

**European Training Foundation** 

# SKILLS MISMATCH MEASUREMENT IN MONTENEGRO



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### INTRODUCTION

In 2017, the European Training Foundation (ETF) began a project on skills mismatch measurement in ETF partner countries. The project objectives were to identify regular data sources, and develop and test indicators that can capture various angles and implications of skills mismatch.

Through a combination of international and local expertise, and in consultation with national stakeholders, the ETF aimed at defining and testing a methodological approach to measuring skills mismatch that can be adapted to the context of selected countries (in transition or developing). It also aimed at ensuring that there is as much comparability as possible across countries and with similar European or international initiatives (e.g. Cedefop, OECD and ILO).

In the first phase of the pilot project, four partner countries were selected: Serbia, Georgia, Egypt and Morocco. In the second phase, it included Montenegro, North Macedonia and Moldova. Country-specific analyses have been developed for all countries to contextualise skills mismatch measurement. A cross-country report complements these findings and explores the methodology further. The comparative cross-country analysis includes a methodological discussion on the feasibility of expanding such an approach to most ETF partner countries in the coming years, in order to provide a broader outlook on the nature and extent of skills mismatch.

The ETF intends to provide participating partner countries with an easy-to-update template for measuring skills mismatch, to help them replicate and continue the practice more regularly. A deeper knowledge of the nature and incidence of skills mismatch, including good contextualisation (socio-economic aspects, labour regulations, job matching services, etc.), would help countries to better target their efforts to match supply to demand through education, training, employment and other policy interventions. Such an analytical exercise may also help institutions and partners assess how effective their skills policies are.

The current project mostly measures skills mismatch by proxy. Education and occupation act as a proxy for the skills taught and the skills required in a job (position/occupation). Hence, skills mismatch in the current context refers to a mismatch between a person's level of education or skills and those required for a job – known as 'vertical mismatch'. There is also 'horizontal mismatch', when the types of skills provided by an education do not match the requirement even though the overall education level does match.

The key mismatch indicators (or clusters of indicators) calculated and discussed in this report are: unemployment rates by various dimensions; proportions of unemployed people to employed; people not in employment, education or training (NEETs); coefficient of variation for education; variance of relative unemployment rates; over- and under-education; mismatch by occupation groups; and relative wages.

Several stakeholders in Montenegro might be interested in the data and interpretations in the report. National strategies and planning documents for education and employment recognise the challenge of inadequate matching between the supply of skills and labour market demand. The findings and indicators analysed in this report could be used by a range of stakeholders, including policymakers, to capture different angles of mismatch and better target their policy actions.

A few challenges emerged while collecting, processing and interpreting the data, particularly limitations to the representativeness of the data when certain indicators were disaggregated by age group. Such limitations are inherent given the size of the population in Montenegro, and other



countries involved in this project face the same challenges, including Moldova. The statistical challenges are summarised in the final chapter.

Researchers and academics might also find the methodology used for this study (which essentially relies on existing data sources) helpful for exploring new or more in-depth studies on the nature and incidence of skills mismatches in Montenegro.

Chapter 1 presents key information on demographic, labour market and economic considerations. Such analysis is essential in order to contextualise the discussion on skills mismatch in the country, as insufficient context could jeopardise the interpretation of indicators and lead to biased findings.

The data sources and aspects of comparability are explored in Chapter 2. Montenegro is in a good position as a result of sustained reforms in the field of statistics. Efforts have also been made to bring data collection, management and dissemination in line with international and European standards. The results of this study are based on ongoing cooperation of the ETF and its research team with the relevant employment, education and statistics authorities. The Statistical Office of Montenegro (MONSTAT) provided detailed data for the calculation of specific indicators, helping the research team to understand aspects of coverage and comparability.

Chapter 3 discusses the relevance and results of each skills mismatch indicator (or cluster of indicators). The final chapter summarises the key conclusions and potential policy implications. The main objective of this initiative was to develop a feasible approach to skills mismatch measurement and analysis that could be replicated in other ETF countries. The proposed conclusions, therefore, do not look extensively at policy implications. A better insight into how to respond to skills mismatch would require a wider analysis of education, training and employment systems; the available resources and capacities; efforts to modernise education and expand continuing training; the role of sector skills councils, etc. Nevertheless, the report's findings do signal the most important avenues for further action.

It is hoped that the results of this attempt to measure skills mismatch in Montenegro, using data produced on a regular basis, will help policymakers and stakeholders to consolidate their practices and tools for researching skills needs, identifying emerging mismatches and enhancing skills policies and programmes.



### 1. CONTEXT

### 1.1 Country context and institutional background

Montenegro's population growth is relatively flat, and its estimated population of 622 373 (MONSTAT, 2017) is slightly higher than the 2011 census figure of 620 029. The country has a low population density of 45 people per square kilometre. Around 30% of the population lives in the capital city, Podgorica. Montenegro is an ethnically diverse country.

#### TABLE 1.1 SOCIO-ECONOMIC DATA, 2017

Population (million)	0.6
GDP (EUR billion)	3.8
GDP per capita (EUR)	6,100
Gini coefficient (2014)	31.9
Life expectancy at birth (years) (2014)	76

#### Source: World Bank

As Montenegro is a small country, the high costs of developing and running national institutions are linked to a limited capacity to exploit economies of scale in the provision of public goods and services. Substantial capacity building is required to ensure that the legal framework and regulatory bodies are compatible with the EU, and to be able to absorb EU funds.

Montenegro is an open economy that aspires to join the European Union. It is also an economy vulnerable to external shocks, as it relies heavily on capital inflows from abroad to stimulate its growth. Over the last two decades, the economy has also become highly dependent on tourism and related activities, especially in the summer season. Seasonal effects can be seen in higher overall economic activity in the third quarter, but are also visible in the structure of the labour market.

The country's economy is transitioning to a market system. State-owned companies undergo a privatisation process. Tourism, which accounts for roughly 20% of the gross domestic product (GDP), brings in three times as many visitors as Montenegro's total population every year. Energy and agriculture are considered two distinct pillars of the economy, in addition to tourism. Montenegro uses the euro as its domestic currency, although it is not an official member of the euro-zone.

The economy continued to see strong growth in the fourth quarter of 2017. After a high rate of 4.7% quarter-on-quarter growth, the GDP grew at a significant rate of 4% in the last quarter of 2017, amounting to EUR 1.05 billion (using constant prices). Nominal GDP growth in the period observed was 6.4%. Looking at the structure of GDP in the fourth quarter, final consumption accounted for 105.6% of GDP, of which personal consumption was 81.9% and government spending was 23.7%. Gross investment in basic assets also had a significant share in the structure of GDP and accounted for 31.2%, while the contribution of the balance of exports and imports was negative -45.3%. The main factors of GDP growth in 2017 were the development of energy and transport infrastructure, and the development of tourism.

The Institute for Strategic Studies and Prognoses projections based on the macroeconomic model show that Montenegro's GDP in 2018 will record a real growth of around 3%. The somewhat lower rate of GDP growth in 2018 compared to 2017 will be the result of a somewhat lower (although still



significant) growth in investment activity in the country. Financial consumption will also record slightly lower growth in 2018 compared to 2017, which will reflect more moderate GDP growth.

### 1.2 Labour market

The Montenegrin labour market is characterised by a low level of activity, a relatively high level of unemployment and a significant mismatch between labour supply and demand. It has changed continuously over recent decades, as the country is going through a prolonged transition period. In addition, events such as conflicts in the surrounding region have also adversely affected the economy and labour market. Even before the start of the transition process, unemployment was high and the population's activity rate was very low. In 1991, the activity rate of the population between 15 and 65 years of age was 51.6%, the employment rate was 40.1% and the unemployment rate was 20.5%.

The intial privatisation process began to change the Montenegrin labour market. Private companies were forced to operate more efficiently and change the role of work. This has created the need for deep and comprehensive labour market reforms in order to make the private sector effective. Certain reform measures have therefore been adopted to improve labour market regulation and make it more accessible to businesses. Some reform measures and amendments to legislation have focused on increasing market flexibility and eliminating business barriers, while ensuring adequate protection of workers' rights. Nevertheless, the labour market is still inflexible and rigid to some extent, which indicates that the reform process for regulatory changes is not yet complete.

According to the 2017 data, the labour market continued to see positive developments in terms of the overall rate of activity, employment and unemployment. All parameters reflecting the situation of the labour market improved significantly compared to the previous year. This positive trend could also be the result of an ageing or shrinking workforce, as these factors do affect the labour market in the long run. However, the positive trends of 2017 are mainly the result of increased economic activity in tourism (with a significant increase in overnight stays compared to 2016), as well as in construction, including intensified highway construction and other capital projects. Despite positive trends in labour market indicators, these improvements are rather limited when it comes to the most vulnerable groups.

According to data from the labour force survey (LFS) in 2017, the active population was 273 200, of which 229 300 (83.9%) were employed and 43 900 (16.1%) were unemployed. The number of employees rose by 2.3% in relation to 2016, and the number of unemployed decreased by 9.1%. The inactive population was 226 600 in 2017, which decreased by 0.3% compared to the previous year. The activity rate for 2017 was 54.7%, the employment rate was 45.9%, the unemployment rate was 16.1% and the inactivity rate was 45.3%.

In the first nine months of 2017, the employment rate increased to 46.3%. The highest employment rate of 48% was recorded in the third quarter, due to Montenegro's seasonal economy and increased employment in tourism and construction. Higher economic growth and a more dynamic economy also increased employment during 2017. Around 74% of all employees are in the service sector, 18% are in industry and 8% are in agriculture. In order to reduce unemployment and improve performance in the labour market, it is necessary to introduce effective active-labour market measures. This particularly applies to measures concerning young people and the hard-to-employ categories of unemployed people.

However, although recent years have shown positive trends in the overall labour market indicators, there is a clear discrepancy between the indicators for men and women. Activity and employment



rates are significantly higher for men, while unemployment rates are at similar levels. Lower activity and employment rates for women indicate that they are still a vulnerable labour market group. Looking at the regions<sup>1</sup>, men and women from the north have fewer opportunities for find a job than those in the central and coastal regions. Activity and employment rates in the north are significantly lower than the national average, while the unemployment rate is higher, at 35.2% compared to 16.1% for the whole of Montenegro in 2017 (LFS data).

	Activity rate			Unemployment rate			Employment rate		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
2012	50.0	56.9	43.4	19.7	19.3	20.3	40.1	45.9	34.6
2013	50.1	56.8	43.6	19.5	20.0	18.8	40.3	45.4	35.4
2014	52.7	59.5	46.2	18.0	17.8	18.2	43.2	48.9	37.8
2015	53.7	60.1	47.7	17.6	17.7	17.3	44.3	49.4	39.4
2016	54.5	61.8	47.6	17.7	18.2	17.1	44.8	50.5	39.4
2017	54.7	62.2	47.4	16.1	15.4	17.0	45.9	52.6	39.4

#### TABLE 1.2 MAIN LABOUR MARKET INDICATORS, 2012–17

Source: MONSTAT, LFS

The average net monthly salary in 2017 was EUR 510, which was 2.2% higher than in 2016. However, consumer prices in 2017 increased by 2.4% in relation to 2016, so real net wages in the same period declined by 0.2%. In 2017, the average gross monthly salary was EUR 765. A high growth rate in net wages was recorded in the sectors of health and social protection (4.7%); arts, entertainment and recreation (10.4%); administrative and support services (7%); and transport and storage (3.7%).

The total number of people who moved internally within the country in 2017 was 5 237. Most of them were women, at 52% or 2 724, while men accounted for 48% of the total number, or 2 513. A positive migration balance was recorded in 11 municipalities in 2017, and the difference between inhabitants immigrating and emigrating was highest in the capital city, Podgorica, at 1 176. The largest negative balance was recorded in Bijelo Polje in northeastern Montenegro, at 487 people.

#### Active labour market policies and public employment services

The strategic framework for employment aims to provide more and better opportunities for employment, particularly for groups exposed to a marginal or precarious position in the labour market, such as women, young people and those in hard-to-employ categories. It was designed by the Ministry of Labour and Social Welfare in collaboration with key partners, in order to reduce labour market imbalances and support better access.

Every year, the Employment Agency of Montenegro (EAM) implements a set of active labour market policies (ALMPs), and over the last few years, it has made efforts to diversify and expand them. This is

<sup>&</sup>lt;sup>1</sup> The concept of region used refers to a geographical (not official/administrative) division of the country. The northern region consists of the following municipalities: Andrijevica, Berane, Bijelo Polje, Petnjica, Rozaje, Gusinje, Plav, Mojkovac, Kolasin, Pljevlja, Zabljak, Savnik and Pluzine. The central region consists of the following municipalities: Podgorica, Niksic, Danilovgrad and Cetinje. The southern region include the municipalities of Herceg Novi, Tivat, Kotor, Budva, Bar and Ulcinj.



in quite a challenging context characterised by a low labour demand, which is reflected in a significant gap between the number of vacancies and the number of registered unemployed.

The data on jobseekers (EAM registers) shows an upward trend from 2013, when around 32 000 were registered, to 2017, when over 50 000 were registered. It seems a change in social protection legislation led to a spike in the number of people registering as unemployed. Specific benefits were granted to women with three or more children with the condition of registering with the EAM. The number of women registered as unemployed almost doubled over the course of five years, from around 15 000 in 2013 to over 27 000 in 2017.

Looking at education, people with an intermediate education represent more than 50% of total unemployment, reflecting the overall pattern of the Montenegrin workforce. Most worrying is that the number of unemployed people with a low level of education has tripled since 2013, reaching 14 681 in 2017. This compares to 4 728 low-skilled unemployed people registered with the EAM in 2013. Meanwhile, the number of highly educated unemployed has been more or less constant (EAM statistical department).

In 2016–17, ALMPs focused on adult education and training programmes, including training for work with an employer, independent work, public works and seasonal employment, as well as a programme to stimulate employment and entrepreneurship. The EAM also takes specific measures targeted at vulnerable groups, such as youth, Roma and people with disabilities. Over recent years, the EAM has also intensified the provision of labour market services, such as job mediation and advice, in order to increase overall employment and improve the quality of the labour supply. For example, the EAM organises informative meetings and motivational workshops, and prepares an individual employment plan for all newly registered unemployed people. These activities are intended to increase activation and job-search readiness, particularly among discouraged, long-term unemployed people.

In line with the strategic focus on promoting youth employment, the EAM, together with the Ministry of Education, the Ministry of Public Administration and the Human Resources Management Authority, are implementing the Government Programme for Professional Training of Persons with Higher Education. The programme has been implemented since 2012 and aims at enabling the persons with higher education and without working experience to gain knowledge, skills and competences for independent work over a period of nine months (in accordance with the provisions of the Law on Professional Training of Persons with Higher Education). Hence, a nine-month period is recognised as a twelve-month work experience and represents a condition for taking the professional exam. In 2016, the total number of participants in this programme was 3 319, while it was slightly lower in 2017, at 3 196. The monitoring of programme's outcomes shows that around one third of participants get a job after completing professional training.

The EAM also organises training aimed at unemployed people who could be potential entrepreneurs, providing training in basic entrepreneurship skills and how to start your own business. In 2017, 26 people attended this start-up training. The Montenegrin Employers Federation is also providing start-up training for young people and women to boost self-employment.

Another youth-focused measure is the programme for stimulating youth employment in seasonal jobs during the winter season, called Young People in Winter Tourism. This is a continuation of the Employ Our Young People in Seasonal Jobs programme, which ran from 2011 to 2015. As part of the programme, subsidies were provided to employers from less developed municipalities who employ young people up to the age of 24. These subsides were largely in the tourism sector (78%).



Another targeted measure is a programme focused on the training and employment of young people in the fight against the grey economy, known as Stop the Grey Economy. It aims to resolve the problem of youth unemployment and eliminate informal business. The programme provides 100 unemployed people (up to the age of 29) who have a higher education with work experience for at least nine months. Participants provided technical support and assistance to officials at the Directorate for Inspection Affairs, the Police Directorate and the Tax Administration in combating informal work and economic activities, etc. They were employed for a fixed duration of three months and benefited from continuous mentoring throughout the programme.

Skills development programmes are also included in Montenegro's portfolio of ALMPs. One focus is on (re)training or upskilling jobseekers to obtain vocational qualifications or particular knowledge and skills for a specific occupation, under the adult education and training programme. Another focus is on stimulating employers to train unemployed people and then employ them, and there is also a specific training programme to increase jobseekers' capacity to become self-employed and start up a business.

One focus of the EAM's specific measures on the employment of people with disabilities is professional rehabilitation. This includes measures and activities that enable people with disabilities, and other hard-to-employ people, to prepare for the labour market appropriately. One of the most important elements of professional rehabilitation is grant schemes. Their main objectives are to prevent the social exclusion of people with disabilities, create equal opportunities, increase their employability, and accelerate their integration into society and the labour market. Financial resources for grants are provided by the Fund for Professional Rehabilitation<sup>2</sup>, which is managed by the EAM. In addition, the EAM runs a programme to increase the employment of people with disabilities through subsidies<sup>3</sup>, with the employment of over 300 people being subsidised in 2017. In addition, the EAM takes specific measures to include Roma and Egyptians segment of the population in active labour market programmes, mainly in public works.

While efforts are being made to increase ALMP provision and better target them, their actual funding and coverage remains quite modest, with around 0.18% of GDP spent on labour market policies in 2017. According to the 2018 budget law, funds for implementing ALMPs are expected to be increased by 80%.

The main reason for this is the limited budget available for such programmes. Apart from an increased budget, there is also a need to strengthen institutional capacities further in order to improve the efficiency and effectiveness of ALMPs. The aims are, for example: to reach people in hard-to-employ categories, young graduates and people not in employment, education or training (NEETs), and other categories vulnerable to unemployment; to provide tailored activation support; and to expand cooperation with social work centres and employers, etc. These shortcomings and recommendations were also revealed by a recent review of ALMPs within the IPA project Active Labour Market Measures for Employability done in 2017. Certain innovations were introduced in targeting vulnerable groups such as youth, women and people at social risk. Systematic monitoring and evaluation of the short- and long-term effect of ALMPs would further help decision-makers to design activation measures or redesign existing ones.

<sup>&</sup>lt;sup>3</sup> An employer who fails to employ a person with a disability is obliged to pay a special contribution for the professional rehabilitation and employment of people with disabilities as part of the monthly payroll. An employer with 20–50 employees is obliged to employ at least one person with a disability, and an employer with more than 50 employees is obliged to employ people with disabilities at a rate of at least 5% of their total staff.



<sup>&</sup>lt;sup>2</sup> In 2017, it financed 41 project proposals with total funds of EUR 2 085 622.59.

### Working conditions: challenges related to informal work

Like its regional peers, Montenegro has a high level of informality in its economy and labour market. According to the National Human Development Report 2016 produced by the United Nations Development Programme and the Government of Montenegro, over 20% of total employees were informally employed in the country. In addition, only partial taxes and contributions were paid for around 10% of employees as a result of 'envelope payments'. This means that one third of the country's employees are affected by informality, either as informal workers or because of partly undeclared work and income. Youth and older workers are particularly exposed to different forms of informality. The same report estimates that if these informal jobs did not exist, the number of unemployed would double. However, the state is losing around 9% of its potential public budget revenues as a result of tax and contribution evasion (based on the 2014 budget).

There is a general assumption that many informally employed workers are exposed to inadequate working conditions, poor salaries and underpayment, and health and safety risks, and do not have access to further training or social insurance systems. Young graduates are particularly vulnerable to such practices and it may partly explain a certain level of job unattractiveness and skills mismatch, including a preference for public sector jobs. Unsurprisingly, informal workers are almost three times more exposed to in-work poverty (17.1% in contrast to 5.9% among formally employed people), as informal workers receive a 30% lower average income.

The National Human Development Report 2016 indicates that one of the most important challenges and obstacles to formality is high fiscal and parafiscal burdens. In addition to the direct impact of tax rates on the scope of formal and informal employment, other aspects are, to some extent, related to rigid labour regulation.

The labour market legislation has been assessed as being rigid and not allowing much room for flexibility. Further reforms are considered necessary to enable the labour market to function better, along with stronger employment support policies and links between employment and social protection. In order to create the legal preconditions for reform measures to be fully implemented, and increase flexibility in the labour market, labour legislation needs to be improved further. During 2017 and the drafting of this report (mid-2018), a number of new or revised pieces of legislation were adopted or in the process of being drafted. These include the Labour Law, the Law on the Social Council, the Law on the Representativeness of Trade Unions, the Law on the Labour Fund, the Law on Peaceful Settlement of Labour Disputes, the Law on Mediation in Employment and Rights during Unemployment, the Law on the Protection of Citizens Working Abroad, the Law on Vocational Rehabilitation and Employment of Persons with Disabilities, and the Law on Occupational Health and Safety.

The economy is still characterised by a low tax base with a relatively small number of taxpayers, which also points to an unfavourable tax burden on the labour force. Reducing the tax burden on workers and expanding the tax base could be considered as a potential improvement, because the current situation points to possible tax evasion and business operations in the grey economy.

Work in the grey economy is also affecting the welfare trap. For a worker to transition from the grey economy to formal, registered employment would mean a drop in their family's net annual income. In this situation, the person clearly will not be motivated to register, even though employment in the formal economy would make their future more secure through pension and insurance contributions, etc. That is why it is very important to strengthen incentives to reduce the size of the grey economy



and the number of people who are receiving social assistance and working unregistered. The social protection funds they receive could then be redirected to individuals and families who are in real need.

### 1.3 Education and training

The education system plays an important role in social development, and the government is responsible for adopting and implementing education strategies and policies at national level. The education system is financed at all levels by the state budget, except for private education. In recent years, a number of reforms were made to all segments of the education system, with the main objective of increasing its overall quality. In 2017, the Ministry of Education introduced changes to primary, secondary and higher education.

According to the LFS, people who have completed secondary education make up the largest share in the active population, at 61.2%, followed by 28.5% who have completed higher education and 10.2% with a primary or lower level of education. The situation is quite different when it comes to inactive people over the age of 15: the largest share is made up of those who have completed secondary education (50.8%), while 39.7% have completed primary school or lower, and the remaining 9.4% have completed higher education.



#### FIGURE 1.1 EDUCATIONAL ATTAINMENT OF THE ACTIVE POPULATION, 2012 AND 2017

#### Source: LFS 2012 and 2017

The educational structure of employed people shows that 60.2% of them have completed secondary education, followed by employees with a higher education (30.3%), and those who have completed primary or lower education (9.5%). On the other hand, the educational structure of unemployed people shows that 66.7% of them have completed secondary education, followed by 19.4% with a higher education and 13.9% with a primary or lower education. This is slightly different to 2012, when there was a markedly lower share of unemployed people with a higher education. This can be attributed to the rising number of people completing higher education in recent years.





# FIGURE 1.2 EDUCATIONAL ATTAINMENT OF THE UNEMPLOYED POPULATION, 2012 AND 2017

#### Source: LFS 2012 and 2017

The government began a comprehensive reform of the education system in 2000, which has increasingly focused on the reform of vocational education and the relevance of skills. The Bologna standards were adopted in 2003, introducing a three-cycle system of bachelor's, master's and doctoral studies. The higher education system consists of one public and two private universities, and one public and nine private independent faculties. It is regulated by the Law on Higher Education.

According to MONSTAT data, the total number of enrolled students has ranged between 23 000 and 26 000 in recent years (2011–17), which is a significant increase compared to the early 2000s. This increase is also the result of efforts to increase the share of the young population with a tertiary education, in order to bring it closer to the EU target of 40% of 30–34 year-olds with a higher education or equivalent by 2020. According to the DG EAC study *From university to employment: Higher education provision and labour market needs in Montenegro* (DG EAC, 2016), this share is currently very low in Montenegro at 16.8%, compared with 38% in the EU.

Higher education institutions deliver academic and applied study programmes, as well as various professional development and training programmes. These include study programmes at undergraduate, postgraduate and doctoral level. Both the public and private higher education institutions are covered by the Law on Higher Education.

According to a DG EAC study, the completion ratio at higher education institutions is 51%, and the employment rate of recent graduates who have completed their studies is 66%. Of those who find a job, the proportion of graduates who find a well-matched job is 55%. Bringing all this together, the efficiency of the higher education and labour market system rather low as for every ten students that enter the system, only two find a well-matched job. The same study emphasises that the student-teacher ratio in the higher education system is about average for the Western Balkans, but despite an increase in student enrolments, only a relatively small proportion of the population has a tertiary education degree.





FIGURE 1.3 NUMBER OF ENROLLED STUDENTS (UNDERGRADUATE STUDIES), 2000/01–2017/18

#### Source: MONSTAT

Study quality is supervised by the Council of Higher Education, which issues certificates of accreditation to study programmes. In order to increase the quality of higher education and institutions, the government established the Agency for Control and Quality Assurance of Higher Education. The agency will be responsible for the study programme accreditation procedure, regular monitoring and control of higher education institutions, and performance ranking, among other things. Montenegro's national qualifications framework includes higher education qualifications and is harmonised with the European Qualifications Framework.

According to the abovementioned DG EAC study, the average score for graduate satisfaction with higher education is 7.1 out of 10. Graduates evaluate the quality of education as 13 percentage points higher at private higher education institutions than at public ones. The study finds that teaching methods follow traditional patterns, with too many subjects and the use of rote learning. A survey conducted as part of the study showed that respondents considered their job prospects to be improved mostly by better teaching methods (64% of respondents), a more relevant curriculum (66% of respondents) and better qualified professors (40% of respondents).

Primary education lasting nine years is compulsory and free for all children between the ages of 6 and 15. Secondary education is also free but not compulsory. By law, vocational education is free for all and there are no restrictions for entry into vocational schools for any social group. The Constitution also guarantees minorities the right to education, and national legislation guarantees the education of students from minority groups in their mother tongue.

Two thirds of secondary students are enrolled in vocational schools, which are offering two types of programmes – four- and three-year study courses. Enrolment in three-year courses is decreasing despite an excess demand for those occupations in the labour market. The main problems and challenges of the vocational education and training (VET) system are related to its alignment with labour market needs. One of the most common patterns among VET graduates is continuing education. Around 70% of VET students continue their education at university, particularly to improve their chances of getting more attractive jobs and higher wages, and to achieve personal aspirations.



This is in the context of low aggregate demand and an uneven distribution of employment opportunities across the country: the northern region has worse employment opportunities compared to the coastal region or Podgorica.

In 2017, the Ministry of Education began reforms to the education system, including VET education. The biggest change is the introduction of dual VET education, which represents significant progress in improving school-to-work transitions through work-based learning. It involves parallel learning and work with an employer for VET students, while the student gets a monthly payment for employment. In this system, almost 300 students are being educated in collaboration with 97 employers in the academic year (2018/19).

Some 17 schools from 12 municipalities participate in this type of education, with 14 educational programmes. Employers are from the services sector and others such as food industry or wood processing. The Centre for Vocational Education controls the material, technical and staffing conditions that the employer must fulfil in order to educate the student in the dual education system, and the student then signs an individual contract with the employer. A working body has been established to monitor implementation.

In June 2017, the new Law on Higher Education was adopted. The main change it introduced was free studies for undergraduate and master's students, and the effects of this reform should be visible in future. The main advantage and risks of this model lie in its financial sustainability, as free studies put additional pressure on already weak public finances. There is also some debate over whether it will lead to improved or lower quality in the higher education system overall.

The higher education system produces too many graduates for the needs of the labour market, leading to a high level of graduate unemployment. Although the unemployment rate of all graduates is below the average for the labour force, the unemployment rate among recent graduates who have completed their studies since 2010 is estimated to be much higher. The higher education sector enrols too many students in a narrow range of subjects such as business administration and law, which attract more than a fifth of all students. On the labour market side, there is an oversupply of graduates in these subjects, as well as in the broader study fields of Arts and Humanities, Social Sciences, Journalism and Information. There is a large and continuing shortage of graduates in Natural Sciences, Mathematics and Statistics.

The higher education sector also suffers from a high level of internal inefficiency, as too many students enrol in studies but fail to complete their courses. Many graduates from vocational high schools move on to higher education. This has a negative impact on the quality of education and is one of the causes of an oversupply of higher education graduates. In addition, many students drop out of their studies. For example, in the 2013/14 academic year, the completion rate for higher education studies was just 53%. The situation is even worse in private higher education institutions where the completion rate is only 38%, compared to 57% in their public equivalents. Overall, completion rates are relatively low. Completion rates on three-year bachelor's degrees are similar to the lowest completion rates in the European Higher Education Area.

Lifelong learning is supported by several measures. These include measures focused on increasing basic skills achievements, the acquirement of recognised qualifications in adulthood, transition to the labour market, and other types of publicly subsidised adult education measures. All programmes related to these measures are focused both on acquiring qualifications, and on acquiring professional knowledge and key skills. There is also a Strategy for Lifelong Entrepreneurial Learning for 2015–19.



In addition, the new Strategy for the Development of Micro, Small and Medium-Sized Enterprises for 2018–22 includes measures to improve the entrepreneurial skills of young people and women.

In order to provide higher coverage of lifelong education and learning programmes, and upgrade the knowledge, skills and competences of its citizens, the government has adopted the Plan for Adult Education in Montenegro (2015–19). This, together with further annual plans based on the four-year plan, should help achieve the goals defined in the Strategy for Adult Education in Montenegro 2015–25. The annual plans set out detailed activities according to priority areas by municipalities. They include activities, target groups, activity organisers, monitoring indicators, planned financial resources and sources of the resources necessary for implementation. However, they do not define the precise scope of the activities, which are implemented by different national institutions.

The EAM provides training and retraining programmes to help unemployed people acquire and upgrade their knowledge, skills and competences. The Human Resources Administration finances professional development programmes for public sector employees, and all ministries finance activities related to the development of specific skills, depending on the need. Business representatives, such as the Chamber of Commerce, also arrange various training courses and activities.

# 1.4 Key developments and challenges in labour market demand and supply

A review of labour market development so far suggests that the transition had a decisive influence as it resulted in structural changes to many parts of the economy. The decreasing share of employment in industry combined with the increased role of services in GDP lowered the demand for certain industrial professions. Overall, it resulted in longer periods searching for employment, as well as long-term unemployment with the typical characteristics of structural unemployment. This came hand in hand with a higher demand for skills and competences for the services sector.

The low rate of labour force activity indicates that people's potential is not being used to the full. In fact, insufficient activity, mobility, skills and motivation among the domestic labour force are resulting in the significant use of foreign labour. This, together with informal labour, reveals that there is still insufficient flexibility in the labour market.

Although there were positive trends in 2017, labour market performance is still characterised by high youth unemployment, low participation of women and high long-term unemployment.

The typical manifestations of the structural mismatch of supply and demand are listed below.

- There is demand for labour in certain skill profiles but the education system does not produce enough of those profiles, primarily due to students' lack of interest in those areas.
- There is demand for labour in certain skill profiles and a sufficient supply of those in the labour market, but vacancies are not filled. A typical example is in the summer season, when qualified waiters from the northern region are reluctant to work in the coastal region for a few months for various reasons (potential informal employment, fear of losing social/unemployment benefits, unattractive working conditions, etc.). This results in the significant seasonal employment of foreign workers.
- There is a supply of certain skill profiles but not a sufficient labour demand for those profiles.



Montenegro appears to experience all of these to varying degrees, and it seems to be one of the most important problems for the country's labour market. According to EAM data (2016), the total labour demand is 2.7 times lower than labour supply. An analysis of the trends in labour supply indicates that supply increased by 11.5% in 2016 compared to 2015. In addition, more than one third of the total supply are people without any work experience and 20% are people under the age of 25.

On the other hand, labour demand decreased by 10.4% in 2015–16. The tourism, trade and construction sectors have the highest shares in the demand structure. Looking at qualification levels, demand for the unqualified and semi-qualified labour force increased. The reason for this could be intensive economic activities in the tourism and construction sectors, which demand an unskilled labour force with a lower level of education.

Regional structural unemployment and a high rate of long-term unemployment are still the biggest problems. There are large differences in the degree of development between regions and smaller territorial units (municipalities). The northern region offers fewer employment opportunities, and although the coastal region and Podgorica have a stronger demand, particularly during the summer, this is often associated with a higher incidence of informality (for example, in tourism or construction activities).

First-time jobseekers face challenges, as employers increasingly require additional knowledge on top of the qualification acquired in regular education, including practical skills and competences, and the capacity to perform professional tasks independently. There is also still insufficient investment in education and training for adults, including those who are employed. This can also be said for investments made from public funds, by employers, and individual investments. As the economy continues its transformation, developing and updating skills is one of the key ways to counteract the challenge of skills mismatch.

#### Inconsistent supply and demand

The structure of registered unemployment (qualifications, specialist training and worker profiles) is not consistent with that of the current labour market demand. A significant proportion of the registered unemployed are people who were formerly employed. Their knowledge and skills mirror the specific structure of the labour and skills demand in the previous economic structure. Long-term unemployment or spells of inactivity also lead to their skill set becoming obsolete, as predictable future demand will require different knowledge and skill sets. There is therefore a need for greater investment in relevant initial education (for young workers entering the labour market) and lifelong learning approaches to address the needs of the lower educated, those with obsolete skills, vulnerable groups, etc.

It is almost impossible to reduce the gap between the structure and volume of demand and supply without properly targeting economic and social needs in the provision of education and training. Other measures are also required to stimulate demand and job uptake. Public institutions, which have a great influence on the labour market, need further capacity building and proper resourcing in order to play an effective role in addressing labour market and skills imbalances.

As labour relations (e.g. types of work contracts) are not that flexible, legal solutions such as employment through temporary work agencies may prove successful in (re)allocating the workforce more efficiently. This is particularly relevant as Montenegro's economy has a higher incidence of short-term and seasonal demand, for example in the tourism sector. Such a solution could also address the



issue of informality. However, employment quality and risk of abuse are still points of concern. Employers could use such contractual arrangements to avoid their obligation to offer permanent contracts after two years.

Making labour relations more flexible should go hand in hand with protecting workers adequately during periods of unemployment, when changing jobs, looking for new opportunities or during periods of inactivity because of their health or family care obligations, for example. Employment stimulation legislation, the Public Employment Service, the Labour Fund<sup>4</sup> and the passive social protection system (e.g. social allowances) provide a crucial buffer during such periods.

Efficient links between the various policy, insurance and taxation strands also influence positive workforce mobility. This can be seen in upward career progression, rapid transition from unemployment or inactivity into jobs, and less precarious pathways to first employment among graduates and other first-time entrants to the labour market. Employment services and ALMPs are still not well enough developed and resourced, which affects their reach and effectiveness. Further efforts are needed to strengthen links between the labour market and social protection, and to reduce disincentives to work. Some important actions with the potential to improve social inclusion have been introduced in recent years (see Economic Reform Programmes, 2017–19 and 2018–20).

#### Skills mismatch and lack of job creation

Skills mismatch and the lack of job creation remain key obstacles to growth and competitiveness. Besides regular analyses of labour market demand done by the EAM and other stakeholders and the relatively recently established graduate tracking system<sup>5</sup>, three recent studies conducted in Montenegro also help complete the picture of existing or emerging mismatches, the reasons behind them and possible policy approaches. These are the DG EAC study quoted above (DG EAC, 2016), and the studies *Labour market transitions of young women and men in Montenegro* (ILO, 2016), and *Mismatch between education and labour market needs* (MEF, 2016).

The skills mismatch manifests itself at secondary and higher education levels, and stems from high transitions from VET into higher education and programmes that are less relevant for labour market needs. It seems an oversupply of higher education graduates, particularly in professional fields that are in low demand such as law, business and the humanities, is producing a high level of graduate unemployment.

According to the DG EAC 2016 study, the main reasons that graduates have difficulty finding jobs are the lack of vacancies and the fact that the higher education system does not equip graduates with the relevant skills. There is a high level of reliance on friends and family to find work, which results in inefficient recruitment practices. Having some work experience is important in enabling graduates to transition successfully into the labour market, both in terms of the probability of finding a job, and of finding a job that is well matched to their field of study.

In response to this issue, the government has introduced a programme aimed at providing unemployed graduates with internships after they leave university. However, according to the DG EAC

<sup>&</sup>lt;sup>5</sup> The tracer study is expected to become a regular practice of the Ministry of Education.



<sup>&</sup>lt;sup>4</sup> The Labour Fund was established by the Law on the Labour Fund (*Official Gazette*, No 88/09). It secures the payment of claims made by employees as a result of the bankruptcy of their employer if the claims are not paid or only partially paid. It also conducts proceedings and decides on the exercise of employees' rights as referred to in Article 98 of the Labour Law.

study, the programme has not been very effective. Further adjustments are deemed necessary to improve targeting and retention, increase the probability of longer-term employment and reduce adverse effects such as misuse, crowding out, displacement, etc.

Many employers, especially foreign investors, have a poor perception of the quality of graduates' skills. The DG EAC study showed that although graduates have strong numerical, reading and writing skills, employers are concerned about the absence of interactive skills, reporting serious and growing skill gaps in this area. The largest increase in graduate employment has been in the accommodation and food services sector, and the construction sector, which reflects the rapid growth in the tourism and construction market. While most graduates are employed by large companies, much of the recent increase in graduate employment has been in fast-growing small and medium-sized enterprises called 'gazelles'. These may be an important source of graduate employment in the future, so it is important to build up entrepreneurial skills and mindsets.

The same study shows that, for employers, the most important skills are sector-specific (where vocational courses are relevant), computer, analytical and problem solving – a mix of cognitive and interactive skills. The relative weakness of these among graduates (apart from computer skills) is worrying and is a major challenge for employers. Many of them solve this problem by providing additional training to their graduate recruits.

Almost one third of recent graduates are in a job that is not well matched to their field of study. In addition, almost a half of recent graduates are vertically mismatched, with one third having a qualification above the needs of the job. Graduates in a well-matched job earn more than others, which highlights the important impact that matching graduate employees to jobs effectively has on the productivity and competitiveness of the economy.

Graduates who studied Information and Communications Technologies have the highest probability of finding a vertically well-matched job. Widespread skill mismatches highlight the deficiencies of the higher education system in failing to supply graduates with the right mix, type and level of skills for the labour market. Reasons for this include the failure to modernise curricula in response to changing technologies and patterns of production in the economy (DG EAC, 2016). Based on the graduate survey conducted for the DG EAC study, 77% of those who had at least some work experience (or an internship) found a job that was well matched to their field of study, while only 59% of those who had no work experience found a well-matched job. This emphasises the importance of work experience, which can be attained through internships or work placements during the period of study, enabling a smooth transition from higher education into the labour market.

Another relevant piece of research on the issue of skills mismatch is the abovementioned ILO 2015 study, in collaboration with MONSTAT, *Labour market transitions of young women and men in Montenegro*, published in 2016. The age of the youth cohort included in the study was 15–29. Key findings highlight a slightly higher incidence of over-education among young workers (11.4%), compared to under-education (8.0%). At aggregate level, the majority of young workers (80.7%) have managed to find work that is well matched to their level of qualifications. Among young people working in elementary occupations (group 9, International Standard Classification of Occupations), more than half (53.6%) have a higher level of education than the level expected for effective performance in the job.

The other occupations in which over-educated young people are primarily found are clerks (where 25.7% are over-educated), and service and sales workers (12.8%), but they also include technicians,



associate professionals, and plant and machine operators. Undereducated young workers are found in elementary occupations when they have not passed even the primary level of schooling.

Vacancy monitoring and other analyses reveal that there is still a strong demand for occupations that require a secondary and primary level of education, with most vacancies being recorded in trade, administrative and auxiliary services, and tourism and hospitality. Although an insufficient percentage of the population is highly educated compared to many EU countries, there is actually not enough demand for tertiary graduates. This indicates that a strategic goal to increase the number of university graduates should go hand in hand with an expansion of complex economic activities, science and innovation, technological advancement, etc. As already mentioned, although enrolment in tertiary education has risen rapidly in recent years, there are registered shortages in certain higher education professions, including doctors and STEM (science, technology, engineering, and mathematics) graduates. This points to an oversupply of graduates in business, law and humanities.

Cross-institutional collaboration is considered essential in order to have early warnings about emerging mismatches and tackle the causes and effects of those imbalances, according to the *Report on Mismatch between education and labour market needs* (MEF, 2016). This paper recommends improved quality of education, effective ALMPs, career guidance and lifelong learning. Enhanced cooperation among stakeholders could also support regular in-depth analysis of mismatch using the data available (MONSTAT and EAM), as well as empirical studies with a methodology that is compatible with European practices, to make them comparable.



### 2. THE DATA

The Statistical Office of Montenegro (MONSTAT) uses a national classification system, which is harmonised with EU standards and classifications, as well as with other applicable international classifications. National standards are revised regularly and adjusted to changes in social and economic conditions.

The Law on the Classification of Activities (*Official Gazette*, No 18/11) regulates the Classification of Economic Activities in Montenegro. The basic definitions and rules for the application of the 2010 statistical classification of economic activities is fully compliant with the definitions and rules for the application of this classification in the EU: NACE Revision 2 (established by Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006). Using the 2010 classification, which fully corresponds to NACE Revision 2 in both form and structure, undoubtedly provides high-quality statistical data that is internationally comparable.

The Standard Classification of Occupations in Montenegro is based on Article 37 of the Law on Statistics and the Statistical System of Montenegro (*Official Gazette*, No 69/05) and it was adopted by the Council of the Statistical System in February 2011. The Standard Classification of Occupations follows the principles and system of the International Standard Classification of Occupations (ISCO-08), and its European version.

The Classification of Education Levels is based on the Law on the Montenegrin Qualifications Framework, which was adopted by the Parliament in December 2010. Montenegro referenced its national qualifications framework to the European Qualifications Framework in 2014, and so to the national qualifications frameworks of other European countries linked to it. The national classification divides educational programmes according to the 2011 International Standard Classification of Education (ISCED) and has nine levels.

Pre-school education is level zero. The ISCED level 1 (primary) includes primary school from the 1st to the 5th grade, while the level 2 (lower secondary) covers the national system of the 6th to 9th grades. The ISCED level 3 (upper secondary) covers the national secondary school system, while the level 5 comprises the former higher schools (i.e. vocational education after secondary education). There is a limited offer for the ISCED level 5. The ISCED level 6 includes all university study programmes lasting three or four years, while those lasting five or six years are classified as ISCED level 7. Doctoral studies are ranked at level 8, according to ISCED 2011. The definitions in the MONSTAT glossary are essentially the same as in recognised international ones, such as the OECD Glossary of Statistical Terms and Eurostat's Concepts and Definitions Database.

The classification of educational programmes is presented in Annex 1. There are some differences between the national classification and the typical ISCED programmes. For example, the two years education of lower secondary programmes after primary school, which typically fall under ISCED 2, are classified as upper secondary education under ISCED 3. Annex 2 presents a correspondence table between ISCED levels and ETF's aggregated levels, i.e. high, intermediate (non-VET and VET) and low.

The LFS has been in place since 1994 and collects information on the economically active population or labour force in the country, as recommended by the International Labour Organisation (ILO). The LFS is carried out in compliance with ILO standards and recommendations for labour force statistics,



as well as with the applicable European standards (i.e. acquis communautaire) and Eurostat requirements for methodology, survey organisation, sample procedure, questionnaires and definitions.

The national authorities collect and manage administrative data sources, as well. Data on the annual and monthly number of employees, for example, is collected on the basis of records regulated by the Law on Records in the Area of Labour and Employment (*Official Gazette*, No 69/03). The records are held by the Central Register of Tax Administration and regularly used by MONSTAT. Administrative data on unemployed people include those registered with the Employment Agency (EAM). Both MONSTAT and the EAM are in charge of collecting data: MONSTAT for LFS-based data and the EAM for registered employment data. The EAM also collects data on vacancies, defined as job openings announced by employers in both the public and private sectors. The national authorities are currently exploring technical solutions for adapting the vacancy-monitoring instrument to the Eurostat requirements for job vacancy surveys.

As the key policy-making body in education, the Ministry of Education is also responsible for the management and continuous development of the educational information system. This includes collecting and processing all data and information on the education system through the Montenegrin Education Information System. The system is constantly being developed to capture new data or respond to new demands for evidence. For example, it has recently been adjusted to capture the provision of practical training to VET students as part of the dual education reform. The important step of establishing regular tracking to monitor students after graduation will be included also in the system.

Some relevant surveys and studies have already been conducted in the area of education, skills and the labour market that are relevant to the discussion on skills mismatches. Primarily, there are the EAM's surveys and publications, such as its regular employers' survey (conducted annually) and analyses of supply, demand and employment in the labour market, which also provides relevant inputs. Besides the EAM, various studies conducted by other national or international institutions proved to be consistent from a methodological perspective. They include: *From university to employment: Higher education provision and labour market needs in the Western Balkans* (DG EAC, 2016); *Labour market transitions of young women and men in Montenegro* (ILO, 2016); and *Mismatch between education and labour market needs* (MEF, 2016).

As said before, this ETF paper aims to capture, calculate and interpret a set of indicators to mirror skills mismatches, using the LFS as its main source. The main reason for choosing the LFS is that the indicators are more likely to be available and consistent for all of the ETF's partner countries included in this project. Most LFSs follow the general model of taking a representative sample of the population. They also include sufficient demographic, employment and education information to provide useful data on skills through education by level and type, and employment by sector or occupation, age, and gender.

In addition to methodological robustness and cross-country availability, another reason for choosing the LFS is its regularity and accessibility without huge investment compared with other data sources. Focused research and ad hoc surveys, etc. would require certain logistical investments and capacity expansion, and are more likely not to be done regularly. Nevertheless, additional sources may provide useful insights and provide complementary skills mismatch information. These could include administrative sources; specific surveys focused on vacancies; or skills-based research such as a sectoral-skills needs assessment or research into changes in occupational tasks, qualifications and transversal competences.



For this specific project, the majority of the data requested is available for Montenegro. According to the Law on Official Statistics and System of Official Statistics<sup>6</sup> (as per Articles 56–58), the LFS microdata cannot be released to third parties, as the individual data on natural, legal persons and households shall be confidential and represent official secret and the only permission to release individual statistical data, without identifiers, is allowed to scientific-research institutions as well as to international statistical organisations and statistics producers from other countries. Therefore, the aggregation of microdata was done by MONSTAT employees with detailed instructions from ETF experts.

The main challenges included the proposed breakdowns of age groups and educational levels into small cell sizes. The issues were discussed and a new solution for the breakdown of age groups and educational levels was proposed and introduced. The size of the overall sample posed some challenges in presenting the indicators calculated. In general, it is to be expected that small countries will have difficulties in providing indicators on several dimensions, as the sample drawn from the population is necessarily smaller.

<sup>&</sup>lt;sup>6</sup> http://monstat.org/userfiles/file/o%20nama/11\_04\_12\_Law%20on%20Official%20Statistics.pdf



### 3. SKILLS MISMATCH INDICATORS: INTERPRETATION AND DISCUSSION

While labour market imbalances, in general, refer to a difference between demand and supply, mismatch concentrates on certain aspects of those imbalances, specifically a mismatch in skills or qualifications between supply and demand. Skills mismatch can occur even when total supply meets total demand in numbers, but not in skills or qualifications.

The micro-dimension of skills mismatch is a matter of level, so the skills are within the correct field of a specific task or occupation, but the level of the skill is lower than would usually be required for the specific occupation or task. This is usually referred to as vertical mismatch, over- and under-education or over- and under-skilling. A horizontal mismatch occurs when the level of the qualification is sufficient, but the type or field of qualification does not match adequately. The more that detailed job requirements can be measured in terms of skills or qualifications, the more likely it is that there will be a horizontal mismatch. In contrast, the less detailed the data is the less likely it is to identify a horizontal mismatch, even where one exists.

The body of knowledge and recommendations summarised in the ETF methodological note, along with other important studies on the skills mismatch by the Joint Research Centre (2014), the European Centre for the Development of Vocational Training (Cedefop, 2015), the European Commission (2015) and Eurostat (2016) are the conceptual and methodological starting point for this country study. The indicators used are summarised in Table 3.1.

Indicator	Definition	Purpose	Data source(s)	Interpretation
Unemployment rate	U/(E+U)	Official unemployment rate Often uses a strict definition of unemployed (searching for a job within the past four weeks)	LFS	Number of unemployed individuals divided by number of employed individuals. Can be calculated for different groups, such as by age, gender, etc. See above. Note also that the different groups might have quite different ratios. Youth U/E shows problems in school- to-work transition and old- age U/E shows a lack of relevant skills or institutional barriers to employment.
Unemployed- to-employed ratio	U/E	Like the unemployment rate but simpler to calculate Provides a direct interpretation of the proportions of employed and unemployed people	LFS	See above Note also that the different groups might have quite different ratios. Youth unemployment shows problems in the school-to- work transition; old-age unemployment shows a lack of the relevant skills or institutional barriers to employment.

### TABLE 3.1 MISMATCH INDICATORS: DEFINITIONS AND INTERPRETATION



Indicator	Definition	Purpose	Data source(s)	Interpretation
NEET	IA+U/POP	Looks at unemployment among young people in the school-to-work transition	LFS	NEETs rate: number of individuals (usually young population aged 15–24 or 15-29) who are not in employment, education or training, divided by the number of all individuals in the respective age group, multiplied by 100. Increased NEET shares signal mismatches and problems in transition from school to work.
Over- education	Percentage of individuals with education level above the required or identified level of education in occupation (or group of occupations)	Degree of mismatch by qualification level	LFS, skills surveys	Share of employed individuals whose education is above the one required by the job, out of all employed people with the same level of education. Higher percentages of over- education (or an increase) reflect higher mismatch.
Under- education	Percentage of individuals with education level below the required or identified level of education in occupation (or group of occupations)	Degree of mismatch by qualification level	LFS, skills surveys	Share of employed individuals whose education is below the one required by the job, out of all employed with the same level of education. Higher percentages of under-education (or an increase) reflect higher mismatch.
Coefficient of variation		Comparison of differences in education level among employed and unemployed people	LFS	Calculated as the ratio of the standard deviation to the mean. Higher levels indicate increased incidence of skills mismatch.
(Relative) wage rates	Various definitions Mostly index of wages relative to base year (and relative to specific base level)	Examines the overall level at a specific time, and the development over time	LFS, wage surveys, administrative (tax or social security) data	Increasing (relative) wages usually indicate a higher (relative) demand for a specific group, i.e. an increase in the wages of workers with a higher level of education compared to those with an intermediate level of education reflects higher relative demand for workers with a higher level of education.

Notes: U – unemployed, E – employed, IA – inactive people, POP – population. The population is, by definition, the sum of employed, unemployed and inactive people (POP=U+E+IA), while the labour force (LF) is defined as unemployed plus employed people (LF=U+E). For the calculation of NEET indicator, young people participating in education are excluded (only non-school-related inactivity is considered).

The following pages discuss the skills mismatch indicators, using existing data and providing an interpretation in line with the country's context.



Table 3.2 provides a general overview of the employed, unemployed and inactive across three education levels: lower, intermediate and higher education<sup>7</sup>. About one third of the population falls into the category of lower education, about half has an intermediate education, and the remaining 18% has a higher education qualification. Relative to their proportion of the population, lower educated people are much more likely to be inactive than the other categories and less likely to be unemployed. The higher educated are much less likely to be inactive, but are more likely to be among the unemployed.

Education level	% share of pop labour market s	Total population		
	Employed	Unemployed	Inactive	(thousands)
Low	8.37	12.30	37.49	19.53
Intermediate non-VET	5.35	3.38	11.14	7.27
Intermediate VET	54.83	65.26	44.28	52.06
High	31.45	19.06	7.09	21.14
Total (%)	100	100	100	100
Total population (thousands)	219.34	44.80	154.28	418.41

#### **TABLE 3.2 POPULATION STRUCTURE, 2016**

Source: Author's calculations using LFS 2016

### 3.1 Unemployment rate and unemployed-to-employed ratios

The unemployment rate is the rate of unemployed people relative to the population that is active in the labour market (the sum of employed and unemployed). Higher rates show an increasing mismatch between supply and demand. Related to this are the unemployment-to-employment ratios, which show the extent of unemployment. A ratio of 0.1 implies that for each unemployed person there are 10 employed, while 1 implies a one-to-one ratio.

The unemployment rate is the ratio of the unemployed over the employed, plus the unemployed. It is the rate most often used by MONSTAT for official statistics, and is inherently related to the unemployment-to-employment ratio and the ratios of employed or unemployed people out of the population. Figure 3.1 shows the unemployment rates from 2012 to 2017 for three age groups: 15–29, 30–49 and 50–64. There is a relatively low downward trend in the unemployment rate for all age groups from the beginning of the period up to 2017. After economic policy measures and social and educational policy reforms were introduced, Montenegro's labour market started to recover and record a positive shift. However, there are still a lot of unresolved issues and scope for improvement.

As can be seen in Figure 3.1, the unemployment of young people aged 15–29 is higher than in the other age groups. Even though there is some decline, these figures reveal the high youth unemployment rate to be a major problem in the country's labour market. The main reasons for the high unemployment rate could be young people's lack of education and experience. Many

<sup>&</sup>lt;sup>7</sup> Annex 2 includes further information on the aggregation by education level used in this report.



young labour market participants are pursuing an education and may not be available in the labour market.

The 30–49 age group is older, more experienced and educated, and have completed the school-towork transition. Their figures are lower than for the younger group. There was an increase in the unemployment rate for people aged 30–49 to 17.2% in 2016, which is the highest rate for that age group over the whole period. This can be explained by the law enabling mothers who have three or more children to quit their job in order to receive benefits and pensions, which was abolished in 2017.

Lastly, there is also a negative unemployment trend in older people aged 50–64, with a significant drop from 2014 (9.2%) to 2017 (4.8%).





Source: Author's calculations using LFS 2014-17

The proportions of unemployed to employed people in different categories allows the relative size of unemployment (or employment) to be analysed, independent of the overall size of a specific category. Naturally, this indicator is very much related to the unemployment rate. Figure 3.2 presents the unemployment-to-employment ratio by educational attainment. It shows typically higher values and more problems or mismatch among the lower educated; medium indicator values for intermediate education levels; and good indicator values showing less mismatch among the higher educated.

Figure 3.2 confirms the relatively low downward trend of unemployment in all age groups, as the average unemployment-to-employment ratio is declining. This is mostly due to the high decline in the unemployment-to-employment ratio for lower education levels, which recorded a decline from 0.50 in 2014 to 0.26 in 2017.





# FIGURE 3.2 UNEMPLOYMENT-TO-EMPLOYMENT RATIO BY EDUCATION ATTAINMENT LEVEL (15–64 AGE GROUP), 2014–17

Note: Partial data on intermediate non-VET due to the low number of observations. Source: Author's calculations using LFS 2014–16

Other education levels have remained at a relatively similar unemployment-to-employment ratio. Intermediate VET declined by 0.02 in the period observed, while the unemployment-to-employment ratio for high educational levels increased by 0.01 in 2017 compared to 2014. This shows that this ratio is much more volatile for lower educational levels, whereas the decrease is evident and stable, or relatively unchanged, for higher educational levels. This might be misleading because not all people tend to remain formally in the labour market when unemployed. People with lower educational levels tend to withdraw from the official labour market, which could lower the unemployment-to-employment ratio. Figure 3.2 also shows that the unemployment-to-employment ratio is lowest for high education, and highest for low education levels.

When looking at gender-disaggregated data, the average unemployment-to-employment ratios for men (Figure 3.3) show a decrease over time, with the exception of 2016. The lower education levels are the most volatile, while high education levels remain relatively similar, with the lowest unemployment-to-employment ratios. The only difference between the unemployment-to-employment ratio for men and for both genders is in intermediate VET education. In Figure 3.2, intermediate VET education remains at a relatively similar level, with a slight decrease in 2017. For men, the trend is similar, but the ratio is higher compared to the lower educational levels. From 2015 onwards, the ratio for intermediate VET education levels is higher than the ratio for lower educational levels. This could possibly be explained with the reasons already mentioned: people in lower educational levels do not tend to stay in the formal labour market but seek other options instead, while those in intermediate VET levels are more educated and have higher hopes of finding a job through the labour market.



# FIGURE 3.3 UNEMPLOYMENT-TO-EMPLOYMENT RATIO BY EDUCATIONAL ATTAINMENT LEVEL OF MEN (15–64 AGE GROUP), 2014–17



Note: Partial data on intermediate non-VET due to the low number of observations. Source: Author's calculations using LFS 2014–16

Figure 3.4 shows the unemployment-to-employment ratio by education level for women over the period observed. The trend is similar to that in Figures 3.2 and 3.3, in which the lower educated are the most volatile, with decreasing ratios. The lowest values are in the high education levels, which remain relatively similar with an unemployment-to-employment ratio in the range of 0.11 to 0.12. There are no significant differences between the two gender groups. For a woman, the ratio is higher for low education levels than it is for men. Also, there is a slight increase in the average unemployment / employment rate for 2017, which is not the case for men.



# FIGURE 3.4 UNEMPLOYMENT-TO-EMPLOYMENT RATIO BY EDUCATIONAL ATTAINMENT LEVEL OF WOMEN (15–64 AGE GROUP), 2014–17

Source: Author's calculations using LFS 2014–16



Employment in the labour market can also be measured by the ratio of employed over the population. Figure 3.5 shows the employment-to-population ratio by age group over the period observed. It is clear that prime-age people (30–49) have the highest ratios, followed by older people (50–64). The graph shows improvement over time, with an increase in the employment-to-population ratio in all age groups between 2014 and 2017. The only decrease was for prime-age people (30–46) in 2016, when a drop of 1.1 percentage points was recorded.





Note: Partial data on 65+ due to the low number of observations. Source: Author's calculations using LFS 2014–17

Montenegro's labour market mostly consists of prime-age population between the ages of 30 and 64. This is to be expected, because younger people tend to stay in school and seek education rather than remaining in the labour market or inactive, while older people over 65 have stopped working. The difference in the participation of young and prime-age people in the labour market is between 31.2 and 34.5 percentage points.

Figure 3.6 shows the employment-to-population ratio for men by age group over the period observed. The trend is the same as in Figure 3.5, showing an increase in the ratio with slight fluctuations. There are higher gaps between the prime-age (30–49) and young (15–29) population within a range of 35.4 to 40.0 percentage points. The employment-to-population ratio for men is higher in every figure than for both genders. The trend is quite positive, with the highest improvements in older people aged 50–64. Younger and prime-age people record a positive shift of almost 4% and 6.2% respectively over the period.





#### FIGURE 3.6 EMPLOYMENT-TO-POPULATION RATIO FOR MEN BY AGE GROUP, 2014–17

Note: Partial data on 65+ due to the low number of observations. Source: Author's calculations using LFS 2014–17

Figure 3.7 shows that the employment-to-population ratio for women is lower than the same ratio for men, in every instance. This is due to the fact that men are more active in the labour market. The only completely positive shift for women is in young people aged 15–29, where there is a constant increase in the employment-to-population ratio. The difference between young and prime-age women is lower than it is for men, with the difference ranging from 27.0 to 31.1 percentage points. However, the difference in percentage points between prime-age (30–49) and older (50–64) people is higher for women than for men. This could mean that there is more evident and active participation of women in the labour market among younger women, as the difference between young and prime-age women is lower than for men, while the gap is larger between prime-age and older women.



#### FIGURE 3.7 EMPLOYMENT-TO-POPULATION RATIO FOR WOMEN BY AGE GROUP, 2014–17

Notes: Partial data on 65+ due to the low number of observations. Source: Author's calculations using LFS 2014–17



Figure 3.8 shows that the part of the population that has a VET-based qualification tends to have higher participation rates than those with a non-VET based education, as indicated by the employment-to-population ratio. It reveals an increasing trend in both types of educations. VET-based education increased from 54.3% in 2014 to 56.3% in 2017 (2 percentage points), while non-VET based education increased from 46.7% to 50.4% (3.7 percentage points). The increase in non-VET based education is higher than for VET-based.

# FIGURE 3.8 EMPLOYMENT-TO-POPULATION RATIO BY TYPE OF EDUCATION (15–64 AGE GROUP), 2014–17



Source: Author's calculations using LFS 2014-17

Figure 3.9 paints a similar picture for the employment-to-population ratio for men. There is an overall increase in both VET and non-VET education, with the exception of VET education in 2015, when there was a drop of 0.3 percentage points. The increase for both education types is larger than in Figure 3.8. There is an overall increase of 3.6 percentage points for VET education and 4.3 percentage points for non-VET education. Also, for men, the ratios for both educational types are higher than for women. This could be explained by the fact that men tend to be more active in the labour market, as already mentioned.

# FIGURE 3.9 EMPLOYMENT-TO-POPULATION RATIO OF MEN BY TYPE OF EDUCATION (15–64 AGE GROUP), 2014–17



Source: Author's calculations using LFS 2014–17



Figure 3.10 shows the same ratio for women. There is an obvious difference in the trends for both VET and non-VET education, with a decrease in both educational types for women in 2017. After an increase in 2015, there is a significant drop in VET-based education for women. The trend is the same for non-VET education: after an increase from 2014 to 2016, there is a drop in 2017. These two employment-to-population ratios are almost the same for both educational types.



# FIGURE 3.10 EMPLOYMENT-TO-POPULATION RATIO FOR WOMEN BY TYPE OF EDUCATION (15–64 AGE GROUP), 2014–17

Source: Author's calculations using LFS 2014–17

### 3.2 Young people not in employment, education or training (NEETs)

This methodology calculates the rate of young people who are neither in employment nor in education or training. It therefore calculates the rate of young people who are not actively participating in the labour market or in education. The underlying reason is presumed to be some form of mismatch, as those who are not in education are generally presumed to have finished their education and should find some form of employment. It therefore combines non-participation and unemployment.

The NEET rate provides an indicator that shows the level of non-participation by young people in the labour market. Higher levels of the indicator reflect an underutilisation of youth potential in the labour market. The low values in the graphs for employment over population might have been misleading, especially for the youngest age group (15–29), in view of their participation in education. The NEET rate strips away participation in education and training, so the percentage of people aged 15–29 who are neither employed nor in education or training was 22.5% in 2014 and 21.4% in 2017. This implies that, in 2014, 77.5% of the young people in that age group were either in education or already working, and 78.6% of young people were either in education or already working in 2017. This trend



over the period observed reaches its lowest value in 2017, with an obvious decrease in the NEET rate between 2015 (when it was highest, at 23.4%) and 2017.



## FIGURE 3.11 YOUNG PEOPLE (15–29) NOT IN EMPLOYMENT, EDUCATION OR TRAINING, 2014–17

The decrease in the NEET rate indicates that the school-to-work transition became easier between 2015 and 2017, and that young people will find a job more quickly after education than they did in the past.

The NEET rate for young males aged 15–29 shows the same trend. As can be seen from Figure 3.12, the NEET rates for young males over the period observed are lower than the general rates for both genders. This could indicate that the school-to-work transition is slightly quicker and easier for young males.



#### FIGURE 3.12 YOUNG MALES (15-29) NOT IN EMPLOYMENT, EDUCATION OR TRAINING, 2014-17

Source: Author's calculations using LFS 2014-17



Source: Author's calculations using LFS 2014-17

The same NEET trend can be observed for young females. The higher percentages indicate that more young females than young males are not in employment, education or training. This can be explained by the traditional role of women in society, in which women are more focused on creating a family and taking care of children.



# FIGURE 3.13 YOUNG FEMALES (15–29) NOT IN EMPLOYMENT, EDUCATION OR TRAINING, 2014–17

Source: Author's calculations using LFS 2014–17

### 3.3 Variance of relative unemployment rates (by education level)

This indicator shows how unemployment deviates within education levels from the overall country average. The higher the variance, the higher the mismatch. The methodology would also be applicable to sub-groups such as age, gender and previous occupation.

The variance of relative unemployment rates, shown in Figure 3.14, allows us to compare the variation that exists in unemployment rates for specific education levels with the national average. A higher value indicates that there is a lot of deviation in these education levels, meaning unemployment affects the various types of education very differently. It provides an alternative (but related) indicator of skills mismatch to the coefficient of variation. Higher values imply a higher level of mismatch.

As Figure 3.14 shows, the overall mismatch measured by this indicator decreases between 2014 and 2016 (when it records its lowest value), then increases significantly again in 2017. During that period, the unemployment rate is decreasing continuously, with slight fluctuations.

Overall, the variance of relative unemployment rates is high, which indicates a high level of mismatch. The high level of mismatch is likely to be induced by one education group deviating more from the average. This statement would require additional analysis.





FIGURE 3.14 VARIANCE OF RELATIVE UNEMPLOYMENT RATES (15-64 AGE GROUP), 2014-17

Note: High volatility due to a low number of observations for intermediate non-VET and low education levels (partial data).

Source: Author's calculations using LFS 2014-17

The variance of relative unemployment rates for men aged 15–64 is very high. Figures 3.15 and 3.16 indicate that the variance of relative unemployment rates for men is lower than for women, suggesting that even if the skills mismatch is high, it is still lower for men than it is for women.



### FIGURE 3.15 VARIANCE OF RELATIVE UNEMPLOYMENT RATES FOR MEN (15–64 AGE GROUP), 2014–17



Source: Author's calculations using LFS 2014-17

For women aged 15–64, the variance of relative unemployment rates is higher than for men, while the unemployment rate is relatively similar for both women and men.





Source: Author's calculations using LFS 2014–17

### 3.4 Coefficient of variation by skills

This indicator compares the distribution of skills within different groups while correcting for the overall size of the underlying statistic. The difference in skill composition/level between employed and unemployed people is expressed in just one number that measures the overall extent of mismatch. The higher the number, the greater the difference between the skills of people employed in the labour market and the skills of people wishing to enter it. The extent to which the distributions are different can therefore be interpreted as a measure of the ineffectiveness of the process of matching supply and demand of skills in the labour market (ETF, 2012).

The coefficient of variation by skills (CVAR) by skills is related to the previous indicator. It attempts to grasp one or several elements of skills mismatch to quickly gauge the extent of it. The CVAR compares the variation of qualifications (expressed as shares) in the unemployed group compared with the working-age population.





#### FIGURE 3.17 CVAR OF QUALIFICATION COMPOSITION (15–64 AGE GROUP), 2014–17



The idea of the indicator is that if unemployment were independent of the qualification level, the CVAR would be zero. The more the two groups differ, the higher the CVAR. Figure 3.17 shows a slightly downward trend, implying that the skills level has become less discriminatory in explaining unemployment. In other words, the distribution of qualifications in the working-age population seemed to coincide more with that of the unemployed in 2017 than it did in previous years, implying a reduction in mismatch. Overall, the mismatch indicated seems relatively high, with a downward trend.



#### FIGURE 3.18 CVAR OF QUALIFICATION COMPOSITION FOR MEN (15–64 AGE GROUP), 2014–17

Source: Author's calculations using LFS 2014–17



Figure 3.18 gives the CVAR by skills for men in Montenegro, showing lower values and a relatively similar trend. The lower values indicate lower skills mismatch for men.

Figure 3.19 shows that the CVAR by skills for women is much higher than the same coefficient for men. This implies that the distribution of qualifications for women in the working-age population seems to coincide less with those of the unemployed for women than for men. The second difference in this indicator for men and women is in the trend. The downward trend has not continued for women as it has for men over the period observed. Instead, Figure 3.19 shows an increase in the CVAR in 2017.



# FIGURE 3.19 CVAR OF QUALIFICATION COMPOSITION FOR WOMEN (15–64 AGE GROUP), 2014–17



Fsollowing an analysis of the trend in the CVAR indicator over the years, Figure 3.20 provides a separate calculation by age group. The high CVAR indicator values for the youngest category (15–29) indicate a very different unemployment spell by qualification in that age group. This should not be over-interpreted as many are still in the education process and the indicator is likely based on few observations. Also, the high value of this indicator indicates a mismatch triggered by a difficult school-to-work transition. The lowest CVAR values are for the 30–49 age group, indicating a lower mismatch at prime age. An upward trend from the 30–49 age group onwards indicates that unemployment is shared more equally in the younger age groups, and becomes more pronounced in the older age groups. Only the 30–49 age group is below the average calculated across the entire population aged 15–64.

Figure 3.21 shows the CVAR indicator for men by age group. The values of the CVAR indicator are lower, which indicates that unemployment is more equally shared between age groups. The same trend and explanations apply here as in Figure 3.20. The difference here is that both the 30–49 age group and 50–64 age group are below the average for the entire population.





#### FIGURE 3.20 CVAR OF QUALIFICATION COMPOSITION BY AGE GROUP, 2016

#### FIGURE 3.21 CVAR OF QUALIFICATION COMPOSITION FOR MEN BY AGE GROUP, 2016





For women, the CVAR indicator values are much higher than for men. The CVAR indicators are also high for the youngest age group (15–29), but this should not be over-interpreted. The lower values for the 30–49 age group indicate that unemployment is more equally shared in that age group, while the CVAR values are higher for the 50–64 age group indicate.



Source: Author's calculations using LFS 2016



#### FIGURE 3.22 CVAR OF QUALIFICATION COMPOSITION FOR WOMEN BY AGE GROUP, 2016



Figure 3.23 applies this concept to a different angle of qualification that distinguishes between qualification through VET and those attained through general education programmes. The trend is relatively similar, with a slight decrease over time, reaching its lowest value in 2017.



#### FIGURE 3.23 CVAR OF QUALIFICATION COMPOSITION (15–64 AGE GROUP): VET VS. NON-VET, 2014–16



For men, the CVAR indicator by orientation of education (VET vs. non-VET) follows a similar trend, with values lowering over the observed period and the lowest value in 2017.



# FIGURE 3.24 CVAR OF QUALIFICATION COMPOSITION FOR MEN (15–64 AGE GROUP): VET VS. NON-VET, 2014–16



Source: Author's calculations using LFS 2014-17

The CVAR values are higher for women than for men. The trend is not similar, with a clear increase in 2017 for this indicator.







Source: Author's calculations using LFS 2014–17

### 3.5 Relative wages

This methodology compares wages across education levels over time, either relative to a benchmark wage or to a base year. Presenting it in a diagram would make it very easy to see how certain education levels have been remunerated compared to others over time. If an education level attracts a higher income than that achieved by people with other education levels, it can be a sign that this level of education is in higher demand in the labour market.

Table 3.3 shows the development of wages between 2012 and 2017. The data by sector is taken from MONSTAT in its index values with a base index year in 2014 for total income. All other income levels are calculated relative to this baseline. It shows an overall increase in total income of 5% over the period observed.

Sector	2012	2013	2014	2015	2016	2017
Agriculture, forestry and fishing	124	102	97	103	109	107
Mining and quarrying	146	143	126	119	126	125
Manufacturing	107	96	91	90	90	88
Electricity, gas, steam and air conditioning supply	181	173	171	181	185	180
Water supply, sewerage, waste management and remediation activities	96	96	95	96	96	97
Construction	82	97	88	91	92	90
Wholesale and retail trade, repair of motor vehicles and motorcycles	68	68	70	69	71	72
Transport and storage	115	106	109	106	108	112
Accommodation and food service activities	79	79	79	84	80	80
Information and communication	156	151	142	144	144	146
Financial and insurance activities	179	186	185	191	192	191
Real estate activities	163	141	139	148	151	140
Professional, scientific and technical activities	89	92	88	84	83	85
Administrative and support service activities	72	70	74	72	65	69
Public administration, defence and compulsory social security	102	103	105	107	119	123
Education	93	94	95	96	100	101
Human health and social work activities	100	100	101	102	108	113
Arts, entertainment and recreation	78	80	79	80	82	91
Other service activities	94	98	91	88	90	97
Total	101	100	100	100	104	106

#### TABLE 3.3 INCOME LEVEL BY SECTOR, 2012–17

Source: Author's calculations using MONSTAT data



The sector with the biggest increase between 2012 and 2017 is public administration, defence and compulsory social security, which rose by 20.5%, followed by human health and social work activities, with an increase of 13% in the same period. Also notable are the construction sector (9.75%), financial and insurance activities (6.7%) and education (8.6%).

Almost all other sectors experienced a decrease in income levels. The largest decreases were in manufacturing (17.7%), mining and quarrying (14.4%), and agriculture, forestry and fishing (13.7%).

Compared to the baseline in 2014, the highest income levels in 2017 were in the financial and insurance activities sector, with an average of 1.91 times the baseline income. This was followed by the electricity sector (1.8 times higher) and information and communication (1.46 times higher). These three sectors, along with real estate activities, recorded the highest income levels for the whole period.

The lowest income levels in 2017 were recorded in administrative and support service activities (0.69 of the baseline level), wholesale and retail trade (0.72), and accommodation and food services (0.80).

Only public administration and defence, education, and human health and social work activities show a positive trend in income growth every year.

### 3.6 Occupational mismatch

This method compares the ratio of people with a certain education level (International Standard Classification of Education (ISCED)) who are working at an inappropriate skill level (based on the International Standard Classification of Occupations (ISCO)) to all workers in that ISCED level.

Table 3.4 contains the results of an empirical analysis of occupational mismatch, comparing the ratio of people with a certain education level who are working at an inappropriate skill level to all workers in that education level. The table shows the occupational mismatch for individuals with an upper secondary education and for individuals with a tertiary education.

Table 3.4 shows that 8.2% of people with an upper secondary education were working in elementary occupations in 2017. It indicates that between 2014 and 2017 there was a constant increase in the ratio of people with an intermediate education who were working at an inappropriate (lower) skill level. This means that more and more people with an intermediate education are working in inappropriate positions. This ratio is lower for men than it is for women.

Table 3.4 also shows the percentage of people with a tertiary education who are working in semiskilled occupations. The trend is quite different. Out of a total population with a tertiary education, there is a decrease in the ratio of people working in semi-skilled occupations over the period observed. This trend is mostly influenced by women, as there is a clear and significant decrease in the ratio of women working in inappropriate occupations between 2014, when that ratio was 15%, to 2017, when it was 8.8%. For men, this ratio fluctuates, recording its highest value in 2016 at 16.5%. In the first two years (2014–15), there were more highly educated women working in semi-skilled occupations than there were men, but that trend turned around in 2016–17.

Comparing these data reveals that the occupational mismatch over the whole period was higher for people with a tertiary education than for those with an upper secondary education. The only exception is women in 2017, when the occupational mismatch for a female was higher for intermediate



education than for higher education. At the higher education level, the overall degree of occupational mismatch decreases from 15.2% in 2014 to 10.9% in 2017. The mismatch seems to have been more common among highly educated men than among highly educated women over the last two years of the period observed. The indicator for women showed a downward trend, while the indicator for highly educated men did not.

The opposite is true for intermediate occupational mismatch, where men are somewhat less likely to be mismatched (6.7% in 2017) than women (11.4% in 2017). However, there was an upward trend for both men and women over the period observed.

To summarise, the level of mismatch decreased for higher education, while it increased for intermediate. This downward trend could be a good sign for people with a tertiary education as the occupational mismatch decreases over time (especially for women). In 2017, 10.9% of people with a higher education were working in a lower skilled job, while 8.2% of people with an intermediate education were working in elementary occupations (on increasing). This may hint at a need to revise the policy interventions in particular in the areas of graduates' transition from school to work and the adaptability of workforce with intermediate education to the changing skills demand. Gender differentials in both incidence and dynamics of mismatches over the analysed period would call for targeted policy actions.

	2014	2015	2016	2017	
Intermediate education – % of al elementary occupations	Intermediate education – % of all people (15–64) with upper secondary education working in elementary occupations				
Total	5.7	7.2	7.4	8.2	
Male	4.1	4.9	5.4	6.7	
Female	8.9	11.2	10.9	11.4	
Higher education – % of all people (15–64) with tertiary education working in semi-skilled occupations				ed occupations	
Total	15.2	13.9	14.2	10.9	
Male	12.4	10.2	16.5	13.9	
Female	15.0	14.7	12.2	8.8	

#### TABLE 3.4 OCCUPATIONAL MISMATCH – INTERMEDIATE AND HIGHER EDUCATION, 2014–17

Notes: Compare with OECD 2010. *Upper secondary education:* intermediate education (ISCED 3–4); elementary occupations: ISCO category 9.

*Tertiary education:* higher education (ISCED 5–8), semi-skilled occupations: ISCO category 4–9. Source: Author's calculations using LFS 2014–17



### CONCLUSIONS

The mismatch indicators suggest that there are problems in making the transition from school, unemployment or inactivity into employment. This can partly be explained by the level of education and relevance of skills.

Unemployment and inactivity rates in Montenegro remain relatively high. Looking at the unemployment-to-employment ratio, it is clear that most unemployed people have low levels of education. After the lowest levels of education, people at the intermediate vocational education and training (VET) level make up the second largest share of unemployment. High educational levels have the lowest unemployment-to-employment ratio of all education levels. This suggests that the labour market difficulties faced by more highly educated people are much less likely to result in unemployment, at least for the population that is active in the labour market. Other indicators seem to suggest that there is a larger degree of over-qualification among the higher educated than among the intermediate levels.

Furthermore, there are larger proportions of people in the labour market with a VET education than with a non-VET education, but both show an upward trend over the period observed. In other words, people with a VET-based education are prevailing in the labour market compared with the population without a VET-based education.

The largest share of unemployment is among young people aged 15–29 (25.8% in 2017), pointing to a difficult 'journey' for young graduates into their first work experience and jobs. Interestingly, the indicator for young people not in employment, education or training (NEET) is decreasing, which means that there is less and less 'underutilisation' of youth potential. This is quite positive in comparison to peer countries.

Given these decreasing trends in unemployment and non-education related inactivity among young people, it can be assumed that the school-to-work transition is becoming easier in the country. In addition, most young people are more focused on continuing their education than finding a job. This could be a reason for the low percentage of young people in the Montenegrin workforce. The prime-age population (30–49 age group) seems to be the most successful, as it is in other countries, with an employment-to-population ratio of almost 70%, followed by the older group.

It seems that the age group most affected by skills mismatch are young people, while the least affected are the 30–49 age group, followed by the 50–64 group.

Judging by the variance of the relative unemployment rate for the period observed, skills mismatch displayed a downward trend overall, implying that unemployment is becoming more evenly distributed across all education levels. The indicator recorded its lowest value in 2016, before increasing in 2017 towards previous levels. However, the definition of skill levels and the cell size (number of observations) can have an impact on its volatility.

The coefficient of variation (CVAR) of qualification composition also shows a slow downward trend, but this indicator could be misleading. Such a 'positive' trend can also be explained by the propensity for migration among the Montenegrin workforce in search of better jobs and higher wages in other countries. Typically, migration can reduce the level of skills mismatch indicators, as well as unregistered unemployment. The same indicator reveals a higher exposure to mismatch



among young people, most probably triggered by a lack of relevant and/or practical skills and work experience.

After young people, the highest mismatch is registered among older people aged 50–64, presumably because their skills are obsolete. Mid-career workers (aged 30–49) face the lowest risk of mismatch since they have already built up their skill set in line with labour demand. They are also young and adaptable enough to keep adjusting their skills and competences to the current and future needs of the labour market.

The occupational mismatch indicator shows that there is also a trend of over-qualification in Montenegro. The over-qualification phenomenon affects people with a tertiary education more often than those with an upper secondary education. However, there is a growing trend of over-qualification among people with an upper secondary education, but a downward trend among those with a tertiary education. This indirectly reveals a rise in the demand for staff with a tertiary education, as the occupational mismatch for them is decreasing over time. This downward trend in occupational mismatch for people with a tertiary education is especially pronounced for women.

This report explores the feasibility of calculating skills mismatch using data from existing and reliable sources. This led to the identification of several clusters of indicators that provide insights into key aspects of skills mismatch. These include under- and over-qualification, and the CVAR of unemployment and employment by various dimensions: gender, age and education level, including a very important disaggregation for education decision-makers, namely data that distinguishes between VET and non-VET education.

The LFS allowed key mismatch indicators to be calculated, revealing consistent and internationally comparable data over the period observed. Several technical challenges were encountered as a result of the relatively small number of observations possible for a small country. The data was therefore aggregated into wider age-bands instead of the five-year bands used for larger countries. In addition, over- and under-education was not calculated using the empirical method due to the small number of observations, which made the results unreliable.

Results and indicators could be strengthened and improved by allowing a clear distinction between qualification levels and ensuring sufficient numbers of observations, especially for age groups that seem to be vulnerable (particularly the younger population). Specific modules that focus on mismatch that can be combined with the general microdata might also help deepen the analysis, by providing insights into the reasons and outcomes of mismatch.

As skills mismatch does exist in Montenegro, there is a need to improve how skills and skills mismatch are measured. This should involve not only continual measurement but also consideration of new methods of obtaining as much accurate and comparable data as possible. The proposed additional modules to deepen insights into the matching process would be one way of collecting the data. Specialised surveys and potentially combining insights from employers and employees may also help deepen understanding. The often difficult school-to-work transition is usually analysed using tracer studies.

All of these options would enable better examination of the persistence of skills mismatch and its impacts. However, the data produced would be of limited value if there were no further improvement in the understanding of that data, as well as of the processes, types, dynamics and potential consequences of mismatch.



The report revealed that the efforts of national institutions and various stakeholders to improve the position of vulnerable groups in the labour market (such as women, young people and those with a lower level of education) should continue. Further efforts could involve highlighting the skills mismatch affecting these groups in the labour market. In order to achieve this, adequate data must be made available, and the existing data regularly used and interpreted for use in policy making, including the data provided in this report.



### **ANNEXES: DATA CLASSIFICATION USED**

### Annex 1. Classification of educational programmes

	Highest level of education successfully completed, 2014–17	ISCED 2011	
0	No formal education	ISCED 0	
1	Less than six years of primary school (basic education)	ISCED 1	
2	At least six years of school, but primary education not completed		
3	Primary education	ISCED 2	
4	Vocational school for two years after primary school		
5	Vocational school for three years after primary school		
6	Secondary general	130ED 3	
7	Secondary vocational school		
8	Vocational education after secondary education	ISCED 4	
Old	system		
9	First level of professional tertiary (college) education, for two years	ISCED 5	
10	Faculty, academy/university	ISCED 6	
11	Master's degree	ISCED 7	
12	Doctor's degree or equivalent	ISCED 8	
Bol	ogna (new system)		
13	Academic higher education for three years		
14	Academic higher education for four years	13CED 0	
15	Academic higher education for five-six years	ISCED 7	
16	Undergraduate studies on applied degree programmes	ISCED 6	
17	Postgraduate specialist studies		
18	Master's studies	ISCED 7	
19	Doctoral studies	ISCED 8	

Source: MONSTAT

### Annex 2. Aggregation by education level

The following aggregation by education level was used to calculate the mismatch indicators throughout the report.

ISCED 2011	ETF aggregation	
0–2	Low	
2.4	Intermediate – general	
5-4	Intermediate – VET	
5–8	High	

Source: Author



### LIST OF ABBREVIATIONS

ALMPs	Active labour market policies
Cedefop	Centre européen pour le développement de la formation professionnelle (European Centre for the Development of Vocational Training)
CVAR	Coefficient of variation
DG EAC	Directorate-General for Education, Youth, Sport and Culture
EAM	Employment Agency of Montenegro
ETF	European Training Foundation
EUR	Euro (currency)
GDP	Gross domestic product
ILO	International Labour Organisation
IPA	Instrument for Pre-accession Assistance
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
LFS	Labour force survey
MONSTAT	Statistical Office of Montenegro
NEET	(Young people) not in employment, education or training
OECD	Organisation for Economic Cooperation and Development
VET	Vocational education and training



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