



# 2023 skills forecast Romania





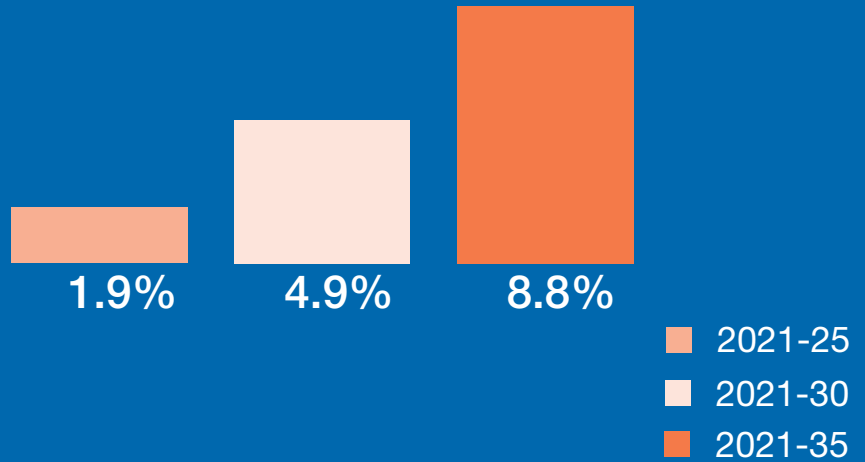
Employment in 2035

9 201 000

8.76%

increase 2021-35

% Employment growth 2021-35



Fastest-growing sectors

2021-35% growth

99%

Real estate, professional, scientific & technical activities

59%

Financial & insurance activities

Highest-demand occupations

Largest creation of new jobs, 2021-35

257 000

Business & administration professionals

187 000

Sales workers

157 000

Labourers in mining, construction, manufacturing & transport

increase in high-skilled labour demand 2021-35

30%

Total job openings, 2021-35

4 492 000

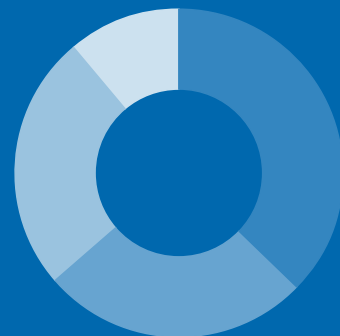


Replacement needs (83%)

New job openings (17%)

Total job openings by skill level

2021-35



High-skilled non-manual occupations (37%)

Skilled non-manual occupations (26%)

Skilled manual occupations (25%)

Elementary occupations (11%)



3.4%

employment increase in 2021-35



Fastest growing occupation

Legal, social and cultural professionals



Fastest growing sector

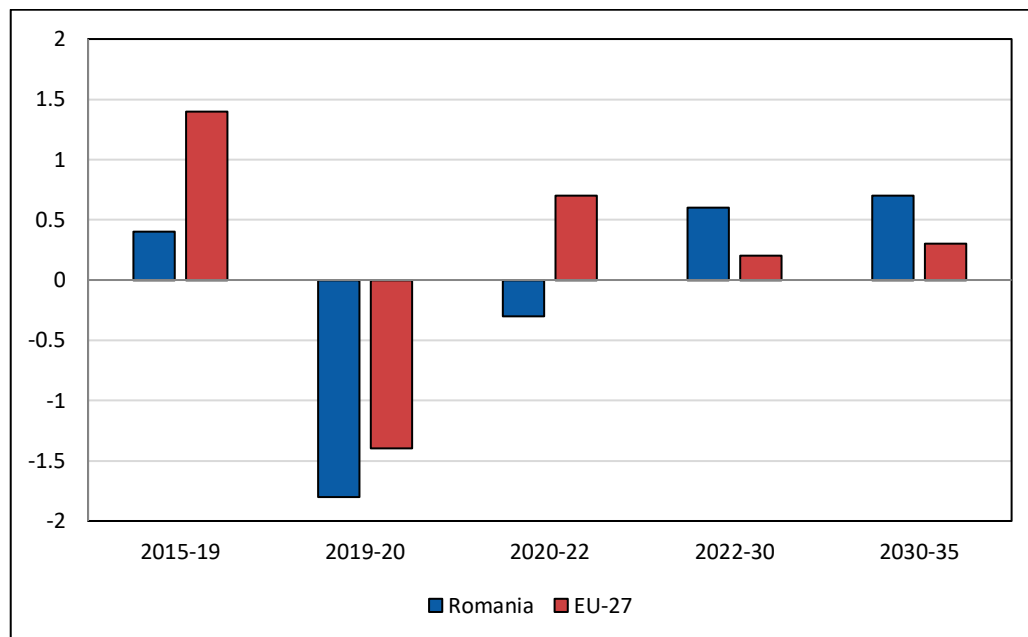
Information and communication

# Cedefop skills forecast: Romania

## 1. Employment outlook

Employment in Romania is forecast to grow faster than the EU-27 average over 2022-35. Figure 1 shows that employment in Romania grew quite slowly over 2015-19, much slower than the EU-27 average, and fell more sharply than the EU-27 in 2020 as the Covid-19 pandemic hit. Employment in Romania is also estimated to have fallen over 2020-22, compared with a bounce-back for the EU-27 over the same period. Across the forecast period, however, employment in Romania is forecast to grow by 0.6-0.7% pa, much faster than the growth of around 0.2-0.3% pa forecast for the EU-27 as a whole.

Figure 1. Annual percentage employment growth in Romania and the EU-27, 2015-35



Source: Cedefop (2022 Skills Forecast).

## 2. Labour force overview

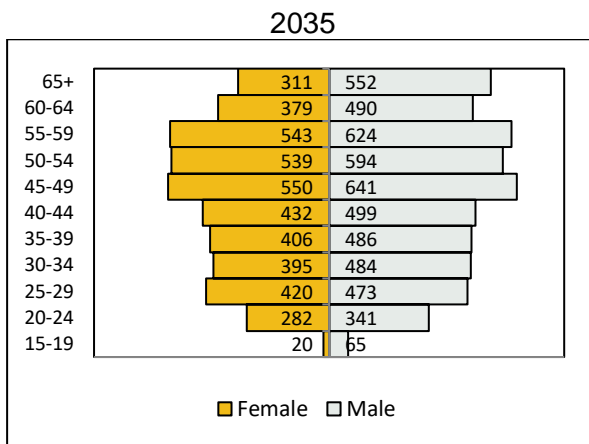
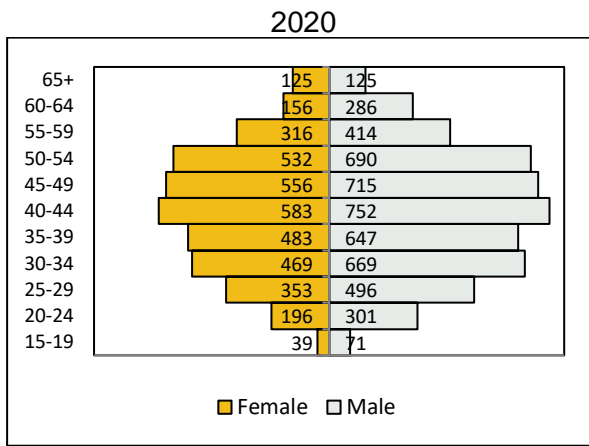
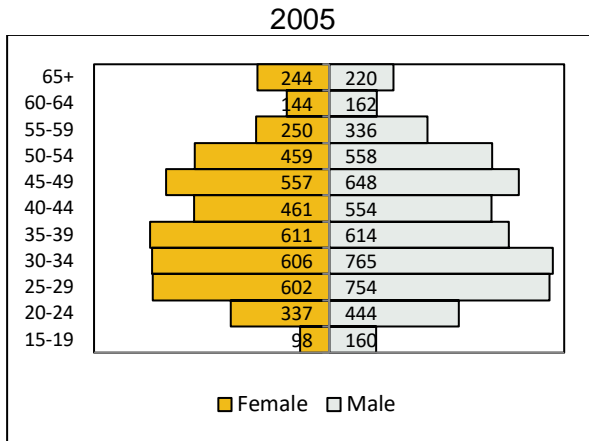
Figure 2 shows the labour force by age group in Romania in 2005, 2020 and 2035. Changes in the labour force in Romania over the forecast period will continue to be driven by the ageing population and increasing participation rates in most age groups. The total labour force in Romania is projected to increase by 6% over 2020-35, compared to a fall of 6% over the previous 15 years. This compares with an expected increase in the labour force of just under 3% over 2020-35 for the EU-27. The total participation rate in Romania is forecast to increase by a very large 9 pp over 2020-35, compared with an increase of only 1 pp in the total rate for the EU-27 as a whole. The total population is forecast to fall by 9% over 2020-35, compared with a fall of 8% over 2005-20.

The population aged 15-54 in Romania is forecast to decline sharply during 2020-35, while the population aged 55-59 and 65 and over is forecast to grow quite strongly, reflecting trends in the relevant younger cohorts in preceding periods.

The participation rates of all age groups above 20 in Romania are projected to increase strongly over 2020-35, with the strongest increase projected for the 60-64 (34 pp) and 20-24 (20 pp) age groups, and the increase for most age groups expected to be at least in double digits.

Female participation rates in Romania are slightly lower than the EU-27 average, with an overall female participation rate of 45% in 2020 compared with the EU-27 average of 50%. However, as discussed, participation rates in Romania are projected to increase rapidly over 2020-35, so that by the end of the forecast period, most female participation rates by age group in Romania will be higher than their counterparts in the EU-27 as a whole. The overall male participation rate in Romania is already higher than the EU-27 average, and male rates by age group are also projected to grow faster than in the EU-27. Overall, the total participation rate for females is projected to increase by 11 pp and for males to increase by 7 pp over 2020-35.

Figure 2. Distribution of the labour force (thousands), 2005-35

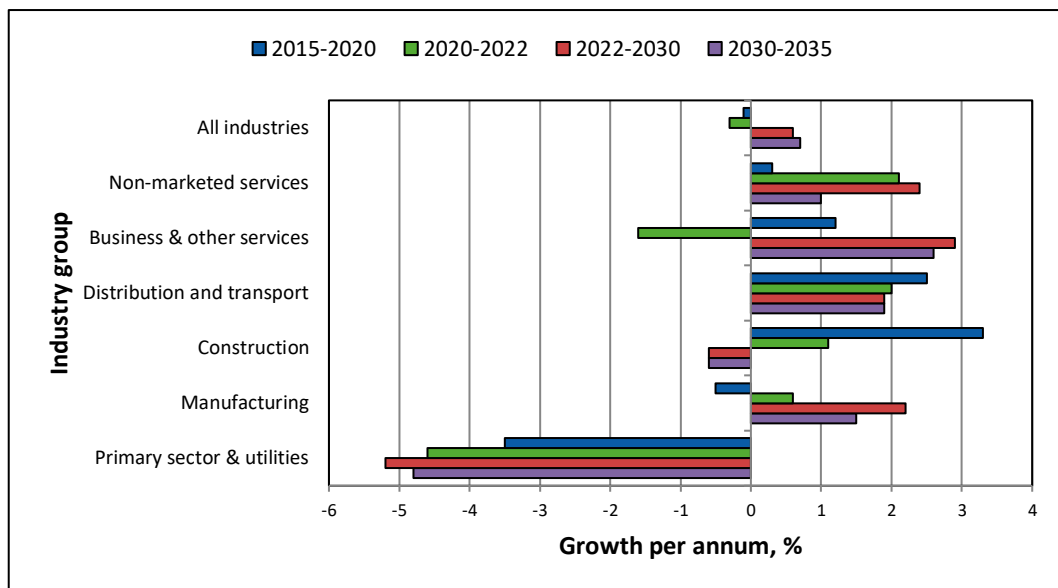


Source: Cedefop (2022 Skills Forecast).

### 3. Sectoral employment trends

Figure 3 shows the annual average employment growth by broad sector in Romania between 2015 and 2035. Although total employment in Romania is expected to continue to grow relatively strongly over the forecast period, the picture among the broad sectors is mixed. Employment growth is forecast to be fastest in the broad service sectors of *Business & other services*, *Non-marketed services* and *Distribution & transport*, all with employment growth of 2% pa or more over 2022-30. Employment growth in *Manufacturing* is also forecast to be relatively fast, with growth of more than 2% pa over 2022-30. On the other hand, employment in *Primary sector & utilities*, which accounts for around one quarter of employment in Romania, mainly through *agriculture*, is forecast to fall by 5% pa over the same period.

Figure 3. **Employment growth by broad sector of economic activity, 2015-35**



Source: Cedefop (2022 Skills Forecast).

In terms of sub-sectors (i.e. below the level of the six broad sectors discussed above), the pattern of growth is much more mixed. Within *Business & other services*, only the sub-sector of *administrative & support services* is forecast to see a decline in employment, of 0.8% pa, over 2022-30. All other sub-sectors in this broad sector are forecast to see relatively strong employment growth over 2022-30. All three sub-sectors within *Non-marketed services* are forecast to see relatively strong employment growth, particularly *public administration & defence* and *health*. Each of these three sub-sectors accounted for 4-5% of total employment in Romania in 2020. In *Distribution & transport*, employment in the large sub-sectors of *wholesale & retail trade* (15% of employment), *land transport*

(5% of employment) and *accommodation & catering* (3% of employment) is forecast to grow strongly over 2022-30. The sub-sectors within *Manufacturing* tend to be smaller, but within the larger ones (2% of total employment or more), employment in *motor vehicles* and *food, drink & tobacco* is forecast to grow strongly over 2022-30, while employment in *textiles & leathers* is forecast to fall quite strongly over the same period. Employment in *Primary sector & utilities* in Romania is dominated by *agriculture*, which is forecast to fall by very strongly over 2022-30.

## 4. Job openings by occupational group

Cedefop skills forecasts estimate the total job openings by occupational group as the sum of net employment change and replacement needs. Net employment change refers to new jobs created or jobs lost due to the expansion or contraction of employment in that sector or occupation. Replacement needs arise as the workforce leaves the occupation due to retirement or career changes. Replacement needs, generally, provide more job opportunities than new jobs, meaning that significant job opportunities arise even in occupations declining in size (i.e. agricultural workers are a typical example, as ageing workers employed in the sector will need to be replaced).

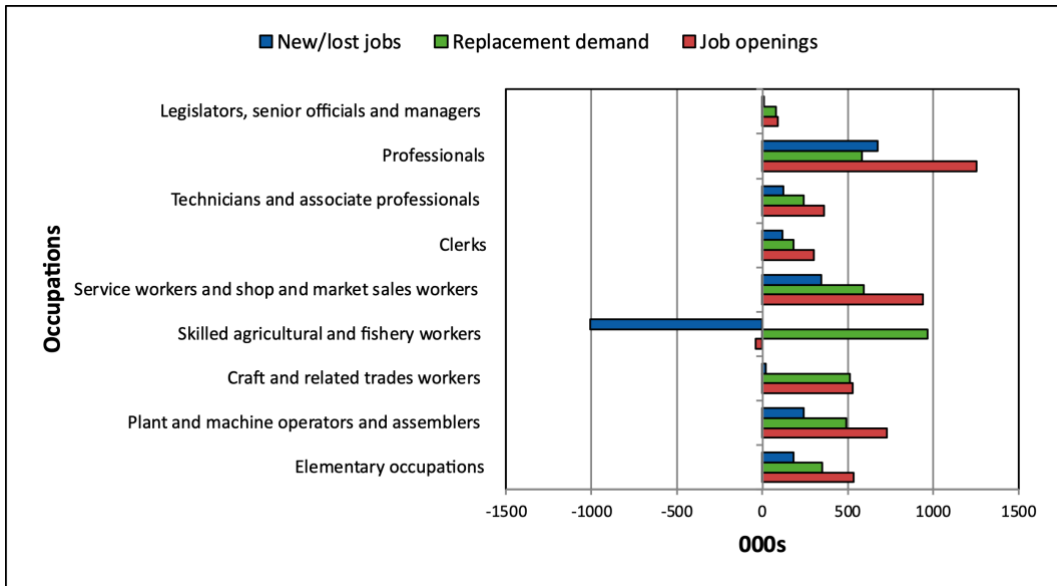
Figure 4 shows the total job openings by broad occupational group over 2020-35. The number of job openings indicates the number of jobs that are required to be filled due to lost/newly created jobs and those that require replacement workers. Most broad occupations, except for *Skilled agricultural & fishery workers*, are expected to experience an increase in the number of jobs. The strong decline in jobs for *Skilled agricultural and fishery workers* is due to the poor prospects for total employment in that particular occupation due to sectoral requirements. There are still forecast to be substantial 'replacement needs' in this occupation (as in others) over 2020-35, as a large number of workers are expected to leave the occupation due to retirement or career changes, but these are not expected to fully counter the loss due to a declining number of jobs. However, all other broad sectors are expected to see a large number of job openings due to an increasing number of jobs and strong replacement demand. *Professionals* is expected to generate the largest number of job openings over the forecast period (over one million), accounting for 25% of total job openings. Overall, there are forecast to be 706,000 more jobs and replacement demand of 4 million jobs, leading to 4.7 million job openings in total over 2020-35.

At the more detailed level, the greatest number of job openings (taking both new/lost jobs and replacement needs together) are expected to be in a mix of skilled and less-skilled occupations. The skilled manual occupations of *drivers & mobile plant operators*, *metal, machinery & related trades workers* and *building & related trades workers* are forecast to account for 10%, 5% and 4% of all job openings, respectively, with the first due to a large number of new jobs as well as replacement demand, and the second due entirely to replacement demand and despite a fall in job numbers. The skilled non-manual occupations of *sales and personal service workers* are forecast to account for 10% and 4% of job openings, respectively, due to a large number of new jobs and replacement demand. The high-skilled non-manual occupations of *business & administration professionals*, *science & engineering professionals* and *legal, social & cultural professionals* are forecast to account for 8%, 5% and 4% of job openings, respectively. Among the



lower skilled, elementary occupations, labourers in mining, construction, manufacturing & transport are forecast to account for 7% of total job openings.

Figure 4. **Job openings by broad occupational group, 2020-35**



Source: Cedefop (2022 Skills Forecast).

## 5. Drivers of occupational change

Within the Cedefop skills forecast, future employment growth (or decline) of occupations is further broken down by separating national economic components from regional industrial and economic effects, helping to interpret what is driving the change. From this perspective employment growth can be explained by three possible drivers: (a) overall trends of the economy (i.e. growth or decline), (b) shifts of employment between sectors and (c) changes in the occupational structure within sectors (i.e. factors making some occupations more important than others).

The Romanian labour market is changing within and across sectors in the development of occupations. Changes in industry size mainly characterise the occupational composition of employment in the country and, in fewer cases, by changes in the level of specialisation within occupations. Both stronger industry size and occupation-specific effects lead to increasing shares of *managers*, *professionals* and *associate professionals*. Similar effects, but with lower impact, are present in some non-high-skilled occupations, such as *general office clerks*, *assemblers* and *labourers in mining, construction, manufacturing and transport*. High-skilled occupations benefiting the most from these trends are, for example, *health professionals*, *administrative and commercial managers*, and especially, *business and other professionals*. These occupations are increasingly important in the sectors and are mainly employed in growing sectors. The strong increases among *professionals* are partly at the cost of *technicians and associate professionals* who are employed in similar sectors, thus enjoying growth through the development of those sectors while being somewhat pushed out by higher levels of education (i.e., *professionals*). Furthermore, it is evident that the industry size effect favours the highly-skilled occupations, and for this level of occupations, its impact is much stronger than the occupation-specific effect. Despite the growing industry size characterising all high-skilled occupations, only two of them, *chief executives*, *senior officials and legislators*, and *managers in services*, face negative and stronger occupation-specific effects.

Several medium level occupations are increasing due to the industry size effect, for example, *assemblers*, *general office clerks*, *general office clerks* and *sales workers*. Few of them, such as *general office clerks* and *sales workers*, become stronger thanks to positive occupation effect at the expense of other occupations. Overall, intermediate occupations are forecast to grow, except for a few occupations such as customer service clerks and *agricultural workers*.

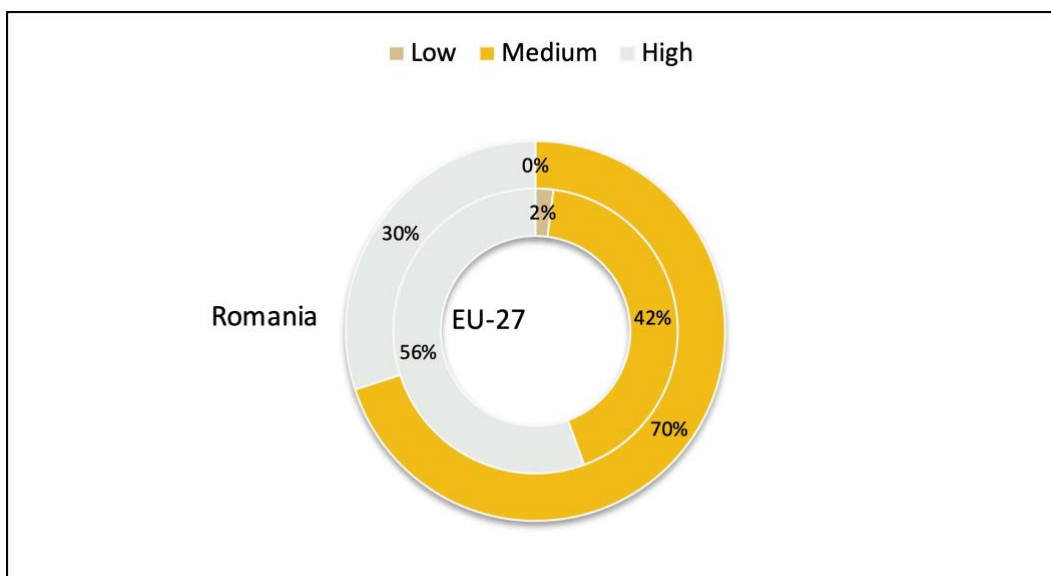
Lower-level occupations are expected to increase. The only exception is for *labourers in mining, construction, manufacturing and transport*. Despite the presence of specialisation in this occupation, thanks to positive occupation-specific effects, there is evidence of a strong decline in the sector, especially for *agricultural workers* (both skilled and unskilled).

## 6. Demand for and supply of skills

Within the Cedefop skills forecast, skills are proxied by the highest level of qualification held by individuals in the labour force and in employment. Three levels are distinguished, high, medium, and low, which correspond to the official ISCED classification. The occupational group also offers an indication of the skill level required, as some occupations (e.g. professionals) typically require high-level skills, while some others (e.g. elementary) typically require only basic ones. Therefore, occupational groups are also linked to a skill level.

Figure 5 shows the shares of total job openings by qualification level for Romania and the EU-27 over 2022-35. In Romania, around one-third of all job openings over this period is expected to require a high qualification, around 26 percentage points (PP) lower than the EU-27 average. Compared to the EU-27 average, a much higher share of job openings are expected to require a medium qualification (70%), and none require low qualifications.

Figure 5. Shares of total job openings by level of qualification, 2022-35



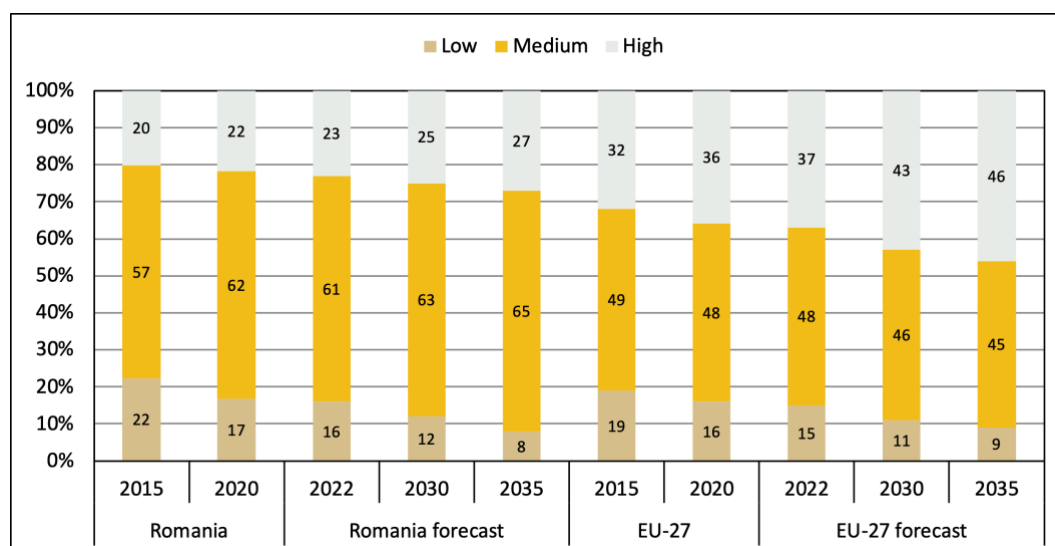
Source: Cedefop (2022 Skills Forecast).

Future labour supply trends depend on the size of the working age population (defined as aged 15 or older), the labour market participation rates, and the extent to which people acquire formal qualifications.

Figure 6 depicts the development of qualification shares in the labour force in Romania and the EU-27. Romania is increasing the share of higher qualified in the labour market. While the share was at 23% in 2022, it is expected to increase to 27% of the labour force by 2035.

In the past, the increase in the share of high qualified labour force was predominantly at the cost of older, low qualified workers. The market share of medium qualified workers increased slightly from 61% in 2022 to 65% in 2035. Relative to the EU-27 averages, Romania has much lower levels of high qualified and much higher levels of medium qualified.

Figure 6. Labour force share by level of qualification, 2015-35

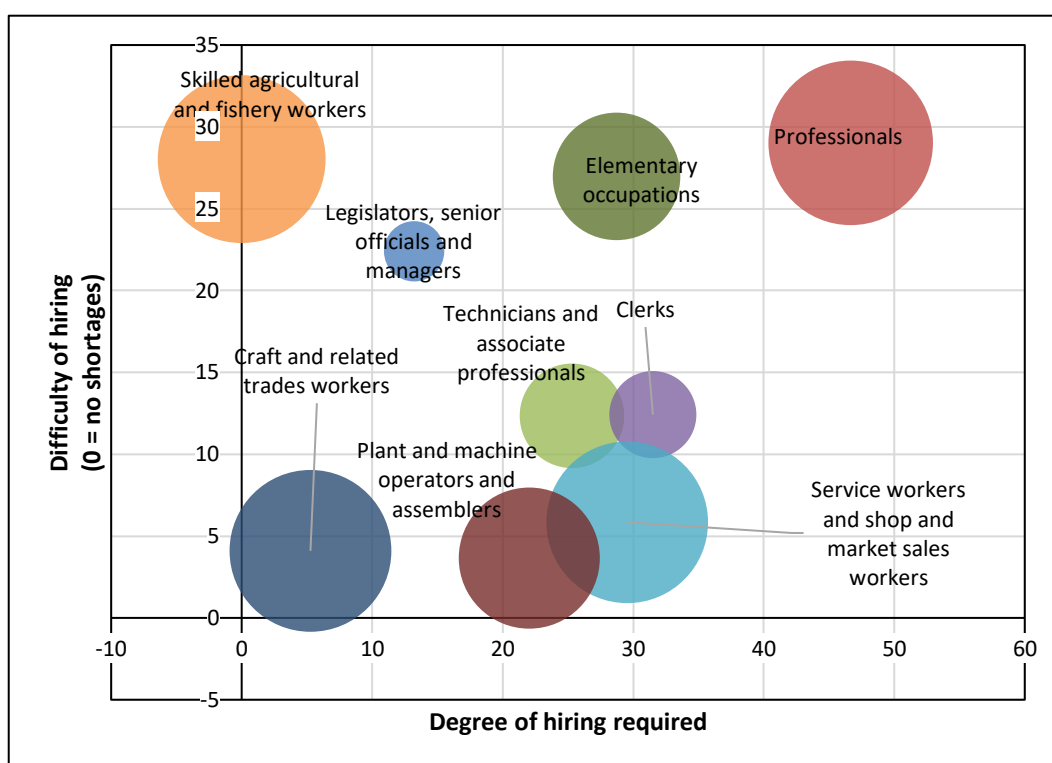


Source: Cedefop (2022 Skills Forecast).

The forecast implies an increasing shortage, especially among the high and low qualified. While the supply of medium educated is forecast to fill the demand within medium level occupations sufficiently, there are shortages to be expected at the higher and lower end. Demand and supply are decoupled as the growing number of graduates will confront a labour market whereby employment opportunities will not match their training.

Figure 7 shows an indicator, difficulty of hiring, whose aim is to approximate shortages of supply by qualifications and its impact on occupations. This measure, shown along the vertical axis, indicates increasing difficulties to fulfil demand given the available supply of qualifications used in the occupation. Along the horizontal axis, the degree of hiring required in the occupation is depicted. Higher values indicate that to reach the forecast result that occupation will need to adjust more (in terms of workers with particular qualifications) relative to the base year (2018) levels. These changes (degree of hiring required) can be due to a change in the qualifications required or increases in the number employed. The size of the bubble indicates the overall employment level, bigger bubbles indicate more employment while smaller bubbles less employment. Occupations with both a high degree of hiring required and a high difficulty of hiring (i.e. towards the top right of the figure) are likely to have the most difficulties in achieving a suitable workforce.

Figure 7. Indicators of future hiring difficulties, 2022-35



Source: Cedefop (2022 Skills Forecast).

Note: Indicators were calculated at the level of the underlying 2-digit occupation groups. Aggregation was based on the employment weights within each 1-digit occupation group.

Despite the increasing supply of higher educated workers there will be shortages within higher occupations. Similar shortages also occur at the lower end, yet this time due to the decrease in the number of low educated. These shortages at the lower end can thus imply that higher educated workers might have to be employed within occupations at a lower level than they have qualifications for, or it will result in hiring difficulties.

Thus, it is no surprise that medium level occupations in the *crafts, the plant and machine operators and assemblers*, as well as the *service workers and shop and market sales workers* are expected to show low hiring difficulties in the forecast (Figure 7). These hiring difficulties are expected to occur alongside high hiring levels within the high occupations of *Professionals* and among the *Elementary* occupations.

## Cedefop methodology

The Cedefop Skills Forecast offers quantitative projections of future trends in employment, by sector of economic activity and occupational group. Future trends in the level of education of the population and the labour force are also estimated. Cedefop's forecast uses harmonised international data and a common methodological approach allowing cross-country comparisons between employment trends in sectors, occupations and qualifications. The forecast and methodology is validated by a group of national experts. The forecast does not substitute national forecasts, which often use more detailed methodologies and data, while they also incorporate in-depth knowledge of a country's labour market.

The latest round of the forecast covers the period up to 2035. The forecast takes account of global economic developments up to May 2022. The European Economy experienced a sharp downturn in 2020 due to the global pandemic, and partially bounced back in 2021. However, the strength of the recovery in the short term is threatened by global factors such as supply chain disruptions, the consequences of the war in Ukraine and high inflation.

The key assumptions of the baseline scenario incorporate the Eurostat population forecast available in May 2022 (Europop 2019) <sup>(1)</sup>, and the short-term macroeconomic forecast produced by DG ECFIN in May 2022 <sup>(2)</sup>. Several revisions to the data affect the Cedefop Skills forecast 2022, when compared to the 2019 update. For example, the population projections used in the 2022 update are generally more pessimistic than those used in the 2019 update (i.e. Europop 2015), with a corresponding impact on labour force figures. The source of historical labour force data is the European Labour Force Survey, which in 2021 underwent important methodological changes causing a break in the time series for several variables, including labour force. As a consequence, in many Member States the participation rates in 2021 are noticeably above/below historical trends, which causes the Cedefop Skills forecast 2022 to be revised in the same direction, compared to the 2019 update. Moreover, some Member States experienced significant revisions in the historical data series for sectoral employment from the National Accounts.

The Cedefop Skills forecast 2022 is made consistent with the objectives set by the European Green Deal by incorporating suitable assumptions in terms of additional investment, power sector technologies, energy balances and carbon pricing.

Energy and commodity price forecasts from the World Bank and the IEA are used as inputs to the Cedefop Skills forecast, which therefore incorporate the recent surge in prices.

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(1) <https://ec.europa.eu/eurostat/web/population-demography/population-projections/database>

(2) [https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2022-economic-forecast\\_en](https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2022-economic-forecast_en)

For the latest update and access to more detailed Cedefop skills forecast data visit our [Skills forecast project page](#).



The country fiche for Romania has been developed in collaboration with Catalin Corneliu Ghinararu, scientific secretary at the National Labour Research Institute/INCSMPS, Romania.

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