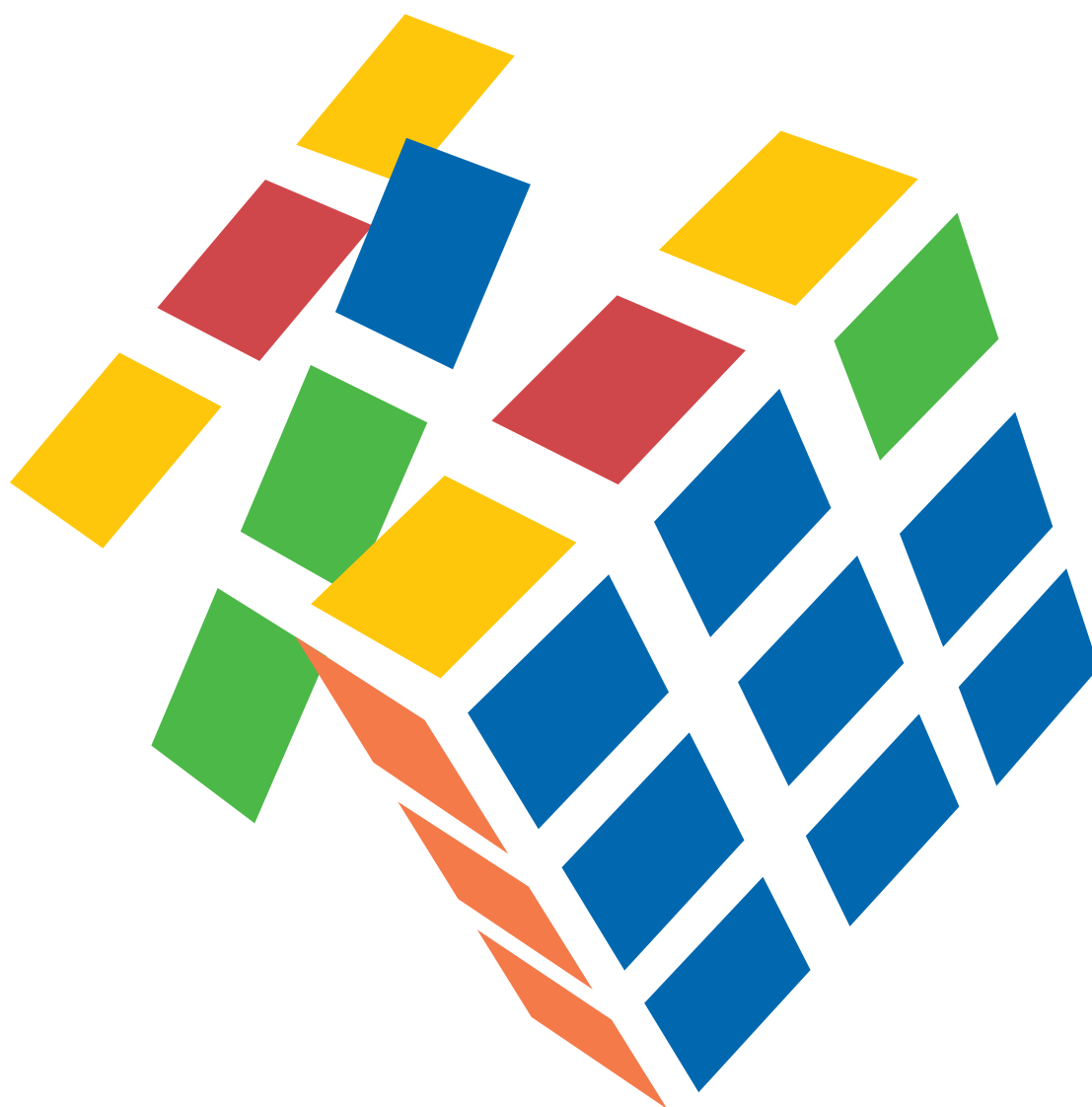




CEDEFOP

European Centre for the Development
of Vocational Training

EN



2020 skills forecast Slovakia





CEDEFOP SKILLS FORECAST 2020

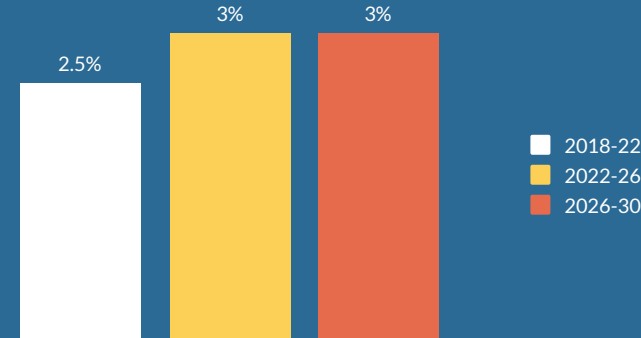
Key facts: Slovakia

2 587 000

Employment in 2030

8.5%
Increase
2018-30

% Employment growth 2018-30



1 292 000

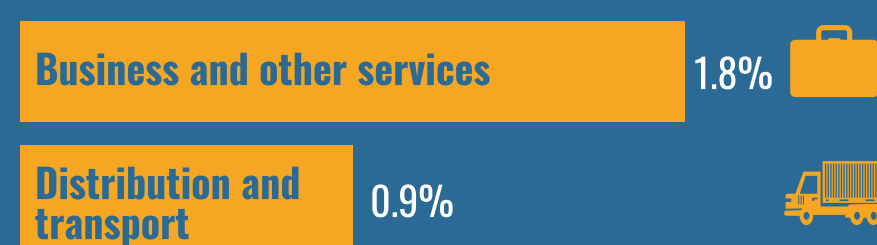
Total job openings, 2018-30



■ Replacement needs (90%)
■ New job openings (10%)

FASTEST-GROWING SECTORS

Growth per year 2018-30

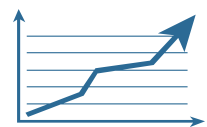


HIGHEST-DEMAND OCCUPATIONS

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

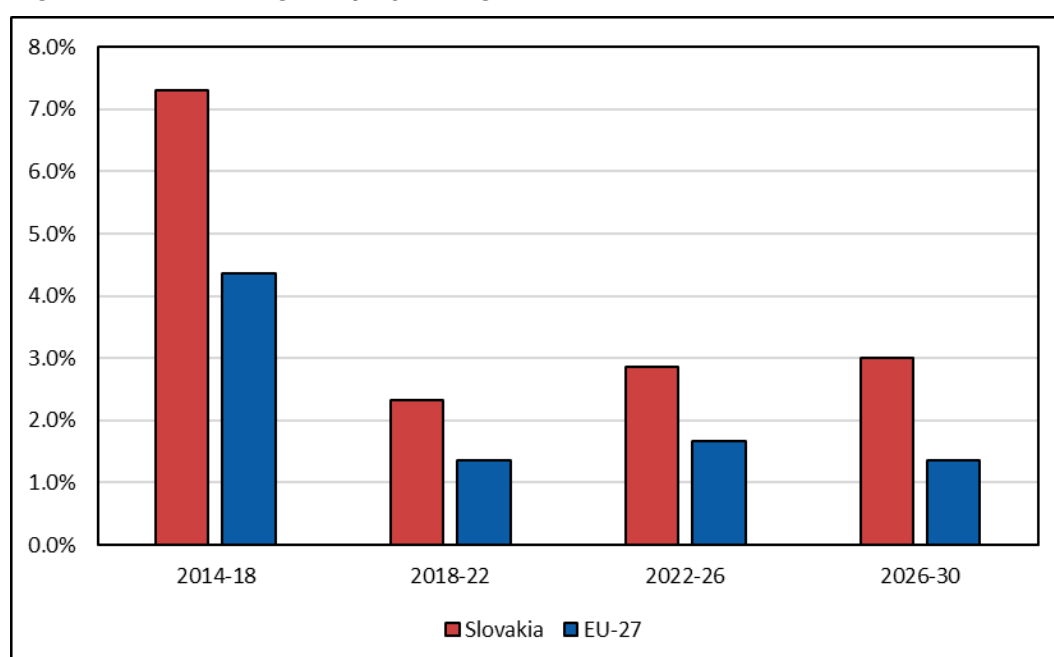
43% Increase in high-skilled
labour supply 2018-30



1. Employment outlook

Employment in Slovakia is forecast to increase over the period 2018-30, although more slowly than over the period 2014-18. Employment growth in Slovakia is expected to accelerate during the forecast period, from around 2% in the short term (2018-22) to 3% in the medium (2022-26) and long term (2026-30). Employment growth is expected to be around twice as much as the EU-27 average in all sub-periods.

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



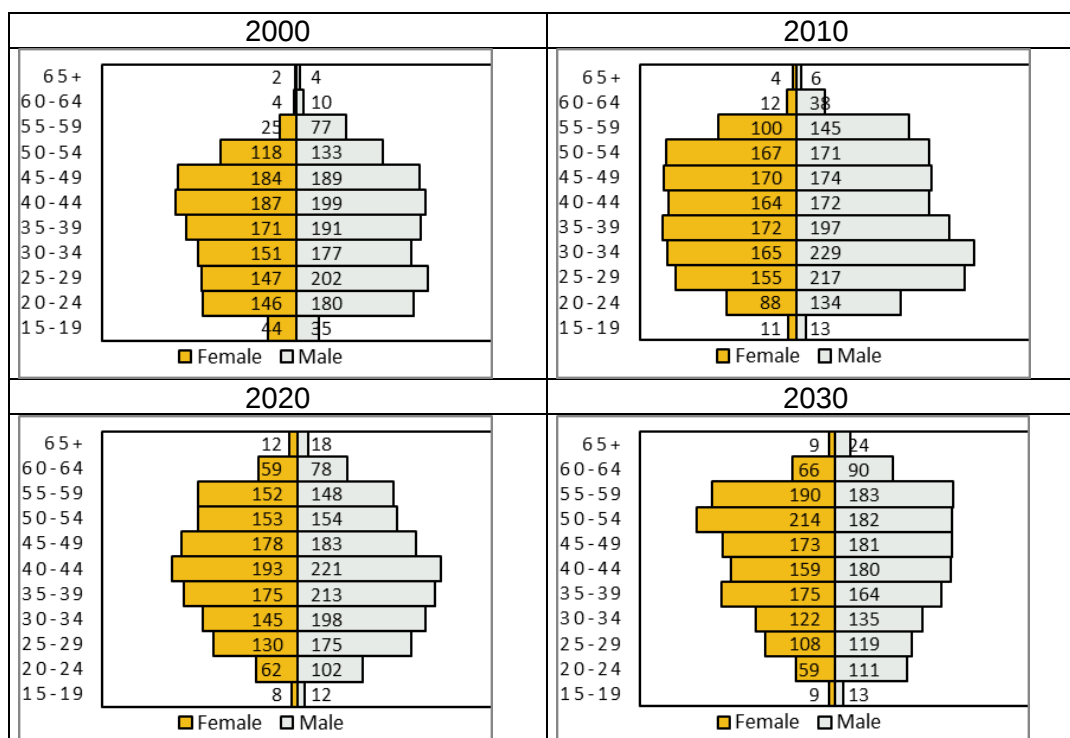
Source: Cedefop (2020 Skills Forecast).

2. Labour force overview

In Slovakia, although the labour force is estimated to have grown by 8% over the two decades from 2000 to 2020, it is projected to decline by 4% over the decade from 2020 to 2030. The decrease in the labour force over the forecast period is driven mainly by the ageing of the population, together with falling participation rates for some age groups. The ageing of the population is expected to lead to those aged 50 or above accounting for 36% of the labour force in 2030, compared to 30% in 2020 (and only 14% in 2000). Over 2020-30, the male labour force is projected to fall by 8%, while the female labour force is projected to increase by 1%. The male participation rate is expected to fall by 6% over

2020-30, from 67% to 61%, with increases only for those aged 20-24 and 55-64 over this period. The strongest increase in labour force by age over this period is expected to be for females aged 50-54, where population is expected to increase by 26% and the participation rate is expected to increase by 10%. The strongest increase in the participation rate is projected to be for females aged 55-59, for whom it is expected to increase by 16 percentage points over the same period.

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



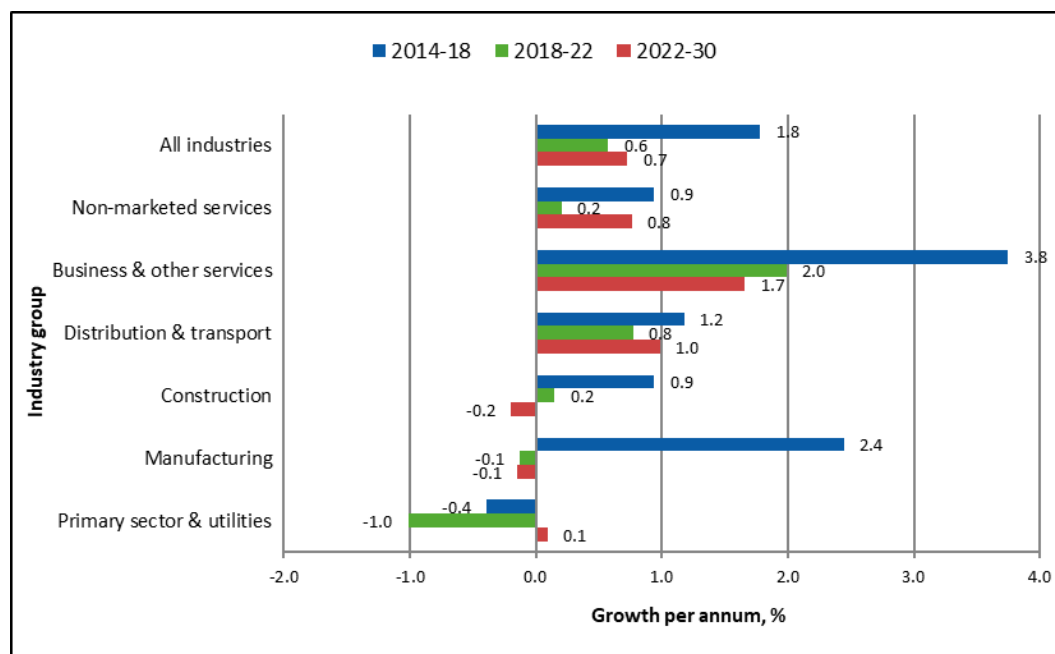
Source: Cedefop (2020 Skills Forecast).

3. Sectoral employment trends

As Figure 3 shows, employment in some sectors is expected to increase significantly, while in others is expected to stagnate or decrease. *Business & other services* is expected to be the fastest growing sector, at around 1.7-2% pa through the forecast period, followed by *distribution & transport* at around 0.8-1% pa. *Non-marketed services* is expected to remain broadly constant in the short term (2018-22) and increase by around 0.8% pa in the long term (2022-30). *Construction* and *manufacturing* are expected to stagnate over the forecast period, while *primary sector & utilities* is expected to decrease by around 1% pa in the short term and to remain broadly constant in the long term.

The expected decrease in manufacturing jobs is consistent with the low value added created by manufacturing in Slovakia, for example in the machinery and equipment and wood and paper industries. This feature has made Slovakian workers particularly susceptible to be replaced by automation.

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



Source: Cedefop (2020 Skills Forecast).

In terms of sub-sectors (i.e. below the level of the six broad sectors discussed above), services such as *R&D, legal accounting and consulting, architectural and engineering* and arts and entertainment expected to be among the fastest growing sectors, thus driving the increase in *business & other services*, while a sizeable growth in *accommodation and catering* is expected to drive the increase in *distribution and transport (of which it is part)*. The increase in *non-marketed services* is expected to be driven almost entirely by the *health* sector, while others such as *education* and *public administration & defence* are expected to remain broadly constant. Among *manufacturing* sectors, *optical & electronic equipment* is expected to grow the most. *Agriculture*, is expected to decline in the short term (2018-22) but to increase somewhat in the long term (2022-30), as targeted policies such as for food security begin to take effect, thus driving the developments in *primary sector & utilities*.

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 due to the expansion of the 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).

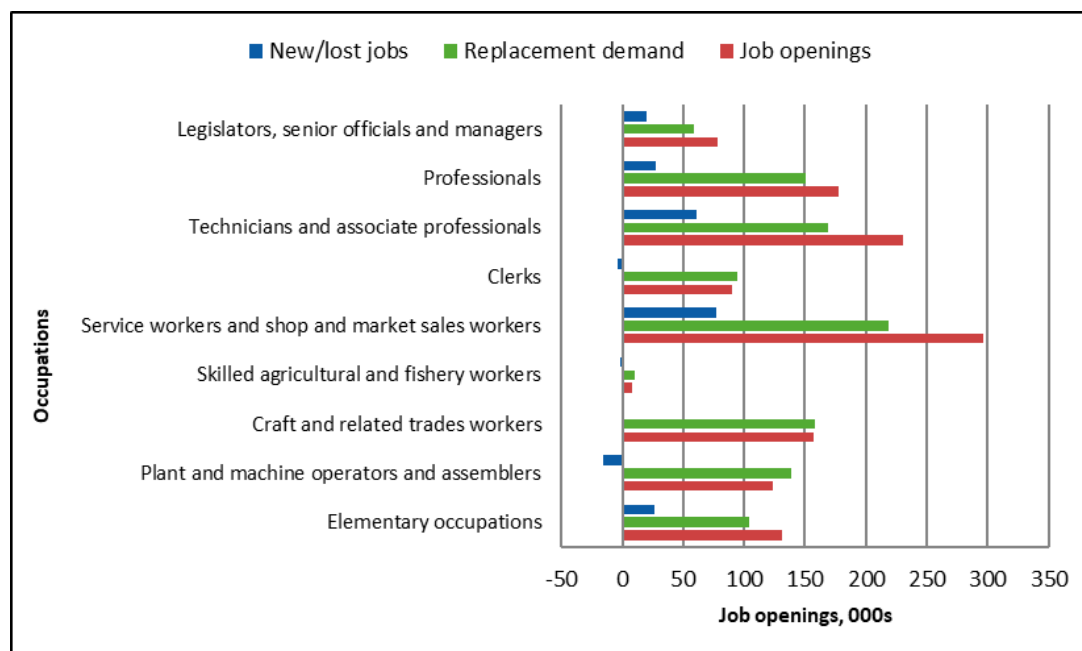
Figure 4 shows the total job openings by broad occupational group over 2018-30. The number of job openings indicates the number of jobs that are required to be filled due to lost/newly created jobs and those that are in need of replacement workers. *Service workers and shop and market and sales workers* are expected to be the occupations creating the highest amount of job openings, accounting for 23% of total job openings over 2018-30, and also to provide the highest amount of new jobs (78 000). Other occupations providing a sizeable amount of new jobs are *technicians and associate professionals*, *professionals* and *legislators, senior officials and managers* (61 000, 27 000 and 20 000 respectively). *Clerks, skilled agricultural* and *craft and related trade workers* are expected to provide job openings only to fulfil replacement needs, while *plant and machine operators and assemblers* is expected to shrink (less 16 000 jobs). In total, about 200 000 new jobs within a total of 1.3 million job openings are expected to be created in Slovakia between 2018 and 2030.

At the more detailed level, most job openings (taking both new/lost jobs and replacement needs together) are expected to be in *skilled non-manual* occupations found mostly in services such as *personal service workers*, *personal care workers* and *sales workers*. *High skill* occupations such as *business and administration associate professionals* and *science and engineering associate professionals* are also expected to be among the occupations providing the highest amount of job openings. Some *skilled manual* occupations such as *drivers and mobile plant and metal, machinery and related trades workers* are expected to provide a significant amount of job openings, although these will be due to replacement needs, while employment in these occupations is expected to shrink, consistent with employment losses in the *manufacturing* sector.

In terms of qualifications, the amount of jobs requiring low and medium qualifications is expected to remain broadly constant over 2018-30. Jobs

requiring a high level of qualifications are expected to increase at a rate of 2.1% pa for an absolute increase of 198 000.

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 Slovakia 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 an increasing share of *professionals* (with an exception for *science and engineering professionals*), *legislators, senior officials and managers*, *technicians and other associate* (with an exception for *health associate professionals*), *customer services clerks*. The increase in industry size

has a positive impact, alongside a positive but more modest occupation effect, only on *personal, care, protective service*. High-skilled occupations that can benefit from these trends are, for example *managers, professionals and associate professionals*, in particular, *legal, social, cultural and related associate professionals* and *chief executives, senior officials and legislators*.

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 expenses of some medium and low-level occupations. Overall, some lower-level occupations are expected to increase. The increase is driven by *elementary occupations* and occupations supporting the production process such as *stationary plant and machine operators, assemblers, drivers and mobile plant operators*.

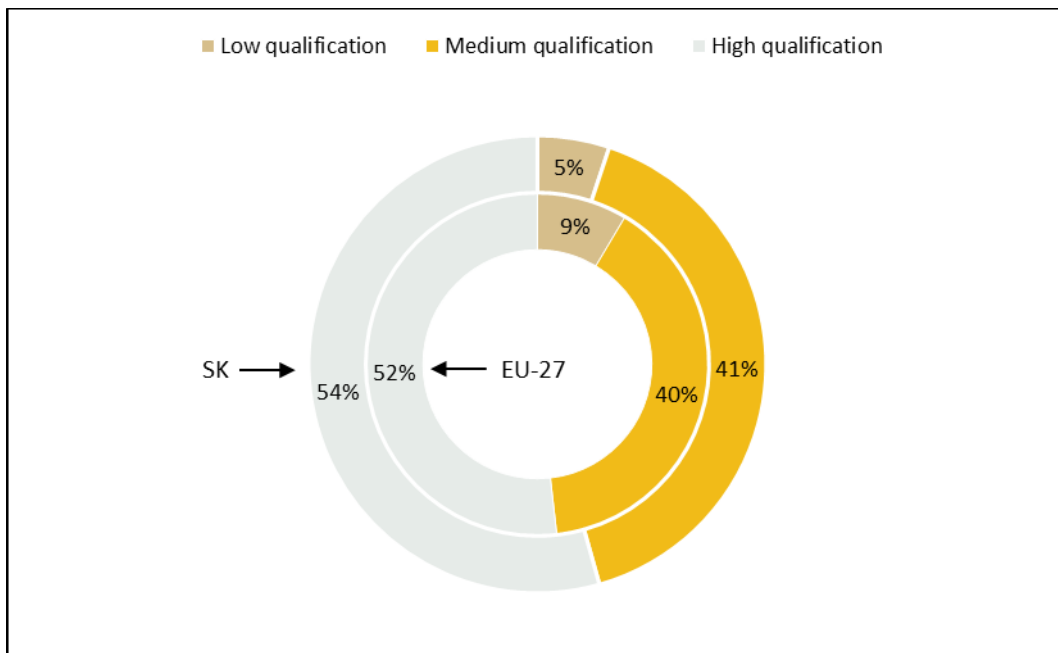
Intermediate occupations are expected to increase slightly overall. Among the medium-qualified occupations becoming stronger are *legal, social, cultural and related associate professionals* and *handicraft and printing workers*.

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 qualifications are expected to account for the largest share. A similar share (to the EU-27) of job openings are also expected to require medium level qualifications, while a slightly lower share is expected to require low qualifications.

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



Source: Cedefop (2020 Skills Forecast).

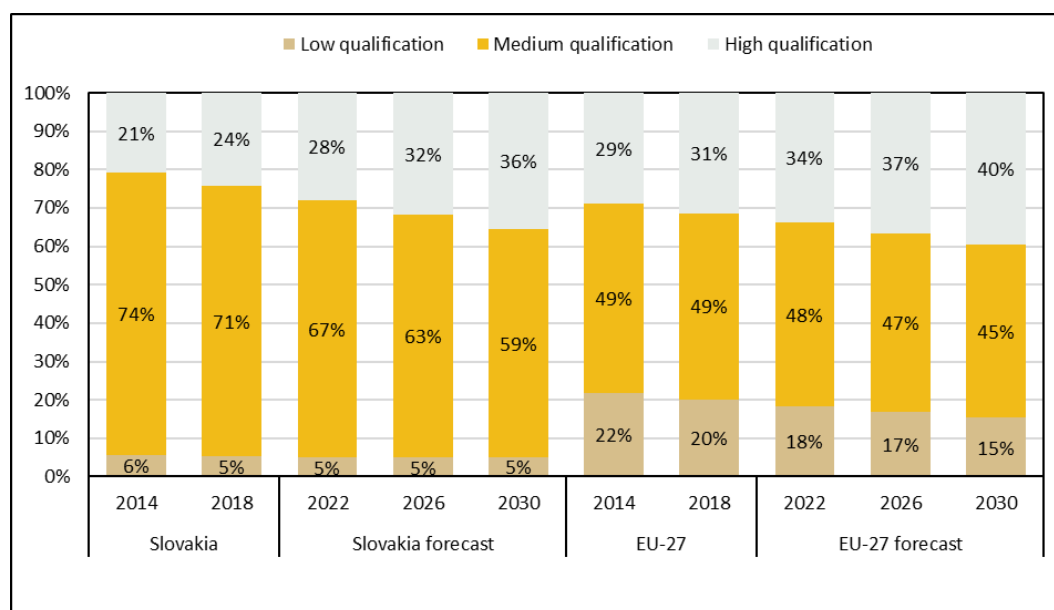
Future labour supply trends depend on the size of the working age population (defined as aged 15 or older), the labour market participation rates, and the extent to which people acquire formal qualifications.

Figure 6 depicts the development of qualification shares of the labour force in Slovakia and the EU-27. Slovakia is expected to see a rapid increase in the share of higher qualified in the labour market. While the share was at 24% in 2014, it is expected to increase to 36% by 2030.

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 requiring generally 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 71% in 2018 to 59% in 2030, while the share of low qualified workers is expected to remain stable at only 5%. The trend is similar to the EU-27, albeit that Slovakia has had slightly lower levels of higher qualified and lower levels of lower qualified but higher levels of medium qualified. Relative

to the EU-27 averages, Slovakia is expected to catch-up somewhat in aligning their qualification mix to EU-27 averages, despite still having a higher share of medium qualified workers and a lower share of lower qualified.

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

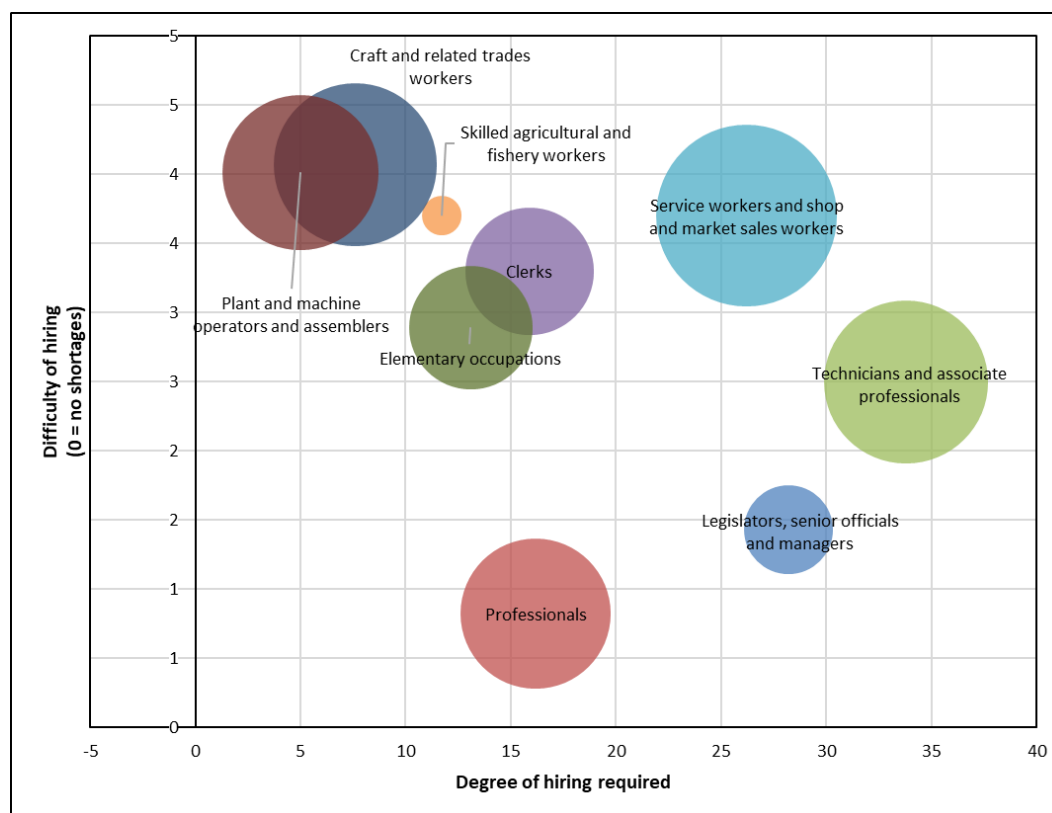


Source: Cedefop (2020 Skills Forecast).

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 (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



N.B: 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 among the medium and lower qualified. These shortages might therefore imply that some of the higher educated will have to be employed within occupations at a lower level than that for which they qualify for, or it will result in hiring difficulties. In general, the labour market, in some respect, is still developing qualification and skills levels required to match requirements of the labour demand. Some mismatch of graduates can occur, while general shortages in specific fields can be observed, especially with regards to technical skills.

Medium and low level occupations in the *service workers and shop and market sales workers*, as well as the *craft and related trades workers* and *plant and machine operators and assemblers* are predicted to experience higher levels of hiring difficulties in the forecast (Figure 6). These go alongside, respectively, higher and lower levels of change, thus high and low levels of hiring required, within these particular occupations. While *professionals* are implied to have less hiring difficulties, as they usually hire from the supply of higher qualified, they are also affected through the hiring of medium qualified workers. A high degree of

hiring required along with modest hiring difficulties can be found among *legislators, senior officials and managers*.

Hiring difficulties among *professionals* are very low across the underlying occupations. The degree of hiring required differs, though, with *health professionals* (34) and *business and administration professionals* (25) being well above the average of *professionals* as a whole (16), while necessary hiring among *information and communications technology professionals* (8) as well as *science and engineering professionals* (5) is well below the average. This last outcome can simply be the result of lower implied changes in the qualification structure of these occupations.

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



For more details, please contact Cedefop's Skills Forecast team at: Skills-Forecast@cedefop.europa.eu

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.

Please cite this publication as:

Cedefop (2020). *Skills forecast 2020: Slovakia*. Cedefop skills forecast.

<https://www.cedefop.europa.eu/en/publications-and-resources/country-reports/slovakia-2020-skills-forecast>

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