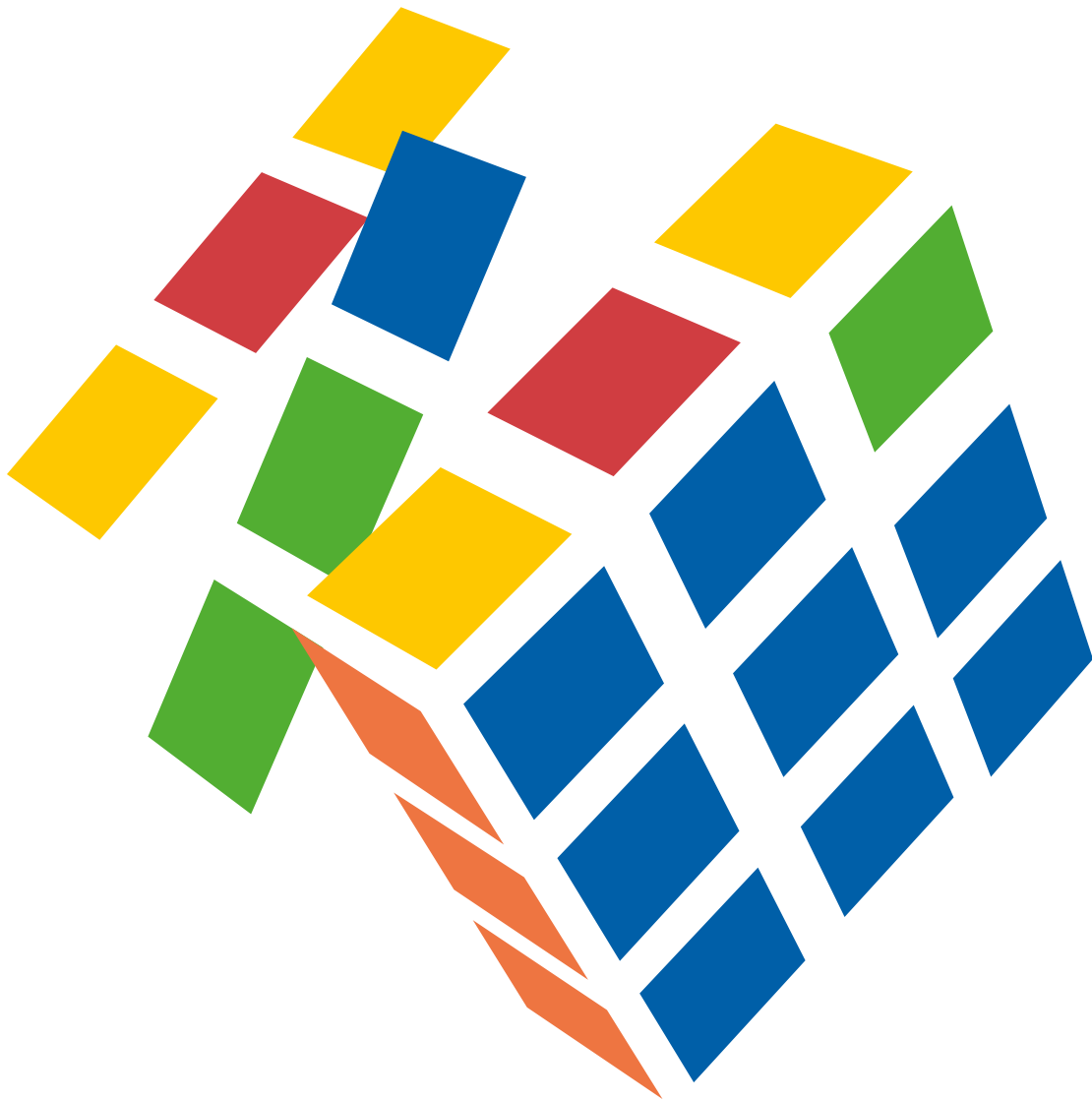




CEDEFOP

European Centre for the Development
of Vocational Training

EN



2023 skills forecast Slovakia





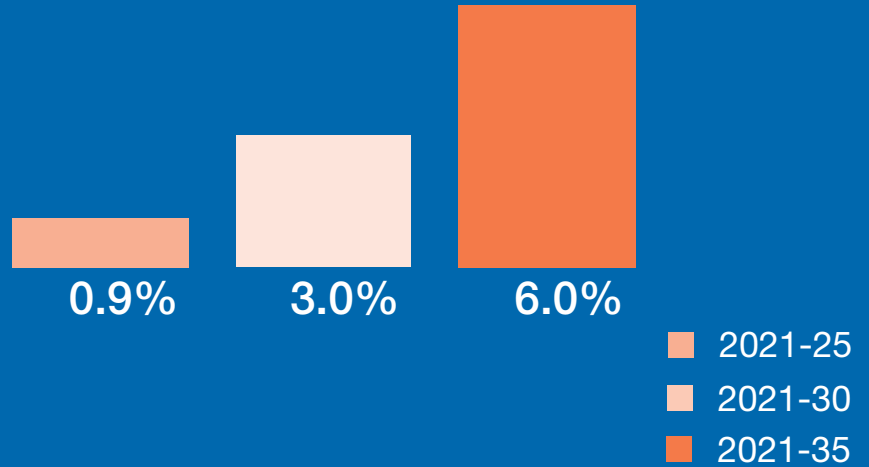
Employment in 2035

2 528 000

5.99%

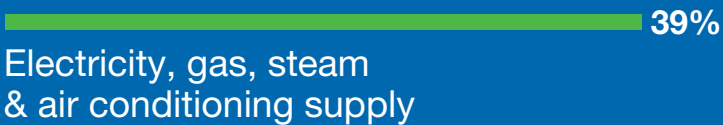
increase 2021-35

% Employment growth 2021-35



Fastest-growing sectors

2021-35% growth



Highest-demand occupations

Largest creation of new jobs, 2021-35



increase in high-skilled labour demand 2021-35

36%

Total job openings, 2021-35

1 424 000



Total job openings by skill level 2021-35



3.4% employment increase in 2021-35



Fastest growing occupation
Legal, social and cultural professionals



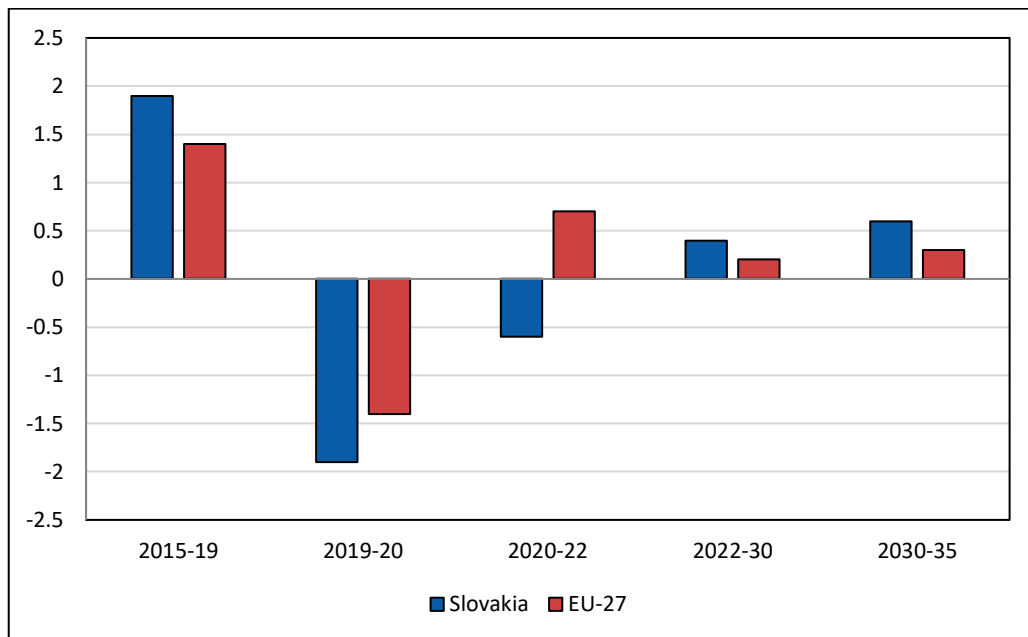
Fastest growing sector
Information and communication

Cedefop skills forecast: Slovakia

1. Employment outlook

Employment in Slovakia is forecast to grow slightly faster than the EU-27 average, albeit at much slower rates than seen over 2015-19. Figure 1 shows that employment in Slovakia grew slightly faster than the EU-27 average over 2015-19 but fell slightly more sharply in 2020 as the Covid-19 pandemic hit. Employment in Slovakia is also estimated to have continued falling over 2020-22, compared to a bounce-back seen for the EU-27. Across the forecast period, employment in Slovakia is forecast to grow by 0.4-0.6% pa, compared with growth of around 0.2-0.3% pa for the EU-27 with an expected slowdown in growth towards the end of the forecast period

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



Source: Cedefop (2022 Skills Forecast).

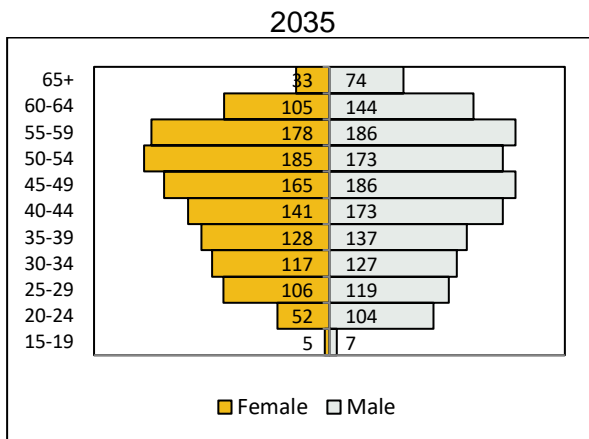
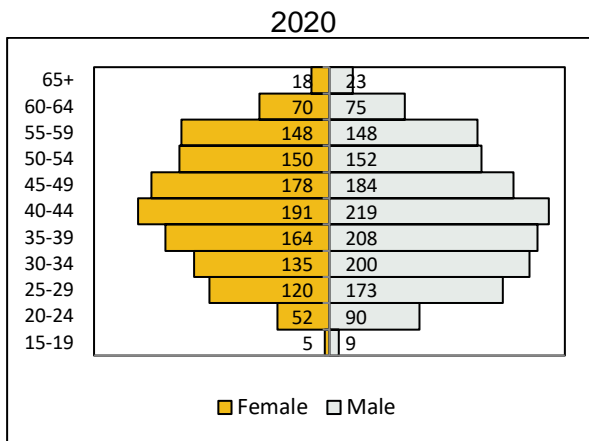
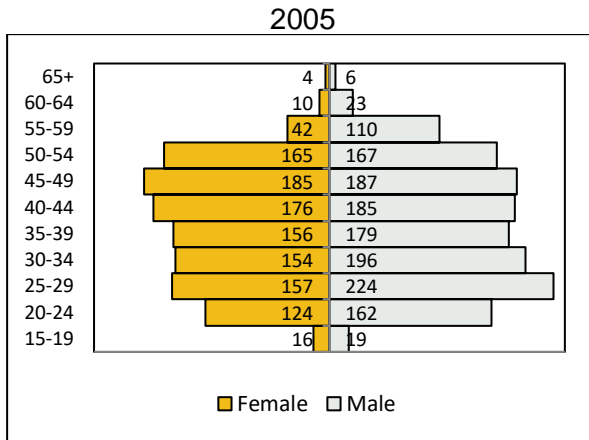
2. Labour force overview

Figure 2 shows Slovakia's labour force by age group in 2005, 2020 and 2035. Changes in the labour force in Slovakia 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 Slovakia is projected to fall by 2.5% over 2020-35, compared with growth of 2.5% 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 Slovakia is forecast to decrease by 2 pp over 2020-35, compared with an increase of 1 pp in the total rate for the EU-27. The total population is forecast to grow by only 1% over 2020-35, compared with 3% over 2005-20.

The population aged 25-44 in Slovakia is forecast to decline sharply during 2020-35, while the population aged 50-59 and 65 and over is forecast to grow quite strongly, reflecting trends in the relevant younger cohorts in preceding periods.

Although participation rates in some age groups in Slovakia are forecast to grow quite strongly over 2020-35, with the strongest increases projected for the 60-64 age group (28 pp), rates in the 40-54 age groups are forecast to decrease (3-5 pp). Overall, the total participation rate for males is forecast to fall by 3 pp and for females to fall by 1 pp over 2020-35.

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

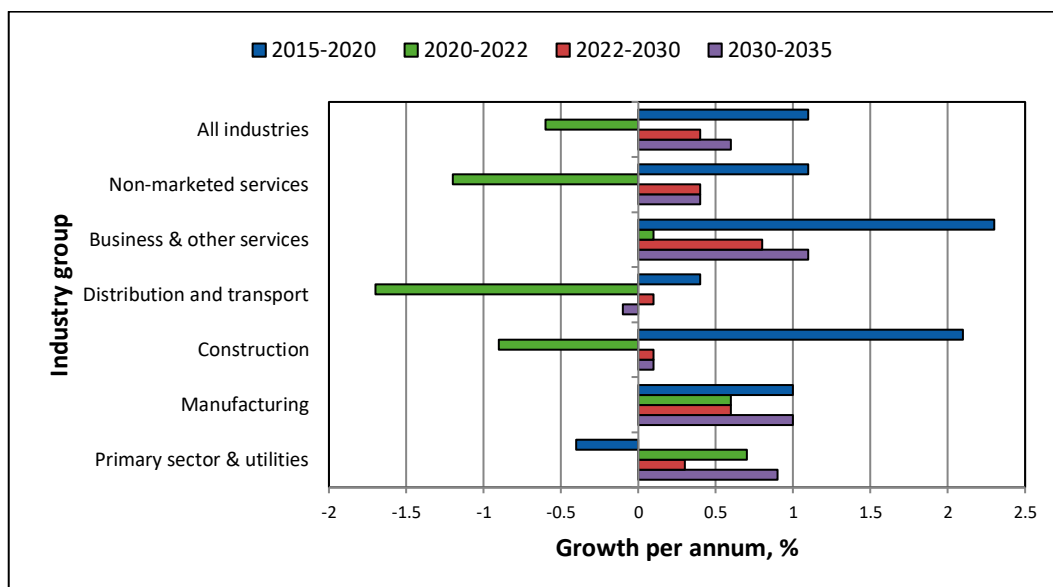


Source: Cedefop (2022 Skills Forecast).

3. Sectoral employment trends

Figure 3 shows the annual average employment growth by broad sector in Slovakia between 2015 and 2035. The forecast indicates relatively significant employment growth, also in 2030-35, when we expect a relatively tight labour market from the perspective of available labour force as well as through the impact of ageing population. While total employment in Slovakia is expected to grow quite strongly over the forecast period, the picture among the broad sectors is mixed. Employment growth is forecast to be led by *Business & other services*, with growth of 0.8% pa over 2022-30, followed by *Manufacturing* (0.6% pa) and *Non-marketed services* (0.4% pa). Employment in *Construction* is forecast to grow only slightly (0.1% 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 even more mixed. Among the larger (accounting for around 2% or more of total employment in Slovakia in 2020) sub-sectors of *Business & other services*, employment in *computer programming & information services* is forecast to increase by around 2% pa over 2022-30, *administrative & support services* by around 1% pa and *legal, accounting & consultancy services* by 0.6% pa. Meanwhile, employment in *financial & insurance services* is forecast to fall slightly over the same period. In *Distribution & transport*, employment in *accommodation & catering services* is forecast to grow by 1.8% pa over 2022-30

and in *land transport* by 0.8% pa, while employment in the very large sub-sector (16% of employment in Slovakia) of *wholesale & retail trade*, and *warehousing & postal services* is forecast to decline slightly over the same period. In *Non-marketed services*, employment in *health* (6% of employment) is forecast to grow by 0.7% pa, while employment in *education* (8% of employment) and *public administration & defence* (7% of employment) is forecast to grow only very slowly. Within *Manufacturing*, in which the sub-sectors tend to be smaller, employment in the relatively large (2% or more of employment) sub-sector of *motor vehicles* is forecast to grow by around 1% pa over 2022-30, while in *rubber & non-metallic mineral products* employment is forecast to grow slightly and in *basic metals & metal products* employment is forecast to fall over the same period. Within *Primary sector & utilities*, employment in the largest subsector, *agriculture*, is forecast to increase by around 0.4% pa.

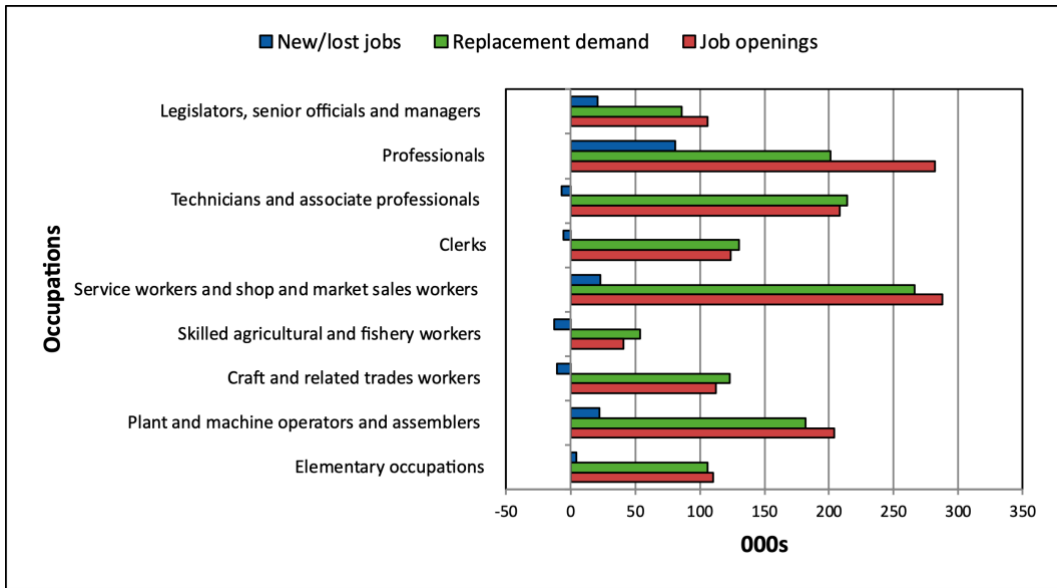
4. Job openings by occupational group

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 total job openings by broad occupational group over 2020-35. The number of job openings indicates the number of jobs required to be filled due to lost/newly created jobs and those requiring replacement workers. *Professionals* is forecast to see the largest increase in the number of jobs, while *Service workers & shop & market sales workers* are forecast to see the largest replacement demand. These two broad occupations are forecast to see the greatest number of job openings, accounting for 19% of job openings over this period. Despite weak growth or declining jobs in the other broad sectors, all are expected to have a positive number of job openings due to replacement demand. Overall, the number of jobs is forecast to increase by 129,000 over 2020-35, but replacement demand of more than 1.3 million jobs will mean that there are expected to be almost 1.5 million job openings over this period.

At the more detailed level, most job openings (taking both new/lost jobs and replacement needs together) are expected to be in skilled and high skilled non-manual occupations. The skilled non-manual occupations creating the most job openings over this period include *personal care workers*, *personal service workers* and *sales workers*, all accounting for 5-6% of all job openings. The high-skilled non-manual occupations providing the most job openings are expected to be *teaching professionals* and *science & engineering associate professionals*. Some skilled manual occupations such as *stationary plant & machine operators* are also expected to provide many job openings. Although most elementary occupations are expected to provide at least some job openings, the number is expected to be much lower than in the more skilled occupations, except for *cleaners & helpers*.

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 occupational composition of employment in Slovakia is mainly characterised 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 to an increasing share of *professionals, legislators, senior officials and managers, technicians and other associates* (with an exception for *health associate professionals* and *business and engineering associate professionals*), but also in occupations which support the production process, such as *handicraft & printing workers, stationary plant & machine operators*, and elementary occupations such as *cleaners, refuse, street & related service occupations*. High-skilled occupations that can benefit the most from these trends are, for example, *science & engineering professionals, health professionals* and, in particular, *administrative & commercial managers*.

Furthermore, the overall effect of occupation-specific and industry size favours highly-skilled occupations. Meanwhile, low-skilled and especially medium qualified occupations are subject to negative effects. Therefore, the effect of occupational change depends on several factors that need to be considered together. Increasing automation and digitisation, together with 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.

Lower-level occupations are expected to increase slightly overall. The only elementary occupation that will experience negative growth is *labourers in mining, construction, manufacturing & transport*.

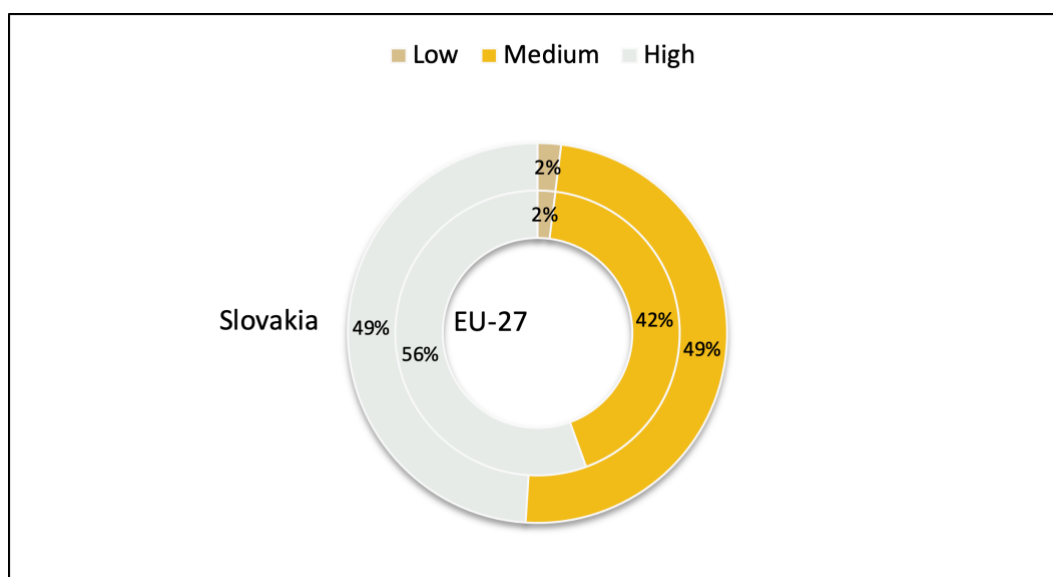
Overall, intermediate occupations are forecast to decrease. Among the medium-qualified occupations becoming stronger are *handicraft & printing workers* and *stationary plant & machine operators*.

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 Slovakia and the EU-27 over 2018-30. In Slovakia, as in the EU-27, job openings requiring high level and medium qualifications are expected to account each for 49%, thus about half of the job openings. Thus, the shares of job openings by qualification over this period is similar to the EU-27 averages.

Figure 5. **Shares of total job openings by level of qualification, 2020-35**



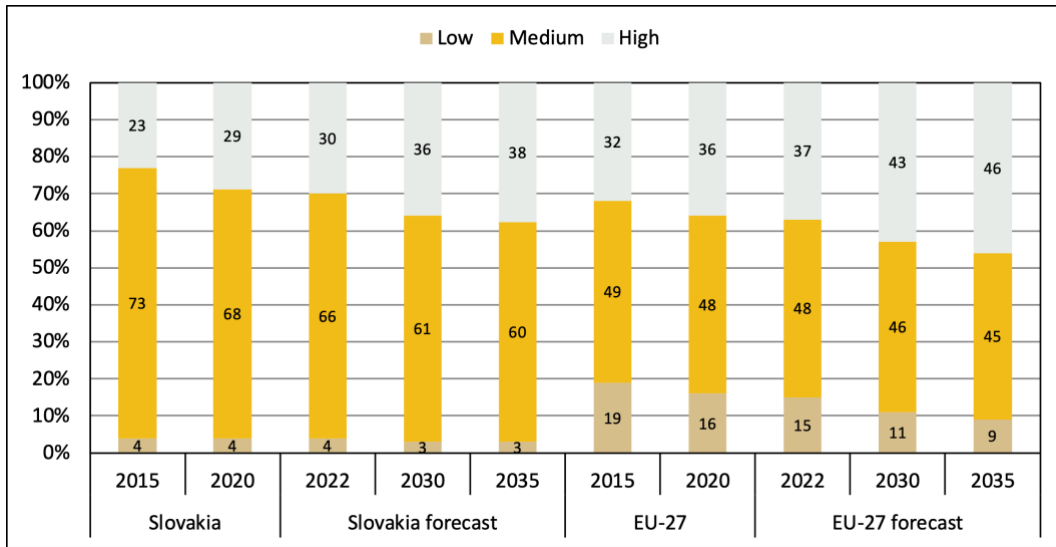
Source: Cedefop (2022 Skills Forecast).

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 of the labour force in Slovakia and the EU-27. Slovakia is expected to see an increase in the share of higher qualified in the labour market. While the share was at 30% in 2022, it is expected to increase to 38% by 2035.

The increase in this share has occurred predominantly through an outflow of older, medium qualified, workers. Next to the outflow of older workers, this is driven by the need to upgrade skills to keep up with the intensive rate of modernisation in manufacturing sectors and strong growth of employment in the automotive cluster, generally requiring higher qualifications. Significant increases of higher educated (tertiary) labour inflow in young cohorts also shift the qualification structure upwards. The share of medium qualified workers is forecast to decrease from 66% in 2022 to 60% in 2035, while the share of low qualified workers is expected to remain stable at only 3%. The trend is similar to the EU-27. Slovakia tends to have slightly lower shares of a higher qualified labour force, along with lower levels of lower qualified. The medium qualified has been strong in Slovakia and remains higher than EU-27 averages.

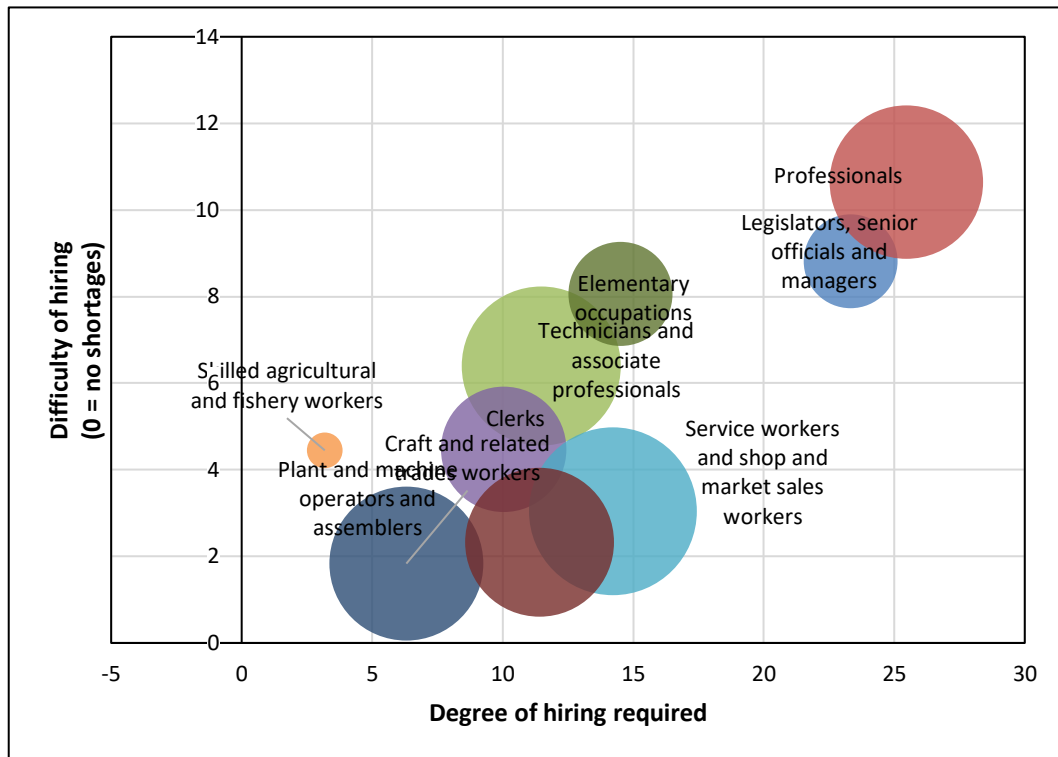
Figure 6. Labour force share by level of qualification, 2015-35



Source: Cedefop (2022 Skills Forecast).

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 (2022) 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.

The increasing supply of higher educated goes along with higher level of employment in higher occupations. Shortages are expected among higher qualified, and to a minor degree among the small group of low qualified. These shortages might imply that some of the medium educated will have to be employed within occupations at a lower level than those they qualify for, or it will result in hiring difficulties.

High level occupations such as *Legislators, senior officials & managers* and *Professionals* show a high degree of hiring requirements along with higher difficulties of hiring, as they usually hire from the supply of higher qualified. Medium and low-level occupations among *Service workers & shop & market sales workers*, as well as *Craft & related trades workers* and *Plant & machine operators & assemblers* are predicted to experience lower hiring difficulties in the forecast (Figure 7).

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) ⁽¹⁾, and the short-term macroeconomic forecast produced by DG ECFIN in May 2022 ⁽²⁾. 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.

(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

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



The country fiche for Slovakia has been developed in collaboration with Marek Radvansky, head of department of Economic Modelling and Analyses at the Institute of Economic Research, Slovak Academy of Sciences, Slovakia.

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