European Centre for the Development
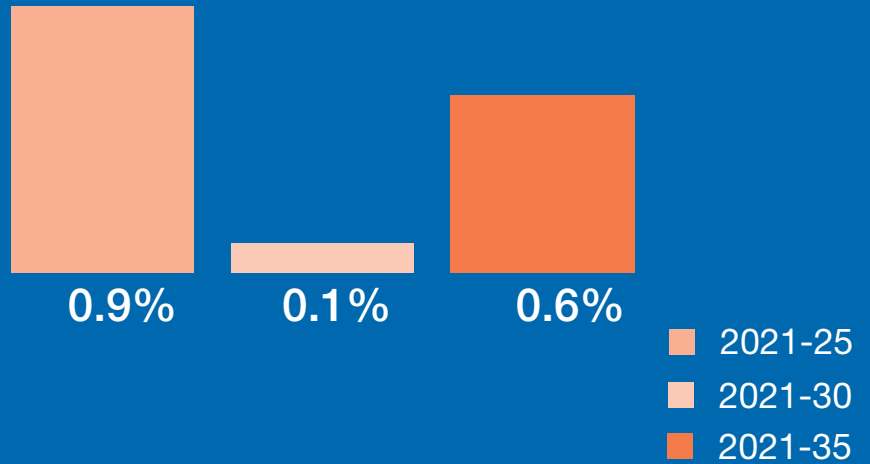of Vocational Training

CEDEFOP

2023 skills forecast
Czechia

Employment in 2035

5 378 000

0.58%

increase 2021-35

% Employment growth 2021-35

0.9%   **0.1%**   **0.6%**

- 2021-25
- 2021-30
- 2021-35

Fastest-growing sectors
2021-35% growth

19%

Arts, recreationh & other service activities;
(Film & TV production/broadcasting)

18%

Information & communication

Highest-demand occupations
Largest creation of new jobs, 2021-35

107 000

Information & communications
technology professionals

82 000

Personal care workers

77 000

Business & administration
professionals

increase in
high-skilled
labour demand
2021-35

27%

Total job openings, 2021-35

2 919 000

- Replacement needs (95%)
- New job openings (5%)

Total job openings by skill level
2021-35

- High-skilled non-manual occupations (47%)
- Skilled non-manual occupations (22%)
- Skilled manual occupations (26%)
- Elementary occupations (6%)

EU overview 2035

3.4%
employment
increase in 2021-35

**Fastest growing
occupation**
Legal, social and
cultural professionals

**Fastest growing
sector**
Information and
communication

Cedefop skills forecast: Czechia

1. Employment outlook

Employment in Czechia is forecast to fall slightly over 2022-30. Figure **1** shows that employment in Czechia fell more sharply than the EU-27 as a whole in 2020, as the Covid-19 pandemic hit, and is estimated to have bounced back slightly less strongly than the EU-27 over 2020-22. Across the rest of the forecast period, employment in Czechia is forecast to shrink by about 0.1% pa over 2022-30, compared with positive, albeit weak, growth of around 0.2% pa for the EU-27 as a whole, and then to grow by 0.1% pa over 2030-35 compared with growth of 0.3% pa in the EU-27 as a whole.

Figure 1. **Annual percentage employment growth in Czechia and the EU-27, 2015-35**
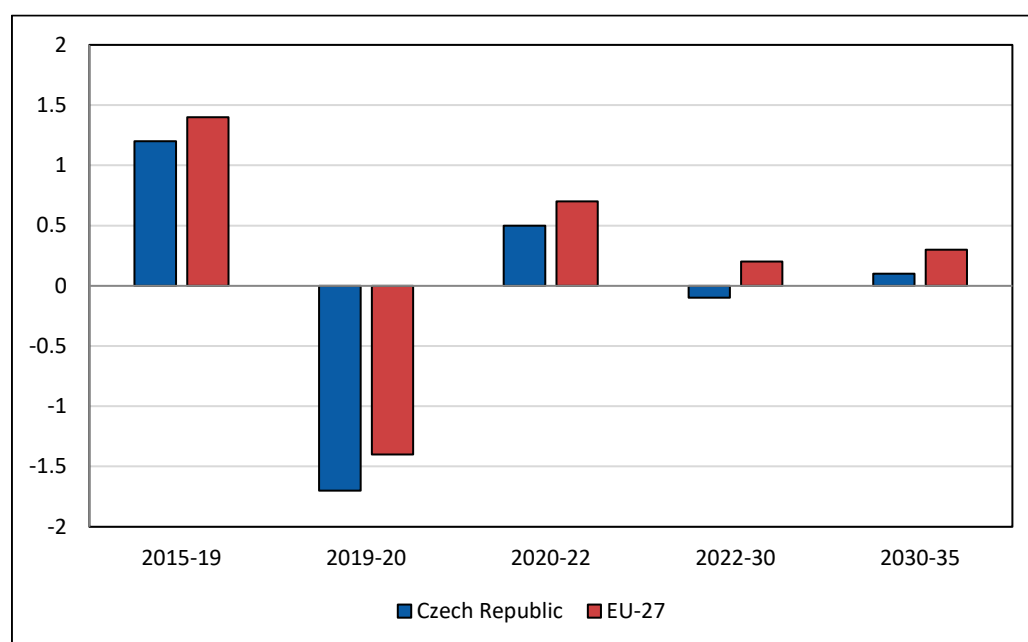
Source: Cedefop (2022 Skills Forecast).
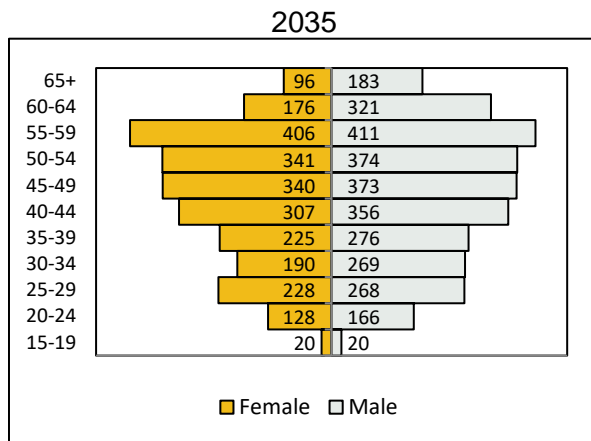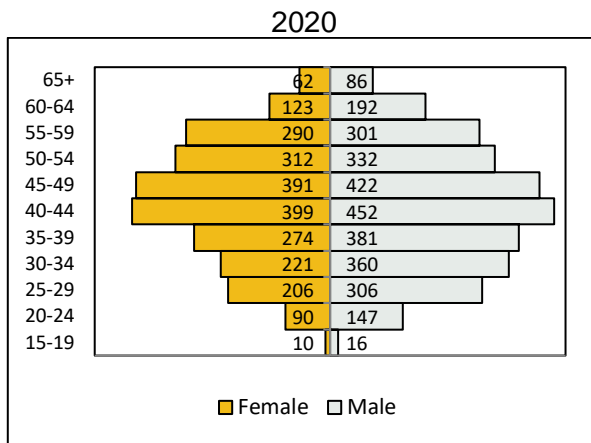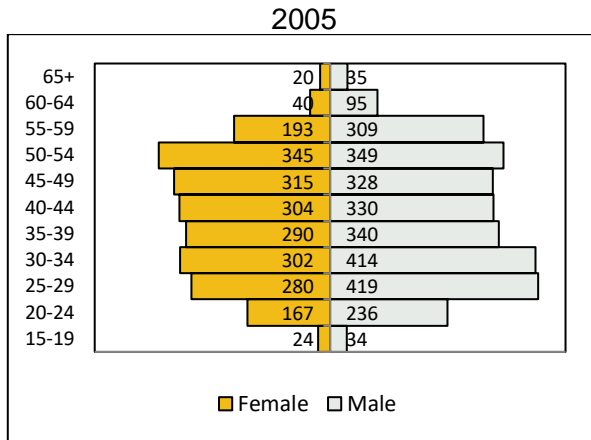
2. Labour force overview

Figure 2 shows Czechia's labour force by age group in 2005, 2020 and 2035. Changes in the labour force in Czechia over the forecast period will continue to be driven by the ageing population, as is the case in much of the EU, and increasing participation rates in most age groups. The total labour force is projected to increase by around 2% over 2020-35, compared with growth of around 4% over the previous 15 years. This compares with an expected increase in the labour force of around 3% over 2020-35 for the EU-27. The total participation rate in Czechia is forecast to remain static over 2020-35, due to the ageing of the population. Total population is forecast to grow by only 1.5% over 2020-35, compared with growth of 3.5% over 2005-20

The population of all age groups between 25 and 49 in Czechia is forecast to decline during 2020-35, reflecting trends in the relevant younger cohorts in preceding periods. Generally, the population in Czechia is ageing more strongly than the average for the EU-27 as a whole.

Apart from for those aged 45-54, participation rates of all age groups in Czechia are forecast to grow over 2020-35. However, participation rates in Czechia for those aged over 35 are generally higher than the average for the EU-27, and so the increases are not projected to be particularly large. The exception is for those aged 60-64, where the participation rate is projected to increase by 16 pp over 2020-35.

As elsewhere, female participation rates are generally forecast to increase more than male rates. Even so, due to the ageing population, the total female participation rate is forecast to increase only by 1 pp over 2020-35, and the total male rate is forecast to fall by 1 pp over the same period.

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

2005

Age	Female	Male
65+	20	35
60-64	40	95
55-59	193	309
50-54	345	349
45-49	315	328
40-44	304	330
35-39	290	340
30-34	302	414
25-29	280	419
20-24	167	236
15-19	24	34

☐ Female ☐ Male

2020

Age	Female	Male
65+	62	86
60-64	123	192
55-59	290	301
50-54	312	332
45-49	391	422
40-44	399	452
35-39	274	381
30-34	221	360
25-29	206	306
20-24	90	147
15-19	10	16

☐ Female ☐ Male

2035

Age	Female	Male
65+	96	183
60-64	176	321
55-59	406	411
50-54	341	374
45-49	340	373
40-44	307	356
35-39	225	276
30-34	190	269
25-29	228	268
20-24	128	166
15-19	20	20

☐ Female ☐ Male

Source: Cedefop (2022 Skills Forecast).

3. Sectoral employment trends

Figure **3** shows annual average employment growth by broad sector in Czechia between 2015 and 2035. Total employment is expected to remain broadly static in Czechia over the forecast period. However, employment in *Business & other services* is forecast to grow by a little under 1% pa and in *Non-marketed services* is forecast to grow by around 0.5% pa over this period. Employment in *Manufacturing* is forecast to fall by almost 1% pa over 2022-30, and then fall only slightly over 2030-35, while employment in *Construction* is forecast to fall by 0.7% pa over 2022-30 and then by more than 1% pa over 2030-35.

Figure 3**. Employment growth by broad sector of economic activity, 2015-35**
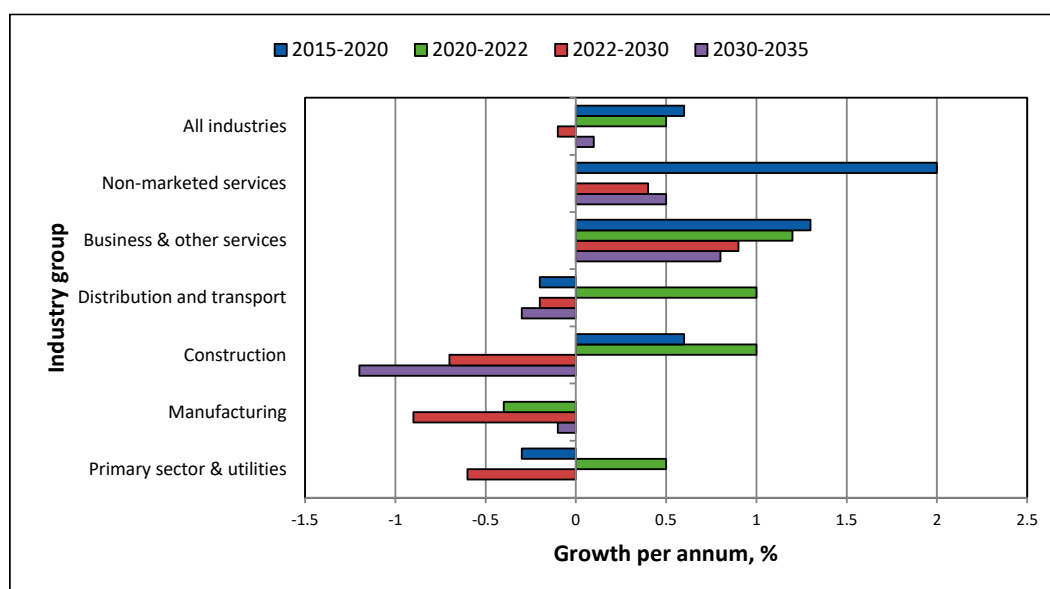
Source: Cedefop (2022 Skills Forecast).

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. The growth in *Business & other services* is forecast to be driven by growth in the sub-sectors of *research and development*, *arts & entertainment*, *market research & other professional services*, *architectural & engineering services* and *other service activities*. Within *Non-marketed services*, the large sub-sector of *public administration & defence* is forecast to see a decline in employment over the forecast period, while employment in *education* and in *health* is forecast to grow relatively strongly. Within *Manufacturing*, *optical & electronic equipment, other transport equipment* and *rubber & other non-metallic mineral products* are all expected to grow relatively strongly. Within *Primary sector & utilities*, employment

in the *electricity* sub-sector is forecast to grow relatively strongly over the forecast period, but all other sub-sectors are forecast to see little or no employment growth.

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 forecast 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 are in need of replacement workers. Most broad occupational groups are projected to shrink or stagnate during the forecast period, with the exception of *Professionals*, which is expected to show net job creation of 369,000. *Professionals* are also projected to see the greatest replacement demand over this period, meaning that it is expected to see by far the greatest number of job openings, almost 1 million, accounting for more than 30% of total job openings in Czechia over this period. Overall, only 38,000 new jobs are projected to be created between 2020 and 2035 in Czechia, while total job openings (mostly due to replacement needs) are expected to amount to more than 3 million.

At the more detailed level, although most job openings (taking both new/lost jobs and replacement needs together) are expected to be in high skill occupations, the occupation with the greatest number of job openings is expected to be the skilled manual occupation of *drivers & mobile plant operators*. The openings here are driven mainly by replacement demand, with a small number of new jobs created. Similarly, the skilled non-manual occupation of *personal care workers* is expected to provide the second-greatest number of job openings. Here, though, there are expected to be a large number of new jobs created, as well as a high level of replacement demand. *Personal service workers*, another skilled non-manual occupation, is also projected to see a relatively large number of new jobs and replacement demand. Among the high-

skilled non-manual occupations with a large number of job openings, *science & engineering professionals*, *teaching professionals*, *business & administration professionals*, *information & communications technology professionals*, *health professionals* and *legal, social & cultural professionals* are all expected to see a relatively large number of new jobs created, together with high replacement demand. On the other hand, business & administration associate professionals and science & engineering professionals are expected to see a declining number of jobs but still many job openings due to replacement demand. The number of job openings for the low skilled *elementary* occupations is generally fairly low, due to declining or weak growth in jobs and relatively low replacement demand.

The occupational and sectoral forecasts align with the ongoing shift of the Czech economy away from being an "assembly line" for foreign producers based on cheap labour. On the one hand, a general convergence process with higher income Member States is happening, with labour costs in Czechia rising as a result. On the other hand, conscious efforts from the Czech government (e.g. increases in minimum wage) are being made to abandon the focus on cheap labour as a source of comparative advantage. Another potential driver of occupational upgrading is employers' difficulties in meeting their high replacement demand in middle and lower skill jobs. That might lead to eliminating or significantly modifying some of these jobs.

The expected trends, therefore, seem to support policy goals. With the declining popularity of manual work, the shift towards a higher share of service sector jobs will also make it easier for employers to fill vacancies at times of high demand. On the other hand, de-industrialisation of the labour market might increase opportunities for non-standard employment relations.

Figure 4. **Job openings by broad occupational group, 2020-35**
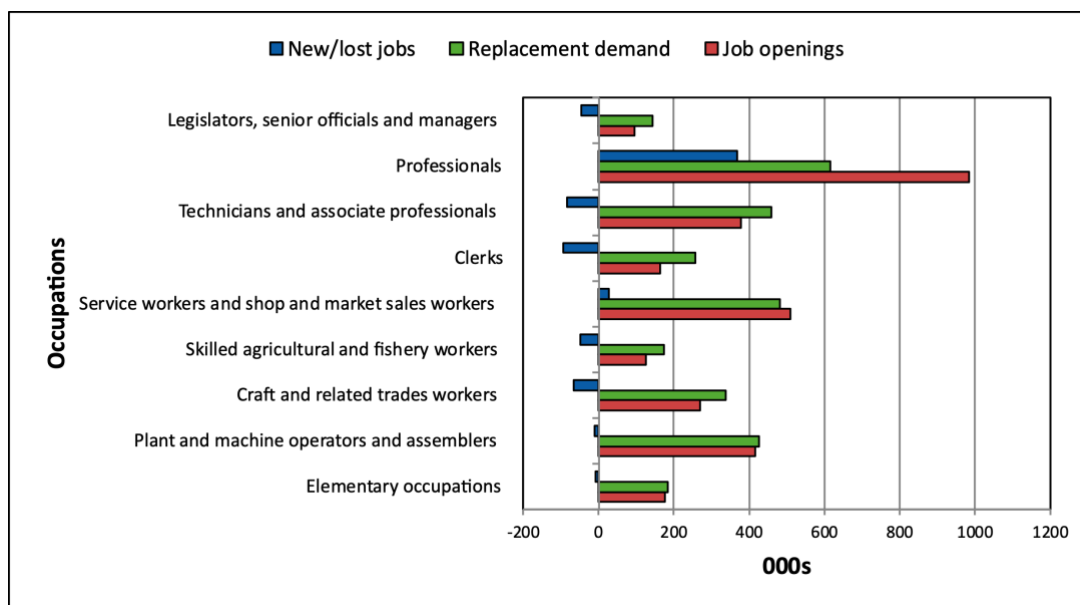
Source: Cedefop (2022 Skills Forecast).

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 Czechia is mainly characterized 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 lead to an increasing share of *Professionals, some types of other associates (i.e. health associate professionals, legal, social, cultural & related associate professionals), workers in personal, care, protective services.* High-skilled occupations that can benefit the most from these trends are, for example, *health professionals, science & engineering professionals,* and, in particular, *business & other professionals.*

Therefore, the overall effect of occupational change depends on a number of factors that need to be considered together. It seems likely that the convergence

7

of the Czech economy and wage levels towards higher-income countries might weaken incentives to hire many low-skilled Czech workers, especially in manufacturing. Increasing digitisation and moves toward a service-oriented economy, including within manufacturing, will lead to greater use of higher-level occupations at the expense of some medium and low-level occupations. All relevant lower-level occupations, except for *agricultural, forestry & fishery labourers,* are expected to decrease.

Intermediate-level occupations will experience an overall decline. Among the few medium-qualified occupations that are expected to see growth, *workers in personal, care, protective services* represent the most promising occupation. Several high-level occupations are expected to become weaker, for example, *chief executives, senior officials & legislators, health associate professionals, science & engineering professionals*.

Among the medium-qualified occupations that are expected to see growth, there is only *legal, social, cultural & related associate professionals*.

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 Czechia and the EU-27 over 2022-35. In Czechia, most job openings are expected to require a medium-level qualification (55%) which is much higher than the EU average. Compared to the EU-27, job openings in Czechia are expected to require a much lower share of high-level qualifications (41%). While the Czech labour market increases the level of higher qualifications, it remains one of the countries where intermediate qualification remains strong.

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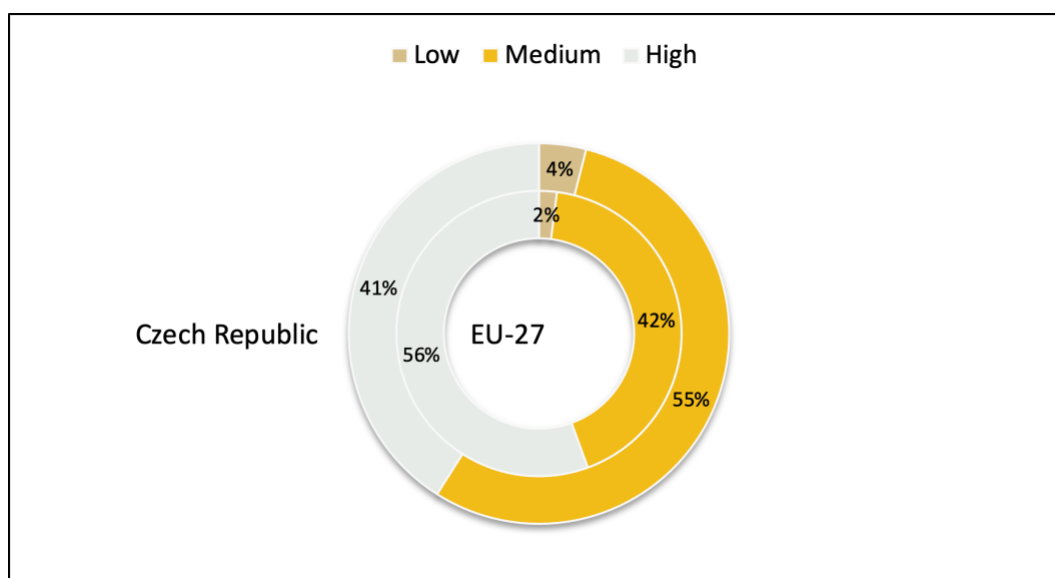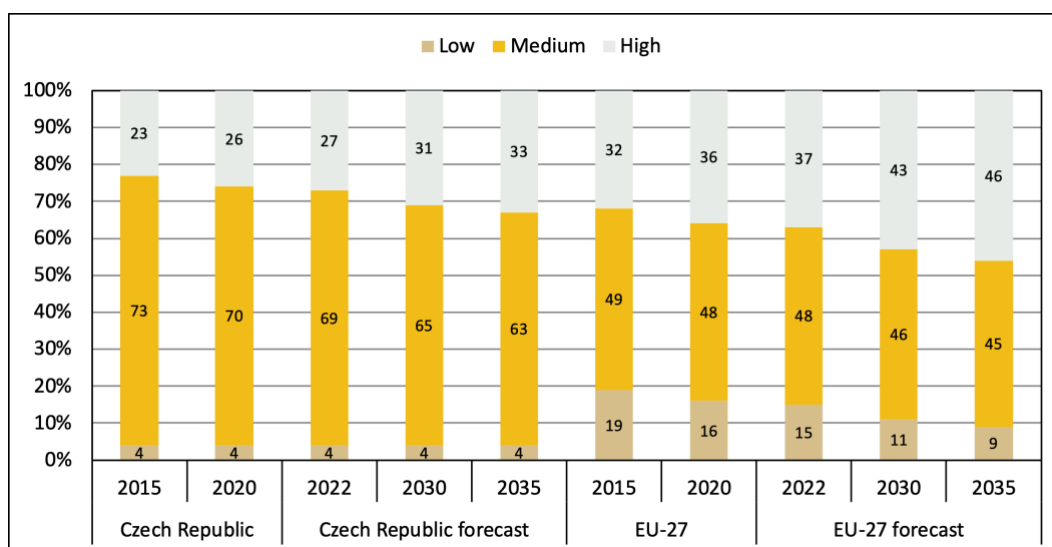

Source: Cedefop (2022 Skills Forecast).

Figure **6** depicts the development of qualification shares in the labour force in Czechia and the EU-27. Czechia is increasing the share of higher qualifications in the labour market. While the share of high qualifications was

27% in 2022, it is expected to increase to 33% by 2035. Even though the previous boom of university education has slowed in recent years, slowly, the upgrading of the qualification structure is also taking place in Czechia.

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

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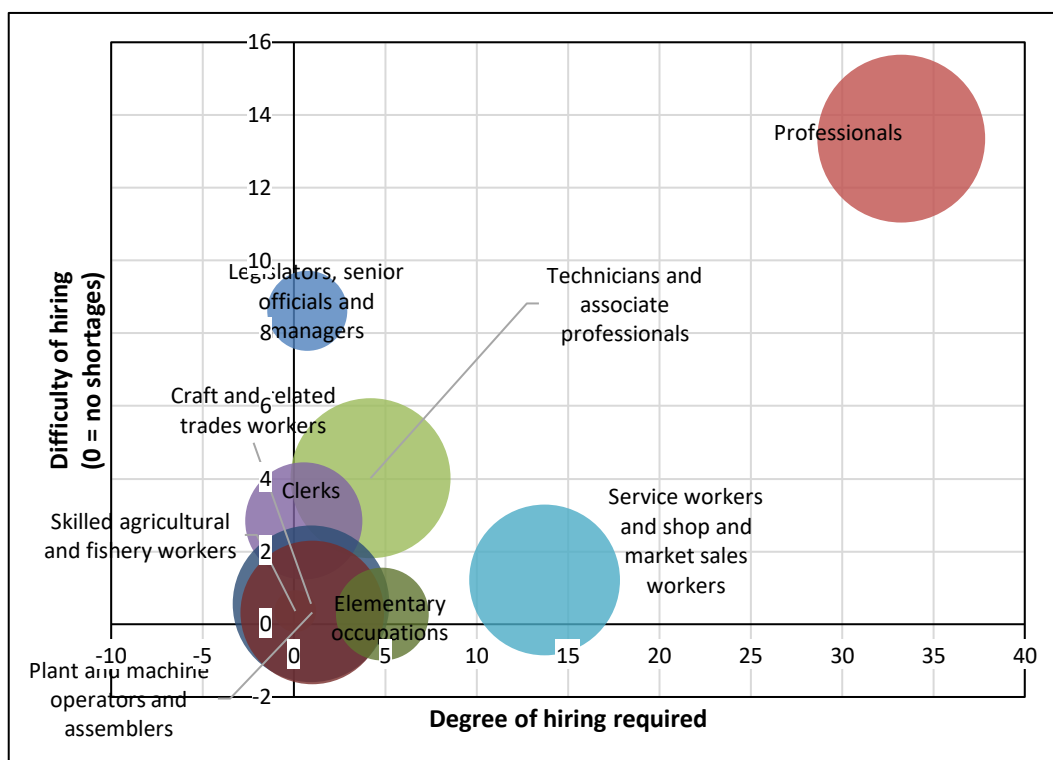

Source: Cedefop (2022 Skills Forecast).

The increase in share of higher qualifications since 2022 has been predominantly at the cost of the intermediate level. The latter is likely to remain declining in the future. From a share of 69% in 2022, it drops to 63% in 2035. The general trend is similar to that of the EU-27, albeit that Czechia has had lower levels of higher and lower qualified and much higher levels of medium qualified. Unlike in many other EU countries, middle education in Czechia is stratified into two distinct levels (with and without the "maturita" exam). The recent decline in the medium qualified labour force was driven by the lower level and this is likely to continue to be the case. The forecast implies an increasing shortage especially among the higher educated.

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 slowing increase in the supply of higher educated affects the shortages in the Czech labour market. Occupations that need a higher educated workforce are projected to encounter shortages and attempt to substitute intermediate level

whenever possible. Most outstanding on the chart of Figure 7 is thus the group of *Professionals* who have a strong degree of hiring and hiring difficulties. All other occupations are encountering much lower degrees of hiring or difficulties. Whereas *Legislators, senior officials & managers* show higher hiring difficulties they do not have a strong degree of hiring. On the other hand, *Service workers & shop & market sales workers* exhibit a higher degree of hiring, yet without much hiring difficulties.

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 Czechia has been developed in collaboration with Michal Janíčko, analyst at the National Training Fund, Czechia.

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