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European Centre for the Development
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EN



2020 skills forecast Bulgaria



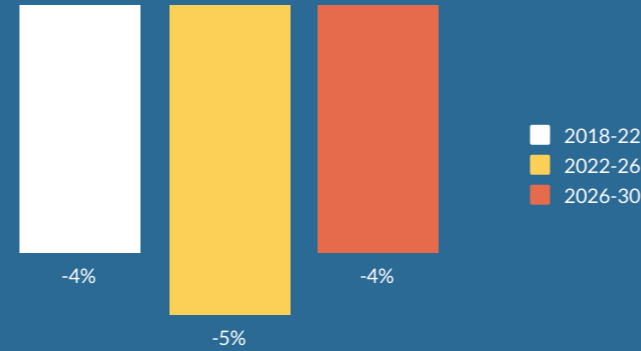


3 068 000

Employment in 2030

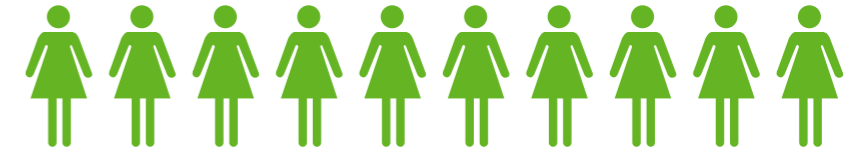
-13%
 increase
 2018-30

% Employment growth 2018-30



1 436 000

Total job openings, 2018-30



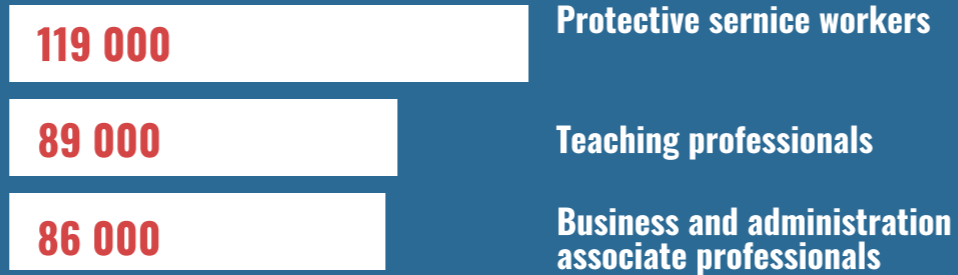
■ Replacement needs (100%)
 ■ New job openings (0%)

FASTEST-GROWING SECTORS

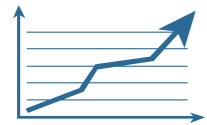
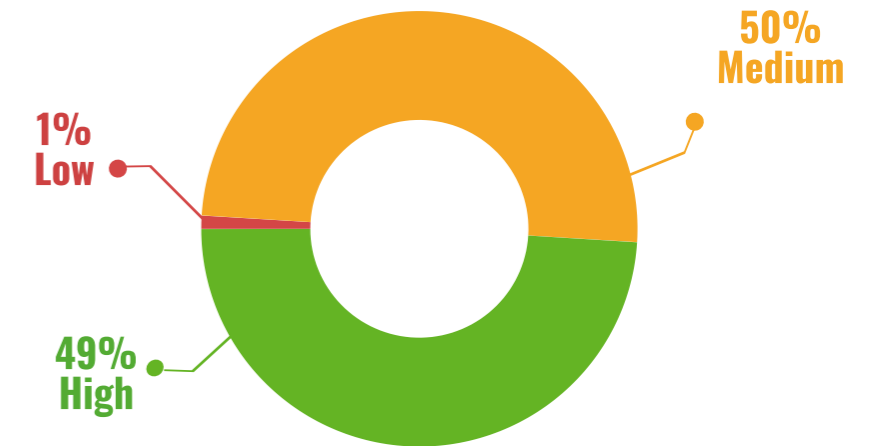
Growth per year 2018-30

HIGHEST-DEMAND OCCUPATIONS

Total job openings 2018-30



Total job openings by qualification level 2030:



4.4%

Increase
 in employment
 in 2018-30



Fastest-growing sector
 Non-marketed services



Highest-demand occupation
 Business & administration associate
 professionals

10% Increase in high-skilled
 labour supply 2018-30

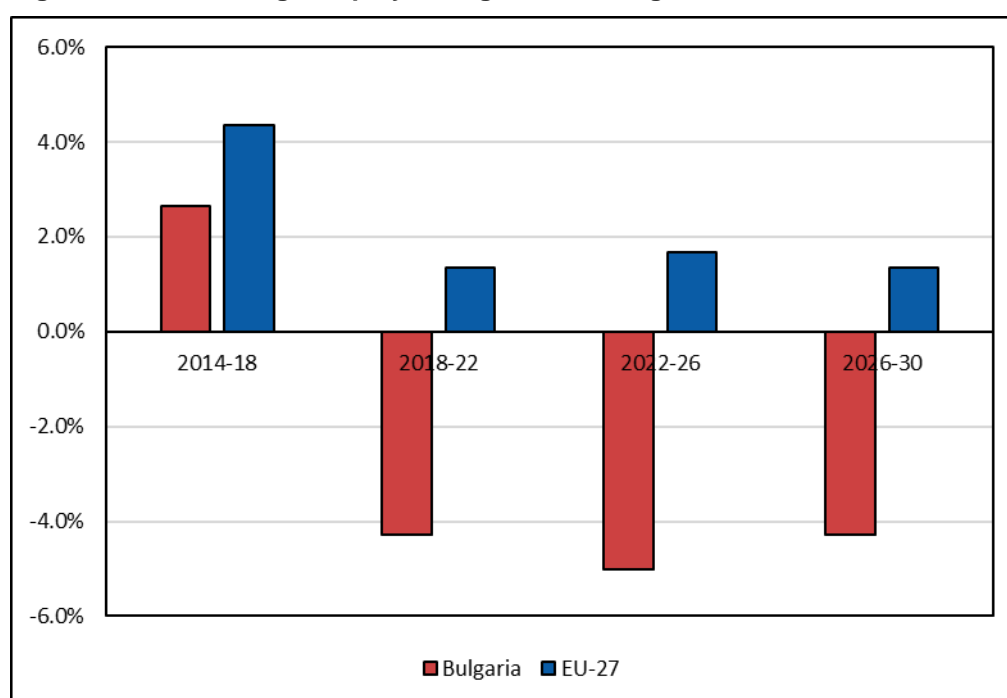


1. Employment outlook

Employment in Bulgaria is forecast to shrink after 2018. Employment is expected to decline by 4.3% over 2018-22, 5% over 2022-26 and 4.3% over 2026-30.

The decline in employment over the forecast period is in contrast with the growth in employment in earlier years, although in the 2014-18 period, the growth in Bulgaria was slower than EU-27 average. Employment growth in the EU-27 as a whole is forecast to continue, albeit also at lower rates than seen over 2014-18.

Figure 1. Percentage employment growth in Bulgaria and the EU-27, 2014-30



Source: Cedefop (2020 Skills Forecast).

2. Labour force overview

Figure 2 presents the evolution of the distribution of the labour force in Bulgaria by age group and gender between 2000 and 2030. Changes in the distribution of the labour force over that period are driven by ageing of the population, a common trend observed across all EU countries, and increases in labour force participation rates among most age groups, both for males and females.

The forecast shows that in 2020 the largest labour force groups included those between 40 and 49 years old. This cohort will, in 2030, still be the largest group, now aged between 50 and 59. Across younger groups (25 to 39 years-old)

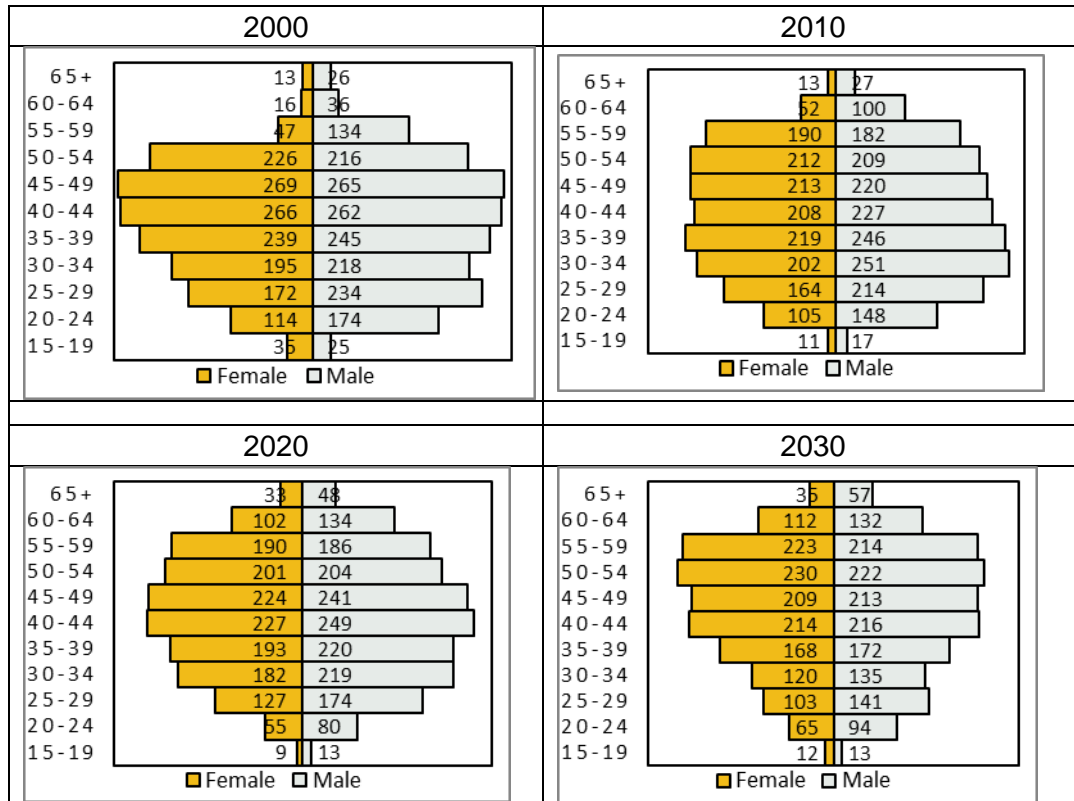
the size of the labour force is expected to decline between 2020 and 2030, with the decline driven by the decrease in the size of the population in that age group.

Analysing the changes in the labour force participation rate between 2020 and 2030, the projections show that the participation rates among females are expected to increase across all age groups, while for males increases are projected for all but the youngest group, of 15-19 year-olds. The increase in participation rates among all age groups for females are projected to be higher than for males.

The increase in labour force participation rates among females is expected to be the highest among 55-59 year-olds (increase from 79% in 2020 to 91% in 2030), 30-34 year-olds (from 79% in 2020 to 89% in 2030) and 35-39 year-olds (from 84% in 2020 to 94% in 2030).

Among males, the largest increases in labour force participation rates are projected for 55-59 year-olds (from 80% in 2020 to 88% in 2030) and 25-29 year-olds (from 67% in 2020 to 73% in 2030) and 20-24 year-olds (increase from 51% to 55%). Increases in most other male age groups are expected to be relatively moderate.

Figure 2. Distribution of the labour force (thousands), 2000-30



Source: Cedefop (2020 Skills Forecast).

3. Sectoral employment trends

Figure 3 presents average annual employment growth rates across broad economic sectors in three sub-periods between 2014 and 2030. As discussed in the context of Figure 1, employment in the economy as a whole is expected to decline between 2018 and 2030. However, the declines will not be distributed evenly across broad sectors. *Non-marketed services*, for example is projected to increase its employment.

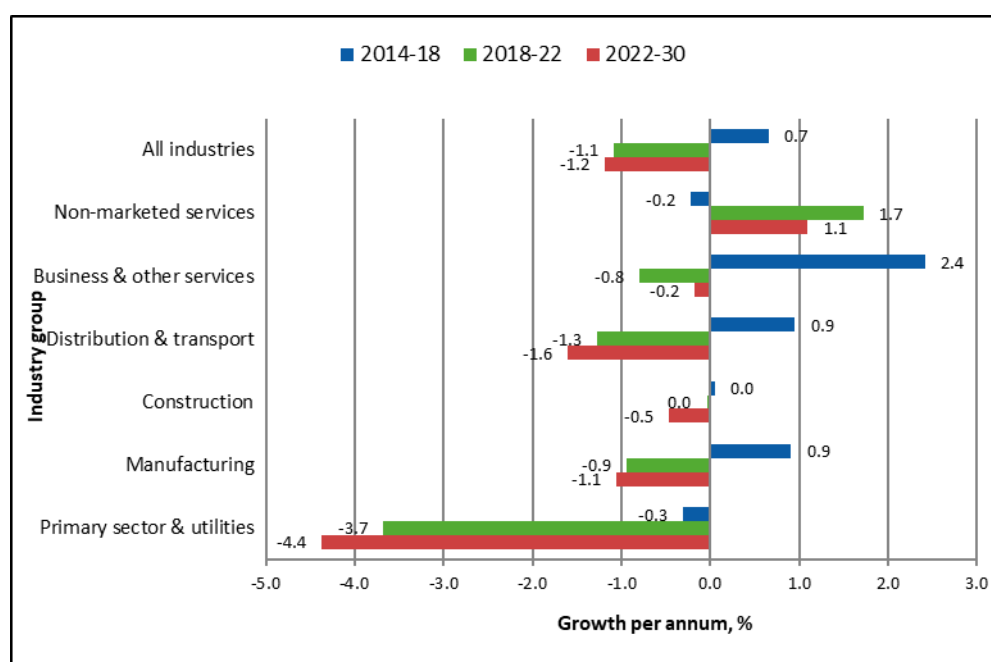
The declines are projected to be the highest in the *primary sector and utilities*, where employment is projected to decline by 3.7% pa over 2018-22, and by 4.4% pa over 2022-30. This trend is primarily driven by *agriculture*, where employment is projected to decline by 4.2% pa over 2018-22 and by 5.2% pa over 2022-30. Underlying this decline is a restructuring from small-scale farming towards large-scale mechanised farming. Among other *primary* sub-sectors, moderate declines are projected for *mining and quarrying*, where employment is expected to decline by just over 1% pa over 2018-30.

Despite seeing growth of almost 1% pa over 2014-18, the *distribution and transport* sector is forecast to see a decline in employment after 2018, falling by 1.3% pa over 2018-22 and 1.6% pa over 2022-30. These declines are driven by falling employment forecast for the *wholesale and retail trade* sector.

Manufacturing is expected to decline in employment at a rate close to 1% pa over the 2018-30 period. The sub-sectors where employment will be declining at the fastest rates include *wood, paper, print, publishing, and basic metals & metal products*. Employment in some high-tech *manufacturing* sub-sectors is expected to increase, such as *optical and electronic equipment and electrical equipment*.

The only broad sector where employment is forecast to increase, *non-marketed services*, is projected to grow by 1.7% pa over 2018-22 and by 1.1% pa over 2022-30. In particular, employment in *public administration and defence and education* is expected to grow strongly. The expansion in employment in the public sector is due to expanding its capacity and improving the quality of local administration, with reforms planned in the areas of decentralisation and ongoing implementation of IT solutions.

Figure 3. Employment growth by broad sector of economic activity, 2014-30



Source: Cedefop (2020 Skills Forecast).

4. Job openings by occupational group

The Cedefop skills forecast estimates 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 due to the expansion 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 2018-30. 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 are in need of replacement workers. Nearly all job openings will come from this need to replace workers retiring or changing occupations. This compares negatively with most EU-27 countries where a portion of job openings will be due to new jobs. However, the employment outlook by occupation in Bulgaria is similar to the rest of the EU in that in the next decade high-skilled occupations will account for a growing share of all job openings.

In total there are expected to be 1.4 million job openings over 2018-30, with, overall, new jobs created only among *professionals*. At the broad level, all low-skilled occupations will see some jobs lost, including *elementary occupations, craft and related trades workers* and *plant and machine operators and assemblers*.

As discussed in the context of the projected decline in employment in the *agricultural* sector, jobs will be lost among related occupations to this sector, such as *skilled agricultural and fishery workers*. The largest decline in job openings are projected for *market-oriented skilled agricultural workers* and also for *market-oriented skilled forestry, fishery and hunting workers*.

Other shrinking occupations include *service workers and shop and market sales workers*. While replacement demand is projected at 316 000 job openings, 91 000 jobs will be lost among these occupations, including losses among *sales workers* (67 000 jobs) and *personal service workers* (41 000 jobs). However, 17 000 jobs will be added for *personal care* and *protective service workers*.

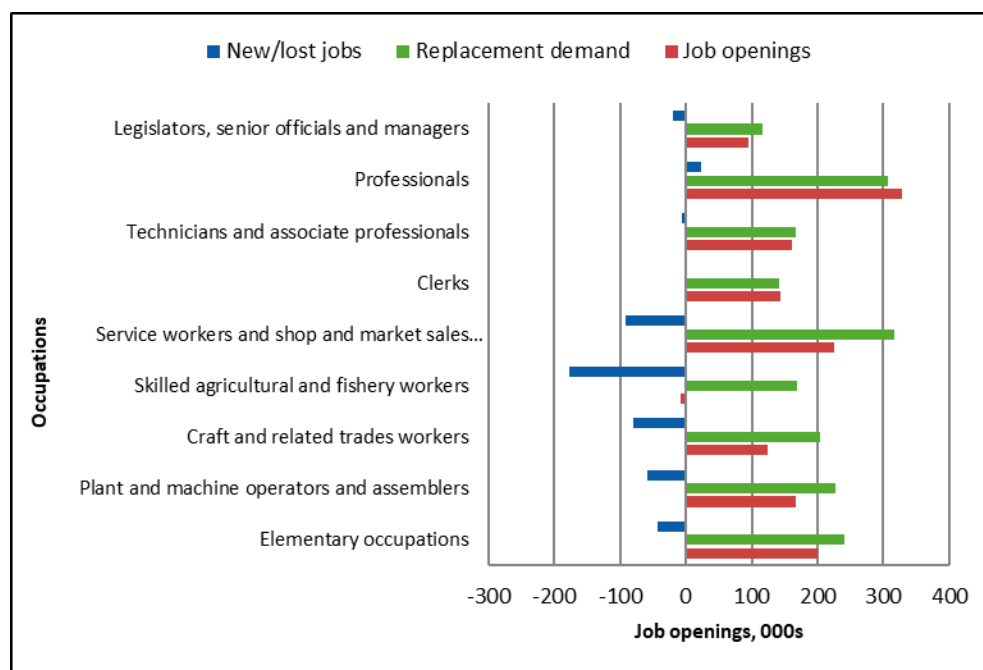
Job openings among *craft and related trades workers* will be limited – while 204 000 jobs openings will be available due to replacement demand, the occupation is expected to shrink by 91 000 jobs. The greatest decline in number of jobs openings will be for *metal, machinery and related trades workers* (33 000

jobs), as well as for *food processing, wood working, garment and other craft and related trades* (32 000 jobs).

Among high-skilled non-manual occupations, a small decline in job openings is expected among *legislators, senior officials and managers*. Replacement demand over the 2018-30 period is estimated at 116 000 job openings, however, it is projected that the demand for these occupations will decline by 21 000 jobs during that period. The detailed occupations expected to decline include *hospitality, retail and other services managers* (19 000 jobs) and *production and specialised services managers* (12 000 jobs). However, nearly 10 000 new jobs will be added for *chief executives, senior officials and legislators* and *administrative and commercial managers* driven by the sectoral needs.

Professionals is the only broad occupational group where new job openings are expected to be created. Overall, 22 000 new job openings will be added, with the largest contributions from *business and administration professionals* (12 000 new jobs), *teaching professionals* (8 000 new jobs) and *information and communications technology professionals* (6 000 new jobs).

Figure 4. Job openings by broad occupational group, 2018-30



Source: Cedefop (2020 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 occupational composition of employment in Bulgaria is mainly characterised both by changes in the level of specialisation within occupations, and, in fewer cases, by changes in industry size. Stronger occupation-specific and industry effects will lead, overall, to increases in the share of *professionals* and *legislators, senior officials and managers*, and *customer services clerks*. The increase in industry size has a positive impact, alongside a modest occupation effect, only for *teaching professionals, business and other professionals* and on *health associate professionals*. High-skilled occupations that could benefit from these trends are, for example *chief executives, senior officials and legislators*, and, in particular, *legal, social, cultural and related associate professionals* and *general office clerks*.

The overall effect of occupational change therefore depends on a number of factors that need to be considered together. Increasing digitisation and moves toward a service-oriented economy, including within manufacturing, will lead to a greater use of higher-level occupations at the expense of some medium and low-level occupations. All relevant lower-level occupations are expected to decrease.

Intermediate occupations are expected to increase slightly overall. Among the medium-qualified occupations becoming stronger are *business and other professionals, custom service clerks* and *assemblers*.

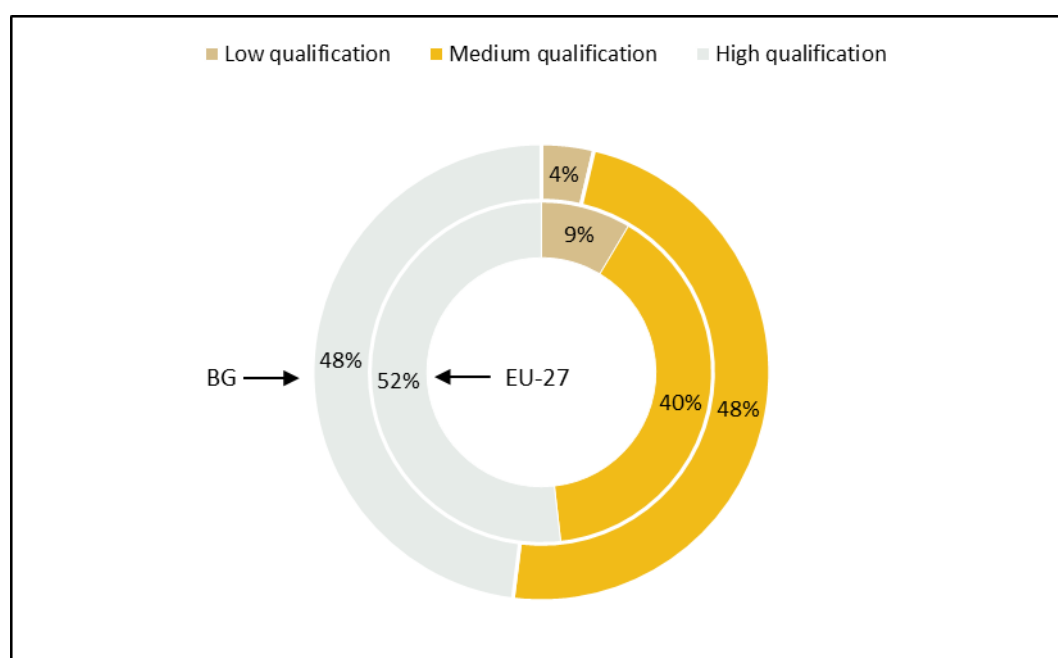
6. Demand for and supply of skills

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 Bulgaria and the EU-27 over 2018-30. In Bulgaria, most job openings are expected to require high and medium qualification in equal measure (48% each), while only 4% of job openings are expected to require a low level of qualification. Compared to the EU-27, a lower share of job openings is expected to require high qualifications, a higher share medium qualifications and a lower share low qualifications.

Figure 5. Shares of total job openings by level of qualification, 2018-30



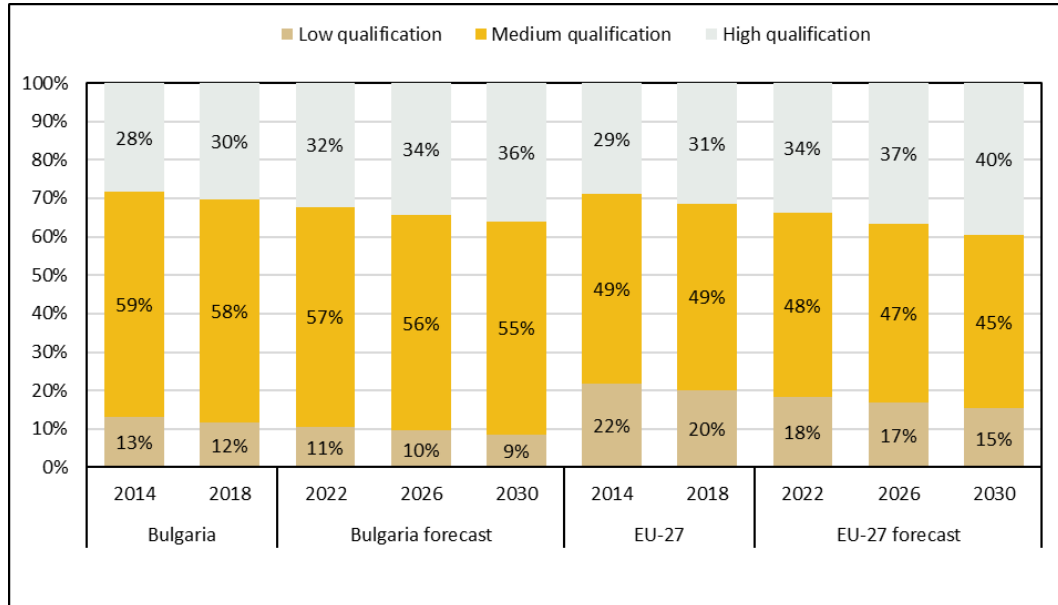
Source: Cedefop (2020 Skills Forecast).

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 the qualification share of the labour force in Bulgaria and the EU-27. Bulgaria is slowly increasing the share of the

higher qualified in the labour market. While the share was 30% in 2018, it is expected to increase to 36% by 2030.

Figure 6. Labour force share by level of qualification, 2014-30



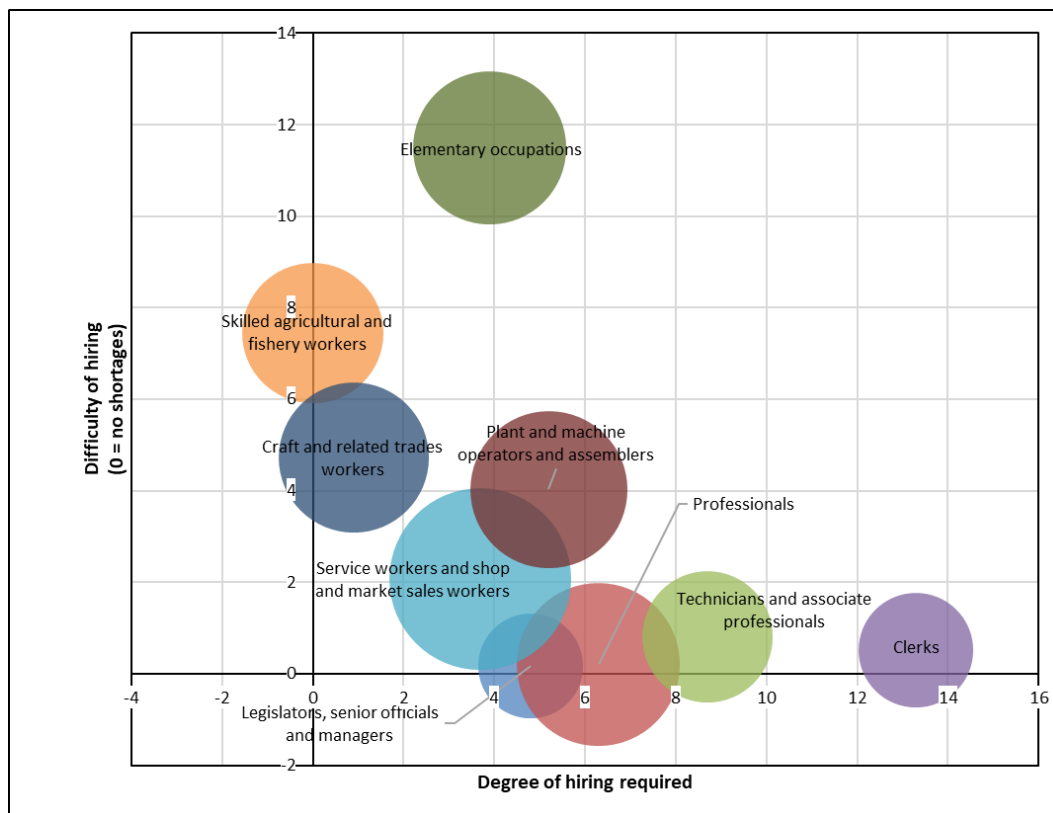
Source: Cedefop (2020 Skills Forecast).

The increase of share has been predominantly at the cost of older low and medium qualified workers. The share of medium qualified workers is expected to decrease from 58% in 2018 to 55% in 2030, while the share of low qualified workers is expected to decrease slightly, from 12% to 9%. The trend is similar to that of the EU-27, albeit that Bulgaria has had lower shares of low and high qualified. Relative to the EU-27 average qualification mix, Bulgaria is expected to continue to have a higher share of medium qualified.

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, 2018-30



NB: Indicators were calculated at the level of the underlying two-digit occupation groups. Aggregation was based on the employment weights within each one-digit occupation group.

Source: Cedefop (2020 Skills Forecast).

The increasing supply of higher educated workers suggests there could be shortages, especially among the medium but also of the lower qualified. These shortages could imply that some higher educated will have to be employed within occupations at a lower level than they qualify for, or it will result in hiring difficulties. Medium and low level occupations such as *elementary*, as well as the *skilled agricultural and fishery workers*, are expected to experience higher levels of hiring difficulties in the forecast (Figure 7). These go alongside, respectively, with low levels of change by qualification, and so a low degree of hiring required, within these occupations. While *professionals, technicians and associate professionals* and *clerks* are implied to have less hiring difficulties, as they usually hire from the supply of higher qualified, they also show a relatively low expected degree of hiring required in the forecast period. The highest degree of hiring required, along with modest hiring difficulties, is expected to be found among *clerks*.

Hiring difficulties among *professionals* are very low across the underlying occupations. The degree of hiring required differs, though, with *information and communications technology professionals* reaching relatively high levels (16) versus the average of 6, and *business and administration professionals* (10) expected also to be well below that average. Low degrees hiring required are expected to be found among *legal, social and cultural professionals* (4), *health professionals* (2), and especially *science and engineering professionals* (1).

Cedefop methodology and scenarios

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 2030. The forecast takes account of global economic developments up to May 2019. The European economy is continued to expand for the seventh year in a row in 2019, with real GDP growing in all EU Member States. As global uncertainties continue to weigh, domestic dynamics are set to support the European economy. The key assumptions of the baseline scenario incorporate the Eurostat population forecast available in May 2019 (Europop 2015) ⁽²⁾ and the short-term macroeconomic forecast produced by DG ECFIN in May 2019 ⁽³⁾.

The Cedefop Skills forecast was developed before the global Covid-19 pandemic had begun. The short-term economic impacts of the pandemic and subsequent lockdowns in many countries are very uncertain, and therefore the current short-term forecast is likely to be over-optimistic. However, the key long-term factors (such as the ageing population, increasing use of automation/artificial intelligence, globalisation, resource scarcity and moves towards a carbon neutral economy) will still hold as the EU Member States put plans in place to deal with the virus and their economies move forwards. The trends in the longer-term forecast are therefore still likely to hold.

For the latest update and access to more detailed Cedefop skills forecast data please visit:

<http://www.cedefop.europa.eu/el/events-and-projects/projects/forecasting-skill-demand-and-supply>



⁽²⁾ <https://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data>

⁽³⁾ https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2019-economic-forecast-growth-continues-more-moderate-pace_en



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The country fiche for Bulgaria has been developed in collaboration with Elka Dimitrova, director at the Ministry of Labour and Social Policy, Bulgaria.

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