors.

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[80]https://www.eurofound.europa.eu/en/publications/2024/young-people-western-balkans

Labour market segmentation plays a central role: women are overrepresented in low-paid sectors such as education, care, and retail, and are more likely to hold part-time, informal, or precarious jobs. These employment patterns limit women's earnings and reduce their access to social insurance and pensions. In many Danube countries, the "motherhood penalty" further constrains women's economic participation, as caregiving responsibilities continue to fall disproportionately on women, especially in the absence of affordable childcare and flexible working arrangements.[81] Institutional differences further exacerbate these patterns. In countries with limited social services and weak family support systems, especially among the EU candidate countries, there is insufficient protection against income loss due to caregiving or single parenthood.[82] Meanwhile, in countries with more comprehensive family policies and gender-sensitive welfare provisions (such as Austria or Slovenia), women tend to fare better, though challenges still persist, particularly among older women or those in rural areas.

4.3   Inequality of Income Distribution

Reducing income inequality is a key component of inclusive and sustainable development and is explicitly addressed in the EU's strategic social policy frameworks, including the *European Pillar of Social Rights* and the 2030 Social Target on poverty and social exclusion.[83] Within the context of the *EU Strategy for the Danube Region (EUSDR) Priority Area 9 (People and Skills)*, addressing income disparities is critical to strengthening social cohesion, promoting upward social mobility, and ensuring equal opportunities across all territories and population groups. Persistent or rising income inequality can undermine the effectiveness of education, labour market, and social inclusion policies, and may hinder the transition towards greener and more resilient economies by marginalising already vulnerable communities.

Income inequality reflects the uneven distribution of income across a population, indicating the extent to which earnings are polarised. Elevated income inequality is associated with limited social mobility, reduced trust in institutions, and slower long-term economic growth.[84] In the Danube Region, it can reflect disparities between urban and rural areas, differences in labour market structures, and varying degrees of access to quality public services and redistributive mechanisms. Measuring and understanding income inequal-

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[81]European Parliament (2022), *Reducing inequalities with a special focus on child poverty*, `https://www.europarl.europa.eu/doceo/document/TA-9-2022-0274_EN.html`

[82]For more detailed overview of the situation of single parents across the EU, refer to `https://www.europarl.europa.eu/RegData/etudes/STUD/2020/659870/IPOL_STU%282020%29659870%28SUM01%29_EN.pdf`

[83]`https://op.europa.eu/webpub/empl/european-pillar-of-social-rights/en/`

[84]`https://www.oecd.org/en/publications/in-it-together-why-less-inequality-benefits-all_9789264235120-en.html`

Figure 4.4: Inequality of income distribution - quantile share ratio from 2011 to 2024 and the index change in the ratio across countries
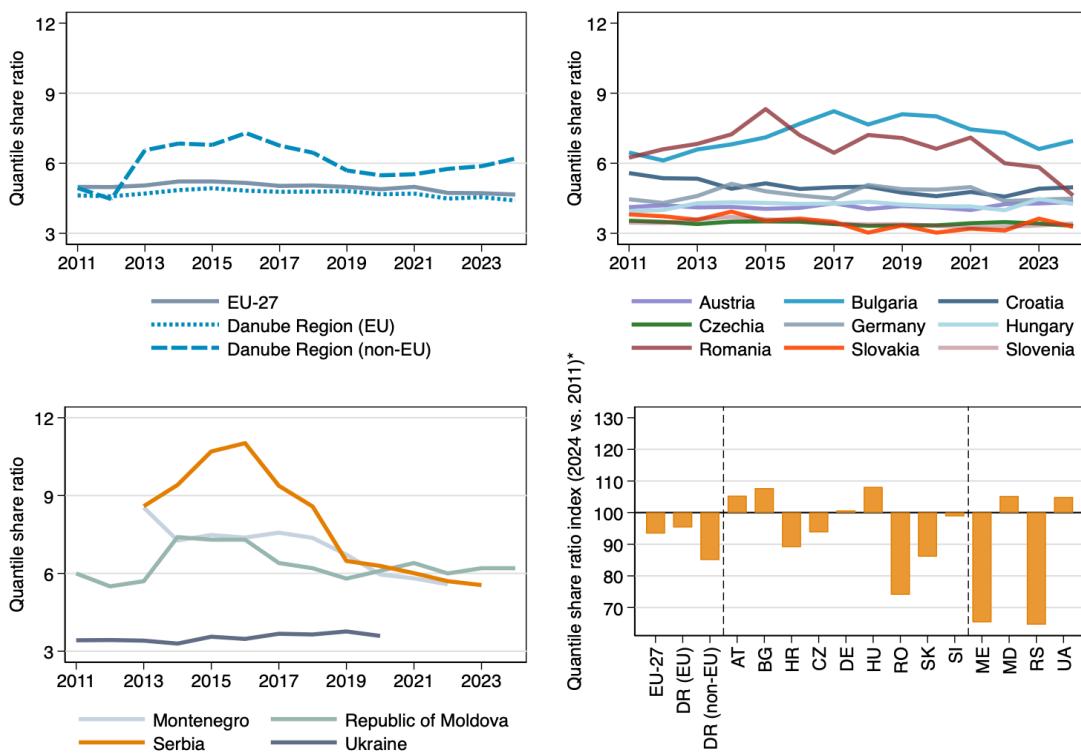
Source: EU Member States, Montenegro and Serbia – Eurostat segment *ilc_di11*. Republic of Moldova and Ukraine – World Bank Database, World Development Indicators (`https://databank.worldbank.org/reports.aspx?source=2&series=SI.DST.05TH.20`).

Notes: Indices are estimated as quantile share ratio in 2024 relative to quantile share ratio in 2011 for all countries, except for Montenegro and Republic of Moldova, where the index is based on quantile share ratio in 2022 relative to 2013, Serbia and Ukraine, where the index is based on, respectively, comparison of quantile share ratio in 2023 relative to 2013 and in 2020 relative to 2011.

ity is therefore essential for designing equitable social and economic policies tailored to regional and national contexts.

Two common measures are typically used to assess income inequality – the quantile share ratio (QSR) Gini coefficient. The QSR is calculated as the ratio of total disposable income received by the top 20% of the population (the highest income quintile) to that received by the bottom 20% (the lowest income quintile). This indicator reflects how many years an individual in the lowest income quintile would need to work to earn what the top quintile earns in a single year. The Gini coefficient quantifies how far a country's income distribution deviates from perfect equality: a Gini index of 0 indicates perfect equality, while a value of 1 (or 100% when expressed as a percentage) indicates maximum inequality.

Figure 4.4 shows the evolution of the quantile share ratio across countries of the Danube Region. Two key observations stand out. First, absolute levels of income inequality vary considerably across the region. Among EU Member States, Bulgaria and Romania consistently record higher QSR values than their regional peers, indicating a

Figure 4.5: Inequality of income distribution - quantile share ratio indices by gender across countries

more polarised income distribution. In contrast, Czechia, Slovakia, and Slovenia maintain comparatively low levels of income inequality, suggesting the presence of stronger redistributive mechanisms and more inclusive labour market structures. Among the EU candidate countries, Montenegro and Serbia exhibited notably high inequality during 2013–2015. However, both countries achieved significant reductions throughout the observation period, pointing to some progress in narrowing disparities.

Second, the trend in income inequality between 2011 and 2024 reveals diverging national trajectories. Notable declines in inequality were observed in Romania (-30.0%), Croatia (-10.9%), Slovakia (-13.9%), and Czechia (-6.2%). These reductions may be attributed to increased minimum wages, pension reforms, and income support measures targeted at low-income households. On the other hand, inequality increased in Austria (by 5.3%), Bulgaria (by 7.7%), and Hungary (by 8.1%). These upward trends may reflect shifts in wage dynamics, declining union coverage, or insufficient tax-benefit progressivity.[85]

The gender dimension of income inequality also reveals important differences. As shown in Figure 4.5, the change in QSR between 2011 and 2024 varied substantially by gender. In Bulgaria, income equality improved significantly for men (-16%), while women saw only a marginal increase in inequality (under 1%). This suggests that male-headed

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[85]For Hungary, refer to `https://www.oecd.org/economy/hungary-economic-snapshot/`. For Bulgaria, refer to the World Bank's 2023 report on shared prosperity `https://documents1.worldbank.org/curated/en/099720005242325527/pdf/IDU0fa6d3b210222704e16093e008add24833ea3.pdf`.

Figure 4.6: Inequality of income distribution - Gini index from 2011 to 2022 and the index change in Gini across countries
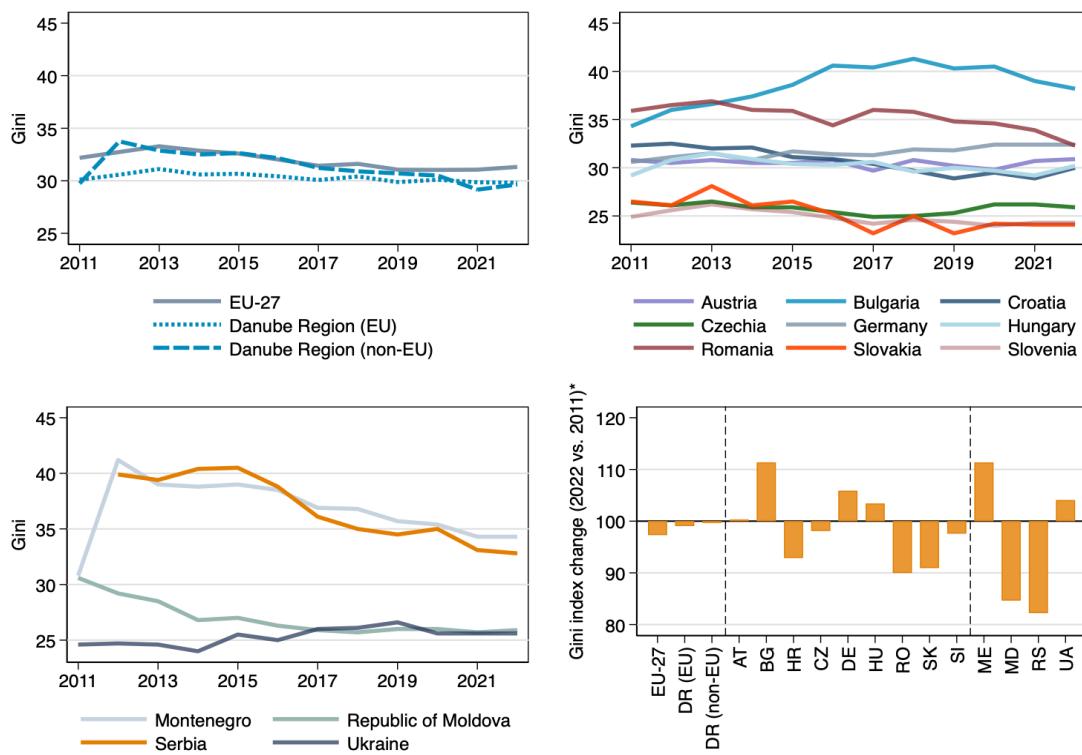
Source: World Bank Database, World Development Indicators (`https://databank.worldbank.org/reports.aspx?source=2&series=SI.DST.05TH.20`).
Notes: Indices are estimated as Gini in 2022 relative to Gini in 2011 for all countries, except for Serbia, where the index is estimated as Gini in 2022 relative to 2012.

households may have benefited more from labour market gains or redistributive policies. In Germany and Hungary, the opposite trend occurred, as income inequality increased more among women, pointing to persistent gender pay gaps and unequal access to stable, well-paid employment.

Rising QSR values and persistent gender gaps are often rooted in structural labour market inequalities. Women across the Danube Region continue to be overrepresented in lower-paid sectors and underrepresented in managerial roles, resulting in slower income growth. Occupational segregation, unequal access to full-time work, and motherhood-related career interruptions further widen these gaps. Additionally, social protection systems in some countries provide limited compensation for caregiving responsibilities or fail to account for gender-specific risks such as single parenthood or longer life expectancy. Furthermore, countries with stronger collective bargaining coverage, inclusive parental leave schemes, and well-funded public childcare services tend to exhibit lower gender gaps in income distribution.[86]

Figure 4.6 presents the evolution of the Gini index across the Danube Region countries.

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[86]`https://eige.europa.eu/gender-equality-index/2022/compare-countries`

Broadly speaking, the dynamics and cross-country variation in Gini coefficients reinforce and complement the patterns observed in the quantile share ratio (QSR), with both indicators pointing to persistent disparities in income distribution across the region. The most substantial increases in income inequality between 2011 and 2022 were observed in Bulgaria, where the Gini index rose from 35.7% to 38.2%, and in Montenegro, from 28.9% to 34.3%. These trends are consistent with the QSR data, which also recorded growing income polarisation in Bulgaria during this period. In contrast, Romania registered a pronounced decline in inequality, with its Gini coefficient falling from 35.5% to 25.9%, closely aligned with its 30% reduction in QSR. Similarly, both the Republic of Moldova and Serbia experienced notable reductions in their Gini indices, from 32.1% to 25.9% and from 39.9% to 32.8%, respectively, mirroring downward trends in their quantile share ratios over the same period.

These shifts highlight the interplay between labour market conditions, redistributive policies, and institutional effectiveness in shaping inequality outcomes. In countries such as Romania and Serbia, falling Gini values and QSRs suggest the impact of more progressive tax-benefit systems, expanded minimum wage policies, and targeted income support measures. Conversely, the rise in inequality in Bulgaria and Montenegro may reflect weak wage growth for lower-income groups, limited redistributive capacity, or structural factors such as high informality and low labour force participation among disadvantaged populations.[87]

4.4 Performance in Basic Competences

Equipping young people with strong foundational skills in mathematics, reading, and science is a cornerstone of inclusive and future-oriented education systems. Proficiency in these domains is essential not only for academic success, but also for employability, civic participation, and lifelong learning. Within the EU policy framework, improving basic competences is a key objective of the European Education Area and closely aligned with Priority Area 9 (People and Skills) of the EU Strategy for the Danube Region. It is also central to achieving the European Pillar of Social Rights, which calls for quality and inclusive education and training at all levels.[88]

This section draws on data from the Programme for International Student Assessment (PISA), an internationally standardised assessment conducted every three years by the OECD to evaluate the ability of 15-year-olds to apply their knowledge and skills in real-world contexts. PISA provides robust, comparable measures of student performance in

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[87]https://op.europa.eu/webpub/empl/esde-2023/
[88]https://education.ec.europa.eu/focus-topics/improving-quality/inclusive-education

mathematics, reading, and science across countries. For the present analysis, data from the 2012, 2015, 2018, and 2022 assessment cycles are used to track changes in educational outcomes over the past decade. Coverage includes all Danube Region countries except Bosnia and Herzegovina. For the Republic of Moldova, data are available from 2015 onward, while for Ukraine, only the 2018 and 2022 waves are included due to data limitations.

Figure 4.7: Change in the share of low-achieving students in mathematics, reading and science by gender across countries (PISA 2022 relative to PISA 2012; for the Republic of Moldova PISA 2022 relative to PISA 2015)

The share of low-achieving 15-year-old students should be no more than 15% by 2030, according to the *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*. However, all Danube Region countries have experienced an increase in the share of low-achieving students across all domains over the past decade. The extent of this deterioration varies by country, with EU Member States in the Danube Region showing the most marked rise between 2012 and 2022: an increase of 22.1% in mathematics, 28.6% in read-

Figure 4.8: Gaps in test performance by gender, migration status and socio-economic status across countries, PISA 2022
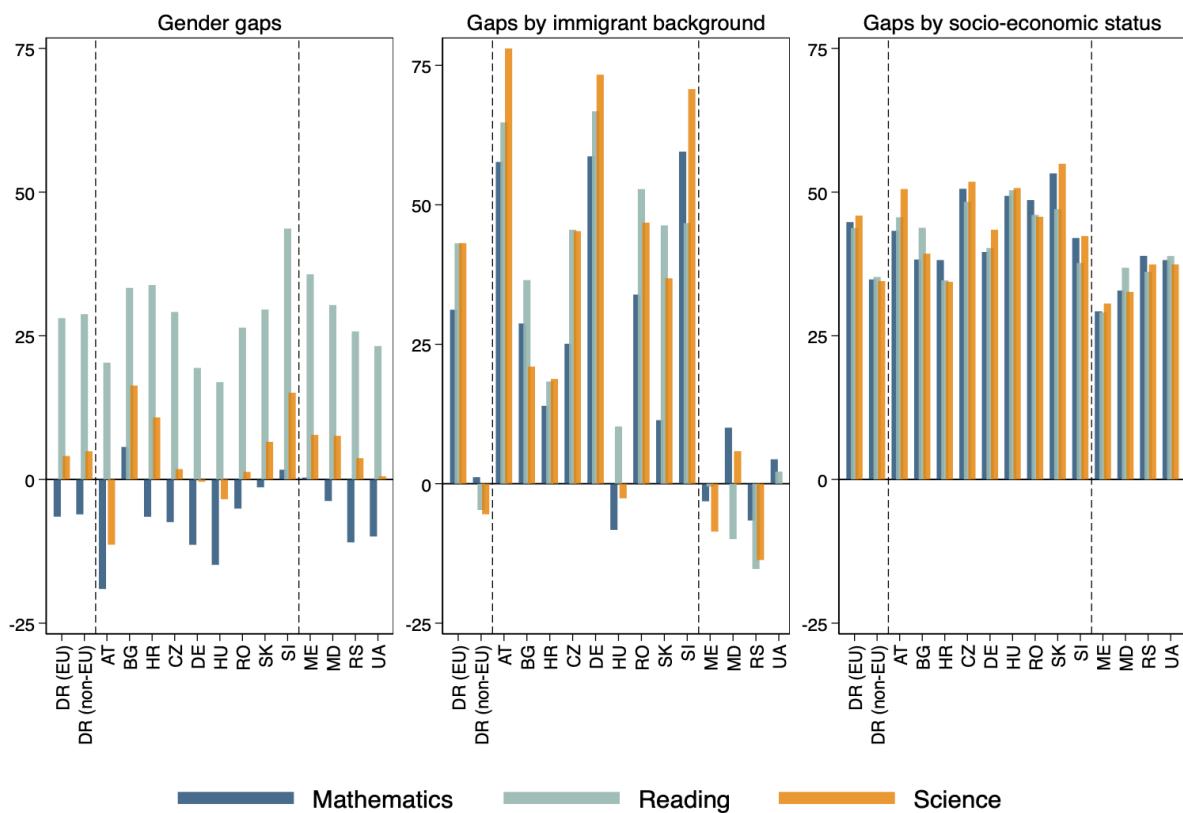
Source: OECD PISA 2015: `https://www.oecd-ilibrary.org/education/pisa-2015-results-volume-i/pisa-2015-data_9789264266490-14-en`.
OECD PISA 2018: `https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-ii_b9935c8e-en`.
Notes: Gaps are measures in test score points. Gender gap is a difference between female and male average scores. Migration status gap is a difference between average scores of non-immigrant and immigrants. Socio-economic gap is score difference adjusted by ESCS status.

ing, and 31.4% in science, compared to respective increases of 5.1%, 17.2%, and 0.1% in the Region's EU candidate countries. This sharp rise in the EU Member States is largely driven by Austria and Germany, where the shares of low-achieving students have increased by 33.1% and 66.7% respectively in mathematics, 29.7% and 75.9% in reading, and 43.7% and 87.7% in science. These alarming increases in low-achieving 15-year-olds suggest that most Danube Region countries are diverging further from the ET2030 benchmark of under 15% by 2030, potentially undermining their capacity to adapt to evolving labour markets and technological change. According to the OECD's PISA2022 framework, maintaining proficiency above Level2 in reading, mathematics, and science is critical for adolescents to function effectively in modern societies[89].

Differences in test scores were evident across gender, migration status[90] and socio-

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[89]`https://www.oecd.org/en/publications/pisa-2022-results-volume-i_53f23881-en.html`

[90]A PISA participant is classified as an immigrant student if they are a first-generation immigrant (foreign-born students whose parents are also both foreign-born) or a second-generation immigrant (stu-

economic background (see Figure 4.8).

In 2022, girls consistently outperformed boys in reading across the Danube Region and also achieved higher scores in science in all countries except Austria, Germany, and Hungary, with the reading gap reaching or exceeding 20 points. Boys, on the other hand, systematically outperformed girls in mathematics, with Bulgaria and Slovenia being the only exceptions. This pattern of gender gaps across test domains is consistent with earlier trends and therefore unsurprising. However, the gaps in mathematics and science are smaller in magnitude than those in reading, suggesting that closing the gender gap in mathematics and science may be more achievable than narrowing the substantial gap in reading. Austria stands out as the only country where boys outperformed girls in mathematics by an average of 20 points. In all other countries of the region, girls tended to score slightly lower than boys in mathematics, while the reading gaps remained large, indicating that boys continue to lag significantly behind girls in reading[91].

The impact of an immigrant background appears to be detrimental to test performance in the EU Member States of the Danube Region, whereas in the EU candidate countries of the region, the performance gaps by origin are negligible. Among the EU countries, non-immigrant students consistently performed better than their immigrant peers across all domains, with the sole exception of Hungary. The largest gaps were observed in Austria, Germany and Slovenia, where mathematics gaps reached or exceeded 60 test score points and science gaps were at or above 70 points. Croatia recorded the smallest gaps across all three domains. These findings suggest that students with an immigrant background are particularly vulnerable and may require additional support and guidance to address potential language and cultural barriers, as well as challenges integrating into the school community. This is especially relevant for students who have arrived in their host country relatively recently.[92].

Students from more favourable socio-economic backgrounds performed significantly better across all domains and in every country without exception. On average, students from higher socio-economic backgrounds in the EU Member States of the Danube Region scored around 45 points higher than those from lower socio-economic groups, while in the EU candidate countries, this difference averaged approximately 35 points across all three domains. Therefore, socio-economic status remains the strongest and most per-

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dents born in the country or economy where they took the PISA test, but whose parents are both foreign-born).

[91]The role of early gender gaps in interests, self-concept, and relative strengths between reading and maths is analysed in Stoet, G., Geary, D. C. (2018). The gender-equality paradox in science, technology, engineering, and mathematics education. *Psychological science*, 29(4), 581-593.

[92]The role of institutional features of national education systems, such as early tracking or language support, in shaping the size of immigrant-native achievement gaps is examined in Borgna, C., & Contini, D. (2014). Migrant achievement penalties in Western Europe: Do educational systems matter? *European Sociological Review*, 30(5), 670–683.

sistent predictor of test performance and carries substantial policy relevance. Students from lower socio-economic groups require targeted support, including equitable access to study materials, equal opportunities, and fair treatment. Addressing these challenges will enhance the performance of adolescents from disadvantaged backgrounds by improving educational opportunities and strengthening their motivation to learn.[93]

Despite variations in outcomes, these trends reflect shared systemic challenges across the Danube Region. The decline in performance observed in several EU Member States may be linked to a combination of resource and quality factors. In some countries, ageing school infrastructure and limited investment in digital and learning environments have constrained the effective implementation of modern pedagogical approaches and digital skills training, both of which are increasingly relevant for PISA assessments.[94] Teacher shortages, especially in STEM subjects and rural areas, have further undermined instructional quality and continuity, while slow curriculum adaptation to evolving competency-based standards has limited students' exposure to higher-order analytical and problem-solving skills tested in PISA.

In contrast, relatively more stable or improving trajectories in several EU candidate countries may reflect the impact of targeted international support, including EU- and UNICEF-funded education quality programmes, as well as smaller or more selective test populations at earlier stages of expansion in national education systems. National and regional variations in tracking policies, vocational orientation, and teacher autonomy continue to influence how students from diverse backgrounds engage with learning and achieve proficiency, underscoring the importance of equitable resource allocation and sustained teacher development across the region.

4.5 Life-Long Learning

Promoting life-long learning (LLL) is central to the European Union's vision of building resilient, inclusive, and knowledge-based societies. As outlined in the *European Pillar of Social Rights* and further reinforced through the *European Education Area and the EU Skills Agenda*[95], access to continuous learning opportunities for adults is critical for

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[93]Improving education inclusiveness and equality is a central focus of both the EU and OECD research agendas and policy frameworks; see, for example, European Commission (2023), `https://op.europa.eu/en/publication-detail/-/publication/2d4c4524-8e68-11ee-8aa6-01aa75ed71a1` and OECD (2023), `https://www.oecd.org/en/publications/2023/01/equity-and-inclusion-in-education_e8cfc768.html`.

[94]OECD (2023), "PISA 2022 Results (Volume I): The State of Learning and Equity in Education", highlights that resource adequacy and the quality of learning environments are strongly associated with student performance in digitalised and problem-solving tasks. Available at: `https://www.oecd.org/en/publications/pisa-2022-results-volume-i_53f23881-en.html`.

[95]`https://ec.europa.eu/social/main.jsp?catId=1223&langId=en`

strengthening individual employability, enhancing social mobility, and supporting inclusive economic growth. *Priority Area 9 of the EU Strategy for the Danube Region (EUSDR)* highlights LLL as a strategic lever for adapting to demographic change, digital and green transitions, and widening skills gaps in a fast-evolving labour market.

The indicator used in this analysis reflects the share of individuals aged 25 to 64 who participated in education or training within the four weeks preceding the EU Labour Force Survey. It captures a broad spectrum of formal, non-formal, and informal learning activities undertaken for professional development, personal interest, or civic engagement. Life-long learning is not only essential for workers seeking to upskill or reskill in response to labour market changes. It is equally important for fostering active citizenship, social inclusion, and personal well-being across all age groups and population segments. In this context, monitoring LLL participation provides key insights into countries' capacities to promote adaptive learning systems and remove structural barriers to adult education.

Figure 4.9: The LLL - the share of individuals participating in education and training from 2011 to 2024 and the index change in LLL across countries for the population aged 25 to 64
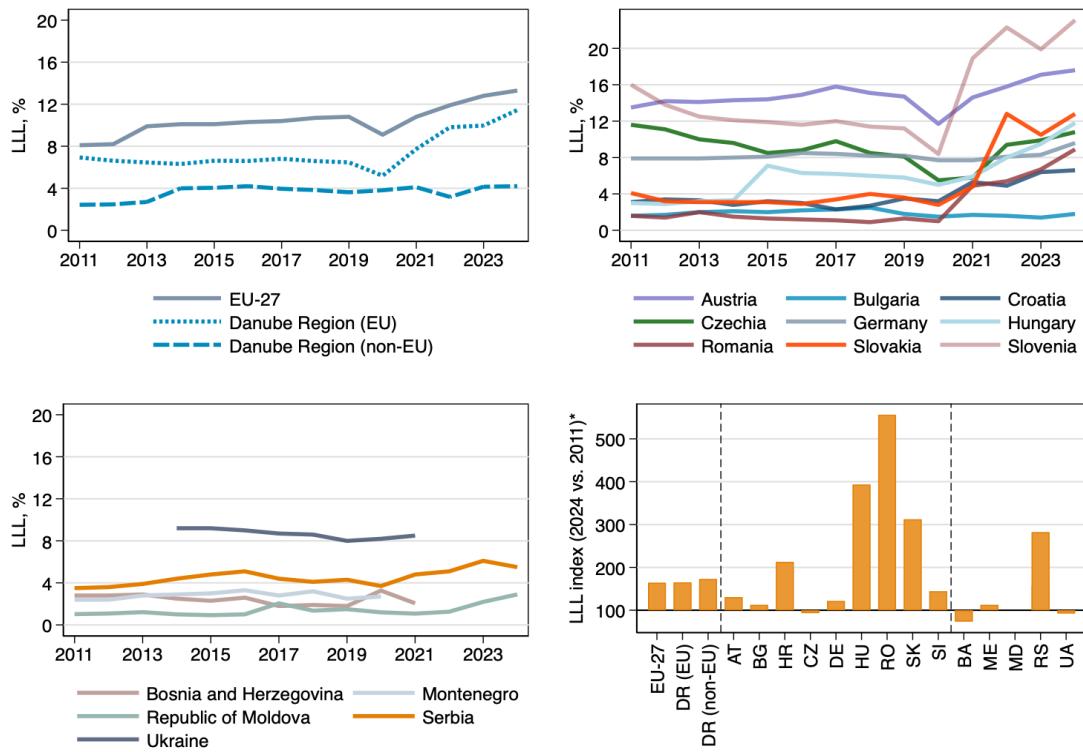
Source: EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*; German sub-regions - Eurostat segment *trng_lfse_04*.
Notes: Indices are estimated as LLL share in 2024 relative to LLL share in 2011 for all countries, except for Bosnia and Herzegovina, where the index is based on LLL share in 2021 relative to 2011, Montenegro and Ukraine, where the index is based on, respectively, comparison of LLL share in 2020 relative to 2011 and in 2021 relative to 2014.

According to the *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*, by 2030 at least 60% of adults aged between 25 and 64 should have participated in learning

Figure 4.10: The LLL - the share of individuals participating in education and training indices by gender across countries for the population aged 25 to 64
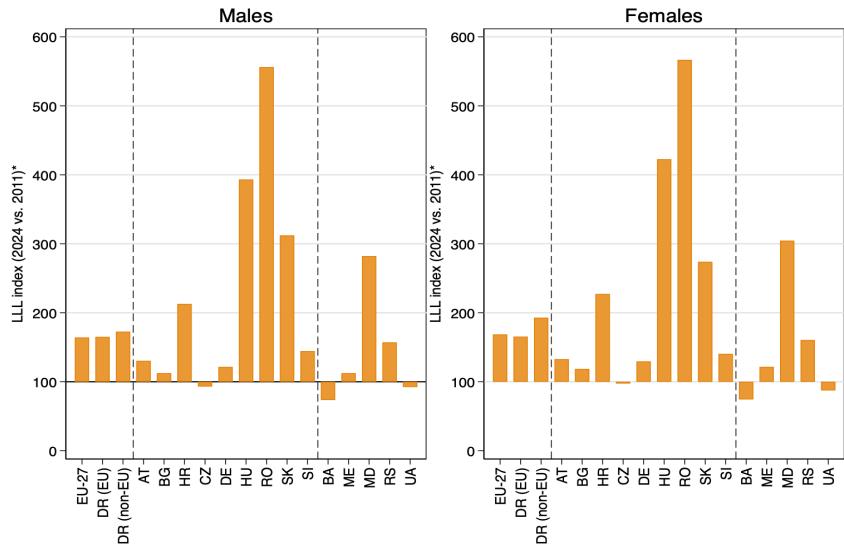
Source: EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*; German sub-regions - Eurostat segment *trng_lfse_04*.
Notes: Indices are estimated as LLL share in 2024 relative to LLL share in 2011 for all countries, except for Bosnia and Herzegovina, where the index is based on LLL share in 2021 relative to 2011, Montenegro and Ukraine, where the index is based on, respectively, comparison of LLL share in 2020 relative to 2011 and in 2021 relative to 2014. Both indices estimated separately for men and women.

Figure 4.11: The LLL - the share of individuals participating in education and training from 2011 to 2024 by age groups across countries for selected years
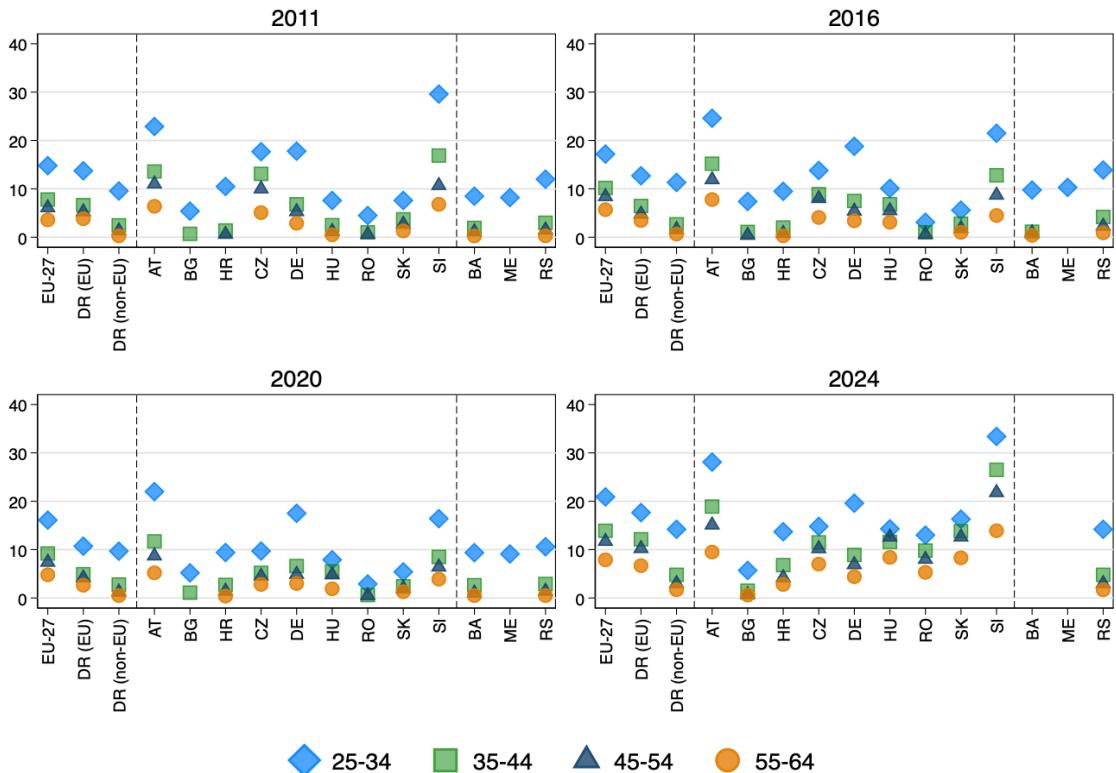
Source: EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*.

within the preceding 12 months.[96] However, the available data relate to life-long learning activities undertaken during the past four weeks only. Therefore, these figures can be compared solely to the 15% target set under the *European Cooperation in Education and Training (ET) 2020*[97].

Figure 4.9 presents the shares of the adult population participating in LLL activities and their evolution over the observation period. By 2024, only two Danube Region countries – Austria (17.6%) and Slovenia (23.1%) - had surpassed the 15% target originally set for 2020, while all other countries continued to fall short of this benchmark. Among the EU Member States of the Danube Region, the average LLL participation rate rose from 6.9% in 2011 to 11.4% in 2024, gradually approaching the EU-27 average of 13.3%. Substantial increases were recorded in Hungary and Romania, where participation rates rose more than fourfold and fivefold, respectively, and in Croatia and Slovakia, where the increases were approximately twofold and threefold.

In the EU candidate countries of the Danube Region, LLL participation remained considerably lower, averaging around 4.2% in 2024. Serbia stood out as the only candidate country to demonstrate steady and continuous growth over the period. These regional disparities reflect broader institutional and socioeconomic divides. EU Member States generally benefit from more developed adult education systems, stable funding mechanisms (such as the *European Social Fund Plus*), and stronger coordination between labour market actors. In contrast, in several EU candidate countries, limited infrastructure for adult learning, underfunded public education institutions, and weaker integration of non-formal learning pathways constrain access. For example, local initiatives in Serbia, such as the Second Chance Programme for adult basic education, have proven effective in supporting adult learners, particularly in rural or marginalised communities[98]. Montenegro and the Republic of Moldova have piloted small-scale community learning centres, but such efforts often lack the scale or institutional embedding necessary to drive system-wide change.

Figure 4.10 shows that no consistent gender differences were observed in the development of LLL rates between 2011 and 2024. The only notable exception was Slovakia, where male participation increased more significantly than that of women. In general, gender parity in LLL is more common in countries with well-developed adult learning systems and where gender equality is mainstreamed in employment and training policies. In other contexts, however, women's participation may be constrained by caregiving re-

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[96]https://op.europa.eu/webpub/eac/education-and-training-monitor/en/comparative-report/chapter-6.html

[97]For more information, see https://www.bmb.gv.at/en/Topics/euint/eea/et2020.html

[98]https://eaea.org/our-work/projects3/lse-database-good-practice-second-chance-systematic-development-functional-elementary-education-adults/

sponsibilities or lower employment rates, particularly among older age cohorts, reducing exposure to employer-provided learning opportunities[99].

Figure 4.11 disaggregates LLL participation by age group and confirms that participation is highest among adults aged 25 to 34 in all Danube Region countries. This trend is partly due to the continuation of formal education or engagement in initial vocational education and training. Participation steadily declines with age, with individuals over 55 significantly less likely to engage in LLL. This decline is attributed to multiple barriers, including a lack of tailored learning offers for older adults, employer reluctance to invest in upskilling ageing workers, and weaker digital literacy among older populations. Additionally, older individuals may perceive limited returns on investing in education late in their careers, especially where pension systems or employment cultures do not support later-life career transitions[100].

Digital transformation, changing labour market demands, and the green transition have also been key drivers, encouraging individuals and employers to invest more in continuous training and reskilling[101]. Despite these promising developments, significant challenges remain. Barriers such as unequal access to learning opportunities, financial constraints, lack of employer support, and low motivation among some adult learners continue to limit participation rates, particularly among older age groups and low-skilled workers[102]. Addressing these obstacles is essential to ensure that life-long learning fulfils its critical role in fostering social inclusion, economic resilience, and the capacity to adapt to an evolving world of work.

4.6 Early Leavers from Education and Training

Reducing early leaving is a key objective under the *EU's Strategic Framework for Education and Training*, as enshrined in the *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*. The framework sets a headline target of reducing the proportion of early leavers from education and training to below 9% by 2030 across the EU. This indicator is crucial as it captures the share of young people aged 18 to 24 who have completed at most lower secondary education and who are no longer participating in any form of formal education or training. Persistent early leaving not only signals missed opportunities

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[99]For more detailed analysis of adult learning trends and explanations, refer to `https://www.aarpinternational.org/File%20Library/llel/OECD-Retaining-talent-at-all-ages.pdf?utm_source=chatgpt.com`

[100]`https://www.cedefop.europa.eu/en/publications/3081`

[101]For more details on the importance of vocational education and training in light of technological change, see `https://www.cedefop.europa.eu/en/publications/9200`

[102]`https://www.cedefop.europa.eu/en/publications/3081`

for individual development but also limits future employability, skills adaptability, and social inclusion, particularly concerning in the context of the digital and green transitions, which demand increasingly advanced and flexible skillsets.

Monitoring trends in early leaving is particularly relevant for *Priority Area 9 (People and Skills) of the EUSDR*, which aims to enhance inclusive education systems and equitable learning opportunities for all. High rates of early leaving are often closely linked to structural inequalities, including socio-economic disadvantage, rural or regional marginalisation, weak school-to-work transitions, and insufficient support for at-risk learners. The availability and quality of vocational education and training (VET) options, career guidance systems, and remedial measures also play a central role in preventing disengagement from education. Addressing these challenges is essential for narrowing territorial and social disparities and ensuring that all young people in the Danube Region have the foundational competences and resilience to participate fully in society and the labour market.

Figure 4.12: Early leavers from education and training from 2011 to 2024 and the index change share of early leavers across countries for the population aged 18 to 24
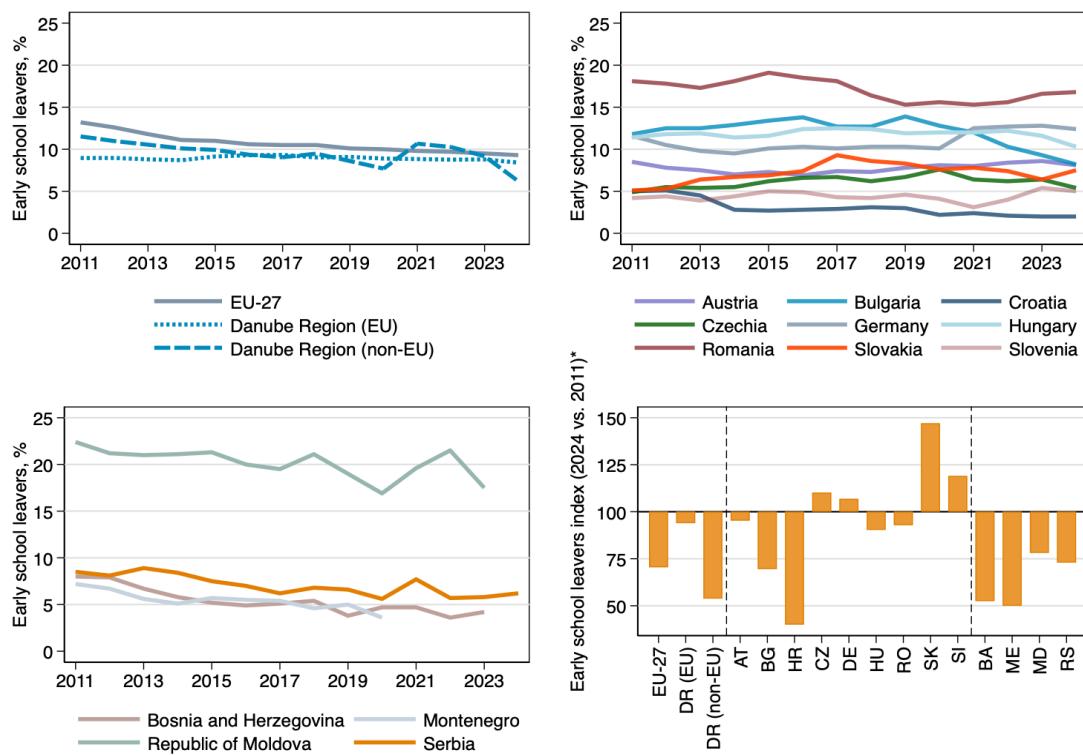
Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_02*; German sub-regions - Eurostat segment *edat_lfse_16*. Bosnia and Herzegovina - the national statistical office. Republic of Moldova - the national statistical office, internal code *gen021200mun*.
Notes: Indices are estimated as a share of early leavers in 2024 relative to a share of early leavers in 2011 for all countries, except for Bosnia and Herzegovina and Moldova, where the index is based on a share of early leavers in 2023 relative to 2011, and Montenegro, where the index is based on a share of early leavers in 2020 relative to 2011.

Figure 4.12 shows the shares of early leavers across the Danube Region. The first striking observation is the significant variation in the shares of early leavers, both within

Figure 4.13: Early leavers from education and training by gender across countries for the population aged 18 to 24
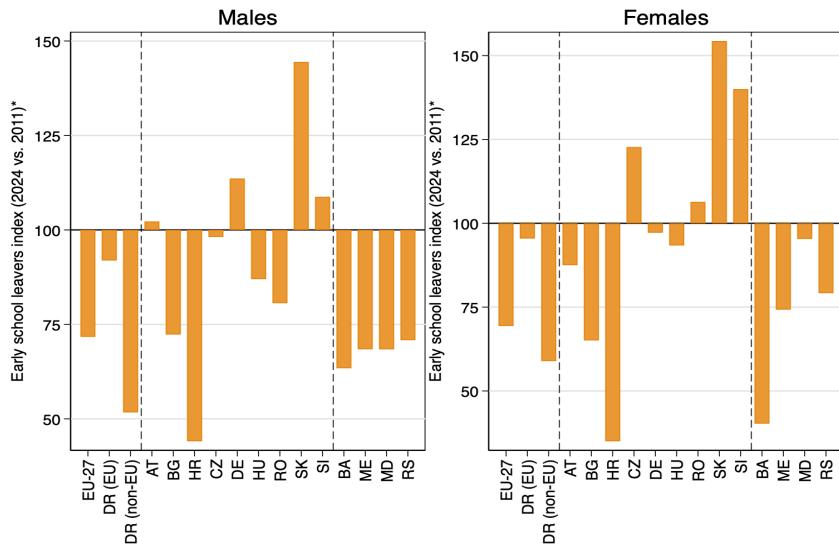
Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_02*; German sub-regions - Eurostat segment *edat_lfse_16*. Bosnia and Herzegovina - the national statistical office. Republic of Moldova - the national statistical office, internal code *gen021200mun*.
Notes: Indices are estimated as a share of early leavers in 2024 relative to a share of early leavers in 2011 for all countries, except for Bosnia and Herzegovina and Moldova, where the index is based on a share of early leavers in 2023 relative to 2011, and Montenegro, where the index is based on a share of early leavers in 2020 relative to 2011. Indices are estimated separately for men and women.

EU Member States and EU candidate countries of the region. Several EU Member States remained well above the target level in 2024, namely Germany (12.4%), Hungary (10.3%) and Romania (16.8%), while in Croatia, Czechia and Slovakia the share of early leavers has consistently remained well below the target level (2%, 5.4% and 5% respectively). In Bulgaria, the share of early leavers decreased by more than a quarter over the observation period, reaching 8.2% in 2024. Among the EU candidate countries of the Danube Region, a significant gap is evident, with the Republic of Moldova reporting the highest share of early leavers in the region overall (17.5% in 2023).

The trends in the share of early leavers between 2011 and 2024 varied considerably across the Danube Region. The proportion of those leaving education and training upon completing lower secondary education increased over this period in Czechia (by 10.2%), Germany (6.9%), Slovakia (47.1%) and Slovenia (19%). However, all of these countries, apart from Germany, still remained below the 9% target level, due to their overall low share of early leavers. All EU candidate countries in the Danube Region with available data, namely Bosnia and Herzegovina, Montenegro, the Republic of Moldova and Serbia, recorded sizeable decreases in the share of early leavers.

These diverging dynamics reflect differences in institutional capacity, education governance, and the design of early warning and intervention systems. Countries that have strengthened their vocational education and training (VET) systems, expanded access to second-chance education, and introduced targeted prevention strategies, such as school

counsellors or outreach initiatives, have generally succeeded in reducing early leaving rates.[103] Conversely, in countries where school-to-work transitions remain weak, and where regional disparities and poverty continue to limit access to upper-secondary education, early leaving tends to remain elevated. For instance, in Romania and the Republic of Moldova, rural students and Roma youth remain particularly vulnerable, due to both financial barriers and weak institutional support.[104] In Germany and Slovenia, increasing shares may reflect growing pressures on low-performing students to enter the labour market early or challenges in retaining newly arrived students with migrant backgrounds.

The gender differences in the trends of early leaving (see Figure 4.13) show that the overall increase in Czechia and Slovenia was driven by females, while in Germany it was driven by males. Furthermore, in Austria the share of early leavers decreased among females but increased among males, whereas the opposite was observed in Romania. These gender dynamics highlight the need for targeted measures within national education strategies to address gender-specific risks of early leaving. Such gaps may arise due to factors like gendered expectations in families and communities, differing labour market pressures, or varying levels of support for boys and girls in lower secondary education.

For instance, young women in rural areas or from minority communities may face stronger family pressures to assume caregiving or household roles, limiting their continuation in education.[105] Boys, on the other hand, may be more vulnerable to disengagement due to behavioural difficulties, peer influences or lower academic support. If left unaddressed, these patterns risk reinforcing longer-term gender inequalities in educational attainment, access to quality employment, and lifetime earnings.

4.7 Educational Equality

Ensuring equal access to quality education for all learners is a core objective of EU education policy and a central pillar of the *European Education Area*. Educational equality is closely tied to broader social equity and is fundamental for fostering inclusive growth, social cohesion, and upward mobility across the Danube Region. It reflects how effectively education systems mitigate, rather than reinforce, existing socio-economic inequalities.

This section focuses on two key indicators that assess the equity of educational outcomes. The first is the PISA Index of Economic, Social and Cultural Status (ESCS), which captures the extent to which students' socio-economic background influences their

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[103]https://www.cedefop.europa.eu/en/tools/vet-toolkit-tackling-early-leaving/intervention-approaches/second-chance-measures

[104]https://ec.europa.eu/eurostat/statistics-explained/index.php/Early_leavers_from_education_and_training

[105]https://www.europarl.europa.eu/RegData/etudes/STUD/2018/596819/IPOL_STU(2018)596819_EN.pdf

academic performance. The ESCS index is a composite measure constructed from several components: (i) the International Socio-Economic Index of Occupational Status; (ii) the highest level of parental education, expressed in years of schooling; (iii) the PISA index of family wealth; (iv) the PISA index of home educational resources; and (v) the PISA index of cultural possessions related to "classical" culture in the household. Together, these elements provide a robust proxy for students' socio-economic background and allow for cross-country comparison of how equitably education systems perform in the Danube Region.

Table 4.1: Education equality - ESCS index in mathematics in 2012, 2015, 2018 and 2022 for selected countries

Country	2012	2015	2018	2022	Index change (2012=100)
Austria	0.69	0.69	0.70	0.59	85.51
Bulgaria	0.38	0.46	0.44	0.32	84.21
Croatia	0.66	0.67	0.68	0.62	93.93
Czechia	0.67	0.63	0.66	0.57	85.07
Germany	0.71	0.74	0.69	0.58	81.69
Hungary	0.54	0.54	0.56	0.49	90.74
Romania	0.47	0.51	0.40	0.30	63.83
Slovakia	0.53	0.58	0.56	0.42	79.25
Slovenia	0.71	0.80	0.77	0.65	91.55
Montenegro	0.39	0.57	0.60	0.44	112.82
Serbia	0.59		0.60	0.54	92.60
Moldova		0.46	0.41	0.38	
Ukraine			0.54	0.49	

Table 4.1 presents the ESCS indices in mathematics for the years 2012, 2015, 2018, and 2022 for Danube Region countries with available data. The index captures the extent to which socio-economic background affects educational outcomes, with a value of 1 indicating perfect equality, where students' social background has no influence on performance. Conversely, values closer to 0 reflect a strong association between students' socio-economic status and their test scores, implying significant educational inequality.

The results confirm a persistent and, in many cases, widening impact of social background on student achievement across the Danube Region. In 2022, the lowest ESCS index values were recorded in Romania (0.30), Bulgaria (0.32), and the Republic of Moldova (0.38), signalling that students from disadvantaged socio-economic backgrounds in these countries face the steepest barriers to academic success. These values suggest that background factors account for a substantial proportion of the variation in mathematics performance, raising concerns over the equity and inclusiveness of these education systems.

Between 2012 and 2022, socio-economic disparities in student performance increased

significantly across most countries. Serbia and Romania experienced the sharpest declines in educational equality, with the ESCS index dropping by approximately 48% and 36%, respectively. Among EU Member States in the Danube Region, all countries registered a deterioration in equity, with declines exceeding 10% in Austria, Bulgaria, Czechia, Germany, Romania, and Slovakia.

These trends reflect a range of interrelated structural and policy factors. Increased social inequality, educational tracking at early stages, underinvestment in disadvantaged schools, and unequal access to high-quality teaching and learning resources are among the key contributors to worsening outcomes. Countries with selective education systems and limited compensatory mechanisms, such as targeted funding, remedial programmes, or inclusive pedagogies, tend to see stronger correlations between students' backgrounds and achievement. Furthermore, the COVID-19 pandemic exacerbated pre-existing inequalities, especially in low-income households with limited access to digital tools and learning support[106]. Without stronger policy efforts to level the playing field, these growing gaps risk deepening cycles of disadvantage and weakening social mobility across the Danube Region.

The second indicator of education equality focuses on gender differences in learning outcomes and complements the estimated gender gaps in PISA test scores shown in Figure 4.8. For this purpose, data from the TIMSS (Trends in International Mathematics and Science Study) survey were utilised for the years 2011, 2015, 2019, and 2023. TIMSS evaluates core competencies in mathematics and science through standardised assessments conducted among pupils in the fourth and eighth years of schooling. As PISA targets 15-year-old pupils, the analysis here concentrates on TIMSS results from the fourth year (typically pupils aged 9.5 years or younger) to provide a more nuanced view of how gender gaps in performance evolve from an early age. It should also be noted that data on eighth-year performance in mathematics are only partially available.

Figure 4.14 presents the gender gaps in mathematics among fourth-grade pupils. Three clear observations emerge. First, the average mathematics scores of fourth-graders have been gradually improving across the Danube Region during 2011-2023, with this trend observed in both EU Member States and EU candidate countries. This improvement likely reflects strengthened early childhood education frameworks, curriculum reforms, and investments in teacher training, which have enhanced foundational skills in maths and literacy.[107]

Second, boys consistently achieved higher scores in mathematics than girls across all countries and survey years. This indicates that the gendered performance patterns

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[106]https://education.ec.europa.eu/focus-topics/improving-quality

[107]https://blogs.worldbank.org/en/education/math-and-science-performance-students-europe-and-central-asia-lessons-top-performers

Figure 4.14: Performance in mathematics by gender across countries via the Trends in International Mathematics and Science Study (TIMSS) 2011, 2015, 2019 and 2023 for fourth-grade students
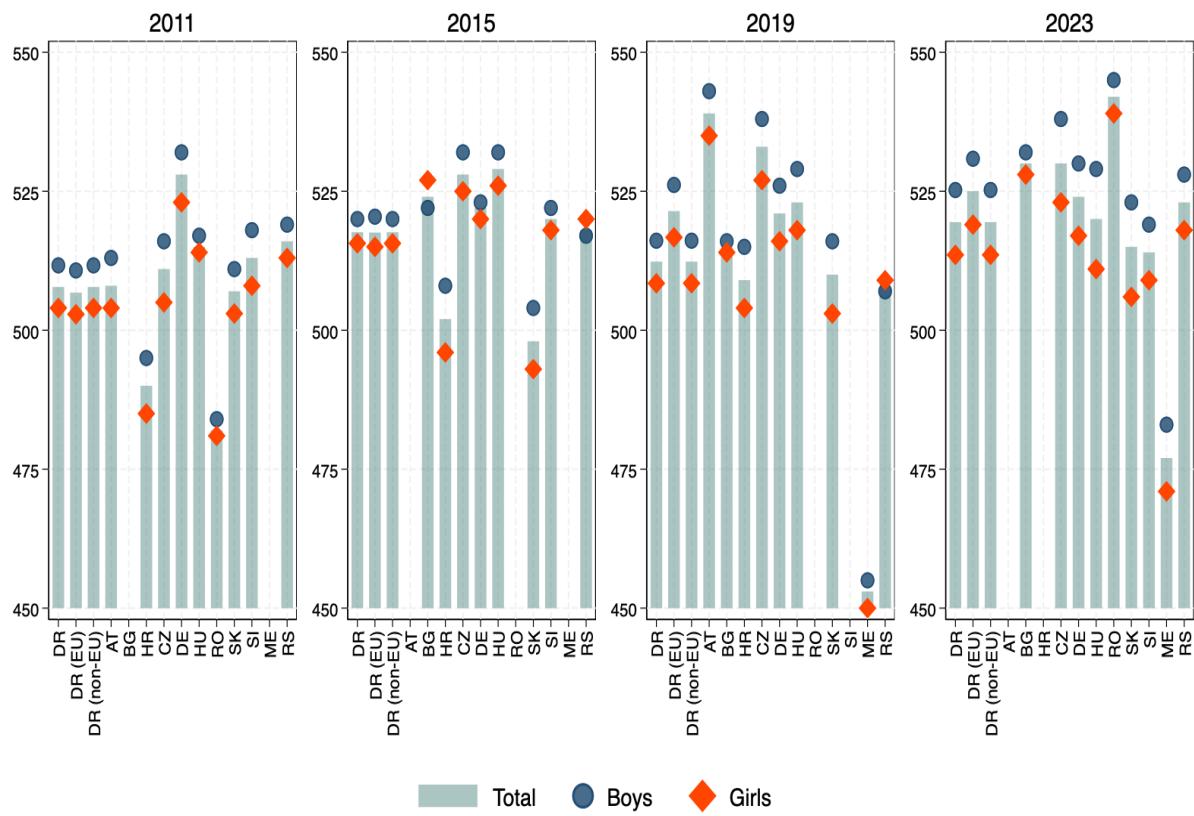
seen among 15-year-olds (Figure 4.8) already emerge by the end of lower primary school. These early disparities may stem from gendered socialisation, differences in self-efficacy in mathematics, or the influence of stereotypes, all of which can affect children's motivation, performance expectations and classroom participation from an early age.[108]

Third, the gender gap in mathematics has widened across the region over the past decade, indicating increasing disparities in foundational skills that are likely to persist and amplify with age. The most notable increases were recorded in Hungary, Romania, and Slovakia, but all countries in the Danube Region experienced a widening gender gap by 2023.

Figure 4.15 depicts gender differences in science performance. In 2011, boys outper-

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[108]For more elaborate anealysis on the drivers of gender disparities in mathematics scores, refer to Bikić, N., Buzaija, N., & Hrnjičić, A. (2024). The impact of early childhood education and mathematical abilities on student achievement: Analysis of TIMSS 2019. *International Electronic Journal of Mathematics Education, 19*(3), em0779

Figure 4.15: Performance in science by gender across countries in test score points via the TIMSS 2011, 2015, 2019 and 2023 for fourth-grade students
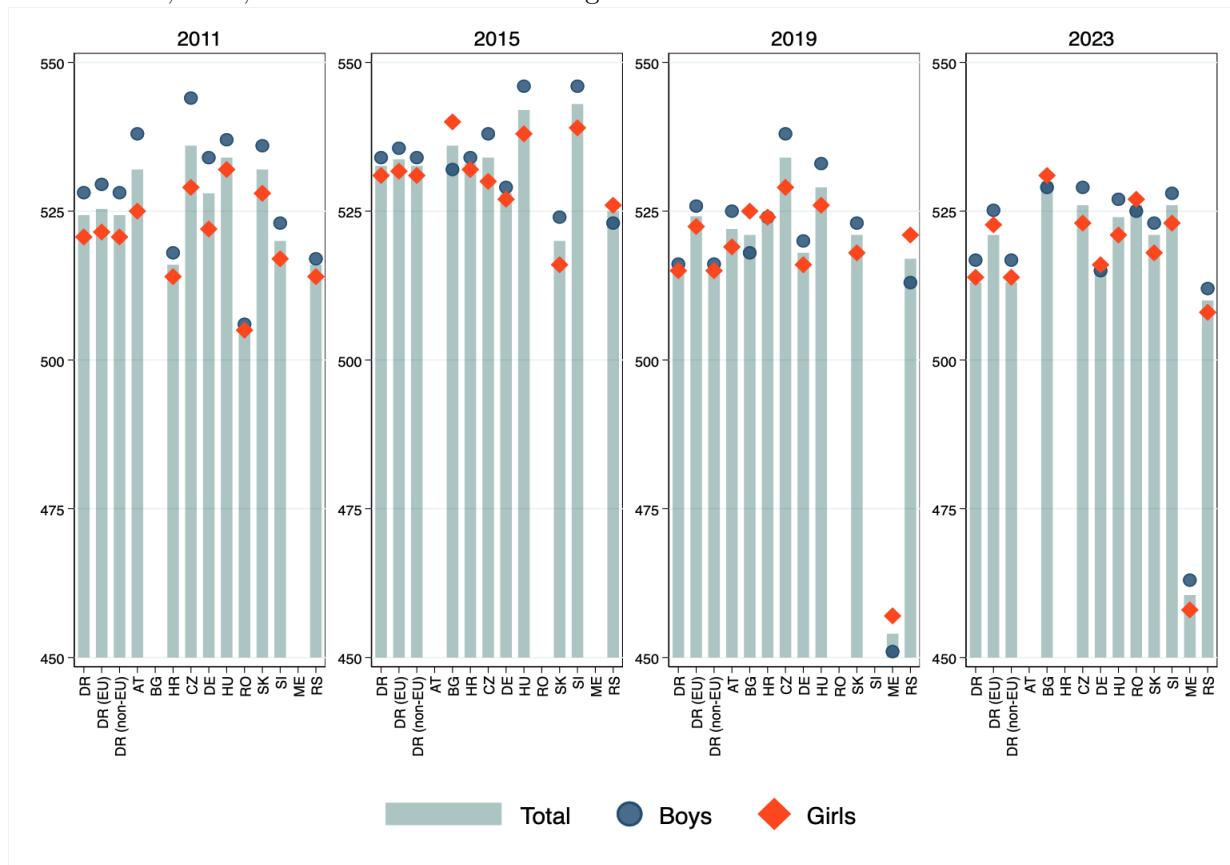
formed girls across all Danube Region countries, with the average gender gap favouring boys in both EU Member States and EU candidate countries. Since 2015, however, the gap has narrowed considerably, and by 2023, girls outperformed boys in Bulgaria[109], Germany, and Romania, with the gender gap reversing in their favour. In several other countries, such as Austria[110], Czechia, and Slovakia, boys continued to outperform girls in science, though the gap narrowed over time.

This convergence in science performance may reflect the growing emphasis on gender equality in STEM education policies, increased access to hands-on science experiences in schools, and targeted programmes encouraging girls' engagement with science-related content from a young age.[111] However, the persistence of gender gaps in some countries suggests a need to further strengthen inclusive teaching approaches, counteract stereotypes,

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[109]The reference year is 2015, as data for 2011 is not available.

[110]Due to missing data, the comparison is drawn between 2019 and 2011.

[111]https://op.europa.eu/en/publication-detail/-/publication/5c74b478-3ffe-11ef-865a-01aa75ed71a1

and ensure that science curricula are relevant and engaging for all students, regardless of gender.

4.8 Access to the Internet

Reliable internet access has become a foundational requirement for full participation in modern education, training, and employment systems. In the context of the digital transition and the increasing role of online learning, remote work, and e-governance, internet connectivity is no longer a luxury but a prerequisite for inclusion and opportunity. Ensuring universal and equitable access to the internet is therefore central to achieving the objectives of the European Education Area and the EU Digital Decade, and aligns closely with Priority Area 9 (People and Skills) of the EU Strategy for the Danube Region, which emphasises access to lifelong learning and inclusive labour markets.

Assessing access to the internet across the Danube Region offers critical insight into the digital divides that persist within and between countries. Differences in connectivity levels reflect broader disparities in digital infrastructure, affordability, and digital literacy. These gaps influence the extent to which individuals can engage in distance education, participate in online training, or benefit from flexible forms of employment. This section focuses on the evolution of internet access between 2011 and 2023, using available data to examine how far countries in the region have progressed in expanding connectivity, and how this has shaped opportunities for more inclusive education, training, and employment[112].

There is no single, standardised measure of internet access across Danube Region countries, and data sources vary by country and year. In most cases, information was obtained from Eurostat, national statistical offices, or relevant ministries. Details on data coverage are provided in the footnote to Figure 4.16. The reference population typically includes individuals aged 16 to 74, but exceptions exist: for the Republic of Moldova and Ukraine, the measure applies to the total population; in Czechia, from 2014 onwards, it includes everyone aged 16 and over; in Germany, since 2016, the data refer to those aged 10 and above; and in Romania, since 2014, it also includes individuals aged 16 and over.

Figure 4.16 presents the evolution of internet use across the Danube Region between 2011 and 2023. Three clear trends emerge. First, internet access expanded markedly in every country of the region. Overall, the share of individuals using the internet rose from 55% in 2011 to 87% in 2023. Second, this expansion contributed to a notable narrowing of the digital gap between the Danube Region and the EU-27. While the difference in

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[112]While access to digital devices also significantly affects participation, this analysis focuses on internet access due to more complete and comparable data coverage across countries.

Figure 4.16: Share of the population having access to the internet from 2011 to 2023 across countries

internet use stood at 15 percentage points in 2011, it had shrunk to just 3 percentage points by 2023. Third, the most rapid progress was observed in the region's EU candidate countries. Starting from a low baseline of approximately 38% in 2011, the average share of internet users in these countries reached 84% by 2023. In Ukraine, the share of the population with internet access nearly tripled, while in other EU candidate countries of the region, such as the Republic of Moldova, Serbia, Bosnia and Herzegovina, and Montenegro, the share more than doubled over the same period.

These improvements reflect targeted public and private investments in digital infras-

tructure, the diffusion of mobile broadband technologies, and increased affordability of internet services. In many EU candidate countries, international development assistance and digital inclusion strategies, often supported through pre-accession funding instruments, played a critical role in expanding connectivity. Within the EU Member States of the region, convergence has been driven by increased policy attention to digitalisation under the European Digital Decade and targeted funding through the Recovery and Resilience Facility (RRF) and European Structural and Investment Funds (ESIF). Countries like Bulgaria and Romania, which had among the lowest internet penetration rates in 2011, recorded some of the fastest growth in the region. National initiatives to improve rural broadband coverage and school or household internet access also contributed to the gains. For example, Serbia's National Broadband Network Development Plan and Moldova's Digital Transformation Strategy provided institutional frameworks for large-scale improvements in digital infrastructure[113]. These advances were supported by national digital skills strategies and school digitalisation programmes that helped bridge the gap between urban and rural areas and between socio-economic groups.

Despite these developments, regional and intra-country disparities remain. Older individuals, those with lower educational attainment, and residents of remote or economically disadvantaged areas continue to face barriers to digital access. These disparities highlight the importance of not only improving infrastructure, but also promoting digital literacy and inclusive access to digital services to ensure that connectivity translates into tangible improvements in education, training, and employment outcomes.

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[113]https://www.undp.org/moldova/press-releases/100-digital-state-strategy-digital-transformation-republic-moldova-2023-2030-approved-executive; https://www.ratel.rs/uploads/documents/pdf_documents/documents/Regulativa/Strategije/Serbia_bb_development_strategy.pdf

4.9 Appendix: Additional Results

4.9.1 People at risk of poverty

Share of people at risk of poverty from 2011 to 2024 by gender across countries
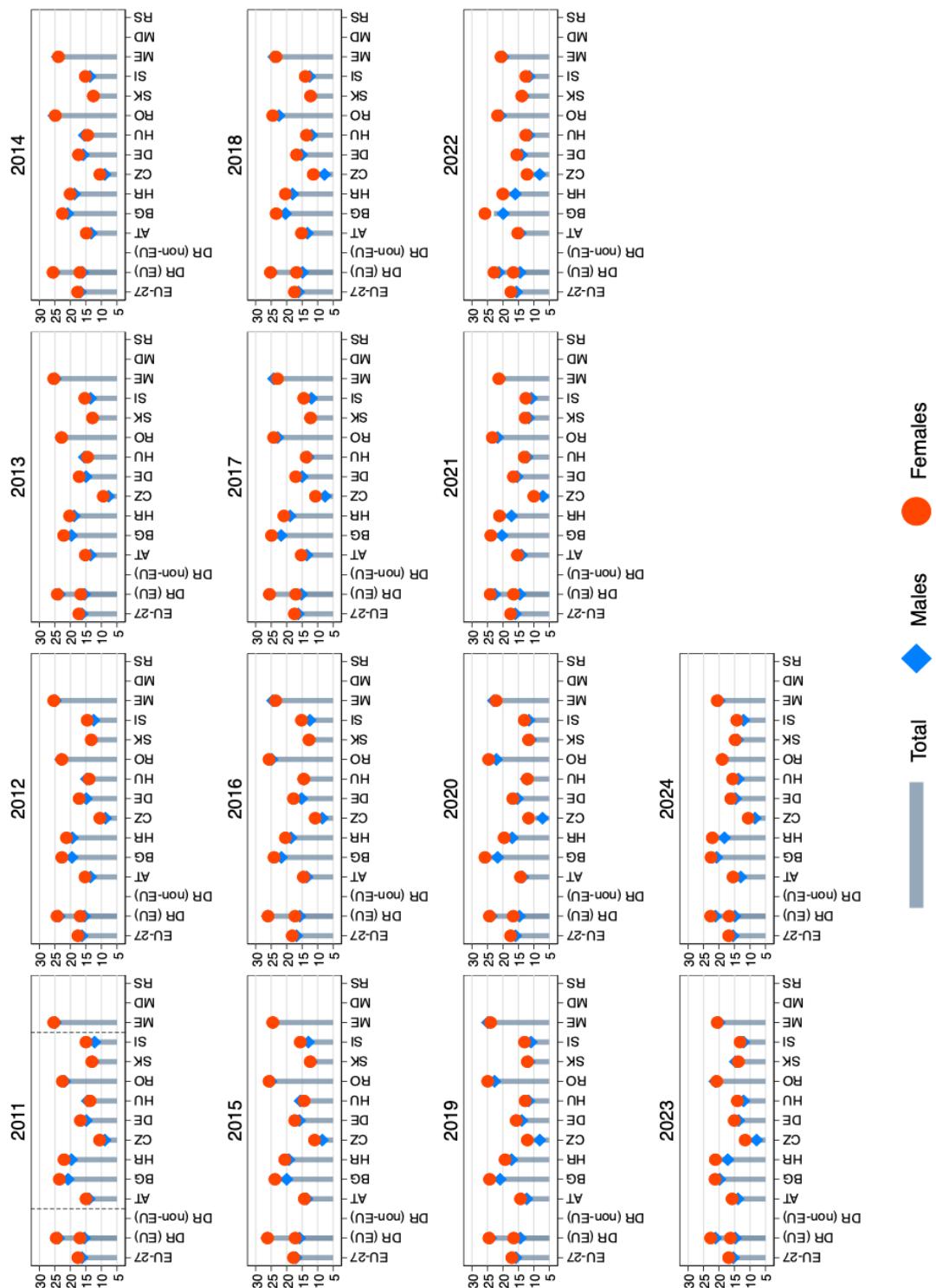
4.9.2   Inequality of income distribution

Inequality of income distribution - quantile share ratio from 2011 to 2024 by gender across countries
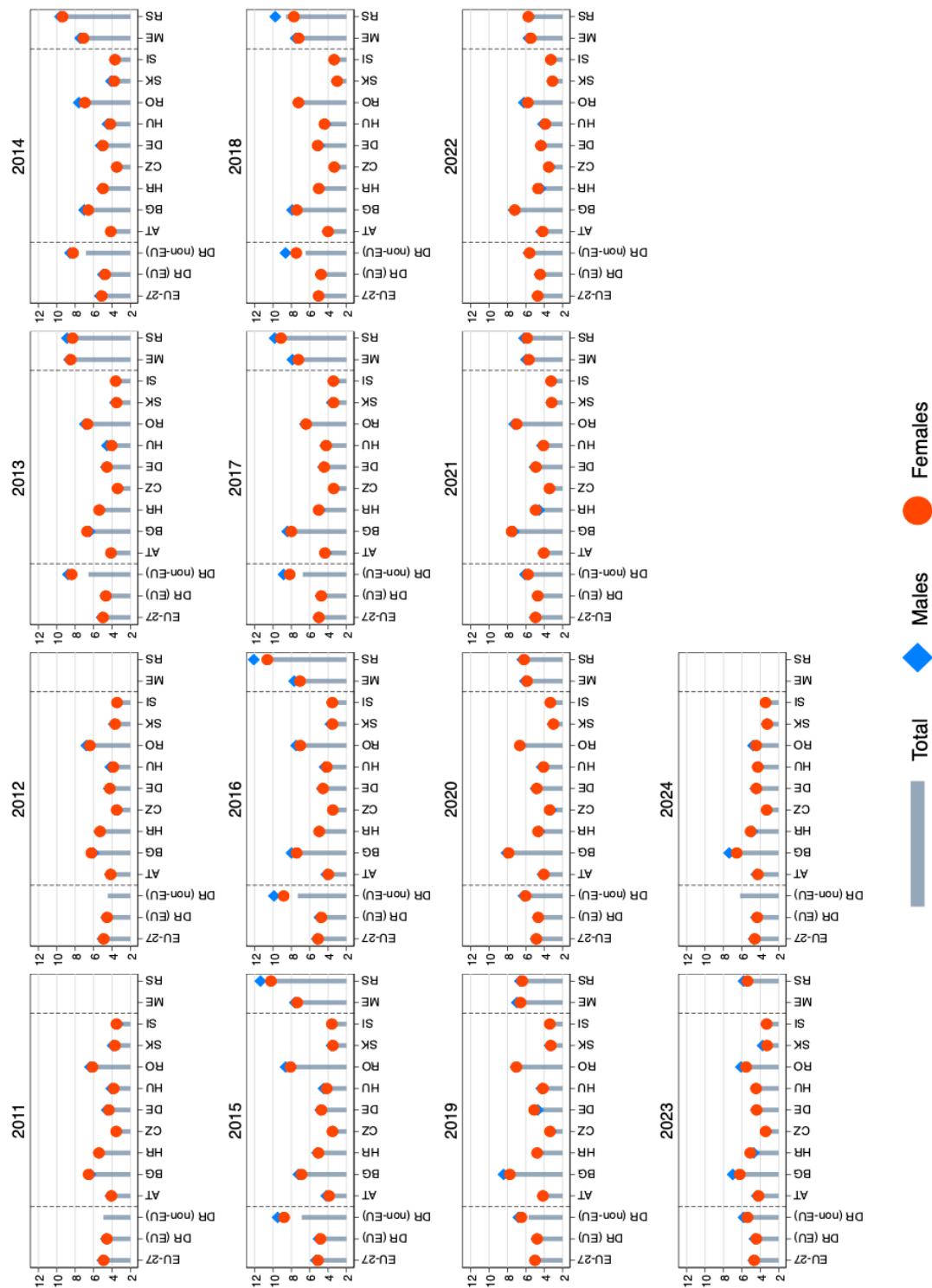
Source: EU Member States, Montenegro and Serbia – Eurostat segment *ilc_di11*.

4.9.3 LLL – share of individuals having participated in education and/or training in the past four weeks

The LLL - the share of individuals participating in education and training from 2011 to 2024 by gender across countries for the population aged 25 to 64
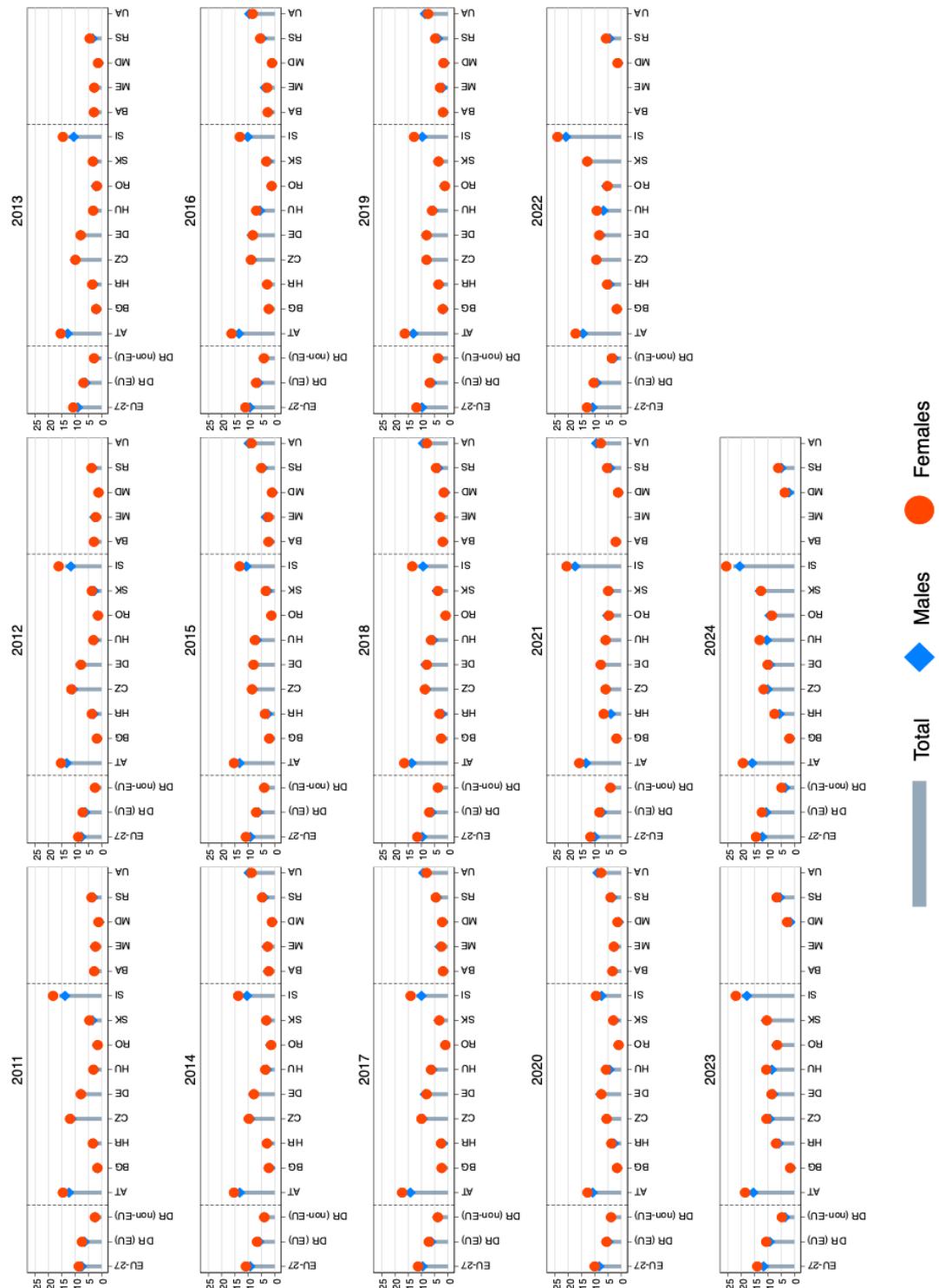
Source: EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*; German sub-regions - Eurostat segment *trng_lfse_04*.

The LLL - the share of individuals participating in education and training from 2011 to 2024 by age groups across countries
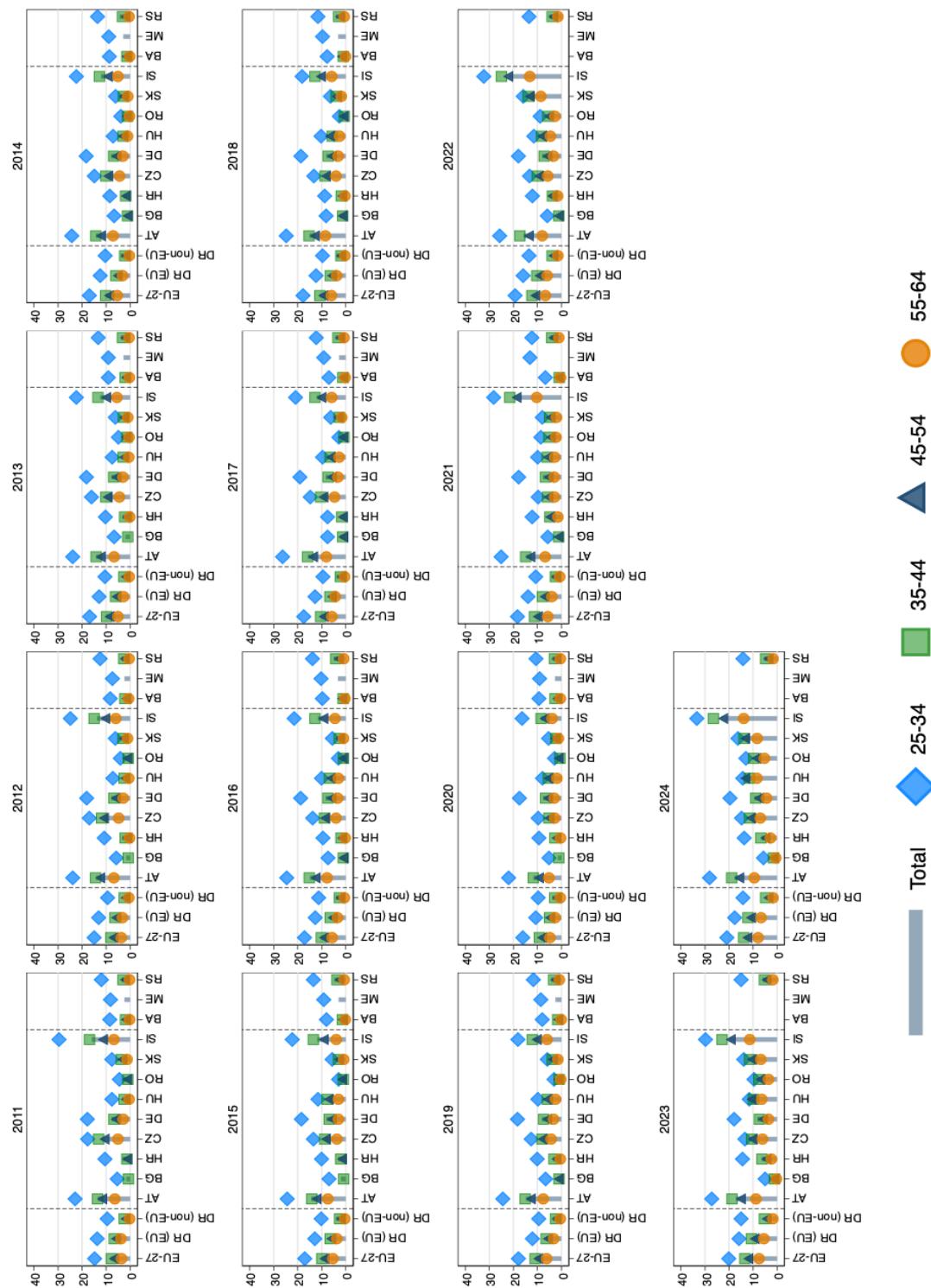
Source: EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*.

4.9.4 Early leavers from education and training

Early leavers from education and training from 2011 to 2024 by gender across countries for the
population aged 18 to 24
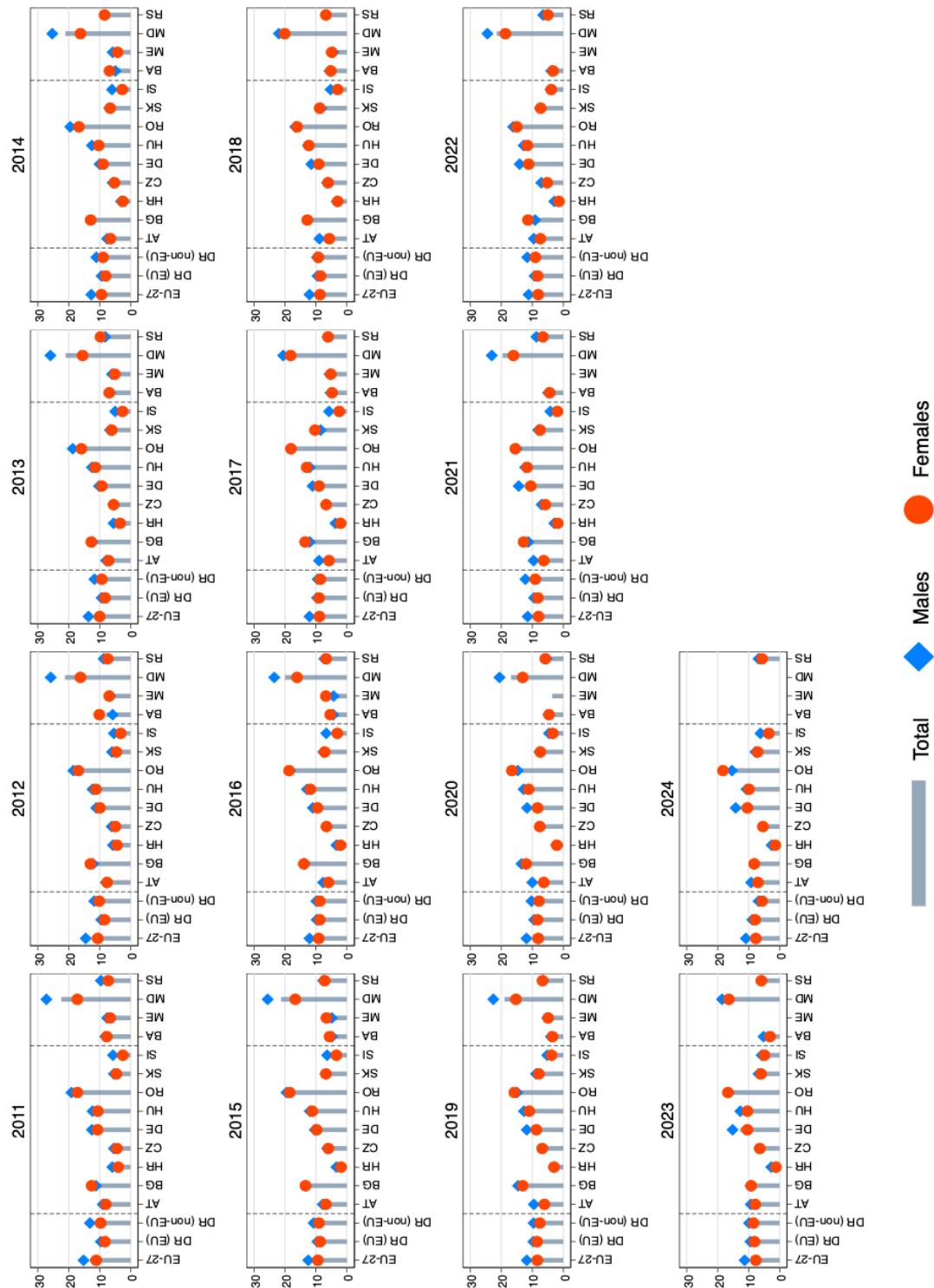
Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_02*; German sub-regions - Eurostat segment
edat_lfse_16. Bosnia and Herzegovina - the national statistical office. Republic of Moldova - the national statistical office,
internal code *gen021200mun*.

4.10 Appendix: Indicators and Data Description

Gender pay gap

Definition: The gender pay gap is measured as follows:

(i) For EU Member States and Montenegro - the average gross hourly earnings of male paid employees minus the average gross hourly earnings of female paid employees divided by the average gross hourly earnings of male paid employees expressed in percentages.

(ii) For the Republic of Moldova, Serbia and Ukraine - the average gross monthly earnings of male paid employees minus the average gross monthly earnings of female paid employees divided by the average gross monthly earnings of male paid employees expressed in percentages.

Source: The data for the EU Member States came from Eurostat segment *earn_gr_gpgr2*. For the Republic of Moldova, Serbia and Ukraine, the data came from the United Nations Economic Commission for Europe (UNECE) Statistical database (`https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT__30-GE__03-WorkAndeconomy/017_en_GE_GPG2_r.px`).

Data availability: For Croatia, only data for the years 2013, 2014 and 2016-2023 were available. For Bosnia and Herzegovina and Montenegro no data were available. For Ukriane only years 2011-2021 were available. For all other countries, the data for the years 2011-2023 were used.

Risk of poverty rate

Definition: The indicator used is the proportion of people in the total population whose disposable income, including social transfers, is below the limit of 60% of the median equalised income after social transfers.

Source: For all countries, except the Republic of Moldova - Eurostat segment *ilc_li02*. For the Republic of Moldova - *enpe_ilc_li09*.

Data availability: For Montenegro only data for years 2011-2022 were used. For Serbia and the Republic of Moldova, the data for the years 2011-2023 were available. No data for Bosnia and Herzegovina and Ukraine were available.

Inequality of income distribution

(a) Quantile share ratio

Definition: The ratio between the income of the 20% of the population earning the highest income and the income of the 20% of the population earning the lowest income is used. The indicator of inequality in income distribution is calculated as the ratio of the share of the richest and poorest income-related population quintiles.

Source: EU Member States, Montenegro and Serbia - Eurostat segment *ilc_di11*.

The Republic of Moldova and Ukraine - World Bank Database, World Development Indicators (`https://databank.worldbank.org/reports.aspx?source=2&series=SI.DST.05TH.20`).

Data availability: For Montenegro, only data for the years 2013-2022 were used. For Serbia, years 2013-2023 were used. For Bosnia and Herzegovina, no data were available. Data for the years 2011-2024 for the Republic of Moldova and for the years 2011-2020 for Ukraine were available for the total population. No data by gender were available for these two countries.

(b) Gini index

Definition: The Gini index measures the distance between the income distribution in a country and the totally equal distribution. A Gini index of 1 indicates that the income distribution in a country is perfectly equal, and a Gini index of 100 indicates that the income distribution in a country is perfectly unequal.

Source: World Bank Database, World Development Indicators (`https://databank.worldbank.org/reports.aspx?source=2&series=SI.DST.05TH.20`).

Data availability: For Bosnia and Herzegovina, no data were available. For Serbia, the data for the years 2012-2022 were used. For the remaining countries, the data for the years 2011-2022 were used.

Performance in basic competences

Definition: Performance in basic competences - i.e. the share of low-achieving students, gender, migration and socio-economic gaps - is measured by relying on the PISA test scores in the mathematics, reading and science domains of 15-year-olds.

Source: The data came from the PISA survey results from the years 2012, 2015, 2018, 2022 were retrieved from the following:

(i) PISA 2012:

`https://www.oecd-ilibrary.org/education/pisa-2012-results-excellence-through-equity-volume-ii_9789264201132-en`.

(ii) PISA 2015:

`https://www.oecd-ilibrary.org/education/pisa-2015-results-volume-i_9789264266490-en`.

(iii) PISA 2018:

`https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-ii_b5fd1b8f-en`. (iv) PISA 2022:

`https://www.oecd.org/en/publications/pisa-2022-results-volume-i_53f23881-en.html`.

Data availability:

(i) *Share of low-achieving students.* For Bosnia and Herzegovina, only the total share was available for the year 2018, and there were no data by gender. For Serbia, there were data for the years 2012, 2018, 2022 for both the total share and gender; for the Republic of Moldova, data for the years 2015, 2018, 2022 were available for both the total share and gender. For Ukraine, only data for the year 2018 for both the total share and gender were available. For the remaining countries, the data for the years 2012, 2015, 2018 and 2022 were used.

(ii) *Gender gaps.* For Austria, Bulgaria, Croatia, Czechia, Germany, Hungary, Romania, Slovakia, Slovenia and Montenegro, the data for the mathematics domain were available for the years 2012, 2015, 2018 and 2022, while data for the reading and science domains were available only for the years 2015, 2018 and 2022. For Bosnia and Herzegovina, all skill domains were available only for the years 2015 and 2018. For Serbia, the mathematics domain was available for the years 2012, 2018, and 2022 while reading and science were only available for the years 2018 and 2022. For the Republic of Moldova, all domains were available for the years 2015, 2018 and 2022. For Ukraine, all domains for only the years 2018 and 2022 were available.

(iii) *Migration gaps.* For Austria, Croatia, Czechia, Germany, Hungary, Slovakia, Slovenia and Montenegro, the data for the mathematics domain were available for the years 2015, 2018 and 2022; data for the reading domain was available for the years 2012, 2015 and 2022, and data for the science domain was available only for the years 2015 and 2022. For Bulgaria, the data for the mathematics domain were available for the years 2018 and 2022; data for the reading domain was available for the years 2012, 2015 and 2022, and data for the science domain was available only for the years 2015 and 2022. For Serbia and Ukraine, only the reading gap in the year 2018 was available. For the Republic of Moldova, the mathematics and science gaps were available for the years 2015 and 2022 and the reading gap for the years 2015, 2018 and 2022. For Romania, only years 2022 was available.

(iv) *Socio-economic gaps.* For Bosnia and Herzegovina and Ukraine, only data for the year 2018 were available; for Serbia, data for the years 2012, 2018 and 2022were available. For the Republic of Moldova, data for the years 2015, 2018 and 2022 were available. For Bosnia and Herzegovina neither total population nor gender data were available. For the remaining countries, the data for the years 2012, 2015, 2018 and 2022 were used.

LLL - share of individuals having participated in education and/or training in the past four weeks

Definition: Life-long learning encompasses all learning activities undertaken throughout life with the aim of improving knowledge, skills and competences within personal, civic, social or employment-related perspectives. Participation in education and training

is a measure of LLL. The participation rate in education and training covers participation in formal and non-formal education and training. The reference period for the participation in education and training is the four weeks prior to the interview. Participation rates in education and training for various age groups and by different breakdowns are presented.

Source: For EU Member States, Montenegro and Serbia - Eurostat segment *trng_lfse_01*. For German sub-regions - Eurostat segment *trng_lfse_04*.

Data availability: Data by age groups were not available for Bosnia and Herzegovina, or the Republic of Moldova. For Ukraine years 2014-2021 were available. All other data is available for the time period 2011-2024.

Early leavers from education and training

Definition: Early leavers from education and training denotes the percentage of the population aged 18 to 24 having attained, at most, lower secondary education and not having been involved in further education or training. The numerator of the indicator refers to people aged 18 to 24 who meet the following two conditions:

(a) the highest level of education or training they have completed is ISCED 2011 Level 0, 1 or 2 (ISCED 1997: 0, 1, 2 or 3C short);

(b) they have not received any education or training (i.e. neither formal nor non-formal) in the four weeks preceding the survey.

The denominator in the total population consists of the same age group, excluding the respondents who do not answer the questions on the 'highest level of education or training successfully completed' and 'participation in education and training'.

Source: EU Member States, Montenegro and Serbia - Eurostat segment *edat_lfse_02*. German sub-regions - Eurostat segment *edat_lfse_16*. Bosnia and Herzegovina - the national statistical office. The Republic of Moldova - the national statistical office, internal code *gen021200mun*.

Data availability: For Ukraine no data were available. For all other countries, the data for the years 2011-2024 were used.

Education equality

(a) PISA ESCS index

Definition: The PISA index of socio-economic status, i.e. ESCS, is derived from a broad number of indicators, including the education level of the parents, number of books at home, language spoken at home and conditions for doing homework. The ESCS parity index measures the impact of the socio-economic status of students on their PISA scores and is calculated as the ratio of the mean score of the least advantaged students to the mean score of the most advantaged ones.

Along with ESCS parity, the gender and migration parities are measured as the ratio of the mean scores of girls to the mean scores of boys and the ratio of the mean scores of students with immigrant backgrounds to the mean scores of native students, respectively. A parity index equal to 1 indicates no impact of the compared attribute (socio-economic status, gender or immigrant background) on the students achievements.

Source: The ESCS index for 2015 was retrieved from OECD `https://www.oecd-ilibrary.org/education/education-at-a-glance-2018_eag-2018-en` Table 2. Equity in skills acquisition (Mathematics, numeracy and ICT Skills). For 2018, the ESCS was retrieved from `https://www.oecd-ilibrary.org/education/education-at-a-glance-2018/equity-in-skills-acquisition-mathematics-numeracy-and-ict-skills_eag-2018-table7-en`.

Data availability: The index for the years 2012, 2018 and 2022 was available for Serbia. For the Republic of Moldova, years 2015, 2018, 2022 were used. For Ukraine, years 2018 and 2022 were available. No data for Bosnia and Herzegovina were available. For other countries years 2012, 2015, 2018 and 2022 were used.

(b) TIMSS test performance

Definition: The TIMSS test measures the basic skills in mathematics and science of fourth- and eighth-grade students (aged below 9.5 years and 13.5 years, respectively) in the form of standardised tests. Direct test score measures are used; each skill measure is presented relative to the TIMSS centrepoint of 500 points for fourth-grade students. Thus, all scores are estimated relative to the reference of 500 points, with a higher score implying a stronger ability in a given domain.

Source: The data came from TIEA & PERLS, International Study Center:

(i) 2011:

`https://timssandpirls.bc.edu/timss2011/international-database.html`

(ii) 2015:

`http://timssandpirls.bc.edu/timss2015/international-results/download-center/`

(iii) 2019:

`https://timss2019.org/international-database/`

Data availability: Both the mathematics and science domains were available for the years 2011, 2015, 2019 and 2023 for Czechia, Germany, Hungary, Slovakia and Serbia; for Austria, only the domains for the years 2011 and 2019 were available. For Croatia, years 2011, 2015 and 2019 were used. For Bulgaria, only the domains for the years 2015, 2019 and 2023 were used; for Slovenia, only the domains for the years 2011, 2015 and 2023 were used.

Access to the internet

The definitions and data sources varied across the countries and were retrieved from `https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2021/July/PercentIndividualsUsingInternet.xlsx`.

- Austria

  (a) Definition - population aged 16-74. From 2011: users in the last three months, aged 16-74.

  (b) Source - 2011-2014: Eurostat; 2015-2016: ITU; 2017-2023: Statistik Austria.

- Bosnia and Herzegovina

  (b) Source - 2011-2015: ITU estimate; 2016 onwards: Agency for Statistics of Bosnia and Herzegovina.

- Bulgaria

  (a) Definition - population aged 16-74. From 2011-2012: users in the last three months, aged 16-74.

  (b) Source - 2011-2014: Eurostat; 2015-2023: National Statistical Institute.

- Croatia

  (a) Definition - population aged 16-74. From 2011-2012 and 2015: users in the last 3 months, aged 16-74.

  (b) Source - 2011-2014: Eurostat; 2015-2023: Croatian Bureau of Statistics.

- Czechia

  (a) Definition - from 2011-2013. population aged 16-74. From 2011-2012: users in the last three months. From 2014: population aged over 16.

  (b) Source - 2011-2013: Eurostat; 2014-2023: Czech Statistical Office.

- Germany

  (a) Definition - from 2011-2015: population aged 16-74. From 2011-2012: users in the last three months, aged 16-74. From 2016: population over 10, break in comparability.

  (b) Source - 2011-2015: Eurostat; 2016: ITU; 2017-2023: Federal Statistical Office.

- Hungary

  (a) Definition - population aged 16-74. From 2011-2012 and 2015: users in the last three months, aged 16-74.

(b) Source - 2011-2015: Eurostat; 2016: ITU: 2017-2023: Hungarian Central Statistical Office.

- Moldova

  (a) Definition - from 2016: according to the analytical survey report Citizens perception, uptake and support for the e-Transformation of Governance in the Republic of Moldova's 2016, the share of internet users who accessed the internet in the past 12 months at least once a day was 71%.

  (b) Source - 2011-2012 and 2017: ITU estimate; 2013: Government of Moldova E-Government Center; 2014: Ministry of Information Technologies and Communication; 2015, 2016, 2018-2023: National Bureau of Statistics of the Republic of Moldova.

- Montenegro

  (a) Definition - population aged 16-74.

  (b) Source - 2011 and 2014: ITU estimate; 2013: Eurostat; 2011, 2012 and 2015-2023: Statistical Office of Montenegro.

- Romania

  (a) Definition - 2011-2013: population aged 16-74. From 2011-2012: users in the last three months. From 2014: population aged over 16. From 2015: number of individual internet users in the last three months.

  (b) Source - 2011-2014: Eurostat; 2015-2023: National Institute of Statistics.

- Serbia

  (a) Definition - population aged 16-74.

  (b) Source - 2011: Republic Agency for Electronic Communications (RATEL); 2012: ITU estimate; 2013-2023: Statistical Office of the Republic of Serbia.

- Slovakia

  (a) Definition - population aged 16-74 in the last three months (source: Eurostat).

  (b) Source - 2011-2013: Eurostat; 2014-2023: Statistical Office of Slovakia.

- Slovenia

  (a) Definition - from 2010: population aged 16-74. From 2011: users in the last three months, aged 16-74.

  (b) Source - 2011-2013: Eurostat; 2014-2023: Statistical Office of the Republic of Slovenia.

- Ukraine

  (a) Definition - from 2011-2014: total population. From 2015: total population using the internet in the past 12 months.

  (b) Source - State Statistics Service of Ukraine.

Conclusions and Recommendations

Conclusions and Recommendations

Objective I: Higher Employment Rate

Over the past decade, labour market conditions in the Danube Region have generally improved, reflecting a period of steady economic recovery, institutional reforms, and targeted employment strategies. Employment rates have risen across all countries, with particularly strong progress observed in several EU candidate countries. These gains highlight the positive effects of active labour market policies, investment in workforce development, and EU-level support mechanisms such as the *European Social Fund Plus (ESF+)* and the *Youth Guarantee*. However, the gap between EU Member States and EU candidate countries remains substantial, underscoring the need for continued structural reforms and stronger integration with EU labour market policy frameworks.

Migration dynamics have also played a pivotal role in shaping these labour market outcomes. Outward labour migration, particularly of younger and highly skilled workers, has contributed to labour shortages in certain sectors and accelerated population ageing in several countries, while inward migration, including refugee inflows and the arrival of foreign workers, has helped mitigate demographic decline and fill labour gaps in others.[114] The integration of migrants and refugees into host-country labour markets, especially in Germany, Austria, and Czechia, has become an important factor sustaining employment growth and workforce diversity across the region. At the same time, the persistence of outward mobility from EU candidate countries continues to challenge local labour markets and limit the supply of skilled labour, reinforcing the importance of creating attractive employment opportunities and improving working conditions domestically.

Despite improvements in employment, unemployment remains a challenge in parts of the region, particularly where labour market institutions are less developed and job creation is constrained by low investment or sectoral decline. Long-term unemployment, in particular, continues to affect a significant share of the unemployed, pointing to enduring barriers to re-employment for certain groups, including the low-skilled and older workers. These patterns reinforce the need for coordinated, inclusive upskilling and re-skilling initiatives, along with the expansion of vocational training systems and more efficient public employment services.

Labour force participation has increased significantly, especially in countries that implemented broad activation strategies and invested in removing work disincentives. Policies that promoted flexible working arrangements, expanded access to early childhood education and care, and introduced financial incentives for returning to work have been

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[114]For discussion of migration impacts on labour markets in Central and Eastern Europe, see OECD (2023), *International Migration Outlook 2023*, OECD Publishing, Paris.

instrumental in mobilising previously inactive segments of the population. Nonetheless, important gaps persist. Activity rates remain low in countries with high levels of informal employment, persistent outward labour migration, or limited access to services that enable labour market participation, especially for women and older persons. These gaps call for tailored policy responses that address country-specific structural constraints while aligning with EU employment and social inclusion priorities.

Youth inactivity, as captured by the NEET indicator, has declined across most of the region, reflecting targeted outreach, stronger school-to-work transition support, and dedicated national strategies. Nevertheless, NEET rates remain significantly higher in EU candidate countries, where many young people still face limited access to quality education pathways, unstable labour demand, and insufficient career guidance. Moreover, gender and age disparities persist, with older youth and young women often experiencing more difficult transitions. Strengthening the connection between education systems and labour market needs, while expanding second-chance programmes and employer-supported learning, would help reduce these vulnerabilities and close the participation gap.

Across all indicators, gender-based disparities have narrowed, particularly in employment and inactivity rates, thanks to policy efforts that addressed care responsibilities, improved work-life balance, and promoted equal opportunities. However, gender gaps persist in several countries and sub-sectors, often linked to structural inequalities in access to quality jobs, training, or flexible arrangements. Continued gender mainstreaming in labour policies, supported by the *European Pillar of Social Rights* and EU funding instruments, remains essential.

The region's labour market convergence remains uneven, with EU candidate countries often lagging behind in key indicators due to institutional bottlenecks, limited fiscal capacity, and demographic pressures. Yet, the pace of improvement in many of these countries demonstrates the feasibility of accelerated progress, especially where reforms are aligned with EU recommendations and backed by strategic investments. Going forward, policy actions should focus on strengthening employment services, enhancing adult learning systems, closing skills gaps, and addressing territorial, demographic, and migration-related imbalances through locally tailored labour market interventions. Reinforcing cooperation between education, employment, and social sectors is also essential for building more inclusive and resilient labour markets across the Danube Region.

Objective II: Improved Education Outcomes and Relevant Skills and Competences

Education systems in the Danube Region have undergone notable improvements over the last decade, reflecting progress in access, attainment and skills development. However, outcomes remain uneven across countries and education levels, with persistent divides between EU Member States and EU candidate countries, as well as between different population groups. These differences are not only statistical but carry significant implications for the region's long-term competitiveness, resilience, and social cohesion.

Participation in early childhood education and care (ECEC) has expanded, but gaps remain substantial. Countries that have made ECEC compulsory or integrated it within broader education reforms report significantly higher enrolment. Public investment, female labour market participation, and universal or subsidised access are strong predictors of high ECEC participation. Conversely, in many candidate countries, enrolment remains low due to structural constraints such as underdeveloped infrastructure, affordability challenges, and limited outreach. These early disparities risk entrenching inequalities that persist throughout the education lifecycle.

At the upper secondary level, most countries in the region report high attainment among young adults. In the candidate countries, this is often supported by labour markets that demand formal educational credentials and by education systems that offer strong vocational tracks. However, in some EU Member States, especially those with growing immigrant populations, male attainment has declined, reflecting challenges in integrating newcomers and in offering flexible learning pathways. Disparities between rural and urban areas and across socio-economic groups also persist in several countries.

Tertiary education attainment is steadily increasing, though the region as a whole still falls short of EU-level targets. Countries with diversified higher education systems, active student support policies, and strong university–industry linkages have made faster progress. Yet barriers such as demographic decline, outmigration of young people, limited institutional capacity, and underinvestment in higher education continue to constrain participation. The gender gap is pronounced and growing, with women in every country more likely to attain tertiary qualifications. This reflects broader labour market trends, where men are more likely to enter work earlier through vocational routes, while women continue into higher education.

Youth employment outcomes have improved, particularly among those with upper secondary education. However, candidate countries still face systemic barriers to successful school-to-work transitions, including weak job-matching mechanisms, informality, and limited private-sector demand for skilled youth. Even among EU Member States,

disparities are visible. Countries with strong dual systems and well-functioning public employment services record better results. Others struggle with misalignment between education and labour market needs, particularly in rural areas and among young women.

Finally, digital skills have improved across all age groups, driven by policy integration, digital infrastructure, and increased access to technology. Young people generally report strong ICT competences, while older adults, especially women, continue to lag. These generational and gendered gaps are often rooted in past occupational segregation and low exposure to digital tools during working life. Localised digital inclusion initiatives show promise but remain fragmented in scale and coverage.

Together, these trends reveal a region that is progressing but still facing entrenched structural challenges. The education systems of the Danube Region are increasingly aligned with EU objectives, but uneven reform implementation, demographic pressures, and socio-economic divides threaten to limit the full realisation of a more inclusive and future-ready People and Skills agenda.

Objective III: Increased Quality and Efficiency of Education, Training and Labour Market Systems

Across the Danube Region, the evolution of public and private education spending, teacher distribution, and labour market policy expenditure reveals persistent gaps between EU Member States and EU candidate countries. While EU countries have generally maintained more stable investment and staffing levels, non-EU countries experienced sharper fluctuations, often driven by fiscal constraints or crisis-related disruptions. Two broad trends emerge: limited growth or even decline in public investment, and a narrowing role for private contributions, particularly in non-EU contexts. These dynamics raise concerns about the long-term equity and effectiveness of education and employment systems in the region.

Across the Danube Region, public investment in education has remained broadly stable over the past decade, with only marginal increases despite growing needs linked to digital transformation, population ageing, and skills shortages. While EU Member States tend to allocate a higher share of GDP to education than candidate countries, variation across national systems remains substantial. These differences reflect not only diverse policy priorities but also institutional constraints and fiscal capacity. In a few cases, rising public investment is linked to reforms aimed at modernising infrastructure or improving teacher compensation, while in others, fiscal pressures have limited the scope of education funding.

Private expenditure on education has declined in most Danube countries, particularly

among EU candidate countries. This drop reflects both reduced household capacity to contribute to education costs and, in some cases, expanded public coverage. At the same time, some countries have seen a rise in private spending, driven by the growth of private higher education institutions, increased demand for early education, and gaps in public service provision. These trends illustrate the evolving balance between public and private responsibilities in education financing, raising questions about affordability and access across different population groups.

Pupil-to-teacher ratios have remained largely stable since 2013, but cross-country differences persist. In several countries, ratios are relatively low, particularly in early education, supporting more individualised instruction. In others, especially at upper-secondary or post-secondary levels, high ratios point to resource constraints or structural inefficiencies. In some cases, extremely high ratios may also reflect data or classification issues, particularly in vocational or post-secondary programmes. These disparities underline the importance of consistent investment in the teaching profession and effective planning of human resources in education systems.

Public spending on labour market policies shows a similarly uneven picture. While the EU average has risen over the past decade, many countries in the Danube Region have reduced their investment, particularly in active labour market measures. Although several governments responded to the COVID-19 crisis with short-term increases in LMP funding, these were temporary and largely phased out by 2023. Some positive exceptions exist, such as Croatia and Bosnia and Herzegovina, where significant increases in labour market spending were recorded. However, persistently low LMP investment in many non-EU countries reflects structural weaknesses, such as limited fiscal space and underdeveloped employment services.

Overall, the findings point to persistent gaps in public and private investment in human capital across the Danube Region. While some countries are advancing towards more resilient and inclusive education and labour market systems, others continue to face challenges rooted in policy fragmentation, economic pressures, and institutional capacity. Monitoring these developments remains vital for supporting evidence-based policy and achieving the objectives of EUSDR Priority Area 9.

Objective IV: Ensuring Inclusive Education and Training and Promoting Inclusive Labour Markets

Progress towards more inclusive and equitable education and labour market outcomes across the Danube Region remains uneven, with persistent gaps between EU Member States and EU candidate countries, as well as within individual countries themselves.

Gender disparities in earnings continue to shape labour market outcomes across the region. Despite some improvements in gender pay equality in certain countries, progress remains inconsistent and, in some instances, has reversed. Structural barriers such as occupational segregation, unequal caregiving burdens, and differences in access to quality employment continue to influence wage outcomes. Institutional factors, including the strength of collective bargaining systems and the role of gender equality bodies, play an important role in shaping these dynamics. In several countries, especially outside the EU, the persistence or worsening of gender pay gaps reflects deeper systemic constraints on women's full economic participation.

Poverty risks remain a major challenge across the Danube Region. The divide between EU Member States and candidate countries has persisted, with the latter facing higher levels of vulnerability. Socio-economic inequalities are more deeply entrenched in countries with weaker welfare systems and more limited access to social transfers or public services. Within countries, poverty risk remains highly gendered, women, especially those in single-parent households or older age cohorts, are more likely to be exposed to poverty, due to cumulative disadvantages in employment, earnings, and caregiving responsibilities. These patterns are reinforced in contexts with limited family support structures or where labour markets offer fewer formal and secure job opportunities for women.

Income inequality, measured through both the Gini index and the quantile share ratio, shows mixed developments. While some countries have made tangible progress in narrowing income disparities, others have seen inequality widen, reflecting divergent economic trajectories and labour market policies. In particular, countries with more compressed wage structures and robust redistributive systems have generally experienced more equitable outcomes. Gender-specific inequality trends also reflect the cumulative effect of uneven labour market opportunities, unequal pay, and access to social protection.

Educational outcomes provide critical insights into longer-term social mobility and equity. The most concerning trend is the rise in low achievement rates among 15-year-olds in reading, mathematics, and science. Contrary to the EU's benchmark targets, all Danube Region countries have seen deteriorating outcomes, with the most significant setbacks recorded in countries with highly stratified school systems or long-standing equity challenges. Performance gaps linked to socio-economic background, gender, and migration status are persistent, and in some cases, growing. Students with an immigrant background tend to perform worse, particularly in countries with less inclusive educational support systems. Similarly, students from disadvantaged socio-economic backgrounds consistently lag behind their peers, underscoring the enduring role of early-life inequalities in shaping learning outcomes.

Participation in life-long learning (LLL) remains below the EU target in most countries

of the region, although positive trends are evident. Some countries have made substantial progress, driven by improved adult education frameworks and expanding access to training. However, major gaps persist, particularly in candidate countries, where institutional support for adult learning is often weaker. Age disparities in participation remain, with younger adults more likely to engage in learning, while older individuals, particularly those with lower skills, face more barriers. These include limited availability of accessible programmes, lack of financial support, and fewer opportunities for workplace training, especially in small and medium-sized enterprises.

The early leaving rate remains a critical concern in several countries. While some have successfully reduced early leaving rates, others, particularly in parts of Southeast Europe, remain well above the EU threshold. Gender dynamics are also apparent, with country-specific trends suggesting that boys and girls face different sets of challenges linked to social expectations, labour market pressures, or lack of institutional support in transitioning from lower secondary to further education or vocational training.

Evidence on educational equality shows that disparities in learning outcomes linked to socio-economic status have widened in nearly all countries. The influence of social background on test performance is particularly strong in countries with selective or unequal school systems. Moreover, gender-based disparities in mathematics and science performance emerge at an early age, as shown in TIMSS data, and tend to widen over time. This suggests that gendered educational trajectories are shaped by socialisation processes and institutional responses from early primary education onward.

Finally, access to the internet, a key enabler of education, employment, and civic participation, has expanded markedly across the region. The most significant progress has been made in EU candidate countries, where internet usage has grown rapidly over the past decade. This digital convergence reflects both increased infrastructure investment and the expanding role of digital tools in education and work. However, structural differences in connectivity persist, particularly in rural areas or among low-income households. These digital divides risk exacerbating existing socio-economic inequalities if not addressed through comprehensive access strategies.

Together, these indicators reveal a complex and evolving landscape of inclusion and inequality across the Danube Region. While some convergence between countries is evident, entrenched disparities persist, shaped by differing institutional capacities, labour market dynamics, education systems, and social protection regimes. Continued monitoring of these trends is essential to inform effective and inclusive strategies that leave no one behind.

Policy Actions to Strengthen Labour Market Inclusion and Resilience in the Danube Region

1. **Strengthen Inclusive Labour Market Participation**

1.1. Expand tailored activation services. Activation strategies should go beyond standardised interventions and focus on personalised, needs-based approaches for jobseekers. This includes enhancing profiling systems to better assess barriers to employment, combining counselling, job search support, and modular training, and targeting long-term unemployed, older workers, low-skilled individuals, and persons with disabilities.

   Policy example from the region: Slovenia's Public Employment Service has successfully implemented individualised action plans for vulnerable groups, supported by the European Social Fund (ESF). These personalised plans combine career counselling, job matching, and targeted training, contributing to improved activation outcomes for long-term unemployed and low-skilled individuals.[115]

1.2. *Invest in care infrastructure to boost female employment.* Access to affordable childcare and eldercare is a critical enabler for women's labour force participation, particularly in countries with low female employment rates. Governments should expand subsidised early childhood education and care, support community-based and employer-sponsored care models, and ensure service accessibility in rural and low-income areas.

   Policy example from the region: Austria offers a strong example through its "1,000 new childcare groups" initiative (*1.000 neue Kinderbetreuungsgruppen*), which since 2008 has co-financed the expansion of childcare places and extended hours in cooperation with provinces and municipalities. This has significantly improved ECEC coverage, particularly for children under three, and is linked to rising female employment rates.[116]

1.3. *Strengthen public employment services (PES) in underserved areas.* Well-functioning PES are key to inclusive participation, particularly in structurally disadvantaged regions. Governments should invest in digital PES platforms for remote support, deploy mobile PES units to reach remote areas, and enhance staffing for personalised guidance and employer engagement.

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[115]https://ec.europa.eu/social/main.jsp?catId=1206&langId=en
[116]https://www.bundeskanzleramt.gv.at/agenda/familie/kinderbildung-und-betreuung/ausbau-kinderbildung-und-betreuung.html

Policy example from the region: Croatia's Public Employment Service (PES) has launched a digitalisation initiative to enhance the accessibility and efficiency of employment services. Supported through EU funding, the initiative has expanded outreach in rural areas, enabling more equitable access to job search support and training opportunities.[117]

1.4. *Promote flexible and inclusive employment arrangements.* Expanding access to flexible work models, such as part-time work, teleworking, or phased retirement, can support participation by older workers, caregivers, and persons with health limitations. Policies should encourage employers to adopt inclusive practices through tax incentives, HR certification schemes, and labour law adaptations.

Policy example from the region: Slovakia has adopted telework-friendly policies to improve work-life balance and labour force participation, particularly for parents and caregivers. Germany's "Part-Time Plus" model promotes gender equality in the workplace by incentivising both partners to share caregiving responsibilities through balanced part-time work arrangements.[118]

2. **Improve the Quality and Responsiveness of Education and Training Systems**

2.1. *Modernise curricula and teaching methods to align with labour market needs.* Education systems should update national curricula to reflect the evolving skills landscape, integrating transversal competences such as digital literacy, green skills, problem solving, and entrepreneurship. This also requires investment in teacher training, development of interactive teaching methods, and stronger cooperation with employers and industry stakeholders.

Policy example from the region: Bulgaria's "Education for Tomorrow" programme co-funded by the EU has supported digital curriculum reform and teacher upskilling in response to changing labour market requirements.[119]

2.2. *Strengthen vocational education and training (VET) through dual systems and employer engagement.* Expanding high-quality dual VET programmes can help reduce skill mismatches and support smoother school-to-work transitions.

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[117]https://digital-strategy.ec.europa.eu/en/factpages/croatia-2024-digital-decade-country-report

[118]https://www.oecd.org/content/dam/oecd/en/publications/reports/2017/02/dare-to-share-germany-s-experience-promoting-equal-partnership-in-families_g1g6a140/9789264259157-en.pdf

[119]https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/02/bulgaria-s-equal-access-to-school-education-in-times-of-crisis-project_dfd710e8/4ba2d868-en.pdf

This includes incentivising employer participation, developing flexible learning pathways, and ensuring VET responsiveness to regional and sectoral labour market trends.

Policy example from the region: Austria and Germany have long-established dual VET systems that integrate in-company training with classroom instruction. In Serbia, the dual education model has been formalised and expanded through the 2017 Law on Dual Education, establishing structured cooperation between schools and companies for work-based learning.[120]

2.3. *Improve quality assurance and performance monitoring in education systems.* Governments should invest in robust quality assurance frameworks, learning assessment tools, and education monitoring systems to track outcomes and inform evidence-based reforms. This includes supporting national agencies, school inspections, and transparent performance reporting.

Policy example from the region: Romania's National Agency for Quality Assurance in Pre-university Education (ARACIP) has developed and implemented comprehensive school evaluation standards to strengthen accountability and transparency in education. These tools support both external evaluations and school self-assessments, helping identify areas for improvement and guide evidence-based quality enhancement across the education system.[121]

2.4. *Promote inclusive and flexible learning pathways across all education levels.* Education systems should enable smooth progression and re-entry by expanding access to second-chance education, modular programmes, and recognition of prior learning. Flexibility supports students at risk of early leaving and adults seeking to upskill or reskill.

Policy example from the region: Slovenia's "Project Learning for Young Adults" (PUM-O) offers second-chance education, personalised mentoring, and practical skills development for early leavers and NEET youth. The programme combines individual learning plans, work-based learning, and psychosocial support to facilitate reintegration into formal education, vocational training, or employment, and has been recognised as a good practice in inclusive youth policy.[122]

2.5 *Foster business collaboration.* Vocational and higher education providers should be encouraged to co-develop curricula with industry, establish internship

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[120]https://www.srbija.gov.rs/tekst/en/129780/dual-education.php
[121]https://aracip.eu/
[122]https://www.euroguidance.eu/pum-o-plus-project-based-learning-for-young-adults-in-slovenia

pipelines, and offer entrepreneurial training. These links help align education with labour market demand and support innovation ecosystems.

Policy example from the region: In Hungary, dual vocational education and training (VET) is supported by formal governance structures such as the Dual Training Council. This council coordinates collaboration between schools, industry, and government, ensuring alignment between education delivery and employer needs in technical and STEM fields.[123]

3. Ensure Sustainable Investment and Efficiency

3.1. *Raise education spending in underfunded systems.* Countries with public education expenditure significantly below EU averages should progressively increase their investment to align with the ET2030 benchmarks. Sustainable funding is especially critical for early education, inclusion, and digitalisation, where underinvestment can have long-term consequences for equity and human capital development.

Policy example from the region: Bulgaria has significantly bolstered its education budget in recent years, with targeted investments in early childhood education, digital infrastructure, and teacher compensation. These efforts are funded through the EU-backed "Science and Education for Smart Growth" Operational Programme (2021-2027), which supports education modernisation aligned with Bulgaria's national Strategy for Education Development.[124]

3.2. *Modernise funding frameworks to promote efficiency and impact.* Governments should conduct regular cost-efficiency reviews and adopt funding models that prioritise outcomes and social returns. Targeted investment in early learning, vocational education and training (VET), and public employment services (PES) can generate high long-term payoffs in terms of skills, employability, and labour market resilience.

Policy example from the region: Romania is piloting a performance-oriented VET funding model through its National VET Implementation Plan (2021-2027), supported by EU structural funds. This model includes the creation of regional consortia and dual vocational campuses designed to align education delivery with local economic needs and improve efficiency across the VET system.[125]

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[123]https://www.cedefop.europa.eu/en/news/vocational-education-and-training-hungary
[124]https://sf.mon.bg/?lang=en
[125]https://eurydice.eacea.ec.europa.eu/eurypedia/romania/national-reforms-vocational-education-and-training

3.3. *Maintain labour market policy (LMP) funding beyond crisis periods.* While many countries increased LMP budgets during COVID-19, a shift from reactive emergency spending to sustained, strategic investment is needed. Building integrated labour market data systems can help monitor policy impact and guide more efficient resource allocation over the long term.

Policy example from the region: Croatia's National Recovery and Resilience Plan (NRRP) includes 277 million Euro in reforms designed to strengthen active labour market policies, such as upskilling, reskilling, and improved employment services infrastructure, demonstrating the transition from crisis responses to long-term labour market resilience strategies.[126]

3.4. *Monitor and optimise pupil-teacher ratios across education levels.* Persistent imbalances, especially in post-secondary and vocational education, can hinder teaching quality and institutional performance. Regular reviews of staffing levels and teaching loads can ensure more equitable learning conditions and better allocation of human resources.

Policy example from the region: Bulgaria's Strategic Framework for Education, Training and Learning (2021-2030) establishes annual reviews of school networks and staffing ratios, intending to ensure a minimum pupil-to-teacher ratio (e.g., 10:1 in early childhood education) and to adjust staff allocations based on local needs and demographic shifts.[127]

4. Bridge the EU / non-EU Divide

5.1. *Build institutional capacity in education and employment systems.* Candidate countries should strategically leverage IPA III and WBIF instruments to modernise teacher training systems, strengthen evidence-based education planning, and improve the reach and effectiveness of public employment services (PES). Building administrative capacity is essential for implementing EU-aligned reforms, ensuring high-quality service delivery, and enabling better absorption of EU funds for inclusive growth.

Policy example from the region: In Bosnia and Herzegovina, the EU4Employment initiative has strengthened institutional capacity by supporting reforms in public employment services, digitalising job-matching tools, and delivering tailored training for PES staff. These efforts aimed to improve service

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[126]https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/croatias-recovery-and-resilience-plan_en
[127]https://www.european-agency.org/sites/default/files/CSM%20Country%20Report%20Bulgaria.pdf

quality, particularly for youth and long-term unemployed, and were co-financed under the EU's IPA framework.[128]

5.2. *Leverage EU funds more effectively for human capital development.* Candidate countries should strengthen their strategic use of EU funding instruments, particularly ESF+, Erasmus+, and human capital components of IPA III, to support education, training, and labour market reform. This involves not only increasing absorption capacity and co-financing mechanisms but also aligning projects with national strategies and ensuring robust monitoring and evaluation. Enhanced administrative coordination among ministries, agencies, and implementing partners is essential for maximising the impact of available EU resources.

Policy example from the region: Croatia has significantly expanded its participation in the Erasmus+ programme since joining the EU, with notable growth across higher education, vocational education and training (VET), and youth exchanges. According to the 2022 Erasmus+ factsheet, Croatia implemented more than 1,200 mobility projects under Key Actions 1 and 2, involving over 20,000 participants. The increased absorption of EU funds reflects effective coordination between the national agency for mobility and education and higher education institutions, contributing to stronger internationalisation and skills development.[129]

5.3. *Promote mutual learning and cooperation through regional networks.* EUSDR platforms should be leveraged to strengthen cross-border peer learning, policy dialogue, and joint pilots in education and employment. Regional cooperation can help identify shared challenges, accelerate the diffusion of innovative practices, and reduce policy fragmentation. Structured exchanges between education and labour market institutions allow for benchmarking, capacity building, and the joint development of tools or approaches tailored to the region's needs. Such cooperation also fosters mutual trust and supports convergence in key human capital outcomes across the Danube Region.

Policy example from the region: Regional cooperation in education and training is effectively promoted through initiatives such as the *Education Reform Initiative of South Eastern Europe (ERISEE)*[130] and the *Centres of Vocational Excellence (CoVE)* platform[131]. ERAISEE fosters policy dialogue and peer

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[128]https://eu4employment.ba/o-nama/

[129]https://erasmus-plus.ec.europa.eu/document/factsheet-erasmus-in-croatia-in-2022

[130]https://www.erisee.org

[131]https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/skills-jobs/centres-vocational-excellence_en

learning among Danube Region countries on vocational education, digitali-
sation, and quality assurance, supporting convergence with EU frameworks
such as the European Education Area. Complementing this, the CoVE ini-
tiative connects vocational training providers, enterprises, and innovation ac-
tors across borders to strengthen skills ecosystems and improve employability.
Together, these initiatives exemplify how regional collaboration enhances the
quality, relevance, and inclusiveness of education and training in the Danube
Region.