Ministry of Economics
Republic of Latvia

INFORMATIVE REPORT

# MEDIUM AND LONG-TERM LABOUR MARKET FORECASTS

2022

# INFORMATIVE REPORT

# ON MEDIUM AND LONG-TERM LABOUR MARKET FORECASTS

2022

# INTRODUCTION

In order to implement action 34.1 of the Government Action Plan: Declaration of the Intended Activities of the Cabinet of Ministers Headed by Arturs Krišjānis Kariņš, as well as Paragraph 24 of the Protocol Decision No 48 of 14 July 2009 and Paragraph 11 of the Protocol Decision No 60 of 8 November 2016 of the Cabinet of Ministers, the Ministry of Economics has prepared the *Informative report on medium and long-term labour market forecasts* (hereinafter – the "Report").

The Report describes the current situation in the labour market and includes medium-term labour market forecasts up to 2030 and long-term labour market forecasts up to 2040, updated by the Ministry of Economics. These labour market forecasts are based on the economic development and demographic scenarios, which were developed by the Ministry of Economics.

Labour market forecasts drafted by the Ministry of Economics are one of the tools that allow an early anticipation of formation of labour market mismatches in the future. They show possible trends in the labour market development and possible risks if the current education system and education supply structure are retained.

Forecasts are only one of the stages in the labour supply adjustment process. They are the quantitative basis for further discussions among employment, education and structural policy makers, social partners, scientists and other stakeholders, in order to prepare and adapt the expected structural changes in the national economy in a timely manner.

The information is outlined in 5 chapters and in the Annex. The Report consists of a characterisation of the economic and labour market trends, description of economic and demographic development scenarios, medium-term and long-term labour market forecasts, an overview of implemented and planned education and employment measures, and also a summary of recommendations on labour demand and supply improvement directions, and an annex.

All the statistical information, except for the specifically mentioned cases, has been taken from the database of the Central Statistical Bureau of the Republic of Latvia. The data provided by the Statistical Office of the European Communities (Eurostat), Ministry of Education and Science, State Employment Agency, and the European Centre for the Development of Vocational Training (Cedefop) have also been used in this Report.

Detailed MoE labour market forecasts, economic growth scenarios and demographic forecasts can be viewed on the website: https://prognozes.em.gov.lv.

# ABBREVIATIONS

| | |
|---|---|
| ALMP | active labour market policy |
| RRF | Recovery and Resilience Facility |
| CEDEFOP | European Centre for the Development of Vocational Training |
| CSB | Central Statistical Bureau |
| DOM | dynamic optimisation model |
| LFS | Labour Force Survey |
| WB | work-based |
| EC | European Commission |
| MoE | Ministry of Economics |
| ERDF | European Regional Development Fund |
| EU | European Union |
| ESF/ESF+ | European Social Fund (ESF+ in 2021-2027) |
| GDP | gross domestic product |
| ICT | information and communication technologies |
| ISCED | International Standard Classification of Education |
| ISCO | International Standard Classification of Occupations |
| IT | information technologies |
| MoES | Ministry of Education and Science |
| ECL | Employers' Confederation of Latvia |
| IDAL | Investment and Development Agency of Latvia |
| LQF | Latvian qualifications framework |
| CM | Cabinet of Ministers |
| SME | small and medium-sized enterprises |
| SEC | Sectoral expert council |
| SEA | State Employment Agency |
| OECD | Organisation for Economic Co-operation and Development |
| R&D | research and development |
| PIAAC | OECD Programme for the International Assessment of Adult Competencies |
| VECC | Vocational education competence centre |
| PPS | Purchasing power standard |
| REACT-EU | Recovery Assistance for Cohesion and the Territories of Europe |
| STEM | Science, technology, engineering and mathematics |
| ILO | International Labour Organisation |
| ULC | unit labour costs of products |
| SRS | State Revenue Service |

# TABLE OF CONTENTS

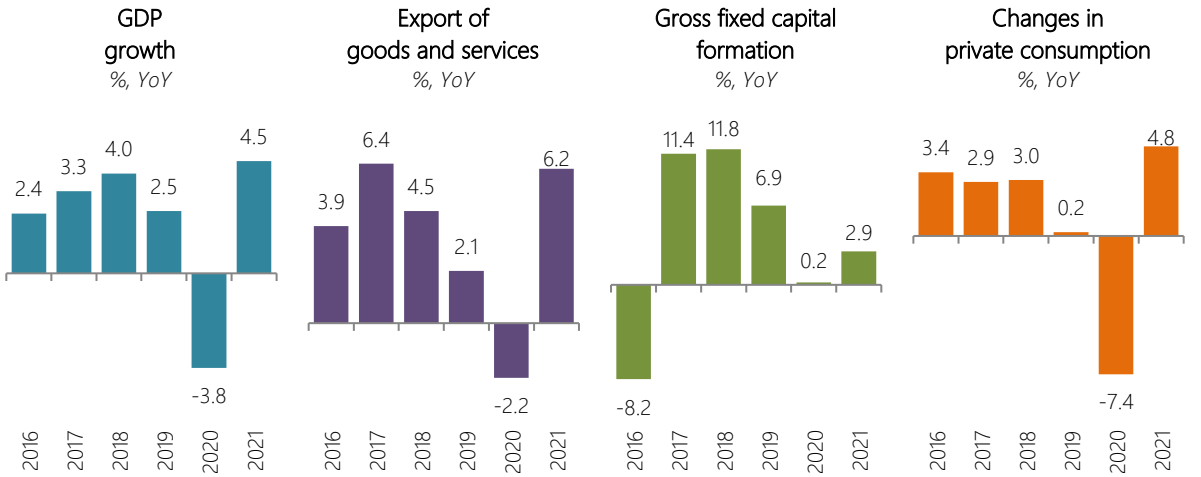
# 1. ECONOMY AND LABOUR MARKET DEVELOPMENT

## 1.1. MACROECONOMIC SITUATION AND DEVELOPMENT OF INDUSTRIES

Stable economic growth in Latvia with its rates exceeding the EU average continued from 2011 to 2019 and GDP increased by an average of 3.3% per year. The Covid-19 pandemic has had significant impact on economic development on a global scale and also in Latvia. In 2020, GDP in Latvia shrank by 3.8% under the influence of the pandemic.

Economic development in 2021 was still affected by the Covid-19 pandemic and measures to restrict it; however, rapid growth was observed in the economy in the middle of the year largely due to the base effect. GDP has grown by a total of 4.5%. The largest impact was from the increase in exports thanks to the favourable atmosphere in Latvia's largest export markets. Trends in export varied – goods export volumes increased very rapidly reaching the highest export value so far, while the export of services significantly lags behind the pre-crisis level. The consumption of households made a considerable contribution to the increase in GDP. Investment amounts in conditions of Covid-19 in 2020 were comparatively stable and positive trends continued also in 2021. Government consumption also continued to grow, mainly due to the government support measures to mitigate the negative consequences of Covid-19.

Figure 1.1




Source: CSB

The Covid-19 pandemic has caused significant changes in the policy that has been implemented so far – the government debt and the budget deficit has increased rapidly. In addition, risks to the current account balance prevail. Inflation is growing rapidly affected by the increase in world prices.

In 2010, producing sectors (i.e., agriculture, forestry and fishery, industry, and construction sectors) accounted for 27.6%; however, in 2021 – for 27.2% of total value added. In 2021, compared to 2010, the share has increased in construction, business services, and public services. Nevertheless, it has declined in other industry, transportation, trade and accommodation.

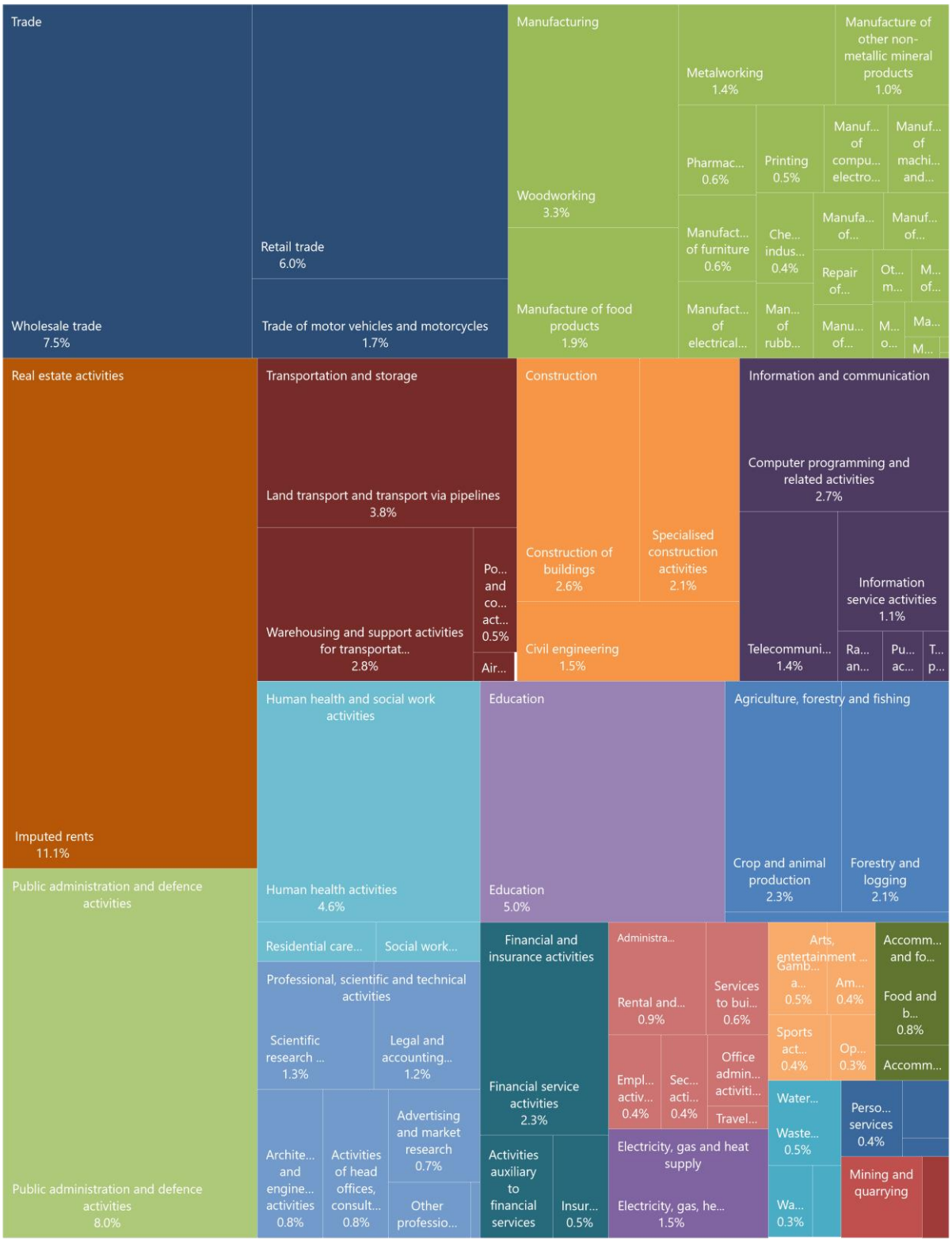
In 2015-2019, growth was observed in all sectors, with the exception of electricity, gas, steam, and air conditioning supply and financial activities. The increase in trade and manufacturing volumes had the largest effect on growth. However, in 2020 the Covid-19 crisis had a negative effect on almost all sectors. Growth continued only in agriculture, forestry, and fishery, construction and public services, with the largest effect from the decline in volumes in transportation, accommodation, and food service activities, and the arts, entertainment, and recreation. As the economy recovered, in 2021, growth was observed in manufacturing and other industry, trade, transportation, financial activities, information and communication, as well as public services, with the largest impact from the increase in volumes of trade, health, and manufacturing.

Overall, uneven growth is observed in **agriculture, forestry, and fishing**, because the industry is closely linked to weather. In 2020, volumes of the industries slightly increased. Production volumes increased in crop production, animal production, and fisheries, and reduced in forestry and logging. In 2021, volumes of the industries generally reduced rapidly. Volumes of products decreased in all the three subsectors. A significant reduction was observed in crop production due to unfavourable weather, which reduced harvest of all cereal crops considerably.

Figure 1.2

Structure of national economy

*2021, %*



The development of **manufacturing** is fostered by improved competitiveness of Latvian manufacturers, as well as demand dynamics in the largest export markets. In 2020, production volumes in manufacturing were 0.9% lower than a year ago. Production volumes of vehicles, light industry, metalworking and food industries shrank, while production volumes of woodworking, electrical and optical equipment, paper industry and publishing increased. Sharp growth was observed in manufacturing in 2021. Industry production volumes exceeded the level of the previous year by 7.4%. Growth of the industry was significantly affected by increases in volumes of chemical industry, woodworking, manufacture of electrical equipment and machinery and equipment. In 2021, manufacturing turnover at current prices increased by 21.4%. Volumes of products sold in the domestic market grew more moderately, while volumes of exported products – more rapidly.

**Other industries** (mining, electricity and gas supply) reduced in 2017-2020, underpinned by the drop in electricity and gas supply sectors due to warm weather. In 2021, volumes in other industries grew moderately. Cold weather increased natural gas and electricity supply at the beginning and at the end of the year, while favourable weather in spring contributed to the development of mining and quarrying.

The development of the **construction sector** is very cyclic and is mainly related to public orders and projects of the EU funds. In 2020, construction volumes remained practically unchanged compared to 2019, while in 2021 volumes of construction products generally reduced by 6.1% affected by a rapid increase in prices of construction materials (mainly wood products and metals). Thus, activities in the implementation of existing projects and commencement of new projects slowed down. A reduction was observed in all major groups of construction with the most rapid decline in production volumes of construction of buildings.

**Trade** was positively influenced by an increase in private consumption, taking into account gradual increase in income of the population. Until 2020, the trade sector showed stable growth rates. In 2020, the sector was negatively affected by the decline in private consumption, rising unemployment and falling incomes caused by the Covid-19 crisis, and its volumes reduced by 3%. In 2021, the trade sector was positively influenced by the easement of the Covid-19 restrictions. It grew by 8.9% in 2021. The rise in retail trade turnover in 2021 was slightly steeper than in 2020 and grew by 2.5%. Food retail turnover remained unchanged, but, despite trade restrictions, non-food and fuel trade increased rapidly. The wholesale trade turnover at current prices grew by 28.4%.

**Transportation and storage** is closely linked to international transport. In 2020, volumes of the industry declined due to Covid-19 restrictions. As the epidemiological situation improved and the restrictions introduced were cancelled, the sector's volumes increased in 2021. The drop in freight volumes was seen in railways and ports, while road freight volumes increased rapidly, driven by increases in both inland and international freight volumes. In 2021, passenger transport continued to reduce under the influence of Covid-19 – by 46.5% in ports and by 16.6% in inland transport. An increase was observed in air transport – by 17%, while the number of passengers considerably lagged behind the pre-crisis volumes of 2019.

In **business services**, in 2020, volumes declined rapidly in all sub-sectors under the influence of the Covid-19 crisis. The drop in service volumes in the arts, entertainment. and recreation had a major impact due to the strict measures introduced to limit the Covid-19 pandemic. In 2021, volumes of business services increased rapidly. The biggest impact was from the increase in service volumes in financial and insurance activities, and information and communication. Meanwhile, volumes continued to reduce in arts, entertainment and recreation and real estate activities.

In **sectors of public services** volumes of services provided increase according to the increase in total general public budget expenditure. With the government expenditure increasing, a steady growth has been observed in the public services sectors since 2014. In 2020, under the influence of the Covid-19 crisis, volumes of public services increased moderately, while in 2021 total volumes of services showed a rapid increase caused by the increase in human health and social work activities.

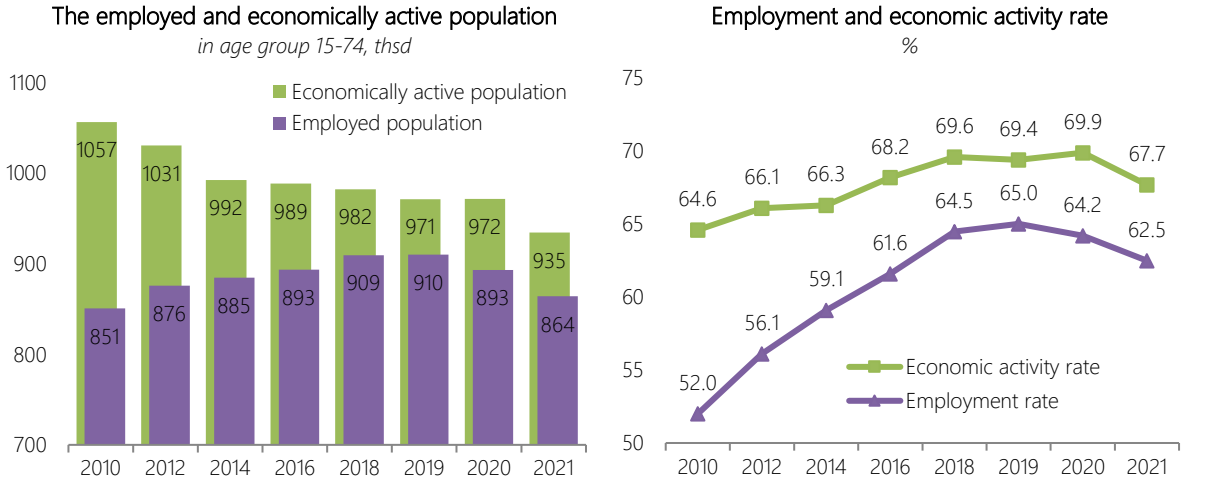
However, on 24 February 2022, when Russia invaded Ukraine, the geopolitical situation has deteriorated and there is a big uncertainty as to how the war and related sanctions will affect economic development (see Chapter 3.2.1).

# 1.2. EMPLOYMENT AND UNEMPLOYMENT OF THE POPULATION

Along with the increase in economic activities, the general situation in the labour market has gradually stabilised. At the same time, the Covid-19 crisis has left a visible impact on the labour market. The number of the employed and the employment rate are still significantly lower than in 2019. The crisis has also affected the economic activity of the population, which, along with demographic processes, is narrowing labour market supply and increases the risks of labour shortages. The protracted crisis has increased the share of long-term job seekers, which, together with regional labour market disproportions, may pose structural unemployment risks in the coming years, as well as exacerbate the problem of availability of labour force.

The decline in economic activities due to the Covid-19 crisis has affected the decline in labour demand. Overall, in 2021, the number of people employed was by 29 thousand or 3.2% lower than in 2020, and this has been the largest decline in the number of the employed since 2010. In total, 864 thousand people aged 15 to 74 years were employed in 2021. However, the number of occupied posts increased only by 0.4%.

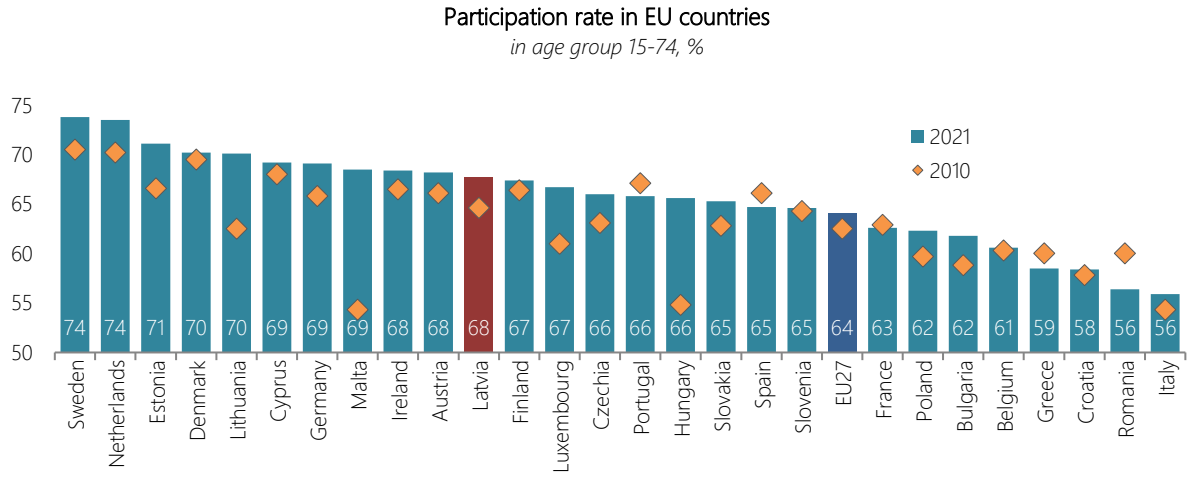
Figure 1.3




Source: CSB

Although, generally, the negative effects of the Covid-19 pandemic on employment of the population were mitigated by the state support measures, which partly allowed both jobs and population income to be maintained, but protracted crisis has widened the impact of the pandemic on the labour market.

Figure 1.4



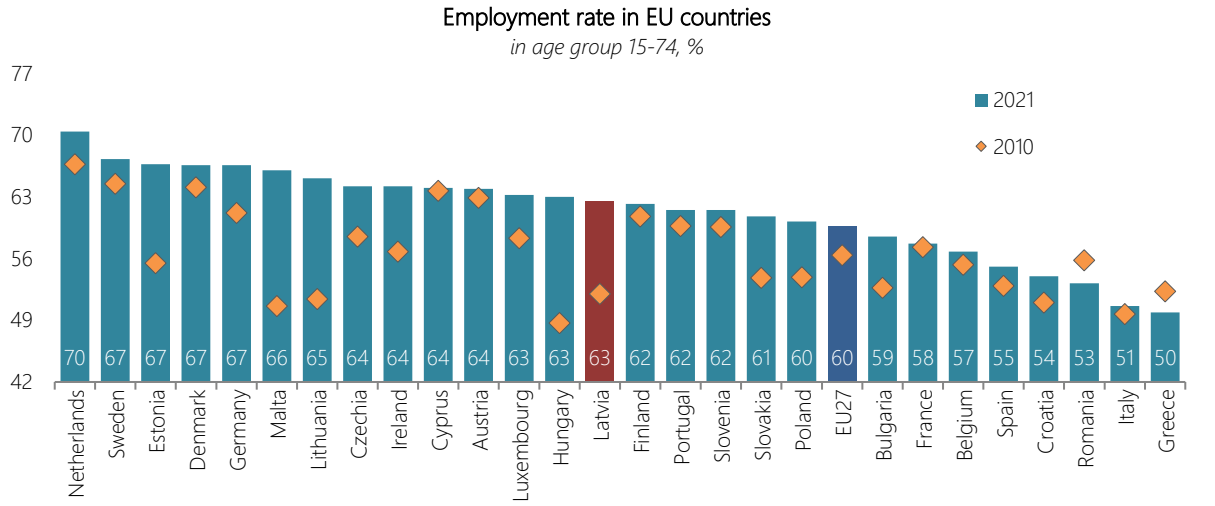

Source: *Eurostat*

Also, the need for labour force is replaced by the increase in productivity even more, and thus the number of employees required for performing a specific job declines.

The share of the employed in the total population in 2021 was 62.5%, being 1.7 percentage points lower than in 2020, and it is 2.5 percentage points below the pre-crisis level (2019). Although generally there was an increase in economic activity of the population in 2020, participation of the population in the labour market has been gradually declining since Q4 2020. In 2021, the economic activity rate of the population aged 15-74 was 2.2 percentage points lower than in 2020.

Participation rate in Latvia is higher than the EU average. In 2021, the economic activity of the population was 3.6 percentage points higher than the EU average (64%).

Figure 1.5



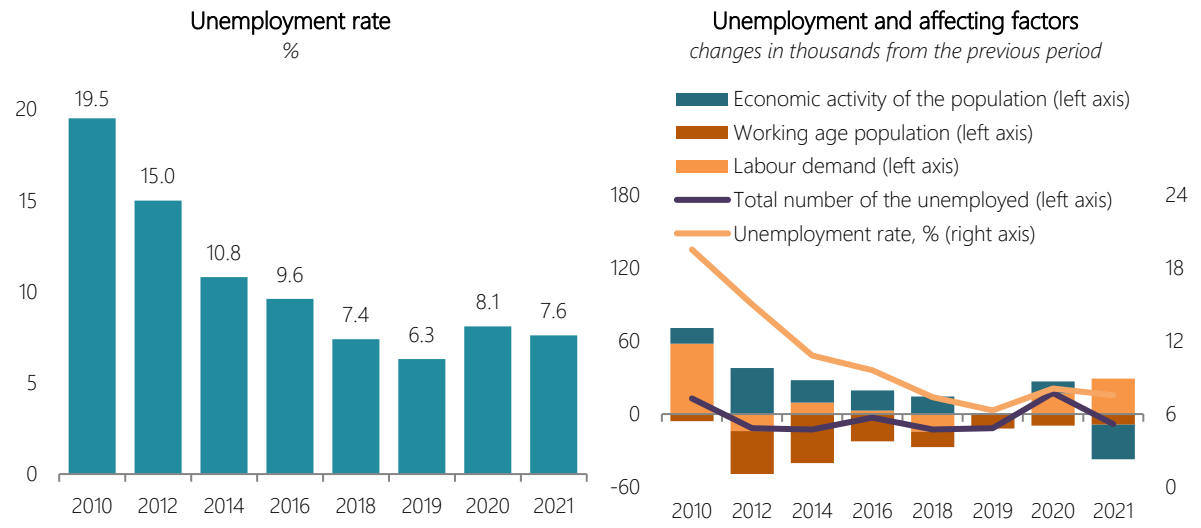

Source: *Eurostat*

In terms of employment rate, Latvia also is ahead of the majority of EU countries and in 2021 the employment rate of the population aged 15 to 74 was 2.9 percentage points higher than the EU average. Since 2010, the increase in the employment rate in Latvia was one of the most rapid in the EU. However, it should be taken into account that the employment rate in 2010 in Latvia, like in other countries, reached its lowest point after the financial crisis of 2008, therefore the changes in the indicator are partially related to the low base effect of the employment rate in 2010.

After the increase in 2020 under the influence of the Covid-19 crisis, the unemployment rate fell to an average of 7.6% in 2021, which was 0.5 percentage points less than in 2020 and 11.9 percentage points less than in 2010. Overall, the number of the unemployed declined to 70.6 thousand in 2021, which was 8.1 thousand less than in the year before. The decline in unemployment was mainly affected by the reduction in economic activity of the population, as well as demographic processes – the decline in working age population and changes in the age structure of the population – still continue to have a significant effect.

The registered unemployment rate from the peak of the first wave of the virus in June 2020, when it increased to 8.6%, reduced by almost 2 percentage points (to 6.7%) in March 2022. Overall, the number of registered unemployed in this period increased by almost 18 thousand.

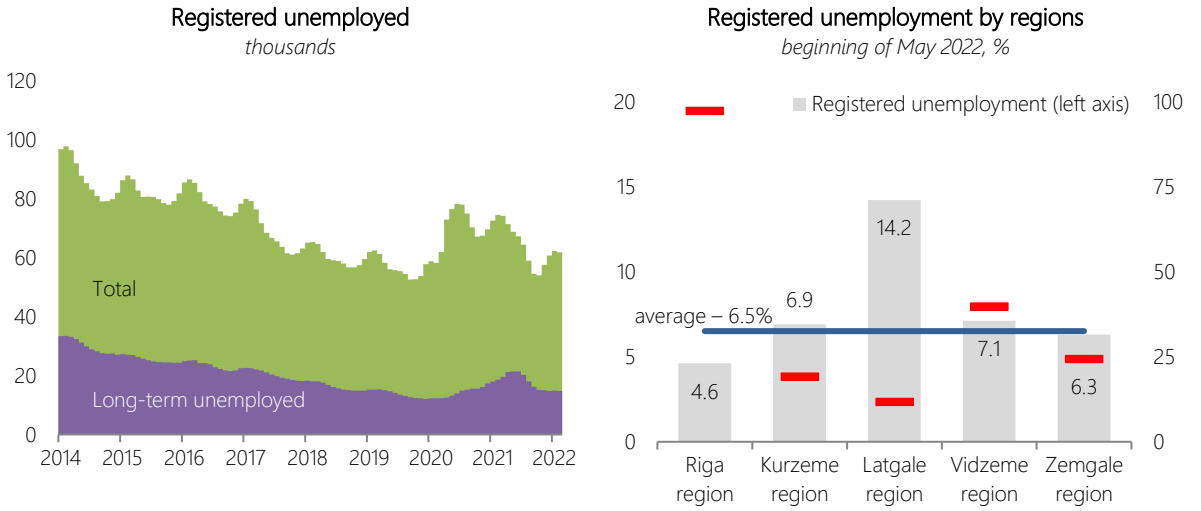
Figure 1.6




Source: CSB

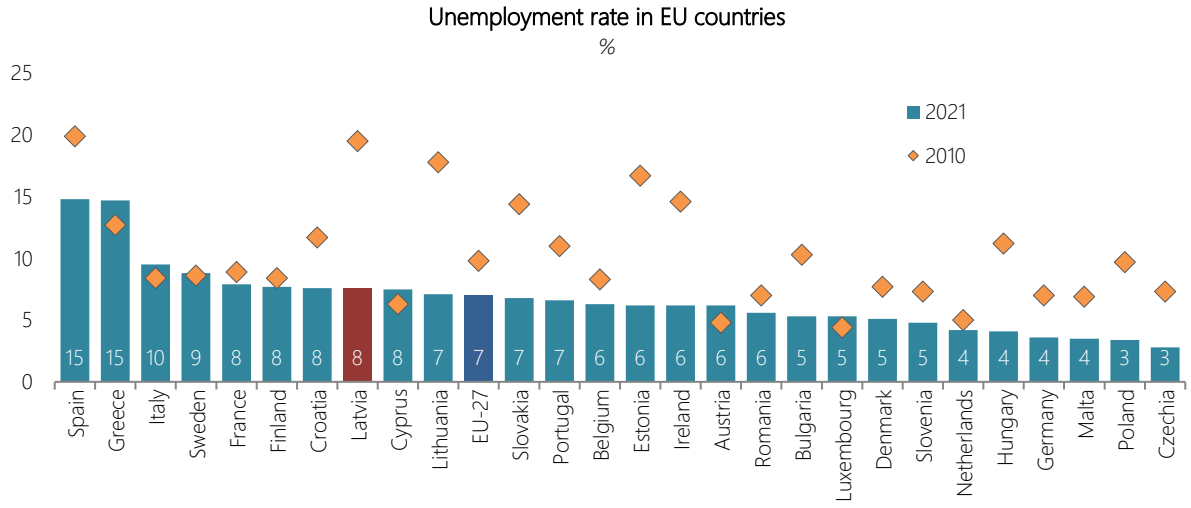
In 2021, the average unemployment rate in the EU Member States was 7%. In comparison with 2010, the unemployment rate decreased rapidly in all the three Baltic countries. In 2021, it was above the EU average in Latvia and Lithuania and below the EU average in Estonia.

Figure 1.7




Source: SEA

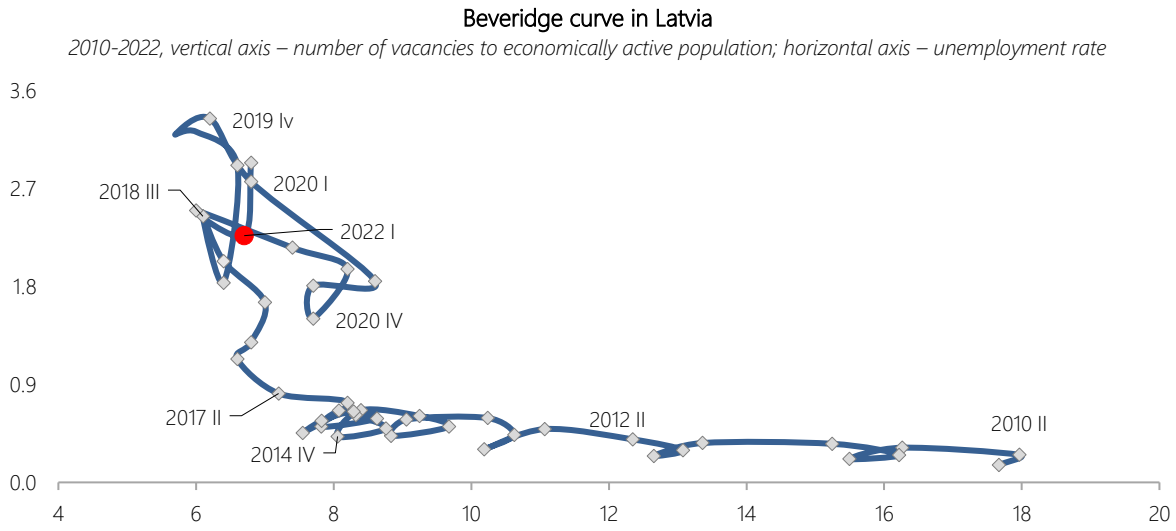
Figure 1.8




Source: *Eurostat*

Although the uneven regional distribution of labour resources and vacancies is currently one of the most vivid structural risks of the labour market, it is, however, not the only risk. Risks are caused also by the high share of long-term unemployed people – approximately 1/4 of registered job seekers have been out of employment longer than a year. Among long-term unemployed, 60% were unemployed aged 50 and above, 25.7% were unemployed with disabilities. It should be taken into account that high long-term unemployment, which is clearly regional, can cause an increase in structural unemployment, namely, the longer these people are unemployed, the greater the risk of losing skills and abilities. Moreover, there is a risk that part of the current unemployed might have problems to find a job according to their skills, as they lack vital skills currently demanded by the market. Some proof of the formation of structural unemployment can be obtained using the Beveridge curve, which represents the interrelated dynamics of unemployment and free workplaces.

Figure 1.9




Source: CSB, SEA

During the financial crisis – in 2009 and at the beginning of 2010, unemployment grew, but the number of vacancies remained practically unchanged. The unemployment reached its peak in Q2 2010. An upwards change in the direction of the Beveridge curve can be observed from Q3 2010 to the end of 2016, which shows a change in the economic phase cycle and the improvement of the situation in the labour market. Employment was increasing gradually, and the number of job seekers and inactive persons has declined. Therefore, the creation of

new jobs has resumed. The shift on the curve is the same as the drop in the number of jobs during the crisis, which demonstrates a cyclic decline in the unemployment. The decline in the unemployment rate was related to an increase of economic activity. Therefore all the measures related to the facilitation of economic activities and business operations stimulate a higher demand for labour and expand the employment opportunities.

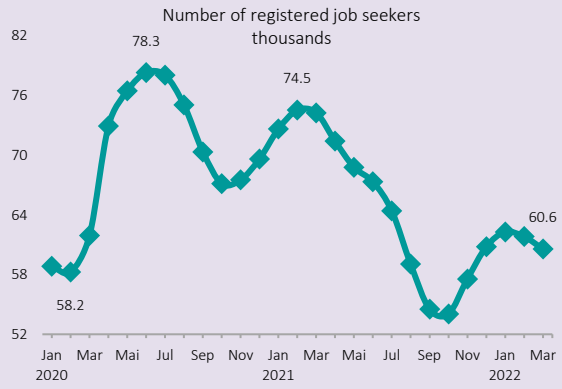
Since 2017, structural non-compliances of the labour market have become even more distinct hindering a faster decrease in unemployment. The number of vacancies has been growing faster than the unemployment rate, which is an indication of structural unemployment. It should be noted that the Covid-19 crisis has generally accelerated structural changes in labour demand accelerating automation of workplaces in labour-intensive industries – mainly reducing the demand for low and medium qualification workforce without processional skills and increasing the share of jobs requiring higher qualification, in particular in information and communication services. Labour force upskilling and reskilling measures provide a significant support to overcoming structural changes in the labour market.

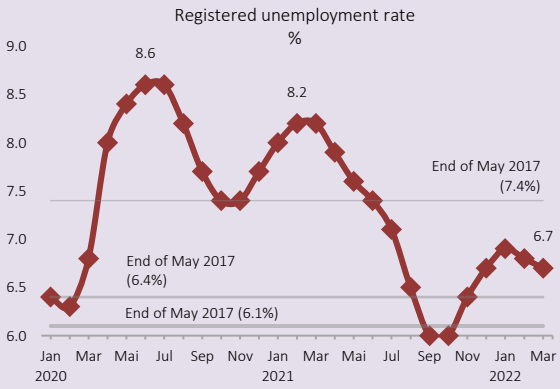
### Impact of Covid-19 on the Latvian labour market

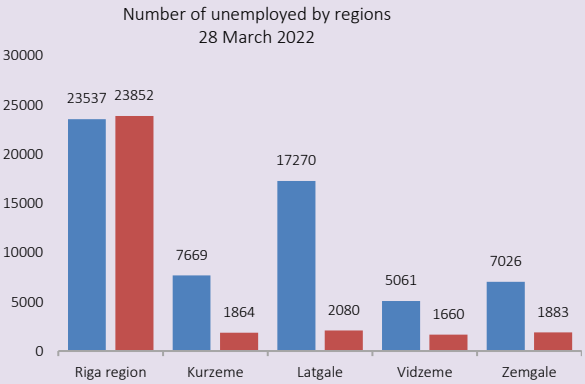
Along with the rapid spreading of Covid-19 in the world and the decline in economic activity, a rapid drop in activity has been observed starting from the beginning of March 2020 also in the Latvian labour market. Due to the rapid spread of Covid-19, since March 2020 to the peak of the first wave of the virus in July 2020, registered unemployment rate increased by more than 2 percentage points – to 8.7% at the beginning of July 2020. High registered unemployment rate was observed also during the second wave of the virus, reaching 8.2% in the middle of March 2021, but the peak of the third wave (6.8%) was reached at the end of February 2022. At the same time, the number of registered vacancies declined rapidly – by more than 17 thousand. The impact of Covid-19 was observed in almost all economic sectors. The sectors, which have been directly hit by the crisis (aviation, restaurants, bars, public catering, international passenger transportation, the arts, culture and entertainment, hotels and dwelling houses, organisation of conferences and exhibitions, car rent, rent of equipment and tangible assets, travel agency and tour operator activities, sports facilities, clubs, fitness centres) have sufferedmost severely.

**Since the beginning of March 2022 the general situation in the labour market has improved, unemployment has declined, and the number of vacancies has increased sharply.**

As the incidence of Covid-19 reduced, from April 1, the epidemiological safety measures that were in effect have been cancelled. Some of them were preserved only in the environments with particularly high risk of being infected. At the same time, it should be noted that further impact largely depends on whether new virus strains will develop and new restrictions related to the spread of Covid-19 will be introduced.



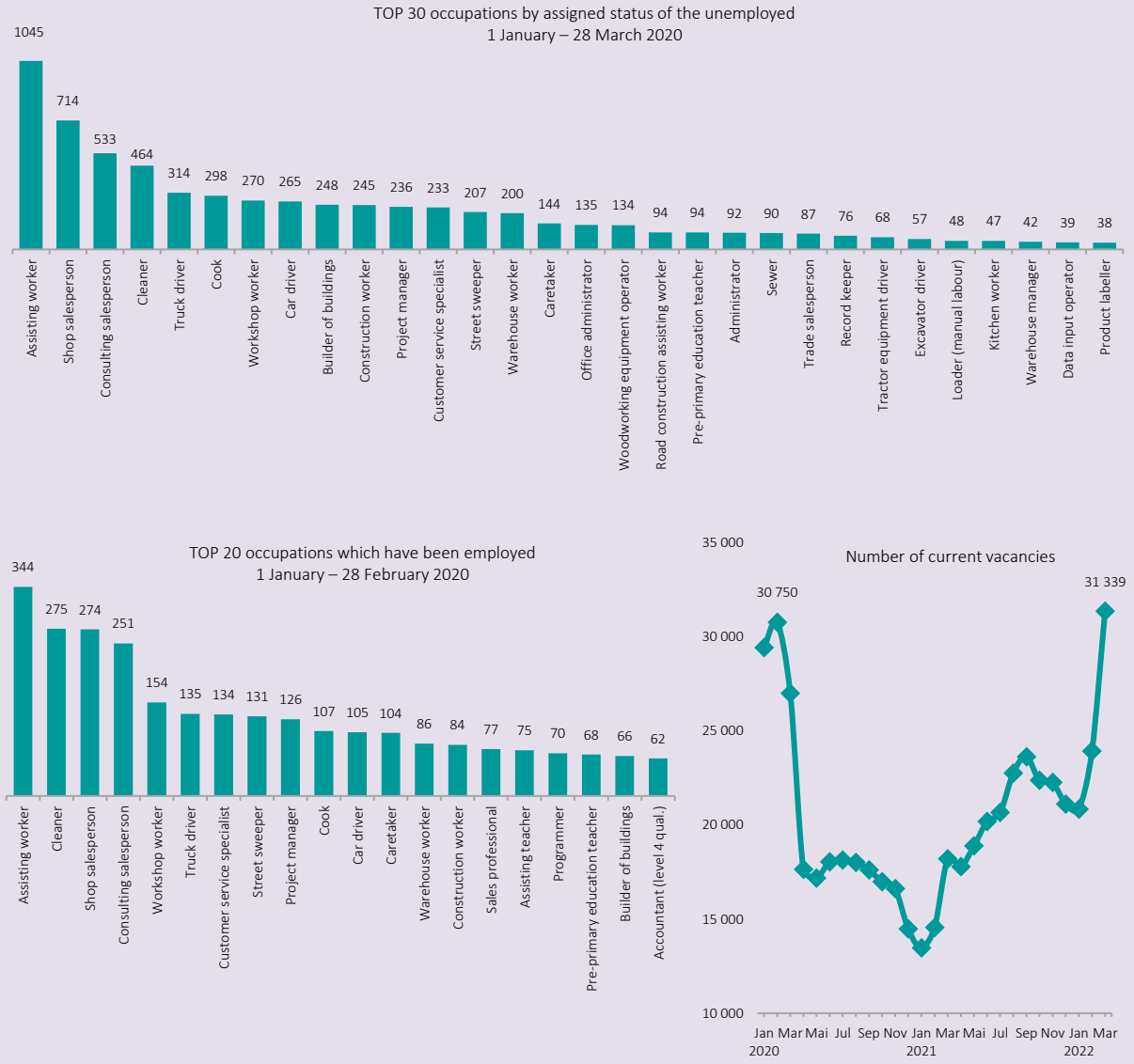




**TOP affected sectors**

- Transportation and storage
- Administrative and support service activities
- Accommodation and food service activities
- Wholesale and retail trade
- Waste management and remediation activities
- Manufacturing
- Real estate activities
- Arts, entertainment and recreation
- Professional, scientific and technical activities
- Forestry
- Financial and insurance activities
- Information and communication

Source: SEA, MoE calculations

Box continued



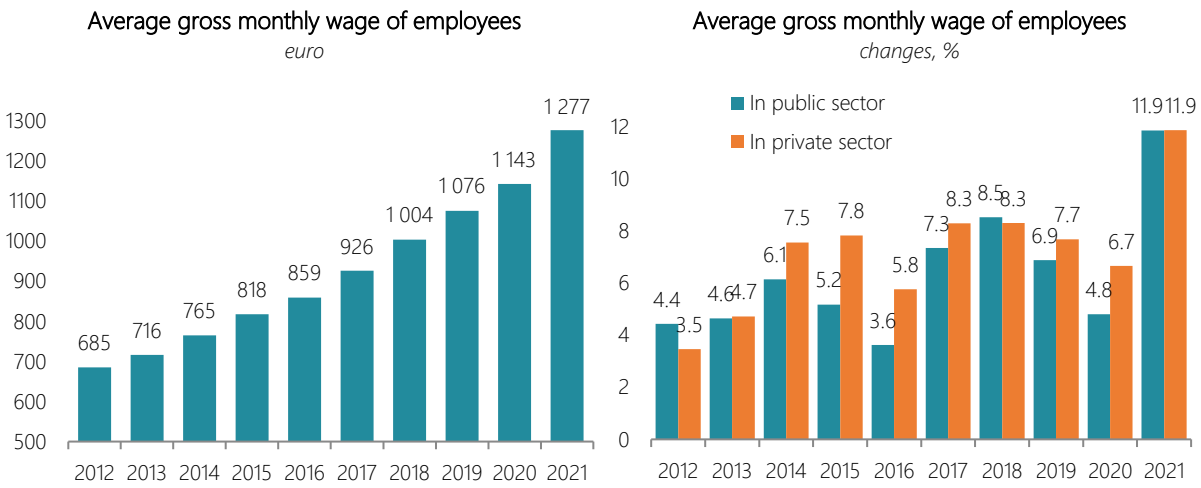

Source: SEA, MoE calculations

## 1.3. WAGES AND PRODUCTIVITY

In light of improvements in the labour market and increasing labour shortages, since 2013 gross wage growth has remained stable above 4.5% per year and reached the fastest growth in recent years in 2021, with gross wages increasing by 11.7%. In 2021, the average gross wage reached 1,277 euro. Its increase was largely affected by the increase in labour demand and at the same time the decline in the working age population, which put pressure on wages. Compared to the pre-pandemic level of 2019, the gross wage has risen by 18.7 per cent.

Since 2011, wages have been growing in both the private and public sector. In 2021, wages were growing equally rapidly in the private sector and in the public sector (by 11.9%), mainly due to the increase of wages of healthcare employees. In recent years, the difference in wages in the private and public sector has declined rapidly. If in 2008 the average gross wage in the private sector (623 euro) was by 183 euro lower than in the public sector (806 euro), then this difference has shrinked to 20 euro (1,293 euro in the public sector; 1,273 euro in the private sector).

Figure 1.10

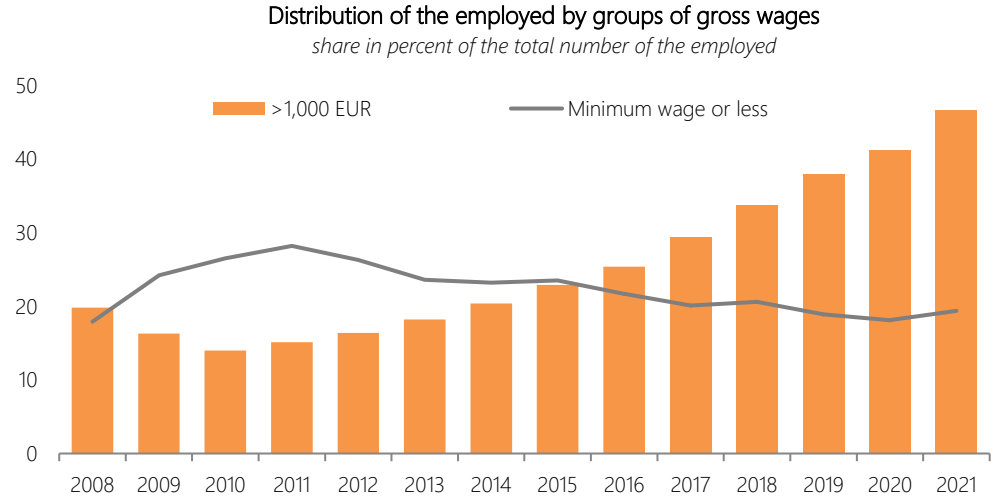



Source: CSB

Along with an increase in the nominal wage, real wages are also increasing gradually. In 2013-2016, the increase in real wages became more rapid. This has been primarily driven by the rapid rise in nominal wages, as well as the moderate increase in consumer prices. In 2020, the real wage increased by 5.9%, while in 2021 an even more rapid increase in real wage was observed (by 8.1 percent).

In recent years, the share of people receiving the minimum wage has been reducing and the number of the employed receiving a wage over 1000 euro per month has been growing. The share of the group of people who receive 1000 euro or more reached already 47% of the total number of the employed in 2021.

Figure 1.11




Source: CSB

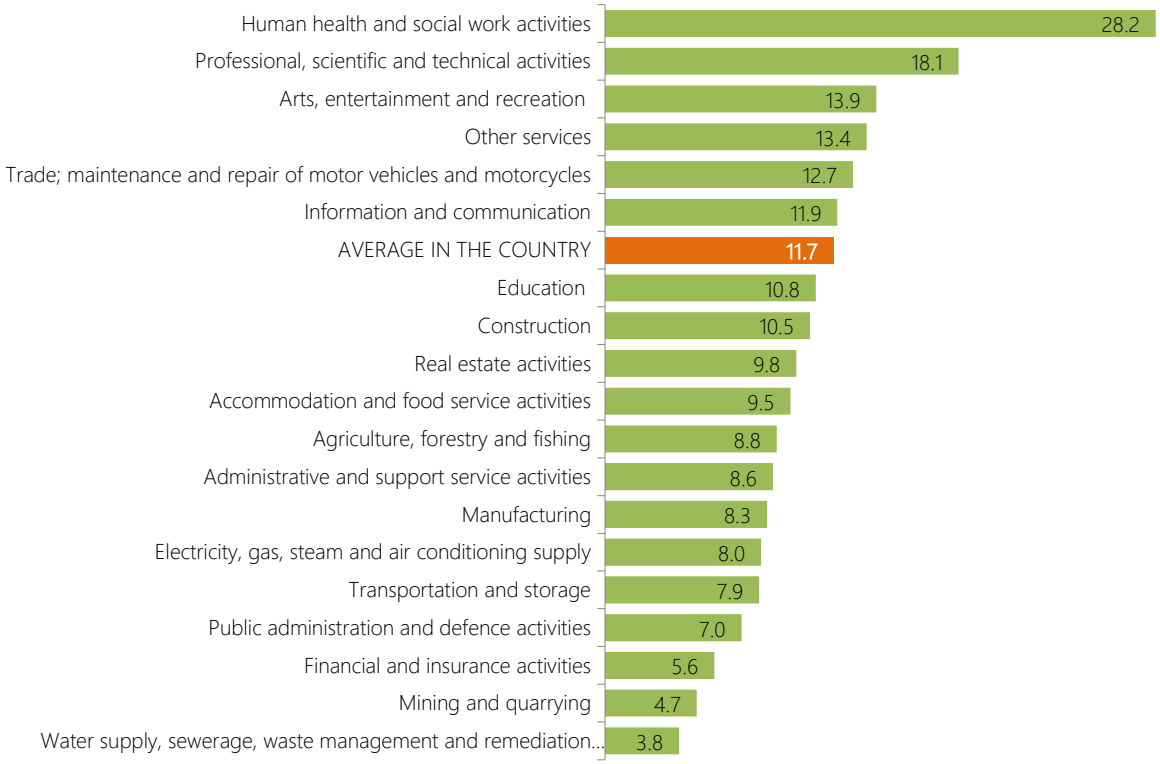
Wages have in fact been growing in all sectors of the economy since 2013; however, their dynamics varied. In 2021, the fastest growth of wages was observed in health – 28.2%. Similarly, in 2021, a comparatively rapid increase in gross wages was observed in professional, scientific and technical activities (18.1%), arts, entertainment and recreation (13.9%), and in other services (13.4%).

The highest gross wage was still in financial and insurance activities – EUR 2282, which is almost twice higher than the average wage in the national economy. At the same time, the smallest wage in 2021 was in accommodation and food service activities – 795 euro.

Figure 1.12

Changes in gross wage by sectors

*2021 vs. 2020, %*

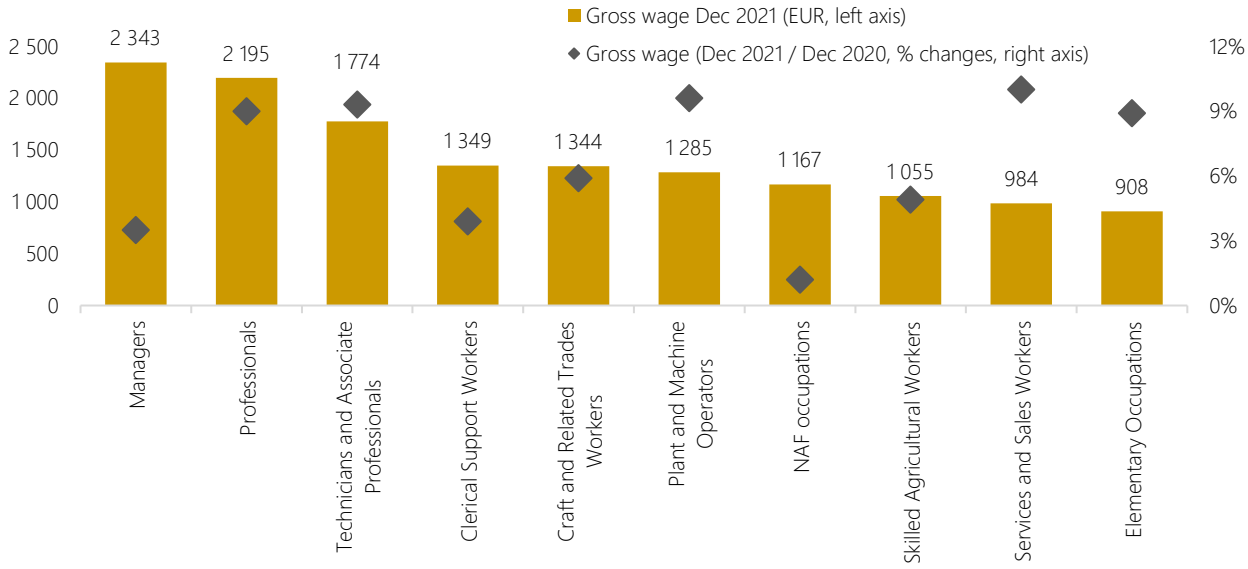



Source: CSB

The average gross wage in manufacturing increased by 8.3% in 2021, compared to 2020, which, taking into account the rapid increase in wages in other sectors, is below the average increase in wages in the country. Compared to 2012, the average gross wage in manufacturing has grown by 89% unlike the average in the national economy, where it has increased by approximately 86 per cent.

Figure 1.13

Average gross wage and its changes by occupations*




Source: State Revenue Service

* Average gross wage calculated based on full-time equivalent (160 hour workload per month)

In 2021, compared to 2020, wages grew rapidly also by occupations. Wages were growing in all major groups of occupations. The most rapid increase in wages was observed in the major group of services and sales workers occupations – by 10%, but it should be taken into account that this group still has one of the lowest wage levels among major groups of occupations. Wages in major groups of plant and machine operators, professionals, and technicians and associate professionals were also growing rapidly. In turn, a smaller increase was observed in occupations in the National Armed Forces (+1.2%).

Labour costs are a significant factor of competitiveness; therefore wage growth must be balanced with the increase in productivity. Otherwise, the competitiveness in tradable sectors is lost, which ultimately does not ensure a sustainable increase in the total income (welfare) and convergence to the EU average.

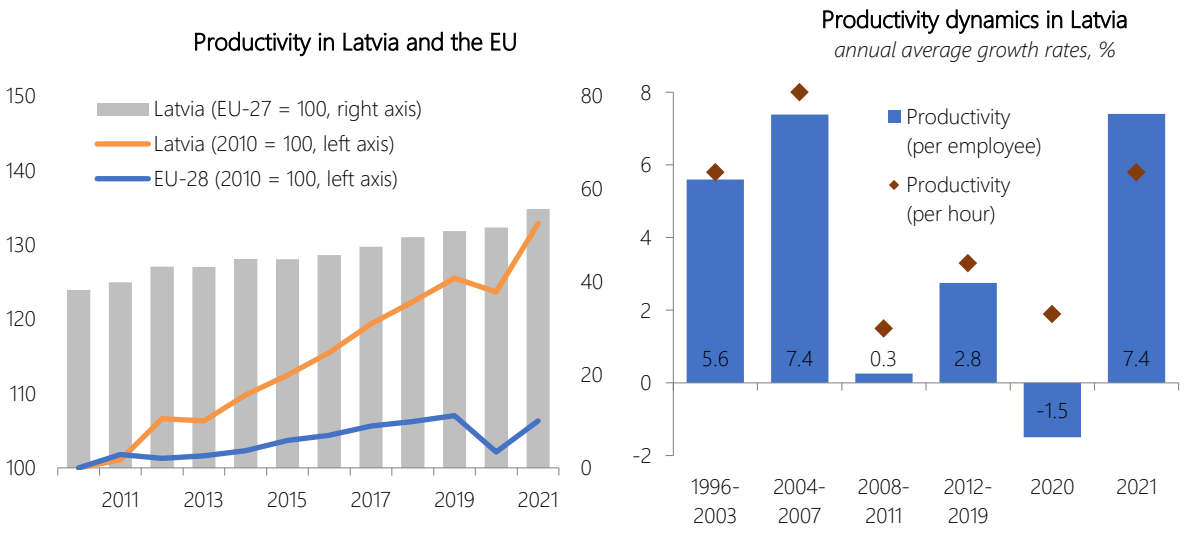
Latvian economic growth is supported by the increase in productivity. However, productivity rates tend to decrease in the long term, while labour costrates remain persistently high. The most rapid increase in productivity was observed before 2008, after Latvia acceded to the EU, which became a significant incentive for the inflow of foreign investments.

From 2004 to 2007, productivity increased by 7.4% per year (EU average – 1.4%). The global financial crisis had a negative impact on productivity. In the first year of economic recession, productivity reduced by 2.4%, which was rather insignificant compared to the drop in GDP (by 14.2%) mainly due to the strong adjustments in the labour market. Although the effects of the crisis have not been long and positive productivity dynamics has resumed since 2010, they are still half slower than the average in 1996-2007.

Productivity has been growing by 14.3% per year in the last five years (2015-2019), i.e. almost 3 times more rapidly than in the EU on average. In the last five years preceding the crisis caused by the Covid-19 pandemic, transportation and storage, manufacturing and trade contributed most to increasing the overall productivity of the economy. Dynamics were positive also in other sectors, except financial intermediation, where productivity was at an 18% lower level in 2019 compared to 2014.

Since 2020, the productivity dynamics were determined by adjustments in product and labour markets in response to the measures to restrict the Covid-19 pandemic. In 2020, productivity declined by 1.5%, while in 2021, as the restrictions were lifted and economic activities resumed, productivity was at a 7.4% higher level than a year before and GDP per employed in the Latvian economy reached 55.7% (almost 73.5% according to PPS) of the EU average. Since 2010, the productivity gap with the EU average narrowed by almost 14 percentage points.

Figure 1.14




Source: Eurostat

In 2020, the Covid-19 pandemic brought a global strong and lasting impact on the economic situation. Like in nearly all countries around the world, in 2020, due to the Covid-19 pandemic, the economy of Latvia was in recession. However its impact on productivity is uncertain. It decreased in terms of the number of employees by 1.3%. In terms of the number of hours worked, productivity has increased by 2.1%, which is slightly below the

trend of the last decade. In 2021, productivity (per employee) in the Latvian economy was at a 7.4% higher level, but hourly productivity at a 5.8% higher level than a year ago. Clearly different fluctuations in productivity rates in the first year of the Covid-19 pandemic were largely affected by state support for the preservation of jobs, mainly in the form of subsidised wage schemes, which contributed to the preservation of jobs, while the number of hours worked reduced.

In times of high uncertainty, it is difficult to fully assess the impact of the Covid-19 pandemic on the future productivity dynamics. In the short term, productivity fluctuations lead to adjustments in product, labour, and capital markets in response to measures to restrict the pandemic and to stabilise the economy. In turn the impact of the pandemic on long-term productivity trends will largely determine change in business models and consumer behaviour. It is evident that changes are taking place, for example, the degree of digitisation (e-services, remote work, etc.) is significantly increasing; however, still a degree of uncertainty regarding the permanence of these changes and their impact on long-term productivity trends in different sectors remains. Structural changes in Latvian economy towards higher value-added activities and knowledge-intensive industries will also greatly determine the positive dynamics of productivity.

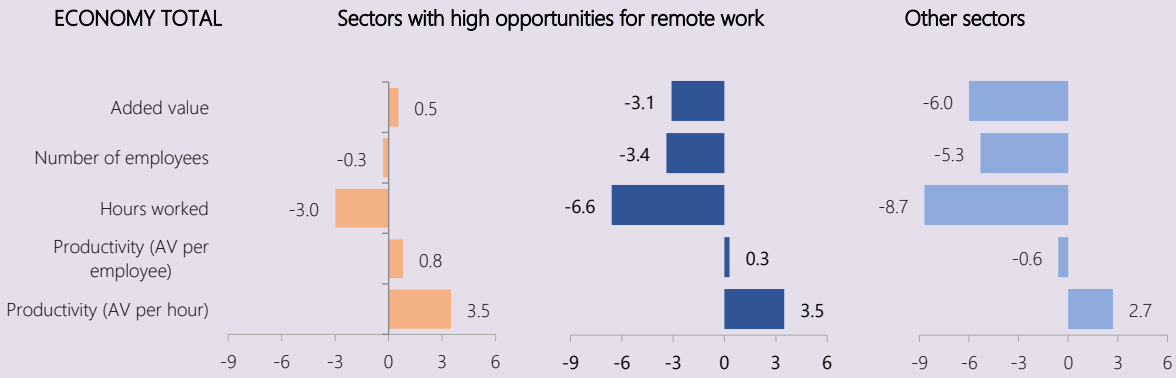
**Impact of remote work on productivity**

Much more extensive remote work opportunities have shown during the Covid-19 crisis – about 1/5 of employees worked remotely in 2021. On the other hand, some studies show that remote work in general can have a positive impact on productivity of employees, as well as reduces costs, such as transport costs. Similarly, sectors with high opportunities for remote work have shown better resilience and better performance in times of crisis.

According to calculations by the University of Latvia think tank LV PEAK, during the Covid-19 pandemic, industries with high opportunities for remote work have generally demonstrated better resilience to the crisis. The impact from the introduction of Covid-19 pandemic containment measures on those sectors where remote work opportunities are higher, the number of employees and the added value decreased to a lesser extent than in sectors with a more limited potential for remote work. Similar conclusions can be drawn regarding changes in productivity.

**Changes in added value, number of employees, hours worked and changes in productivity across sectors in Latvia**

*changes in Q2 2020 – Q2 2021 vs. 2019, quarterly average, %*



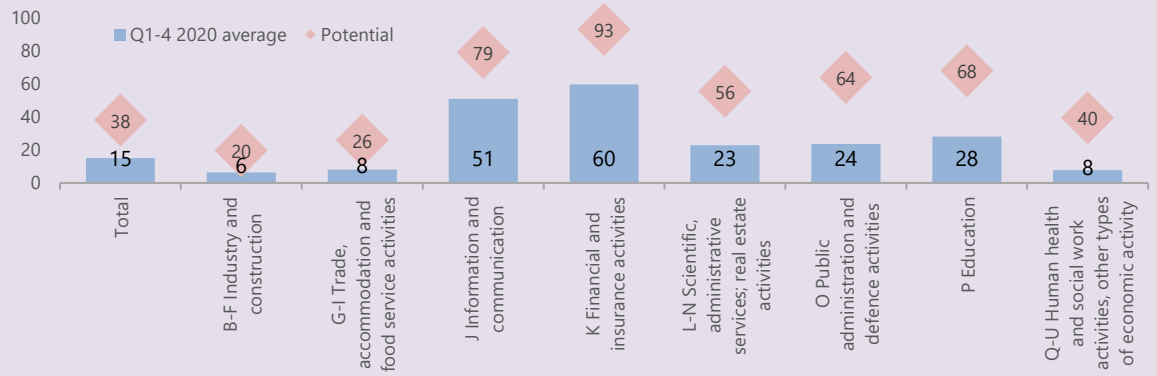

Source: *Latvia's Productivity Report 2021* https://www.lvpeak.lu.lv/latvijas-produktivitates-padome/latvijas-produktivitates-zinojums/

The calculation results provided in the LV PEAK study show that about 38% of employees in the Latvia economy can potentially work remotely, however, all the sectors have a relatively large gap between those working remotely and the number of potential remote employees. In 2020-2021, the quarterly average number of employees working remotely in Latvia during the Covid-19 pandemic was only half of the potentially possible number of employees.

Box continued

Remote work potential and share of remote employees in 2020-2021 as a quarterly average during the Covid-19 pandemic in Latvia

*% of total employees in the sector*




Source: *Latvia's Productivity Report 2021* https://www.lvpeak.lu.lv/latvijas-produktivitates-padome/latvijas-produktivitates-zinojums/

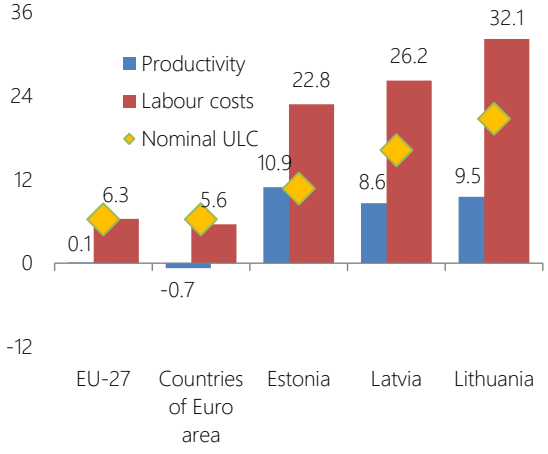
The increase in the use of remote work can lead to major structural transformation processes for the economy, which can have a positive impact on job efficiency. However, it should be noted that all aspects that remote work can provide can only be assessed in the longer term, taking into account the still insufficient amount of accumulated data to fully assess the impact of remote work. It should also be noted that productivity in remote work conditions during the Covid-19 pandemic is affected by many other additional factors, such as the psychological situation of employees, school closures, etc., the full evaluation of which is limited.

Latvia is in one of the leading positions by productivity growth rates among the EU Member States, yet wages have been growing faster than productivity, weakening competitiveness of Latvian entrepreneurs in the field of costs. The increase in nominal unit labour costs (ULC) also evidences of the growing risks of losses in cost competitiveness.

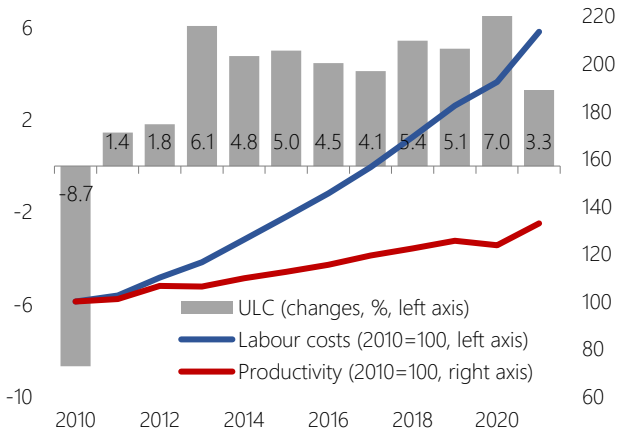
Figure 1.15

Changes in productivity, labour costs and ULC in the Baltic countries and in the EU

*2021 vs. 2018, %*




Dynamics of labour costs and productivity




Source: *Eurostat*

Statistical data reveal that in years of economic growth the gap between productivity and labour costs is widening, while in recession it is getting smaller. The growth rates of workers' wages in 2004-2007 were almost five times higher than those of productivity dynamics indicators, which also had a reflection in a rapid increase in product unit labour costs (ULC)[1]. Although the serious adjustments to product and labour markets created by the global

[1] ULC is a relationship between labour costs and productivity. If productivity is growing faster than the wages, then ULC is decreasing, which is an indication that competitiveness of state costs increases, and the other way around.

financial crisis in 2009-2011 bridged the gap between the increase in productivity and labour costs, the ULC growth also has resumed after the economy recovered.

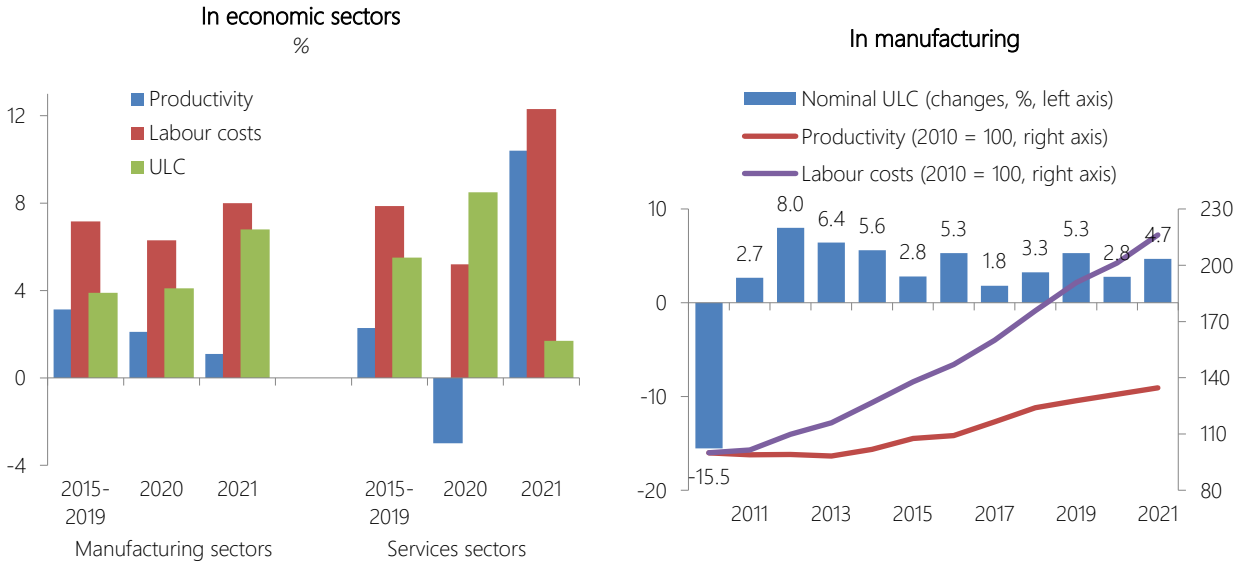
Particularly strong dynamics of nominal ULC was observed in the last years before the Covid-19 pandemic. In 2019, compared to 2015, ULC rose 15.4%, driven by a nearly 3-fold faster increase in labour costs compared to productivity growth. Before 2019 the increase in labour costs was affected both by wage convergence processes in the EU labour market and more tense situation in the Latvian labour market due to the increase in labour shortage.

ULC continues to grow also in the years of the Covid-19 pandemic. Under the influence of the decline in economic activity, labour costs increased more slowly in 2020 than a year ago – by 5.5% (by 7.8% in 2019). Despite a more moderate increase in labour costs, it did not compensate for the drop in productivity (by 1.5%) and ULC increased by 7%. In 2021, labour costs continued to grow, and were 11% higher than a year ago. However, pressure on unit labour costs was more moderate than a year ago (increased by 3.3%), thanks to the increase in productivity by 7.4 percent.

Cost competitiveness reduction risks are observed in both manufacturing and services sectors. The dynamics of labour costs in the last five years (2015-2019) before the Covid-19 pandemic in both mentioned groups of sectors were very similar – annual average increase by almost 7.2% and 7.9%; however, productivity in manufacturing sectors increased almost one and a half times more rapidly than in the services sectors – by 3.1% and 2.3%, respectively. Therefore, also the nominal ULC increase in manufacturing sectors was more moderate.

Figure 1.16

ULC, labour costs and productivity




Source: Eurostat

The shock related to the Covid-19 pandemic has a stronger impact on adjustments in the products market than in the labour market. In the last two years (2020-2021), labour costs in manufacturing and services sectors were growing by 14.7% and 18.2%, respectively. Despite the fact that productivity in goods manufacturing sectors increased in 2020 and 2021, it was unable to cover the increase in labour costs, and ULC increased by 11.2%. In services sectors, in 2020, productivity reduced by 2.8%, but in 2021 exceeded the level of the previous year by 10.4%. In the two years of the pandemic, productivity in services sectors generally increased by 7.1%, which is less than the increase in labour costs. The largest increase in nominal ULC in the two years was observed in the field of information and communication, and in the construction sector. In financial services, unit labour costs of products were at a lower level than in 2019, mainly due to the decrease in the number of employees.

In manufacturing the gap between productivity and labour costs increase rates is slightly more moderate than in the national economy on average. However, annual changes in nominal ULC are rather volatile being to a large extent affected by factors on the goods market, while labour costs show stable upward dynamics. Labour costs in

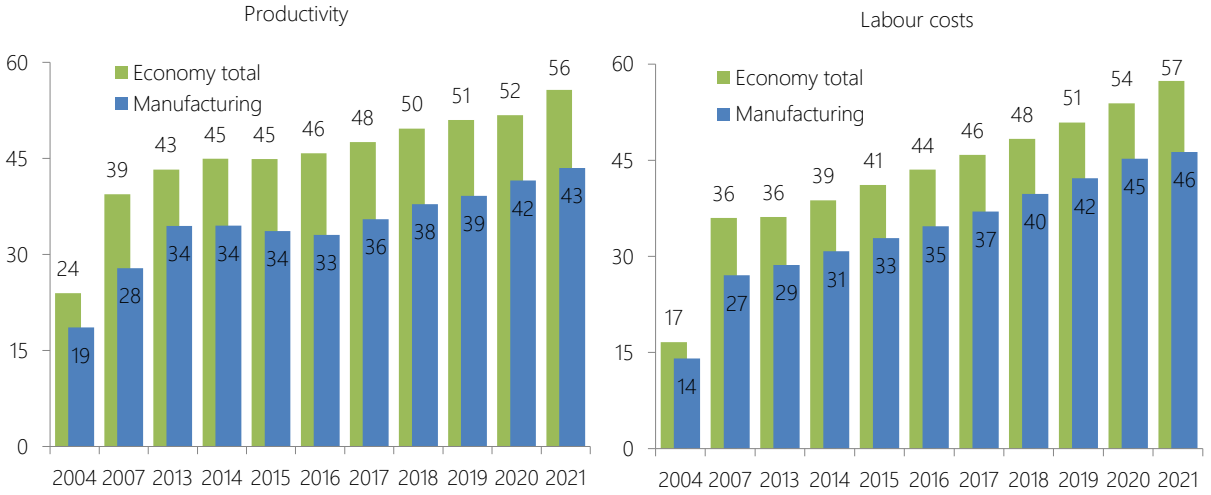
manufacturing were growing two times faster than productivity in the last five years before the pandemic (2015-2019).

In 2020, both productivity and labour costs increased by 2.6% and 5.4%, respectively, increasing nominal unit labour costs of products by 2.8%. This is an evidence that under the influence of the measures to restrict the Covid 19 pandemic the changes in the number of the employed were stronger than the reduction in manufacturing volumes. Labour costs in companies in manufacturing sectors continued to increase. Also, in 2021, the dynamics of productivity and labour costs in manufacturing remained positive. Compared to the previous year, productivity in the sector increased by 2.7%, but labour costs increased much more rapidly – by 7.5 percent. As the gap between the growth rates of productivity and labour costs is expanding, nominal ULC is growing more rapidly as well – by 4.7%, getting close to the trends of the crisis caused before the pandemic.

Figure 1.17

Convergence of productivity and labour costs with the EU average level

*% of the EU-28 average*




Source: Eurostat

The labour costs dynamics in Latvian manufacturing significantly exceeds EU average labour costs and nominal ULC growth rates. Taking into account that the EU countries are our main trade partners, such trends reduce the competitiveness of Latvian producers in the field of costs.

In the long term, the increase in labour costs, which is not compensated by a corresponding rise in productivity, may have a negative impact competitiveness and reduce the share of company's profits, which entrepreneurs will be forced to adjust to keep price competitiveness in external markets.

Labour costs in Latvia are among the lowest in the EU Member States. In 2021, labour costs per employed in the Latvian economy were almost 57.4% of the EU average, whereas in the manufacturing industry – 46.3%. Compared to 2016, in 2021, the labour cost gap decreased by 14 percentage points (in manufacturing – by 11.6 percentage points), while in terms of productivity in the economy it fell by a total of 10 percentage points (by 10.4 percentage points in manufacturing). This means that the wage convergence process is faster than productivity convergence both in the economy as a whole and in manufacturing.

The increase in productivity is the main factor determining competitiveness. Although Latvia's export share in world markets is growing, competitiveness reduction risks are still very high. The gap between productivity and labour costs has increased as a result of the crisis caused by the Covid-19 pandemic. The data of 2021 evidence that as the economic activity is restoring, the dynamics of labour costs are becoming more rapid than productivity dynamics, increasing cost competitiveness mitigation risks even more. Therefore, strengthening of Latvia's competitiveness will largely depend on the ability to reduce the productivity gap with the EU Member States.

# 2. LABOUR DEMAND AND SUPPLY

## 2.1. CHANGES IN AND STRUCTURE OF THE LABOUR DEMAND

During the period from 2011 to 2019 (after the financial crisis of 2008), when growth returned to Latvia, the number of employees increased in all major sectors of the economy. However, 2020 brought new challenges to Latvia, as well as to most countries of the world, caused by the global Covid-19 pandemic. Overall, Latvia's economy and labour market are not strongly dependent on the sectors primarily affected by the Covid-19 crisis (accommodation and food service activities, international passenger transport). The share of employees in Latvia in 2019 in these sectors was the fifth lowest among EU-27 countries. However, it should be noted that the restrictions introduced to stop the pandemic and the global drop in demand directly or indirectly affected most sectors of the economy in Latvia, particularly labour-intensive sectors.

Table 2.1

Number of the employed in economic sectors

*thousands*

| | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 | 2019 | 2020 | 2021* |
|---|---|---|---|---|---|---|---|---|---|
| **Total** | **1054.9** | **850.7** | **875.6** | **884.6** | **893.3** | **909.4** | **910.0** | **893.0** | **864.0** |
| Agriculture, forestry, fishing | 83.9 | 73.3 | 73.3 | 66.4 | 68.7 | 63.3 | 66.3 | 64.3 | 58.6 |
| Manufacturing | 156.4 | 112.2 | 122.5 | 118.8 | 123.5 | 116.9 | 115.1 | 114.5 | 109.4 |
| Other industry | 29.6 | 26.5 | 20.6 | 18.9 | 25.7 | 23.2 | 19.3 | 19.6 | 22.2 |
| Construction | 124.1 | 57.6 | 62.3 | 73.2 | 66.1 | 74.6 | 81.1 | 76.5 | 72.4 |
| Trade, accommodation | 197.3 | 162.0 | 155.6 | 161.6 | 154.7 | 171.7 | 169.6 | 160.2 | 158.3 |
| Transportation and storage | 88.1 | 71.4 | 75.1 | 84.8 | 83.3 | 80.7 | 74.3 | 69.3 | 66.9 |
| Other business services | 156.3 | 153.9 | 163.4 | 165.0 | 173.2 | 179.2 | 178.3 | 185.1 | 172.3 |
| Public services | 219.0 | 193.7 | 202.3 | 195.7 | 197.5 | 198.1 | 204.6 | 201.4 | 203.9 |

Source: CSB
Starting from 2014, labour force survey methodology has changed – quarterly average population residing in households (previously population at the beginning of the year) is used for generalisation of the quarterly data
*MoE assessment of 2021 based on LFS data of 2020

In 2021, according to the labour force survey data, the number of the employed was 864 thousand, which was by 3.2% or 29 thousand less than in 2020, and this had been the largest drop in the number of employees since 2010. The number of the employed reduced most rapidly in agriculture, business services and construction, and increased in other industry.

Figure 2.1

Structure of the employed in economic sectors


Source: CSB

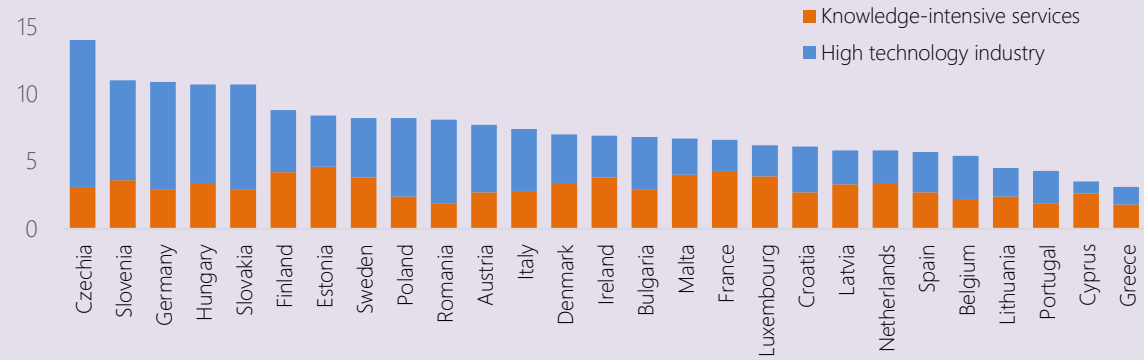
In 2021, the largest percentage of the employed was in public services sectors (24%), business services (20%), trade and accommodation (18%), as well as manufacturing (13%). Compared to the year 2010, the structure has not changed significantly, the share of the employed has slightly declined in agriculture and trade. On the other hand, it has increased in construction, business services, and public services Also, it remained unchanged in transportation, manufacturing, and other industries.

**Labour demand in high-tech and knowledge-intensive services sectors in EU countries**

The EC has named the specialisation in high technology and knowledge-intensive sectors as one of the key advantages of the EU's competitiveness in the global markets. Among EU countries, the largest share of employed in the high-tech economy was in Czechia in 2020 (14% of the total number of the employed), Slovenia (11%) and Germany (10.9%), while the lowest – in Greece (3.1%), Cyprus (3.5%) and Portugal (4.3%). Latvia's share of high-tech industries in general is only 5.8%, thus ranking it only the 20th among the 27 European countries by the share of employees in high-tech industries.

**Employment in high-tech economy in EU-27 countries in 2020**

*% of total employment*




Source: Cedefop, Skills Panorama, https://skillspanorama.cedefop.europa.eu/en/skills-themes/future-jobs#

## Demand for occupations

Taking into account the reorientation of the economy to higher added value activities, the number of high qualification jobs has generally increased significantly in the past years. In 2021, the number of the employed in high qualification occupations was almost 21% (40.5 thousand) higher than in 2010. The most significant increase in employees in high qualification occupations was in business services sectors – by almost 28 thousand employees, thus accounting for about 2/3 of the total increase in employees in high qualification occupations. According to the MoE calculations, overall, in 2021, about 386 thousands or 45% of all the employed were employed in high qualification occupations. Most (36%) of the employed in high qualification occupations were employed in the public services sectors (state administration, healthcare, education).

Table 2.2

Numbers of the employed in economic sectors by occupational groups

*2021, thousands*

| | Agriculture | Manufacturing | Other industry | Construction | Trade, accommodation | Transportation and storage | Other business services | Public services | Total |
|---|---|---|---|---|---|---|---|---|---|
| Occupations in national armed forces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 6.6 |
| **High qualification occupations, including:** | **9.6** | **30.2** | **8.9** | **19.7** | **49.6** | **18.9** | **109.8** | **139.4** | **386.3** |
| Managers | 3.8 | 9.3 | 1.7 | 9.3 | 19.0 | 5.7 | 24.3 | 15.1 | 88.2 |
| Professionals | 2.7 | 10.1 | 3.0 | 5.2 | 9.6 | 4.6 | 48.2 | 89.9 | 173.2 |
| Technicians and Associate Professionals | 3.1 | 10.8 | 4.2 | 5.3 | 21.0 | 8.7 | 37.4 | 34.4 | 124.9 |
| **Medium qualification occupations, including:** | **37.3** | **61.4** | **9.0** | **39.6** | **91.0** | **43.1** | **44.2** | **42.0** | **367.5** |
| General Office Clerks | 0.3 | 5.1 | 1.0 | 1.8 | 8.0 | 6.8 | 11.3 | 5.9 | 40.3 |
| Services and Sales Workers | 0.6 | 1.6 | 0.2 | 0.5 | 65.5 | 2.2 | 23.2 | 31.3 | 125.0 |
| Skilled Agricultural Workers | 23.8 | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 1.2 | 0.3 | 25.9 |
| Craft Workers | 1.6 | 38.8 | 2.3 | 32.4 | 13.2 | 4.8 | 5.1 | 1.0 | 99.1 |
| Plant and Machine Operators | 11.1 | 15.5 | 5.5 | 4.9 | 4.2 | 29.3 | 3.5 | 3.3 | 77.2 |
| **Low qualification occupations** | **11.6** | **17.9** | **4.3** | **13.1** | **17.7** | **4.8** | **18.2** | **16.0** | **103.7** |
| **Total** | **58.6** | **109.4** | **22.2** | **72.4** | **158.3** | **66.9** | **172.3** | **203.9** | **864.0** |

Source: CSB, MoE assessment based on LFS data of 2020

The demand for high qualification labour was reinforced by the Covid-19 pandemic, as job forms changed and new technologies entered the labour market. In comparison to 2019, in 2021 high qualification occupations had by 6.1 thousand more employed (increase by 1.6%). The most significant increase was in business services sectors and manufacturing. Also, an increase in agriculture and trade was observed. Medium qualification occupations had by 37.2 thousand less employed (drop by 9.2%). The largest drop was in trade, construction, business services and construction, and an increase – in other industry. In 2021, low qualification occupations had 14.9 thousand less employed, compared to 2019. The biggest drop was in manufacturing, business services, public services and trade, but an increase in construction.

Overall, the most rapid increase in employees in all occupation groups during the Covid-19 crisis (in 2021, compared to 2019) was in information and communication, electricity, gas, steam, and air conditioning supply. However, the most rapid decline was observed in financial and insurance activities and arts, entertainment and recreation. It should be noted that the most rapid increase in the number of employees in high qualification occupations is observed in industries important for the economy – manufacturing – by 14.1% and other industry – by 31.4 percent.

The entry of technologies to the labour market and automation of workplaces has most affected those employed in medium and low qualification workplaces.

The number of employees in medium qualification occupations generally reduced by 19.2 thousand or about 5% compared to 2010. The most significant decrease was in agriculture (by 9.2 thousand), other industry (by 5.6 thousand) and transport services (5.5 thousand). At the same time, the number of employees in medium qualification occupations during this time increased only in construction (by 0.9 thousand) and public services (by 0.9 thousand).

Table 2.3

Changes in the employed in economic sectors by occupational groups

*thousand*

| | Agriculture | Manufacturing | Other industry | Construction | Trade, accommodation | Transportation and storage | Other business services | Public services | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | | *2021 vs. 2019* | | | | | |
| Occupations in national armed forces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 |
| **High qualification occupations, including:** | **-1.8** | **3.7** | **2.1** | **-1.4** | **-1.7** | **-0.7** | **4.1** | **1.7** | **6.1** |
| Managers | -1.3 | 0.5 | 0.5 | -0.8 | 0.2 | -0.8 | 3.4 | -1.1 | 0.5 |
| Professionals | -0.2 | 3.3 | 0.8 | 1.4 | 0.5 | -0.1 | 5.1 | 2.9 | 13.6 |
| Technicians and Associate Professionals | -0.3 | 0.0 | 0.9 | -1.9 | -2.4 | 0.2 | -4.3 | -0.1 | -7.9 |
| **Medium qualification occupations, including:** | **-5.3** | **-4.4** | **1.1** | **-7.4** | **-8.0** | **-6.0** | **-6.9** | **-0.2** | **-37.2** |
| General Office Clerks | -0.7 | -0.1 | 0.1 | 0.9 | -1.5 | -1.4 | -3.5 | 0.3 | -5.9 |
| Services and Sales Workers | -0.2 | 0.5 | 0.0 | 0.1 | -6.2 | -1.7 | -1.5 | -0.6 | -9.4 |
| Skilled Agricultural Workers | -3.7 | -0.1 | 0.0 | 0.0 | 0.1 | 0.0 | -0.4 | 0.0 | -4.1 |
| Craft Workers | 0.1 | -2.0 | -0.3 | -5.9 | -0.1 | -0.3 | -2.2 | -0.6 | -11.3 |
| Plant and Machine Operators | -0.7 | -2.8 | 1.2 | -2.6 | -0.3 | -2.7 | 0.6 | 0.8 | -6.4 |
| **Low qualification occupations** | **-0.6** | **-5.0** | **-0.3** | **0.1** | **-1.6** | **-0.8** | **-4.9** | **-2.0** | **-14.9** |
| **Total** | **-7.7** | **-5.7** | **2.9** | **-8.7** | **-11.3** | **-7.4** | **-7.6** | **-0.6** | **-46.0** |
| | | | | *2021 vs. 2010* | | | | | |
| Occupations in national armed forces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 3.8 |
| **High qualification occupations, including:** | **-1.2** | **4.8** | **2.6** | **2.5** | **-7.6** | **3.0** | **27.9** | **8.5** | **40.5** |
| Managers | -1.8 | -2.4 | -0.1 | 0.8 | -2.7 | 0.1 | 7.2 | 0.9 | 2.1 |
| Professionals | 0.2 | 2.8 | 0.5 | 0.2 | -0.5 | 1.6 | 10.6 | 13.6 | 28.9 |
| Technicians and Associate Professionals | 0.4 | 4.4 | 2.3 | 1.6 | -4.5 | 1.3 | 10.1 | -6.0 | 9.5 |
| **Medium qualification occupations, including:** | **-9.2** | **-4.9** | **-5.6** | **7.2** | **-1.6** | **-5.5** | **-0.5** | **0.9** | **-19.3** |
| General Office Clerks | -0.8 | 0.7 | -0.5 | 0.8 | -4.9 | -2.7 | -1.6 | -1.1 | -10.0 |
| Services and Sales Workers | -1.2 | -0.4 | -0.6 | 0.0 | -0.1 | -2.1 | 2.5 | 3.1 | 1.1 |
| Skilled Agricultural Workers | -8.5 | -1.2 | 0.0 | -0.1 | 0.0 | 0.0 | -1.0 | 0.0 | -10.7 |
| Craft Workers | -0.5 | 1.8 | -4.0 | 6.9 | 1.9 | -1.5 | -0.8 | -1.0 | 2.8 |
| Plant and Machine Operators | 1.8 | -5.8 | -0.4 | -0.5 | 1.4 | 0.8 | 0.4 | -0.1 | -2.5 |
| **Low qualification occupations** | **-4.2** | **-2.6** | **-1.3** | **5.1** | **5.5** | **-2.0** | **-9.2** | **-3.0** | **-11.7** |
| **Total** | **-14.7** | **-2.7** | **-4.3** | **14.9** | **-3.7** | **-4.5** | **18.2** | **10.3** | **13.3** |

Source: CSB, MoE assessment of 2021 based on LFS data of 2020

Similar trends were also observed in low qualification occupations. In 2021, the number of the employed in elementary occupations was by 11.7 thousand smaller than in 2010. The most extensive decrease was observed in business services (by 9.2 thousand) and agriculture (by 4.2 thousand). At the same time, the number of the employed increased in trade (by 5.5 thousand) and in construction (by 5.1 thousand).

Overall, in 2021, 367.5 thousand, i.e., 43% of the employed, were employed in medium qualification occupations. One fourth in this occupational group were employed in trade;17% in manufacturing. 103.7 thousand were employed in low qualification occupations in 2021, one fifth of whom were employed in business services;17% in manufacturing and trade; 13% in other industrial sectors; and 11% in agriculture.

**Impact of the Covid-19 pandemic on labour demand**

In 2020 – 2021, the Covid-19 crisis created significant changes in the labour market and in the structure of numbers of employees, moreover, it is probable that the number of occupied posts in many industries directly affected by the crisis does not return to the previous level for a long time. The largest drop in the number of occupied posts was observed in the industries most affected by the Covid-19 pandemic – accommodation and food service activities, retail trade, and transportation services. A decline was also observed in the arts, entertainment, and recreation.

At the same time, the Covid-19 pandemic did not reduce economic activities in all sectors, individual sectors have not only been able to preserve growth, but also to increase it and to ensure an increase in new jobs. The most significant increase in new jobs was observed in health, information and communication, social care, and also partly in manufacturing sub-sectors, for example, wood industry, metalworking and machinery, pharmacy and manufacture of chemicals, manufacture of electronic and optical equipment, etc.

**Occupied posts**

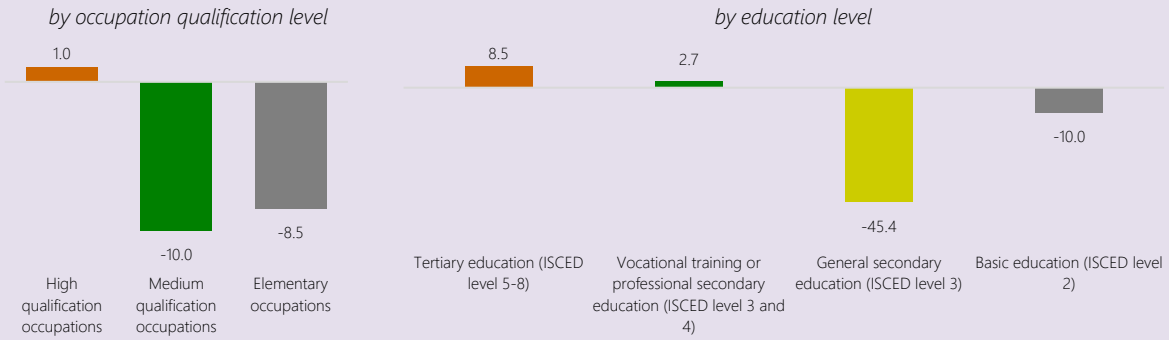
*Most significant changes by sectors, thousand, Q4 2021 vs. Q4 2019*


Source: CSB

During the Covid-19 crisis, job opportunities for high qualification professional increased significantly, while the demand for medium- and low qualification labour declined. The overall increase in labour demand (number of employees) in highest qualification occupations in 2021, compared to 2018, grew by approximately 1 thousand, while medium qualification occupations and elementary occupations experienced a decline in the number of employees (by 10.1 thousand and by 8.5 thousand, respectively).

**Changes in the number of employees**

*2021 vs. 2019, thousand*



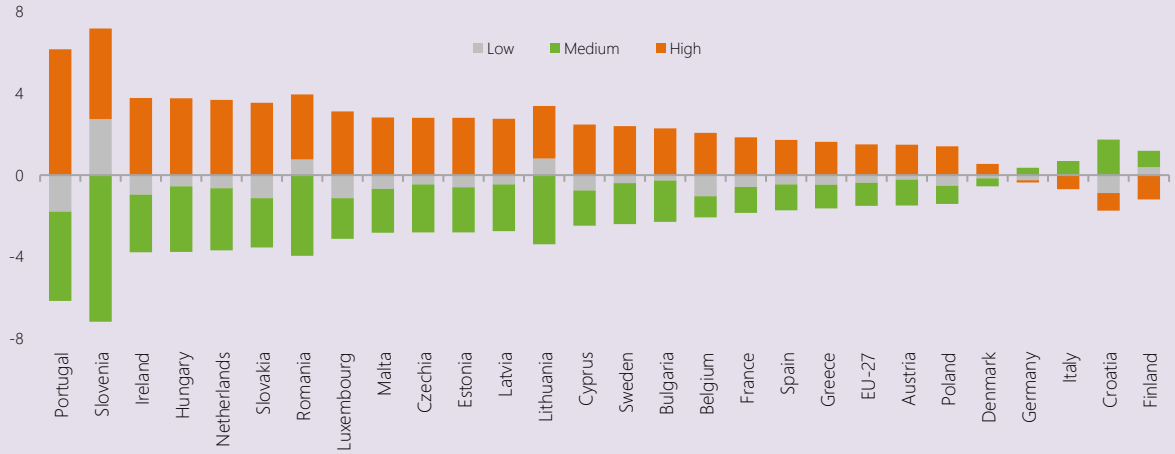

Source: CSB

At the same time, labour demand for skilled labour force increased– in 2021, compared to 2019, the number of employees with higher education increased by 8.5 thousand, with vocational education and vocational secondary education by approximately 2.7 thousand. Meanwhile, labour demand for low qualification and no professional skills declined. In 2021, compared to 2019, the number of employees with general secondary education fell by 45.5 thousand or by approximately 1/5.However, with basic and lower education level – by 10 thousand.

Box continued

Similar trends in structural changes in labour demand are observed in most EU countries. In 2021, compared to 2019, the share of employees in higher qualification occupations increased by an average of 2.0 percentage points in EU-27. At the same time, the share of medium qualification professionals reduced by 1.1 percentage points. In EU-27, the sharpest increase in the share of high qualification occupations is observed in Portugal (+6.2), Slovenia (+4.4), Ireland (+3.8) and the Netherlands (+3.7). The share of employees in low qualification occupations also increased in several countries – in Slovenia (+2.8), Lithuania (+0.8) and Romania (+0.8).

Changes in the share of employees in high, medium and qualification occupations in EU-27 countries
2021, compared to 2019, percentage points



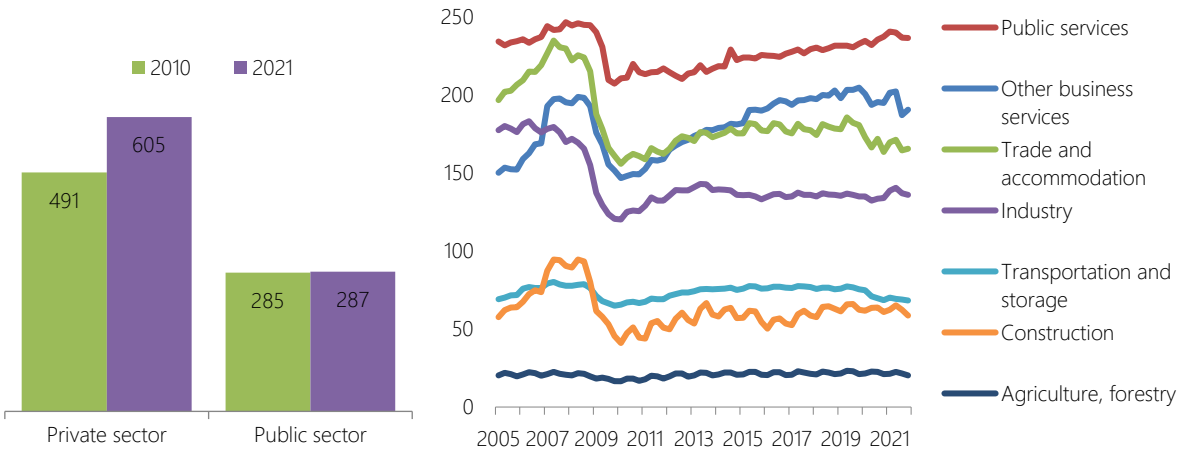

Source: Eurostat

## Changes in the number of occupied posts

In 2011-2019, the number of **occupied posts** grew in all main sectors of national economy, however, their numbers still lagged behind the pre-crisis level, except agriculture and business services, where the number of occupied posts in 2019 exceeded the level of 2007. However, under the influence of the Covid-19 crisis, the number of occupied posts declined in 2020. Nevertheless, in 2021, they increased moderately.

Figure 2.2

Number of occupies posts
*thousands*




Source: CSB

The number of occupied posts in the private sector still continues to grow rapidly. After a 30% decline during the financial crisis, in 2011-2019 the number of occupied posts in the private sector increased by 23%.

At the same time, a relatively slow increase in the number of occupied posts in the public sector, where the number of occupied posts grew only by 0.7% from 2011 to 2021, has been observed. A more rapid increase in the number of occupied posts in the public sector was recorded in 2014, when the number of occupied posts increased by 2.6%, compared to 2013.

Between 2011 to 2021, the number of occupied posts across sectors increased in all sectors with the exception of financial and insurance activities, where the number of occupied posts declined by 4.1 thousand or 20.5%, and in other industry, where the number of occupied posts reduced by 1.4 thousand or 7%. The most rapid increase in the number of occupied posts was observed in health care, where it increased by 23 thousand or 43.3 percent.

A considerable increase in the number of occupied posts was observed also in information and communication, construction, manufacturing, professional, scientific and technical activities, and administrative and support service activities. However, a more moderate increase was in accommodation and food service activities, agriculture, and trade. At the same time, the lowest increase in labour demand was in mining and education. Furthermore, labour demand in public administration, defence activities, and other services has remained essentially unchanged.

Explanation of notions of the employed population and the number of occupied posts

Employed population

According to the definitions created by the International Labour Organization (ILO), employed population are all those persons, who carried out any work for money or for remuneration in the form of goods or services during the reference week.

Employed population also includes self-employed persons in business, in rural agriculture or professional practice. The persons who are temporarily absent from work during a prenatal and childbearing leave, as well as during a parental leave, shall be considered to be employed, if after the end of the leave the person is guaranteed to return to the previous workplace. The employed also include those persons who work in their rural farmsteads (farms or backyard) to produce products for own consumption or sale.

Information on economic activity of the Latvian population (employment and unemployment) was obtained from the continuous Latvian LFS.

In LFS, information about economic activity (including employment) according to the methodology is collected from persons aged 15 to 74. For the international comparability of data part of employment indicators were calculated also for the age group 15-64. Internationally, the age group 15-64 is accepted as working age used for publishing of data by Eurostat and ILO. Therefore, Latvia also published main indicators characterising economic activity for two age groups: aged 15-64 and aged 15-74.

Occupied posts

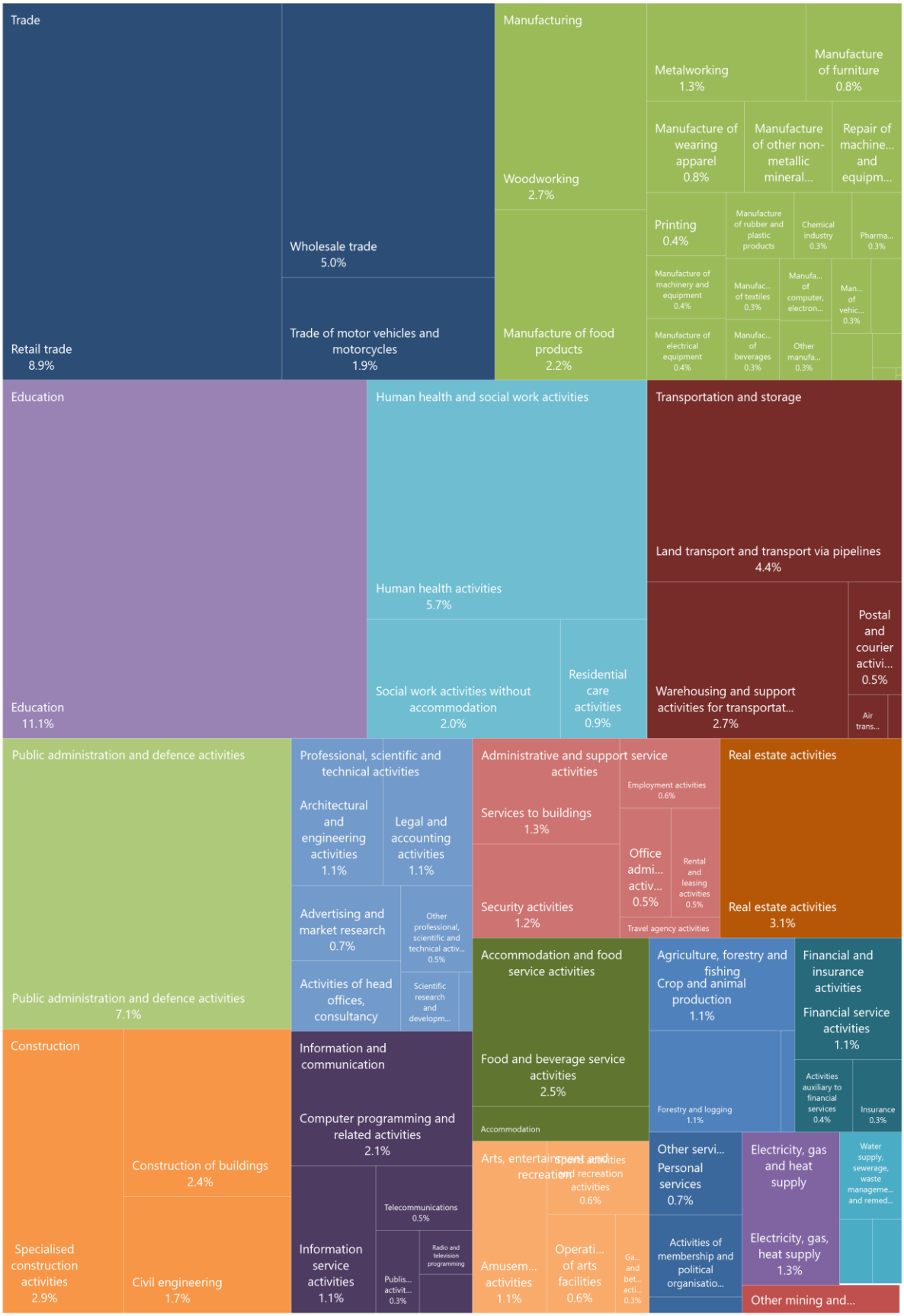
An occupied post is a job on wage, where an employee is employed. The number of occupied posts includes full-time and part-time workers, whose working hours should be registered in accordance with the Labour Law (including those who have a contractor's agreement, but whose working hours are registered and all taxes are paid by the employer). One person may be employed in several jobs.

Data on occupied posts are obtained from the survey of companies, central government institutions, local governments, and their institutions and institutional units. The information is obtained by summarising data of the quarterly statistical review forms prepared by CSB on economic operators, institutions, foundations, associations and funds, and administrative data. Administrative data are obtained as a results of CSB's calculations made from the data of the State Revenue Service.

Figure 2.3

## Occupied posts by sectors

*structure in 2021, %*



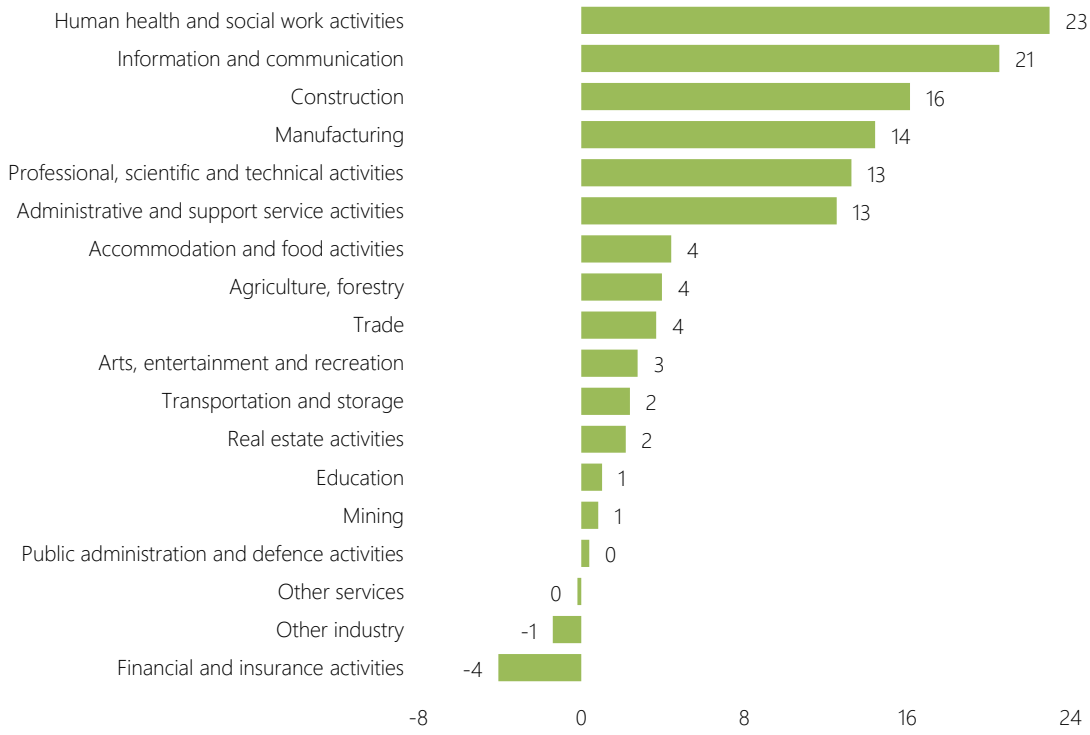

Source: CSB

Although the number of persons employed in agriculture significantly declined from 2011 to 2021, the number of occupied posts in the sector increased, which is explained by a different data registration system.

Figure 2.4

Changes in the number of occupied posts

*2021 vs. 2010, in thousands*




Source: CSB

In 2020, under the influence of the Covid-19 crisis the number of occupied posts decreased by 2.7% or 25 thousand, compared to 2019. More than 3/5 (15.2 thousand) of the total job cuts were in the sectors directly affected by the Covid-19 crisis (accommodation and food service activities; transportation; the arts, entertainment, and recreation, as well as administrative and support service activities), where the most significant decline has been observed in accommodation and food service activities – by 7.7 thousand, which accounted for 30.8% of the overall decline in occupied posts.

As economic activities increased, in 2021, compared to 2020, the number of occupied posts increased by 0.4% or 3.4 thousand jobs , increasing to 892.6 thousand. The most significant increase in occupied posts is observed in manufacturing, health, and information and communication.

Similarly to 2021, and compared to the period before the Covid-19 crisis (2019), the largest increase in occupied posts is observed in heath care and social work activities, information and communication, as well as in manufacturing.

In 2021, the largest decline in labour demand was in transportation services, administrative and support service activities, as well as accommodation and food service activities. At the same time, accommodation and food service activities lag behind the pre-Covid 19 crisis level in terms of occupied posts most significantly, where almost ¼ or 24.4% of occupied posts or 8.8 thousand jobs were lost in the last two years.

# 2.2. DEMOGRAPHIC SITUATION AND LABOUR SUPPLY

## 2.2.1. DEMOGRAPHIC TRENDS

Long-term trends show that the Latvian population continues to shrink. The total decline in population in Latvia since 2000 exceeds 0.5 million, which is about 1/5 of the population in the early 2000s. The most important factors affecting demographic trends are population ageing, low birth rates, and population emigration.

At the beginning of 2022, 1873 thousand inhabitants lived in Latvia, their count decreased by 20 thousand, compared to the beginning of 2021. The MoE assessment was used for the analysis of demographic trends for 2021 and the condition as at the beginning of 2022.

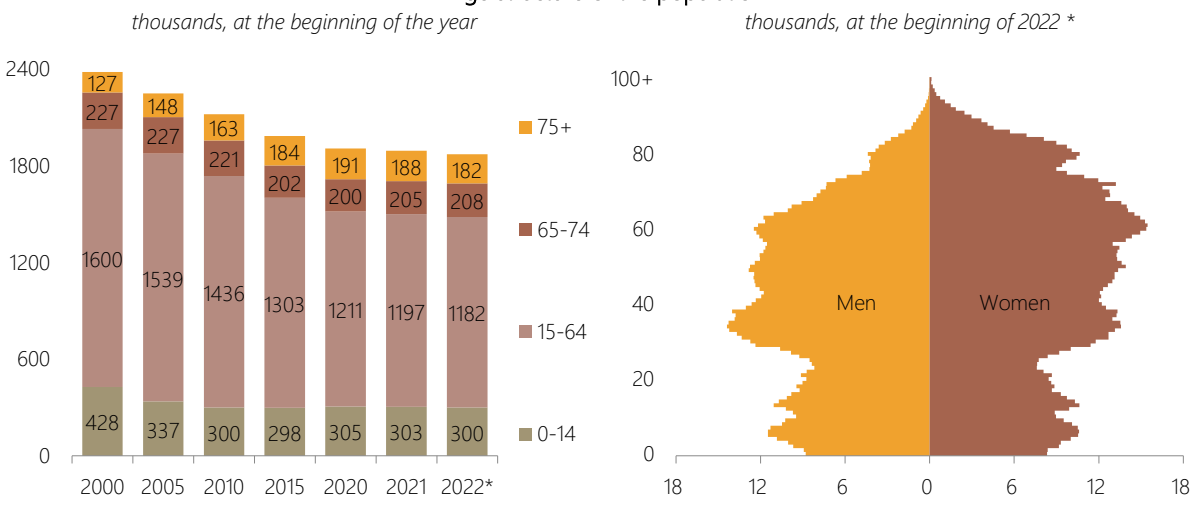
The birth rate in Latvia has been low for a long time, and it does not suffice for the reproduction of the existing population. After the rapid decline in the birth rate in 1990s, starting from 1999, as the socioeconomic situation in the country improved and those who were born in 1980s reached the reproductive age (there was a period of high birth rate in Latvia in 1980-1990), the birth rate in Latvia showed growing trends (the number of newborns, as well as the birth rate increased), which was retained up until 2008. Due to the economic crisis, the number of newborns declined in 2009, and the birth rate resumed growth only in 2012 reaching the highest number of newborns in the last decade in 2015 and 2016. At the same time, a reduction in the birth rate has been observed since 2017 and the overall trend was generally the same also in 2021 – as the birth rate dropped to its lowest level since 2011. The negative birth dynamics of recent years highlights the need for the activation of targeted birth rate stimulation measures.

The death toll has been gradually dropping since 2007. This indicator has stabilised since 2014. The mortality rate has drastically aggravated since 2020 under the influence of the Covid-19 pandemic. The death toll increased by almost 1/4 in 2021 compared to the pre-pandemic period in 2019.

The natural population migration is characterised by the natural population migration coefficient, which has been improving since 2011. It has clearly worsened since 2017 as a result of negative birth rate developments in recent years. Combined with the morality rate in recent years, in 2021 the rate of natural increase has fallen to its historically lowest negative level – -9.0 per 1000 inhabitants.

Figure 2.5

Age structure of the population




Source: CSB;* MoE assessment

The ageing process of the population continues – the average age of the Latvian population is increasing. It has increased by 4.5 years in the period from 2000 to 2022 and reached 42.8 years at the beginning of 2020. Ageing affects the labour market increasing the population above working age. As the number of working age people reduces, the proportion of population beyond working age to working age population becomes higher. As a result of a slight increase in birth rates, the decrease in the number of people before working age has stopped since

2012. Unfortunately, the Covid-19 pandemic has put a stop to this positive trend, and since 2012 the reduction in population before working age has resumed.

In 2021, the number of working age population continued to drop. At the beginning of 2022, compared to the beginning of 2021, population aged 15-74 reached 1391 thousand, declining by 11 thousand. The most considerable decline in the population was observed in the following population groups of working age: 25-29 years (by 8.8 thousand or 8.3%), 30-34 years (by 4.1 thousand or 3%) and 55-59 years (by 4.5 thousand or 3.3%).

When viewing the period since 2000, it was generally the negative international migration that has had the most significant impact on population dynamics. As welfare of the population increases, the intensity of migration flows has decreased only in recent years. The population has decreased by a total of 509 thousand in the period from 2000 to the beginning of 2022, of which 292 thousand or almost 3/5 of the total reduction applies to migration.

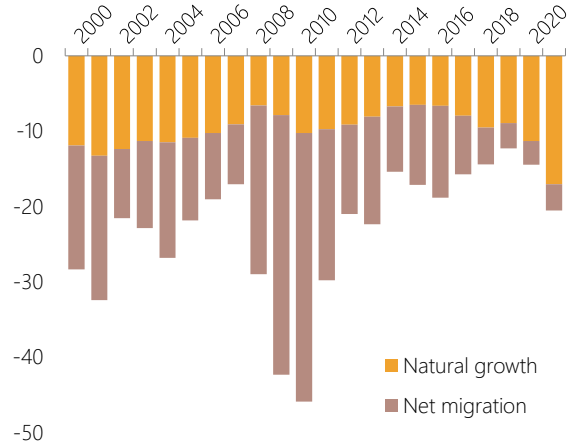
In Latvia, migration flows to foreign countries grew rapidly due to the global financial crisis, as the economic situation was worsening. Negative net migration reached its peak in 2009 and 2010. The main reason for leaving during this period was searching for job opportunities abroad – majority of emigrants were people of working age, and people from younger age groups were especially mobile.

Migration rates have been gradually improving since 2011. Negative net migration was improved not only by the reduction in the number of emigrants, but also by the increase in the number of immigrants. However, since 2014 a small drop has been observed in the number of immigrants and the number of emigrants tended to increase. The situation improved in 2017, as the immigrating population increased and the emigrating population decreased. Along with economic growth, extension of job opportunities and increase in wages, the incentives for economic migration of the population reduce and the negative net migration in recent years has significantly reduced. In 2021, due to migration the population shrank by approximately 3.5 thousand.

Figure 2.6

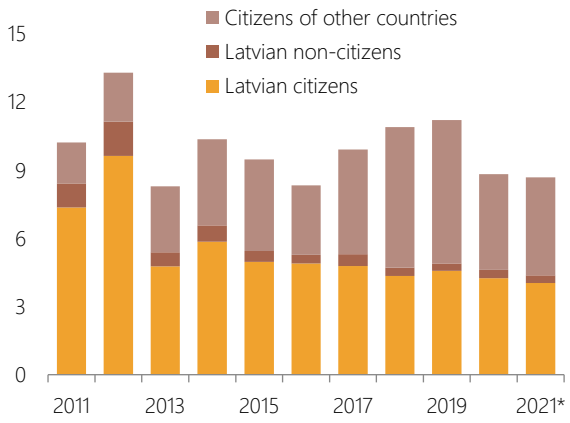
Factors affecting the changes in the number of the population

*thousands*




Long-term immigrants by citizenship

*thousands*




Source: CSB; * MoE assessment

The increase in labour shortage, as well as more open migration policy have generally changed the national composition of migrants. By 2017, Latvian citizens and non-citizens dominated in the overall flow of the immigrant population. In 2018-2019, their number was less than half, but since 2020 the share of Latvian citizens and non-citizens in the total number of long-term immigrants exceeded half again.

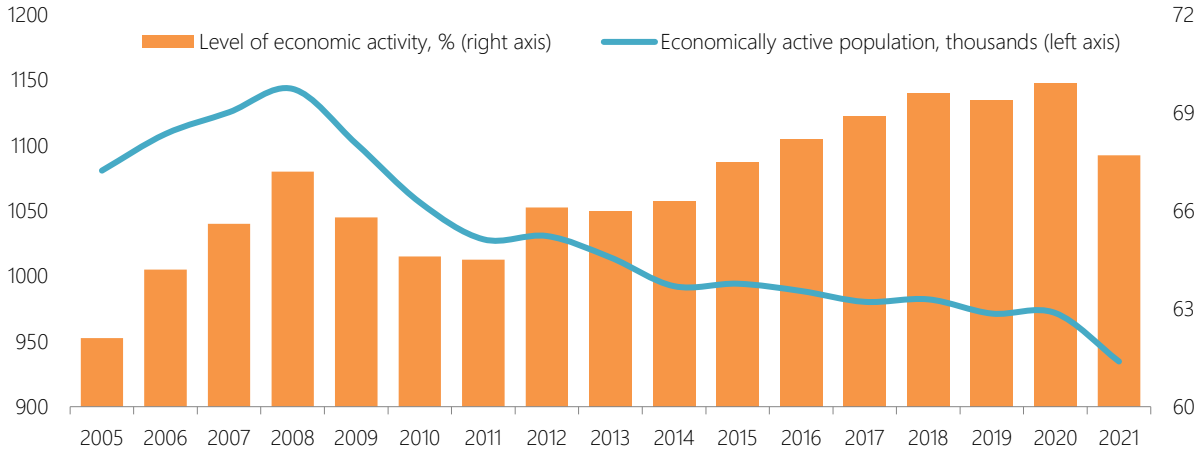
It should be noted that taking into account the free movement of labour force in the EU, it is not possible to perceive emigration flows completely precisely. Not only Latvia, but also other EU member states have to deal with the problem of how to provide accurate description of the structure of those people leaving the country to search for a job.

## 2.2.2. PARTICIPATION OF THE POPULATION IN THE LABOUR MARKET AND THE LABOUR SUPPLY

Labour supply is represented by economically active population consisting of employed population and job seekers.

Figure 2.7

Economic activity indicators



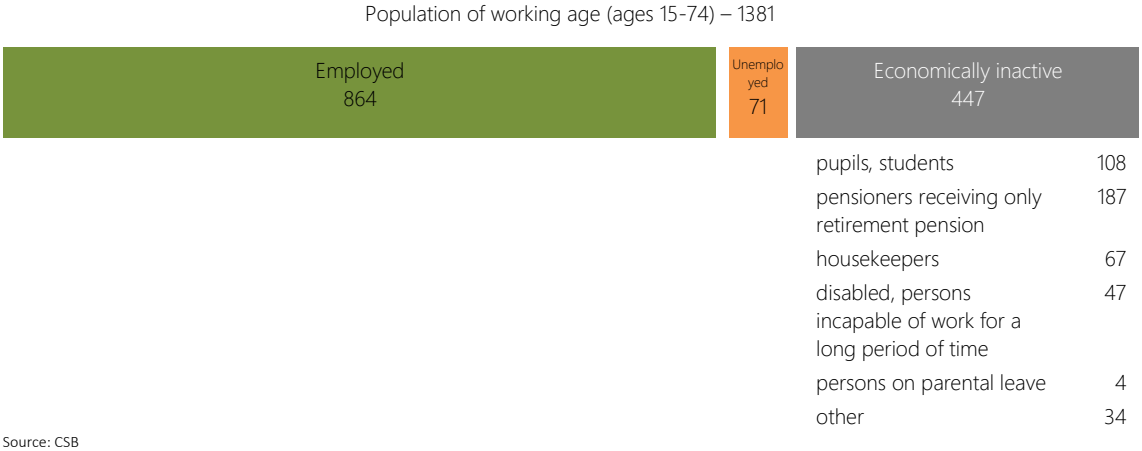

Source: CSB

The demographic processes in the country have a direct reflection in labour supply trends. The working age population is shrinking as a result of ageing and emigration, which has adverse effect also on economically active population. From 2008 to 2021, economically active population reduced by approximately 209 thousand. The economically active population has been decreasing since the global financial crisis of 2008. From 2015 to 2020, the negative trend generally increased, taking into account the increase in economic activity of the population; however, when the Covid-19 pandemic arrived, the rate of decrease in economically active population has increased. In 2021, economically active population decreased by 37.1 thousand, mainly due to the reduction in economic activity during the Covid-19 pandemic. The participation rate of the population in the labour market in 2021, compared to 2020, generally reduced by 2.2 percentage points, in the age group from 15 to 74 – up to an average of 67.7 percent.

Figure 2.8

Situation in the labour market in 2021

*thousands*



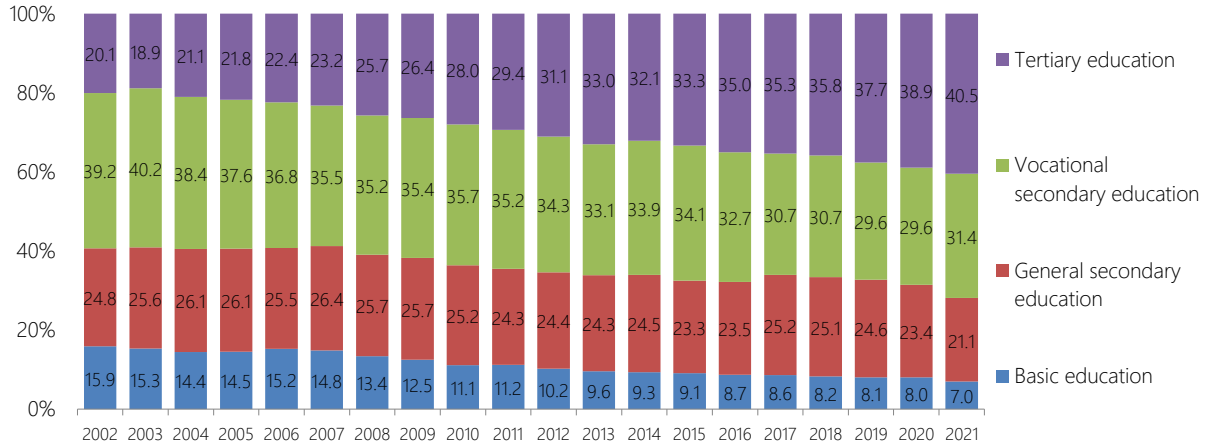

Source: CSB

The level of economic activity is relatively stable in almost all age groups. The largest changes affected the involvement of elderly people in the labour market. The improvement of the economic situation and the increase of the retirement age caused a faster increase in the level of economic activity of the population aged above 60. A decline in economic activity in all age groups is observed in 2021 under the influence of the Covid-19 pandemic.

Figure 2.9

Breakdown of the economically active population by education level

*aged 15-74, %*



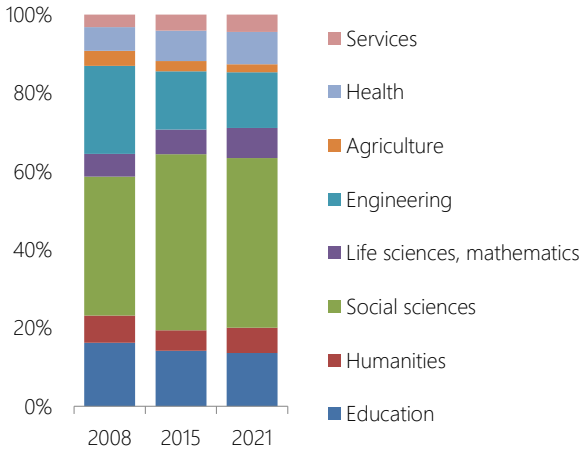

Source: CSB

The population is becoming increasingly aware of the importance of the education level in the labour market. The percentage of economically active population with higher education continues to gradually increase – in 2021, 2/5 of all the economically active population has higher education. It should be noted that in recent years the share of economically active population with secondary vocational education has been gradually growing.

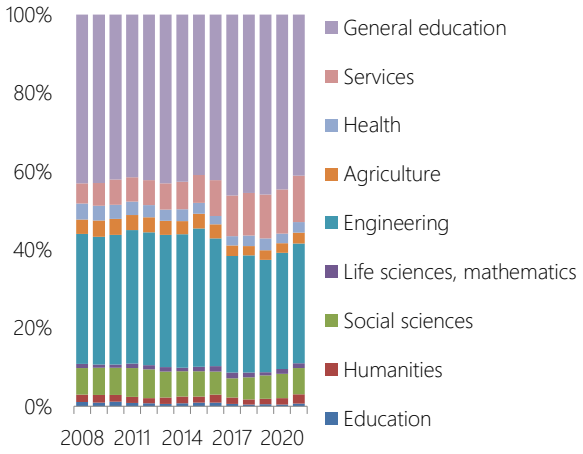
Figure 2.10

Breakdown of the economically active population by thematic groups of education

*with higher education, %*




*with general secondary and vocational education, %*




Source: CSB

The largest labour supply with higher education is in the field of social sciences, business, and law. It was caused by the choice of the students of the previous years to obtain higher education in these thematic groups of education. There has been the most remarkable increase of economically active population in this group since 2008. The next largest thematic groups of education of economically active population are engineering, manufacturing, and construction, as well as education.

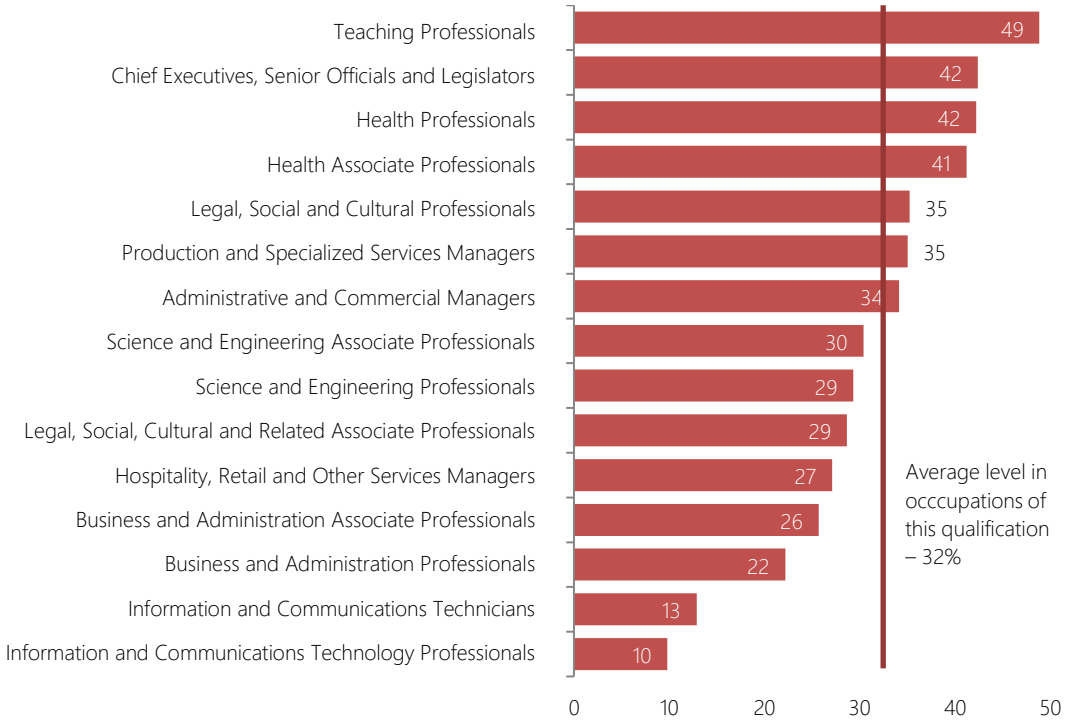
Since 2008, the structure of the economically active population at secondary education level by thematic groups of education has been relatively stable with some exceptions. A considerable part (more than 2/5) of economically active population have general secondary education. These persons have no speciality in the labour market. The largest labour supply for vocational secondary education is in engineering, manufacturing, and construction. However, taking into account labour ageing trends, a decrease in the share of the thematic group has been observed in recent years. The most rapid increase is observed in the thematic group of services– the share of economically active population with the relevant education has more than doubled since 2008.

The labour force in Latvia is increasingly ageing in individual sectors and occupational groups, which can cause a drop in the supply in the future. These trends are becoming stronger over the years.

Figure 2.11

Percentage of employed population above 50 years in high qualification sub-major groups of occupations

*2021, % of the number of the employed in the respective sub-major group*




Source: CSB, MoE calculations

Across sectors the largest share of the employed aged above 50 for a longer period of time has been in other industries (especially in the water supply, sewerage, waste management, and remediation activities sector) and public services (especially in the education sector and human health and social work activities sector), as well as in agriculture.

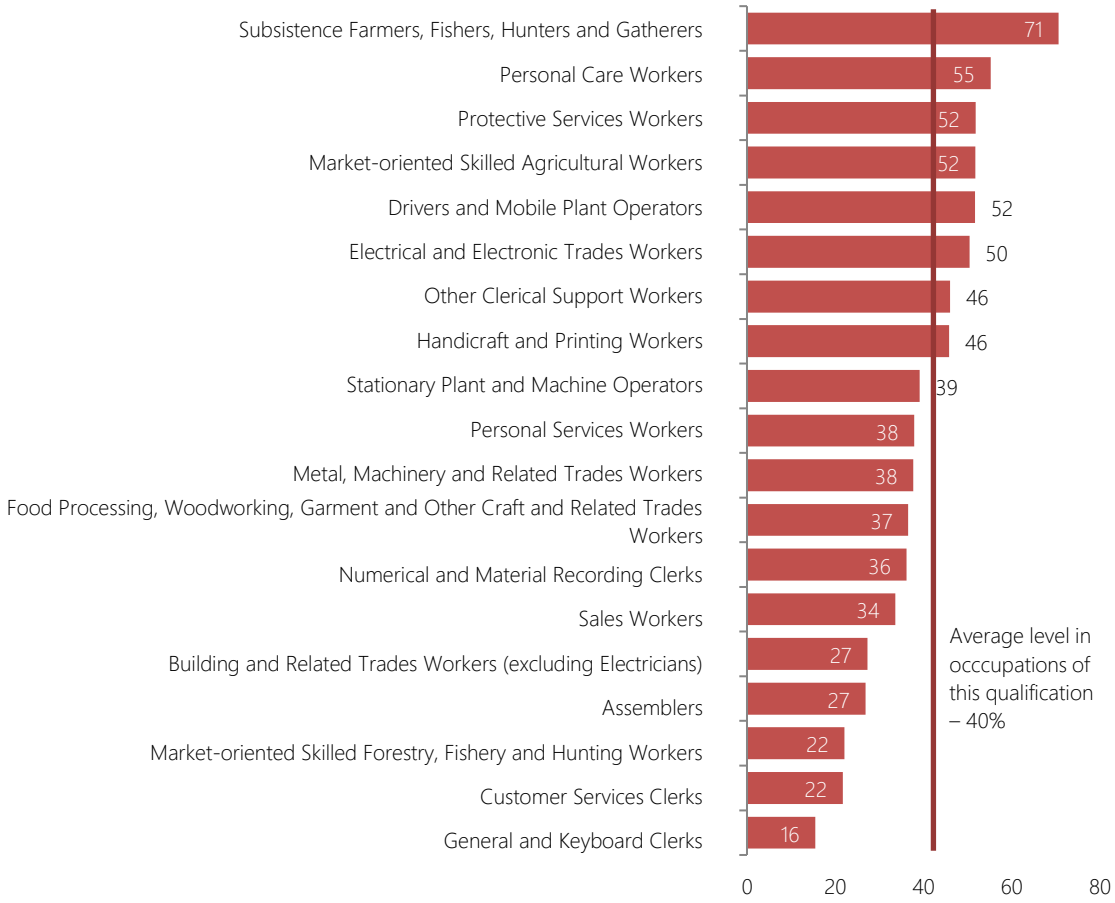
The percentage of the employed aged above 50 in high qualification occupations is 32%. The analysis of the structure of the employed by occupational groups evidences that ageing of labour force does not affect occupations with high qualification in the same way. For a longer period of time, the ageing problems have been specifically affecting health associate professionals and professionals, as well as teaching professionals.

The percentage of the employed aged above 50 in medium qualification occupations is 40%. Negative development trends of the labour age structure also affect a range of medium qualification occupation groups. This trend mostly affects personal care workers, market-oriented skilled agricultural workers, protective services workers, as well as drivers and mobile plant operators.

Figure 2.12

Percentage of employed population above 50 years in medium qualification sub-major groups of occupations

*2021, % of the number of the employed in the respective sub-major group*




Source: CSB, MoE calculations

The labour age structure in various occupations is affected by several causes. Young people do not prefer certain orientations of studies/training or choose to work in a different occupation after studies due to different reasons. Low wages is one of the reasons in individual occupations.

## 2.3. MATCHING OF LABOUR MARKET DEMAND AND SUPPLY

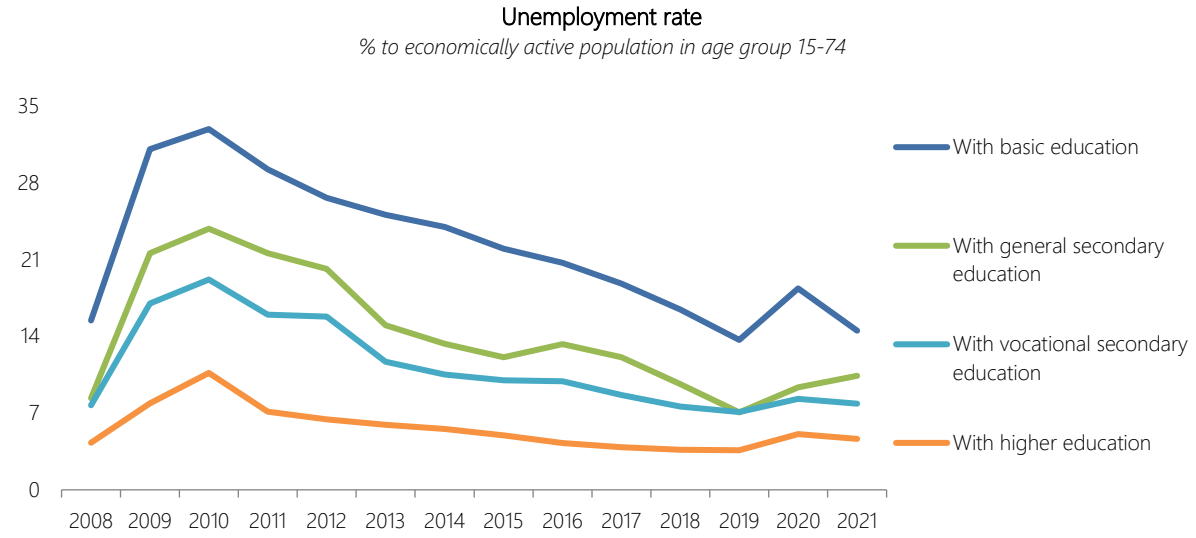
The Covid-19 pandemic crisis has generally reduced labour demand in the economy and also contributed to the total unemployment/labour surplus increase during the crisis. The largest increase in job seekers was observed in 2020, as labour demand reduced rapidly. In 2021, labour demand generally continued to drop; however, taking into account the reduction in economic activity/participation rate of the population in the market, as well as the reduction in working age population, labour supply in the labour market declined as well, thus generally narrowing free labour resources/job seekers in the labour market. Overall, 70.6 thousand persons were job seekers in 2021, which was by 8.1 thousand less than in 2020. In 2021, the unemployment rate reduced to an average of 7.6% of the economically active population exceeding the pre-crisis (2019) level by 1.3 percentage points.

Overall, people with higher education level are less subjected to the risk of unemployment. In 2021, the unemployment rate of people with higher education was 4.6%, while the unemployment rate of people with secondary education was almost twice higher (8.9%), but with basic and lower education – almost 3 times higher (14.5%). It should also be noted that unemployment risks are generally reduced by mastering a profession – in 2021, the unemployment rate among the population with secondary vocational education was 2.6 percentage points lower than among people with general secondary education. This trend has intensified during the crisis –

employers, who considered personnel reduction options, chose to keep employees with professional skills as a priority.

Overall, in 2021, the lowest unemployment rate among the population with higher education was in life sciences, mathematics, and computing and in the health and welfare education group. The highest unemployment rate among the population with higher education was in the thematic groups of agriculture. Meanwhile, at the level of secondary vocational education, the lowest unemployment rate in 2021 was in the thematic group of agriculture health care and well-being.

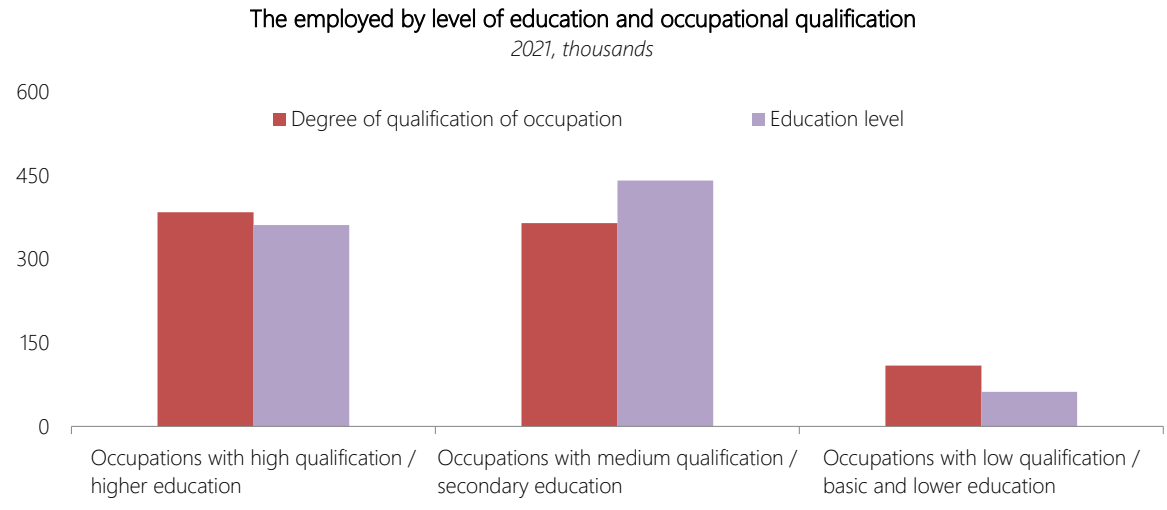
Figure 2.13




Source: CSB

If we look at the **matching of education of the employed to their level of qualification** (for aggregation of occupations see Table 6 in the annex to the report) several significant structural disproportions can be observed. Compared to the breakdown of the employed population by education levels and occupational qualification groups, it is evident that the number of the employed with higher education is smaller than the number of the employed in occupations with high qualification, which people with higher education should actually have. Meanwhile, in 2021, at the level of medium qualification we can see that the number of the employed with secondary education exceeds the number of the employees in medium qualification occupations. This leads to the conclusion that part of high qualification occupations are occupied by employees with secondary education, and this has impact on the potential development of productivity increase in the long-term.

Figure 2.14



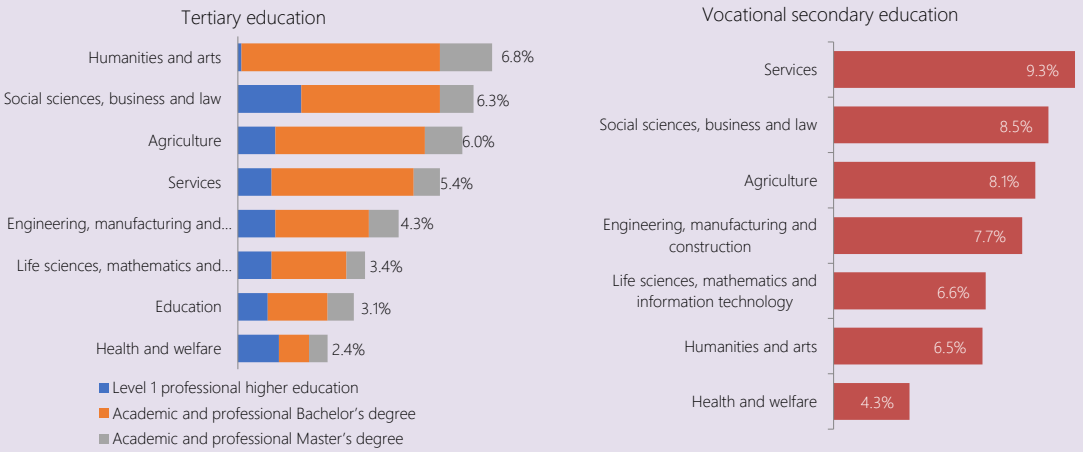

Source: CSB, MoE calculations

**Graduate monitoring results**

The *register of students and graduates* collects data on students in higher education study programmes. Unpersonified data on employment and remuneration of graduates are collected and published. The monitoring of graduates of higher education institutions in Latvia started in 2017, and data are currently available on the jobs of graduates of 2017, 2018 and 2019 one year after the end of their studies. Each year's group of graduates is expected to be monitored over a 10-year period. Monitoring of graduates of vocational education institutions started in 2020 and the first data have been prepared. The monitoring of graduates of vocational education institutions is created based on the monitoring of graduates of higher education institutions, and naturally supplements the monitoring of graduates of higher education institutions, thus providing more comprehensive information on the results of the education system taking into account further life of graduates after they obtain education of the respective degree. Monitoring of graduates is an integral part of the education quality monitoring system, which provides information based on the data accumulated over many years for the adoption of sustainable decisions relating to the formation of education policy and its compliance with the needs of the economy.

According to the results of the monitoring of graduates, around 82% of all graduates of higher education institutions of 2019, on whom information is available, were employed in 2020, but the average unemployment rate among the economically active graduates was 4.8%, which is generally lower than the economy average among the population with higher education. Around 78% of all employed graduates were employed in high qualification occupations (major groups of occupations 1-3).

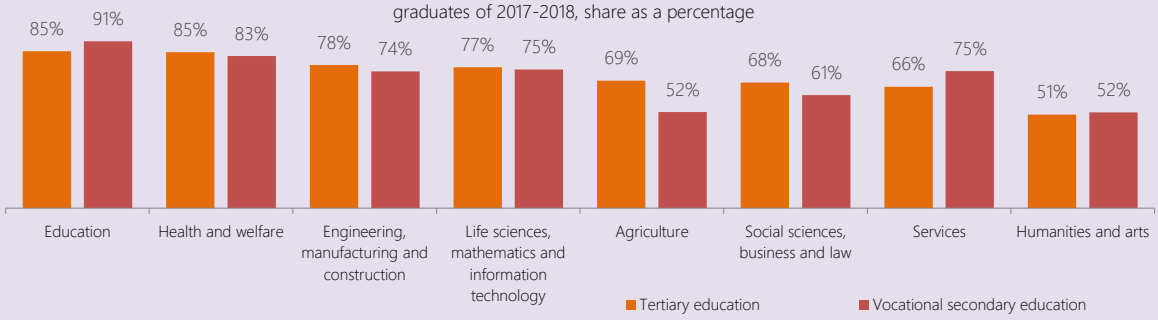
**Unemployment rate among graduates of education institutions by level of education and thematic group of education**
graduates of 2019, %




Source: *Graduate monitoring data; MoE calculations.*

The highest unemployment rate is observed among graduates of social sciences, business and law, as well as humanities and arts, and agriculture programmes. At the same time, the lowest unemployment among graduates is observed among graduates in the fields of health and welfare.

**Matching of occupations of graduates of education institutions to the thematic area of education**
graduates of 2017-2018, share as a percentage




Source: *Graduate monitoring data, MoE calculations based on the occupation-education matching matrix (see Sub-chapter 3.1 of the informative report) by sub-major groups of occupations of the classification of occupations.*

The highest occupation matching level in higher education, taking into account the thematic area of education of graduates, is observed in education (85%) and health and welfare (85%). Life sciences, mathematics and information technology (78%) and engineering, manufacturing and construction (77%) also have a comparatively high matching of occupation. The lowest matching is observed in humanities and arts (51%), mainly due to the fact that graduates of this thematic area of education work in many other occupations, which are not evaluated as matching in accordance with the classification of occupations by main tasks and main requirements of the qualification.

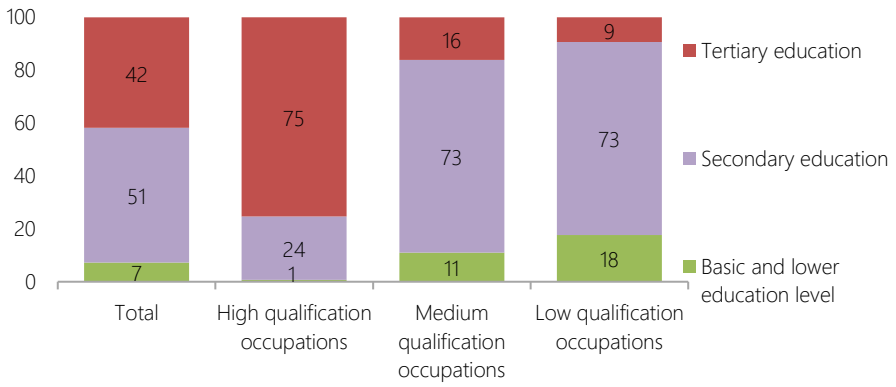
At the same time, it should be noted that significant structural inconsistencies are observed also within groups of occupations. In 2021, the most pronounced insufficiency of skills is observed in high qualification occupations, where only a 3/4 of employees had higher education. It is partially explained by the fact that the high qualification occupational group includes managers of all types of institutions and their business units, as well as positions in other types of companies and organisations, where employment is often not directly linked to the education/qualifications obtained, but rather to participation/ownership in the company or organisation.

At the same time, the most pronounced surplus of skills is in the lower qualification/elementary occupations, where more than 4/5 of all employees have higher levels of education than would be required to carry out their job duties.

Figure 2.15

Structure of the employed by levels of education and by occupational qualification

*2021, %*



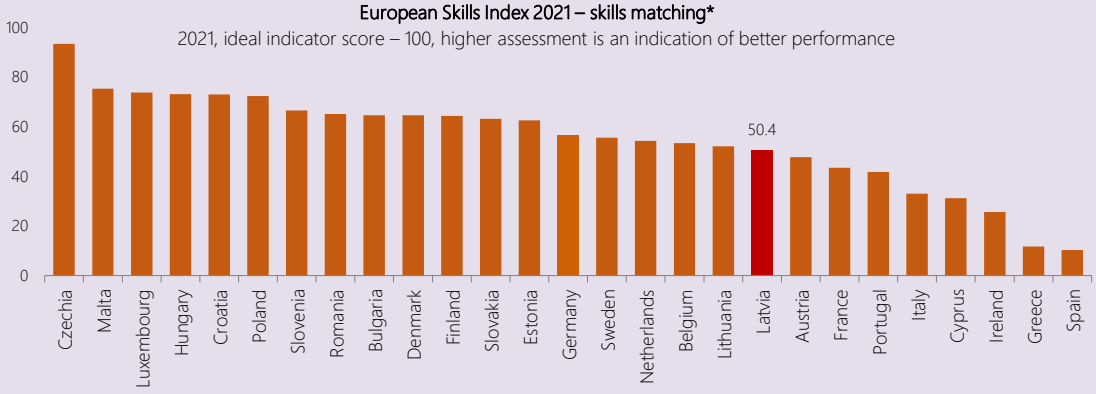

Source: CSB, MoE calculations

**European Skills Index 2021 – skills matching**

According to the skills matching pillar of the European Skills Index, there are still large gaps between EU countries in terms of skills mismatches. According to the index, the smallest mismatches are observed in countries such as Czechia, Malta and Luxembourg, which are closest to the perfect performance, while the most pronounced mismatches are in Spain, Greece and Ireland. Latvia as a whole is slightly above the average in terms of skills matching (50%, 19th place among the EU27 countries), immediately below Lithuania (52%), and significantly lagging behind Estonia (63%). However, it should be noted that Latvia is also ahead of highly developed countries such as Austria, France and Ireland, which are a step ahead of Latvia in terms of skills development and activation.

**European Skills Index 2021 – skills matching***

2021, ideal indicator score – 100, higher assessment is an indication of better performance




Source: Cedefop

**** The European Skills Index measures the performance of the EU's skills system*** *– the distance to perfect performance (100 points), the highest achievement over the last 7 years. The* ***skills matching pillar*** *consists of 3 indicators to measure different aspects of use of skills in the labour market (labour supply with higher or lower skills level than required in the labour market): higher education mismatch (those with higher education that have a job that does not require it); low wage earners (tertiary graduates that are low wage earners); and qualification mismatch (the extent to which each employee's education attainment level matches each occupation in each industry)*

Box continued

For individuals, a skills mismatch has a negative impact on satisfaction with job and wages, for example, a high qualification professional working in lower-level jobs will receive remuneration that is not matching his or her skills, while the employees underskilled for their profession may have problems in carrying out their direct job duties. This reduces productivity of companies while shortage of skills increases recruitment costs and impedes the assimilation of new technologies. At macroeconomic level, mismatches increase unemployment and reduce GDP growth through inappropriate human capital allocation and/or a decline in productivity, which it causes while skills shortages have a negative impact on labour productivity.

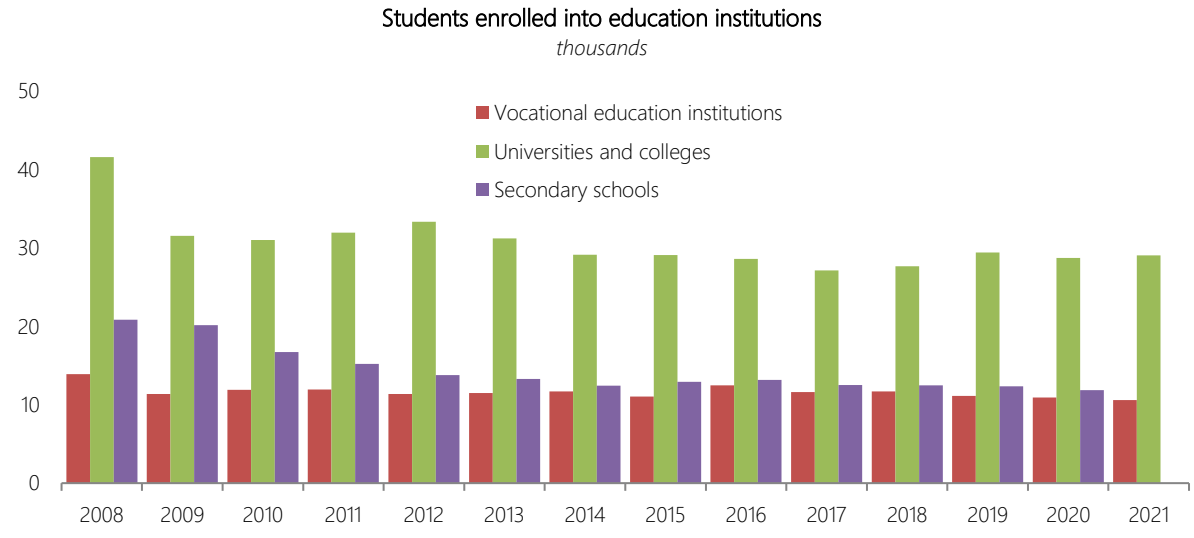
In order to reduce mismatches in skills supply and demand, it is important to provide high-quality education and training programmes, which ensure upskilling and reskilling. The importance of work based (WB) learning is also emphasised. Effective implementation of immigration policy can also help to reduce skills shortages. On the other hand, insufficient qualifications can be reduced by reducing the proportion of low qualification workers, preventing early school leaving and providing opportunities for upskilling. Along with technological progress, the creation of new jobs and cooperation between employers and the education system are also important to ensure adequate skills. Developing a modern lifelong learning system will be essential to help workers adapt and update their skills during their careers. High-quality skills assessment and the development of a system of anticipating changes in the labour market will also be important.

## 2.4. CHANGES IN EDUCATION SUPPLY

### Impact of demographic trends on the number of students

The number of students in general secondary education has been declining in the last 10 years both at the level of basic school and secondary school. The declining trend is also observed in the number of students in vocational secondary education. The main reasons for the reduction in the number of students are persistently low birth rate and emigration of the population. Thanks to the improvement in birth rates in the period from 2004 to 2008, the drop in the number of students of general and vocational secondary education has slowed down; however, the student count trend is still negative.

Figure 2.16




Source: CSB

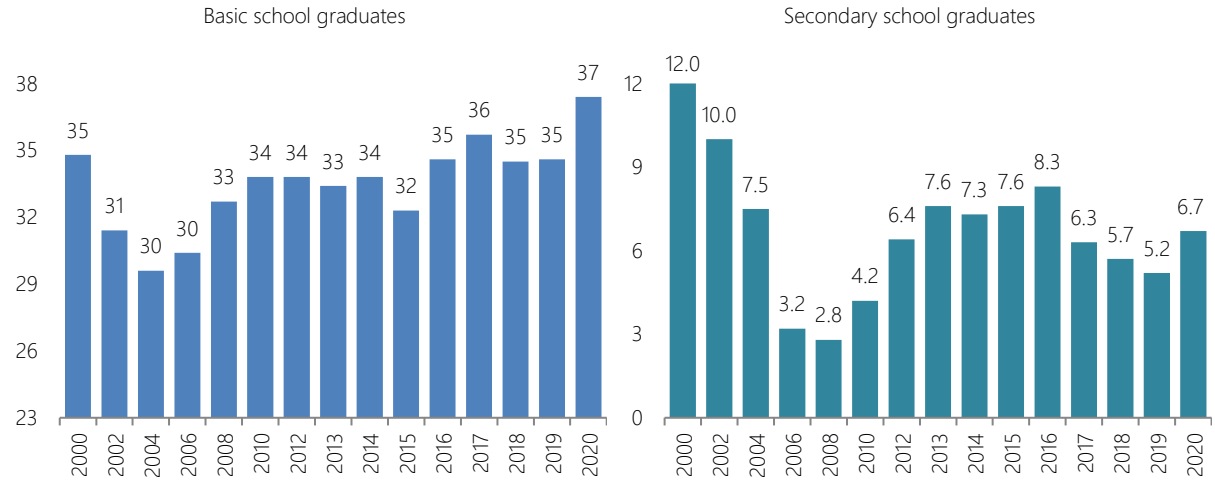
The structure of secondary education depends on the choice of basic school graduates to continue their education. It should be noted that the most significant problem in vocational education is still its low attractiveness level, which is largely related to prejudices and outdated stereotypes in society – about 3/5 of young people after completing basic education still prefer to continue general secondary education. Although basic school graduates have been more focused on vocational education over the last few years, it is still not sufficient to ensure replacement of medium qualification specialists in the labour market due to ageing of the population.

Over the last years, the number of students admitted to vocational education institutions has remained approximately the same, while the share of youths, who continue studies in vocational education after they obtain basic or general secondary education in 2020, increased by almost 2 percentage points.

Figure 2.17

Students continuing their studies in vocational education institutions

*% of total graduates*




Source: CSB

Latvia has set a target for 2024 to ensure that at least 39% (45% in 2027) of the total number of students acquiring secondary education study vocational secondary education programmes. The share of vocation education students has slightly grown in recent years, the student count ratio in vocational secondary education reached 37.4% in academic year 2019/2020. It is necessary to continue measures to promote the attractiveness of vocational education, including public awareness campaigns to dispel myths and change attitudes towards vocational education, thereby increasing the interest of young people in acquiring a profession in vocational secondary education institutions.

### Structural changes in the education supply

Regarding the proportion of students in life sciences and engineering (life sciences, mathematics, and computing group and engineering, manufacturing, and construction group), the target for 2020 was to reach 27% of the total number of graduates. However, in 2021, graduates of the target group constituted only 18.6% (18.7% in 2020) of all graduates. This indicator has not significantly changed in recent years. To achieve this goal, it is vital to implement targeted measures for the involvement of secondary education students into these study directions more actively. It should also be noted that high drop-outs during studies affect the share of graduates in exact study directions.

The number of matriculated students has been declining in recent years, which can be explained by demographic and economic reasons. The inflow of foreign students also does not compensate for this decline. Until 2019, the number of foreign students, who wanted to study in Latvia, has been growing comparatively rapidly. In the last three years the number of foreign students in Latvia has not significantly changed, and in 2021 foreign students accounted for almost 13% of enrolled students.

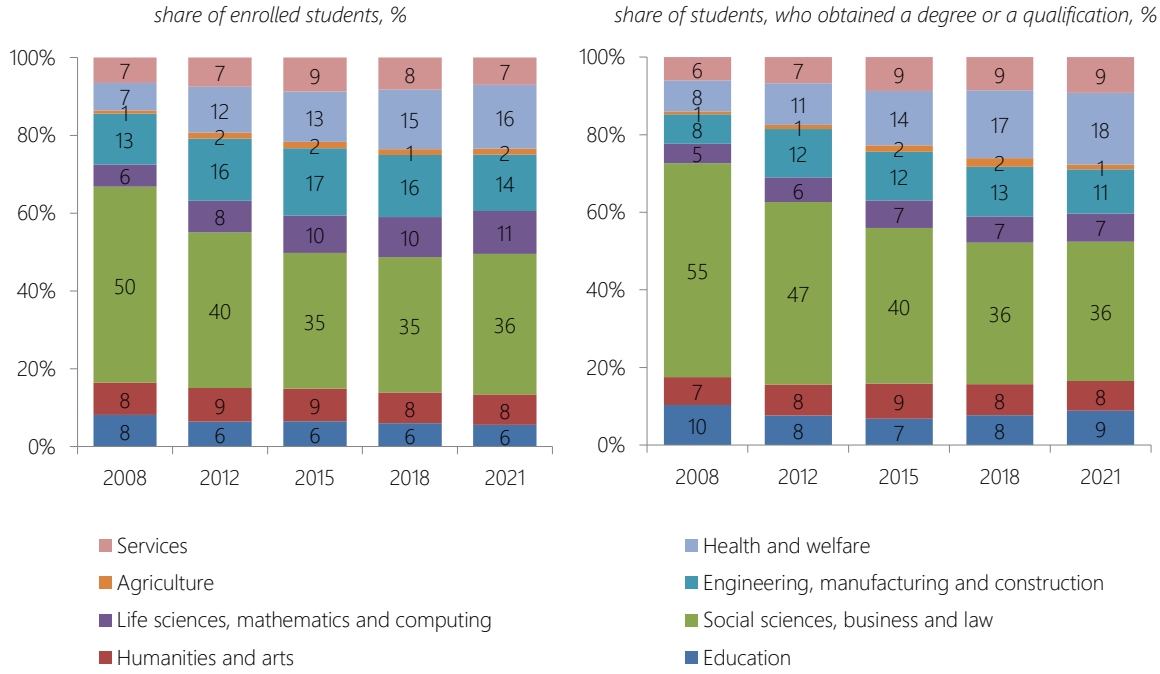
As the economic situation deteriorated in 2009, the possibility of studying for state budget funds became more important, leading to a sharp drop in the share of students in the thematic area of social sciences, where the majority are paid study places. In 2021, the number of students enrolled to the thematic area of social sciences amounted to 36.1% of the total student count.

At the same time, since 2008, the share of students enrolled in the “Education” thematic group has decreased significantly, and it has not significantly changed in recent years. Since 2015, the number of students enrolled to life sciences, mathematics, IT, as well as engineering, manufacturing and construction thematic areas of education

has been generally declining. In 2021, compared to 2015, the number of students in the thematic area of engineering, manufacturing and construction reduced by 16.4% (5032 in 2015; 4209 in 2021). Meanwhile, the share of students enrolled to the health and welfare thematic group has reached 16.4% (12.9% in 2015).

Figure 2.18

Number of students in higher education institutions and colleges by thematic groups of education in the academic year




Source: CSB

The fact that the number of students enrolled in the thematic group of life sciences, mathematics and computing, and health and welfare gradually increases should be evaluated positively. **Meanwhile, a decline is observed in the thematic area of engineering, manufacturing, and construction.**

The changes that took place in the education policy in the previous years are reflected with a time lag. The rapid changes in the structure of enrolled students in 2009 reflected in the structure of higher education graduates only several years later. Over these years, there has been a significant decline in the share of social sciences graduates, which is a reaction to the changes in the structure of the enrolled students.

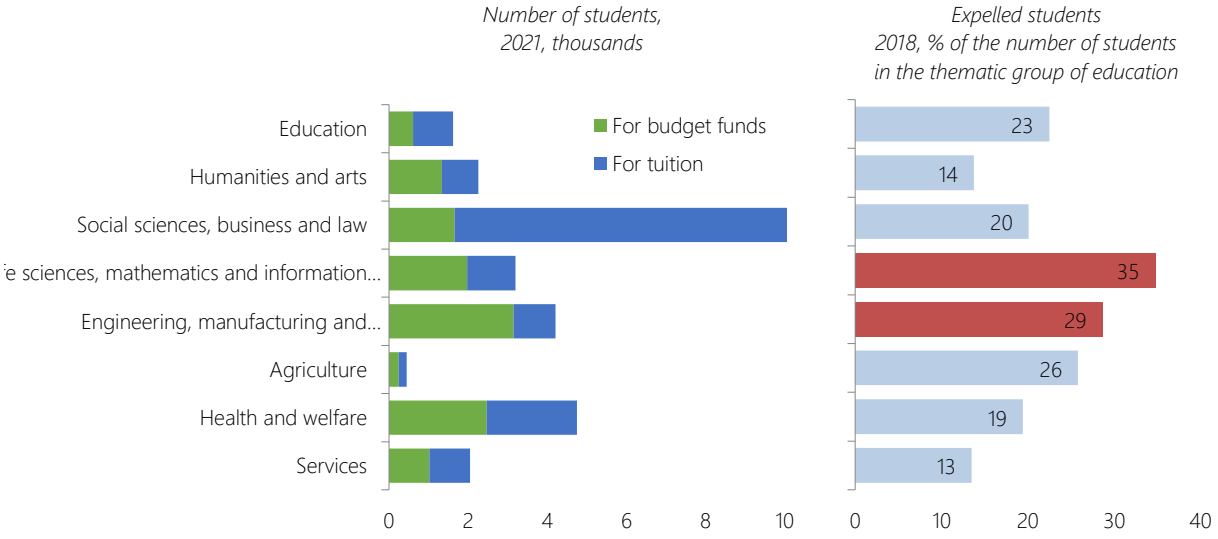
The comparatively small increase in the share of graduates in the thematic group of life sciences, mathematics and computing, and the drop in the thematic group of engineering, manufacturing and construction can be explained by the relatively high level of drop-outs during the studies.

One of medium-term objectives of the education policy is to restructure state aid for higher education studies according to the-term labour market forecasts. In 2021, the number of students enrolled for budget funds in STEM (life sciences, mathematics and information technologies, as well as engineering, manufacturing, and construction thematic areas of education) programmes amounted to 41% of the total number of students enrolled to budget-funded study places (target for 2020 – 55%[1]). Measures for attracting high school graduates to study fields of national importance should be continued. At the same time, it is important to reduce student drop-outs in STEM directions, which is still considerably higher than in other fields.

[1] The Guidelines on Development of Education for 2014–2020 are available here: https://likumi.lv/ta/id/266406-par-izglitibas-attistibas-pamatnostadnu-20142020gadam-apstiprinasanu

Figure 2.19

Students of higher education institutions and colleges by type of funding by thematic groups of education



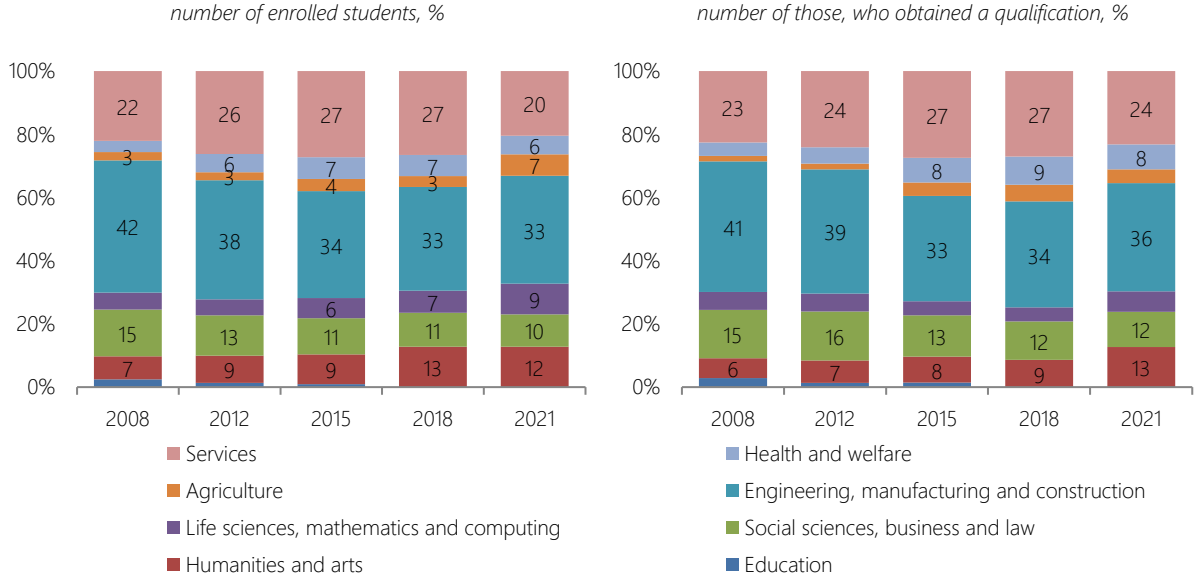

Source: CSB

It should be noted that state support and accessibility of budget places still play an important role in the choice of people in favour of studies in STEM areas. The share of students enrolled for budget funds in engineering, manufacturing, and construction thematic area of education accounted for about 75% of all students enrolled in the respective programmes in 2021. Similarly, the high share of students enrolled in state-funded study places is observed in life sciences, mathematics, and information technologies thematic areas – 62% of all students were enrolled in studies for state budget funds.

Although the proportion of young people studying for budget funds has increased proportionally in recent years, most of them still start studies at their own expense. In 2021, about 43% of the total number of students started their studies for state budget funds.

Figure 2.20

Number of students in vocational education institutions by thematic groups of education




Source: CSB

In vocational secondary education institutions, people most often choose the thematic group of engineering, manufacturing, and construction (33% of the total number of students in 2021). This group is the largest in number; however, its share has been declining since 2008. Since 2018, the share of students enrolled to the "services" thematic group of education has reduced significantly (27% of enrolled students in 2018; 20% in 2020). At the same time, the share of students in the agriculture thematic group of education has increased during the period (by 4 percentage points in 2021, compared to 2018).

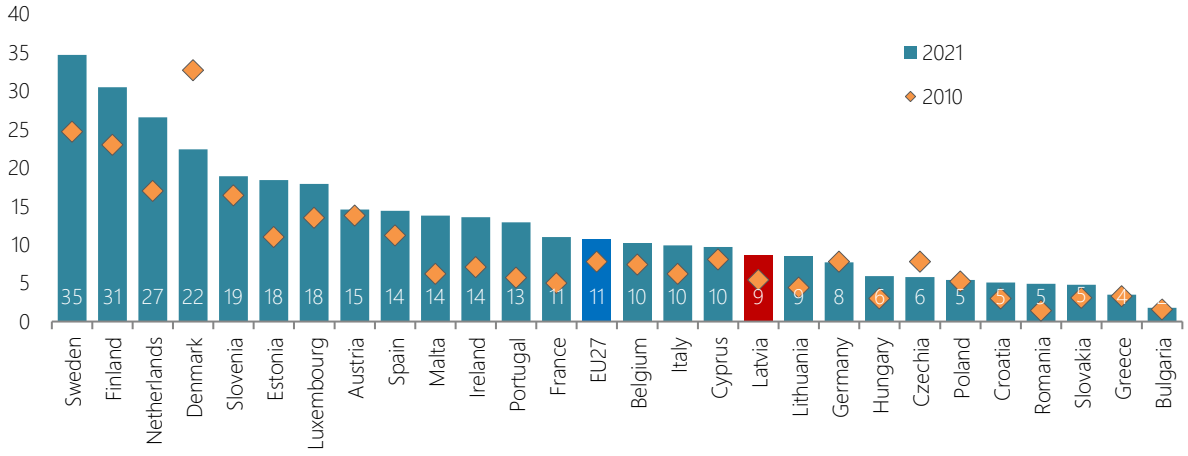
### Adult education

In 2021, 8.6% of 25-64 year-olds were involved in adult education activities, while in the Nordic countries this rate was three and even four times higher. Although participation of adults in the education process has increased recently (by 2.0 percentage points compared to 2020), it is still below the EU average. It should be noted that the involvement of people in adult education in Latvia has not changed significantly over the last 10 years, and the target defined for 2020 to increase the involvement of adults in lifelong learning to 15% was not reached). The purpose of the policy is to reach the involvement of at least 12% of adults in adult education by 2027 (8% by 2024).

Figure 2.21

Population involvement in adult education*

*in the age group 25–64, %*




Source: *Eurostat (EU Labour force survey)*
* During four weeks before the survey

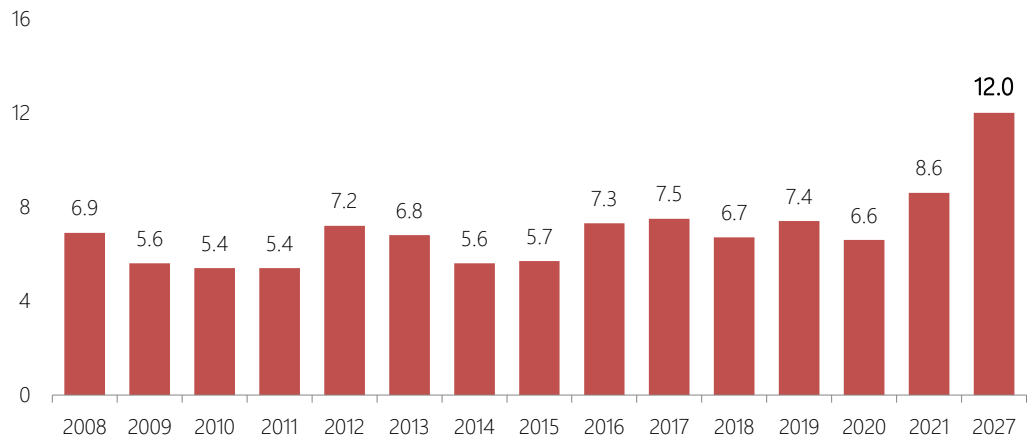
Low involvement has a number of reasons and fundamental problems faced by all the three parties involved in the adult education process – employers, employees, and providers of education services. Society as a whole still has low interest in adult education. Low wages in a number of occupations and sectors is also one of the most significant obstacles to the involvement of persons in longer training courses. The population mainly expects courses and programmes to increase individual competences and adult education is not considered as a career growth opportunity. Weak regional mobility and the possibility of combining learning with work is also a disincentive. There are a number of reasons on the side of enterprises why the existing system is not working properly. The economy is dominated by "low-cost" strategies and investment in education of employees is comparatively small, education supply is unclear or education supply is inappropriate or not available on time. On the side of educational institutions; however, there is no clear, precise demand of businesses and industries. Cheap, low-quality offers compete on the market, albeit existing administration and financing mechanisms are not supportive and motivating.

Given that the labour market is increasingly changing, it is necessary to move towards a functional adult education system in the near future to reduce the unemployment caused by Covid-19, increase digital skills of society, reduce the share of persons with low education, continuously develop skills, abilities, and competences, change the socioeconomic paradigm, master skills and abilities, which are or will be in demand in the labour market, providing the sectors that are growing after the crisis with necessary human resources.

Figure 2.22

Population involvement level into lifelong learning

*% of the population in the age group 25–64*




Source: CSB, *Eurostat*

People with higher education choose to participate in adult education activities more actively. 15.6% of people with higher education were involved in adult education activities in 2021, i.e. by 4.4 percentage points more than a year before (11.2% in 2020). The population with basic education (3.4% in 2019), general secondary education (5.7% in 2021) and vocational education or vocational secondary education (3.7% in 2021) is considerably lower. The involvement indicators among women are considerably higher than among men. The share of involvement of women was 11.5%, which exceeded the share of involvement of men by 6.0 percentage points.

**Development of lifelong learning culture in Latvian businesses**

A lot of knowledge, skills, and abilities needed to sectors or businesses are specific, they cannot be learned only through formal education at school (and this is not the task of formal education). Moreover, acquired skills are becoming outdated increasingly faster. It is becoming more and more difficult and costly to find an employee with adequate knowledge and skills to boost business growth and bring innovation in conditions of a limited workforce in the labour market. The solution is to invest in the training and development of their own employees. The education system will never be able to provide specific skills and abilities at company level. The role of the education system is to provide a broad knowledge base. The task of the sectors is to give signals to formal education and to invest in the improvement of knowledge, skills and abilities of employees.

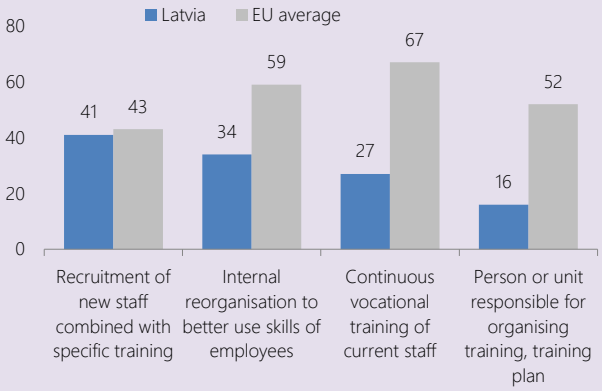
While entrepreneurs in Latvia are facing considerable difficulties in labour availability, investment of companies in training of their employees has not been sufficient and has been rather low until now. The survey of large and medium-sized enterprises conducted by the ECL in 2019[1] shows that only 36% of employers have a separate budget item dedicated to providing education to employees. Another 57% of employers do not have such an earmarked budget item, and the education costs of employees are covered when needed. Data from EUROSTAT Continuing Vocational Training Survey show that companies in Latvia are generally lagging behind European companies in lifelong learning culture[2].

The share of Latvian companies (41%), which also provide specific training when recruiting new staff, is similar to the EU average (42%).However, after starting work, employees in Latvia have fewer opportunities to further develop and use their skills. The share of Latvian companies that reorganise internally to better use skills and competences of employees is around 34%, which is below the European average of 59%. Similarly, 27% of Latvian companies provide professional education/ continuous vocational training, which is more than 2 times below the European average of 67%. A designated person or unit responsible for organising training in the company or the existence of a training plan or budget is an essential prerequisite for the development of a lifelong learning culture in the company. Only 16% of Latvian companies have designated such a person or unit, compared with 52% of companies on average in Europe.

[1] http://muizglitiba.gov.lv/sites/default/files/Pieauguso_izglitibas_aptaujas_rezultati%202019%20LDDK%20IZM.pdf
[2] https://www.oecd-ilibrary.org/education/oecd-skills-strategy-latvia_74fe3bf8-en

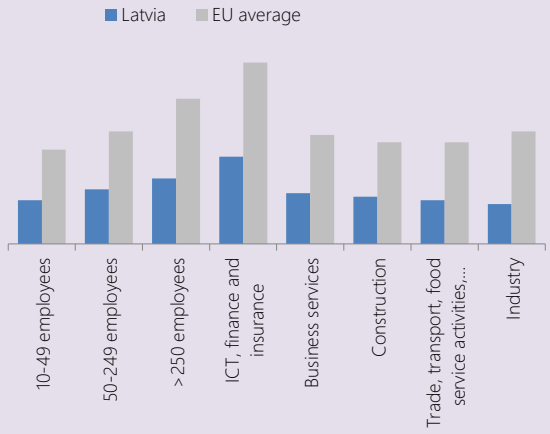
**Lifelong learning culture in companies**

*2015, %*




**Expenses on staff training by company size and sector**

*2015, % of total labour costs*




Source: *EUROSTAT; OECD Skills Strategy Latvia: Assessment and Recommendations (2019)*

Employers play a key role in funding adult education. The share of the costs of professional upskilling of employees in total labour costs of companies in Latvia is the lowest (0.8%) among EU countries. The EU average is 1.7%, while in Denmark – 2.7%, and in France – 2.5%.

Similar to other EU countries, large enterprises in Latvia spend a higher share of their total labour costs on training than SMEs. As the level of participation of SME employees in adult education activities is generally lower and the majority of employees in Latvia work in small and medium-sized enterprises, the state policy plays an important role in supporting the financial capacity of SMEs to provide adult education. In general, the level of expenses on training in Latvian companies, regardless of their size, is significantly lower than in companies of similar size in the EU. Also, differences across sectors persist. In Latvia, ICT, financial and insurance companies spend the most of their labour costs on training. It is followed by companies in science and services; construction; trade, transportation and storage, accommodation and food service activities; and finally industry. However, regardless of the sector in which Latvian companies operate, they all spend less than companies in the EU. In addition, Latvian companies tend to choose short, non-formal training programs that are cheaper and shorter. Usually, they can only provide an unofficial attendance certificate, which means that the skills acquired by employees are not always recognised in the labour market, weakening their ability to take full advantage of the benefits of their participation in training and reducing their motivation to use learning opportunities.[1]

Entrepreneurs may be motivated to invest in the development of employees' knowledge, skills and competences to ensure productivity of the company, but it will also reduce costs of recruiting new staff, foster motivation of employees and positive attitudes towards employers, loyalty, improve the reputation of the company, help to retain employees, and it may be easier for the company to attract good employees and talents in the future. By acquiring new knowledge and skills, employees become more versatile, able to perform different duties, tasks. When entrepreneurs provide and/or invest in training, to make it effective they are forced to think about future trends and plan the development of the company, and to follow up on the quality of training.

However, investment in the growth of employee is also linked to costs such as training fees, time outside work, expenses on training venues and provision of materials, etc. Therefore, large enterprises invest more in the training of employees, because they can distribute the costs of training among a higher number of employees, given that often similar tasks are carried out by several employees of the company. For this reason, small enterprises, on the other hand, have higher costs per 1 employee and they can discourage employers from investing in the education of employees. In addition, employers may avoid investing in the development of employees' skills if they believe that this does not provide immediate benefits, or if they are not sufficiently informed about state aid available for that purpose[2]. The OECD has also assessed that large enterprises, including state capital companies, with higher human resources capacity, often provide training to employees in the company. Training to SMEs is provided by external educational service providers as needed or upon request.

[1] https://www.oecd.org/skills/latvia-employers-report-2022.pdf
[2] https://www.saeima.lv/petijumi/Pieauguso_izglitiba_petijums.pdf

# 3. MEDIUM AND LONG-TERM LABOUR MARKET FORECASTS

## 3.1. METHODOLOGY OF DEVELOPMENT OF LABOUR MARKET FORECASTS BY THE MINISTRY OF ECONOMICS

### MoE labour market forecasts

The MoE has been preparing and updating medium-term labour market forecasts since 2008. Starting from 2011, also long-term forecasts are prepared. The labour market forecasts are based on economic development and demographic scenarios developed by the MoE. which are based on Latvia's medium and long-term growth goals, which are defined in Latvia's strategic planning documents - Latvia's Sustainable Development Strategy "Latvija 2030" and Latvia's National Development Plan for 2021-2027.

The preconditions for these forecasts are closely related to the ability of Latvia to implement the set goals and to introduce the required structural reforms, which are aimed at strengthening the growth potential. Therefore, the forecasts should be considered in context with the progress of these reforms and the possible changes in the policy emphasis should be taken into account.

Labour market forecasts are one of the tools that allow for an early anticipation of formation of labour market mismatches in the future and a more efficient distribution of labour resources in the economy. They show possible trends in the labour market development and the possible risks, taking into account the anticipated changes in the education supply structure.

The medium-term and long-term labour market forecasts developed by the MoE are one of the stages in the labour supply adjustment process. They are the quantitative basis for further discussions among employment, education and structural policy makers, social partners, scientists and other stakeholders, in order to prepare and adapt the expected structural changes in the national economy in a timely manner.

### Labour market forecasting model

The MoE methodology for labour market forecasting arises from the dynamic optimisation model (DOM)[1] that was developed within the ESF project *"Research of long-term forecasting system of the labour market demand and analysis of improvement options"* in 2007. Over time, the labour market forecasting methodology and the DOM model have been significantly improved. Having implemented the ESF project activity "*The improvement of the medium and long-term labour market forecasting instruments*" from 2011 until 2013, the MoE, in cooperation with Riga Technical University, has improved the initial labour market forecasting methodology and model.[2] Furthermore, from 2017-2019 in cooperation with SIA "AC Konsultācijas" with in the study *"Possibilities of establishment of the system of anticipating changes in the labour market and linking of medium and long-term market forecasts with the action policy"*[3] labour market forecasting model assumptions on occupation standards correspondence to the educational needs (occupation-education matching assumptions) have been updated. The new occupation-education correspondence assumptions have been integrated in the model and labour market forecasts starting from 2020. MoE revises occupation-education correspondence assumptions on a regular basis, considering the changes in occupation standards and education curriculum, as well as consulting with sectoral experts.

For the modelling of labour market, the system dynamic approach is employed. The forecasting methodology is based on general equilibrium principles, where labour market demand stimulus are determined and arise from

[1] Examination of the system for long-term forecasts of labour market demand and analysis of its improvement possibilities. MoW of LR: Riga, 2007, http://www.lm.gov.lv/upload/darba_tirgus/darba_tirgus/petijumi/ilgtermina_prognozesana.pdf

[2] For further information on the labour market forecasting model see the Technical Documentation of the Model for Medium- and Long-Term Forecasts and Policy Analysis in the Latvian Labour Market. https://www.em.gov.lv/files/tautsaimniecibas_attistiba/Dokumentacija_Lat.pdf

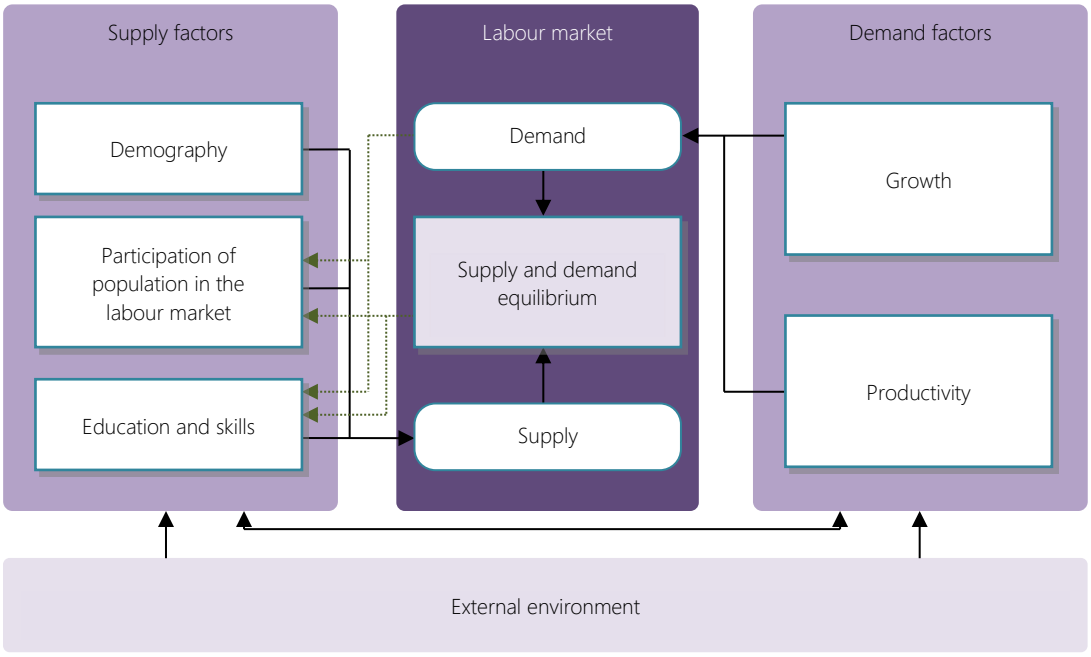
[3] Research "Possibilities of establishment of the system of anticipating changes in the labour market and linking of medium and long-term market forecasts with the action policy": https://em.gov.lv/files/attachments/DarbaTirgus_Gala%20zinojums.pdf

the set economic growth targets, but labour supply in the long term adapts to labour market demand and relative wage changes.

The labour market forecasting model consists of three basic blocks: demand block, supply block, and the labour market block. All of the blocks are interrelated and mutually complementary (see Figure 3.1). The basic principles and inner logic of the model are based on the concept of the labour market general equilibrium, i.e. the labour force demand and supply balances in various labour market segments over a longer period of time.

Figure 3.1

Logical structure of labour market forecasting model




Demand for labour depends on the macroeconomic development scenarios – growth of economic sectors and expected changes in productivity. Demand for occupations arises from the demand of labour in the specific sector and expected changes in the structure of occupations within the sector. But the demand for education depends on the skills/education necessary for the performance of duties of the required occupations.

Labour market supply forecasts arise from:

- detailed demographic forecasts;
- participation level forecasts in different age groups of the population;
- breakdown of the current labour force by age, professional experience (current or previous occupation) and acquired education;
- current education system and education supply (number of students, breakdown of total and state-funded study places by education levels and fields).

At the same time, labour force supply forecasts depend on the general tendency of the labour market towards balance and on the gradual adaptation of supply to demand. Education preferences mainly stem from the ratio of labour market demand to supply, i.e. future students will choose those fields, where the most promising (relatively higher) work opportunities and the highest possible return from individual investments in education are expected at the moment of the decision. The baseline scenario also assumes that the education system and education supply (the distribution of state budget funded study places) do not change significantly during the forecast period. It means that labour force supply forecasts reflect an education-policy-change neutral situation in the labour market.

It should be noted that these forecasts are based on the example of an ideal labour market, i.e. demand for certain levels and fields of occupations in the labour market, determine the demand for the respective level and field of education. It means that in the future the expansion and replacement labour demand in certain occupations can only be satisfied with a labour supply with the qualification (education) necessary for the relevant occupation.

Labour supply forecasts take into account ageing trends of the labour force, as well as occupational mobility of labour force, which are determined by the similarity of skills and competences across occupations.

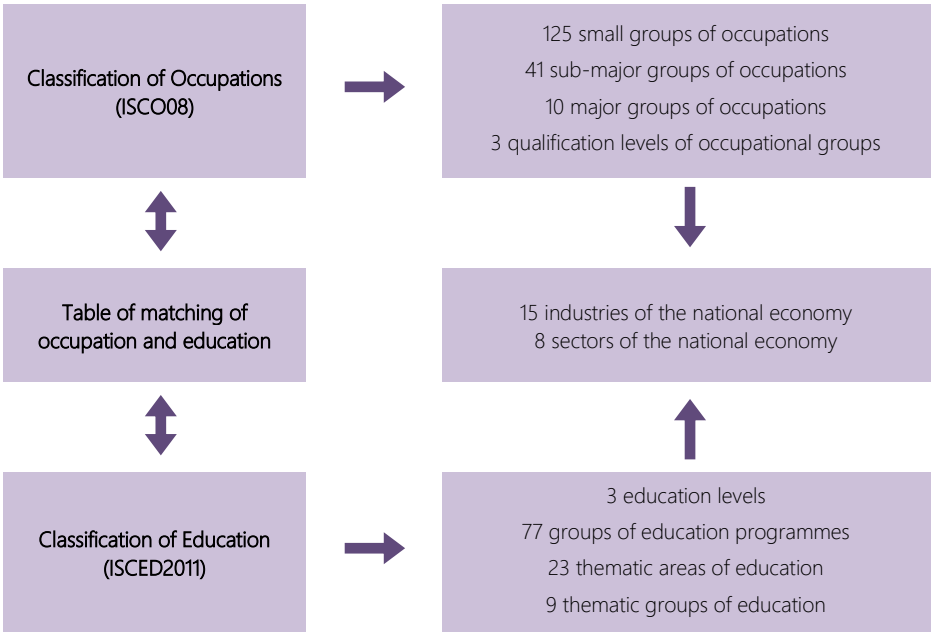
### Classifications and aggregation of the forecasts

The MoE labour market forecasts are prepared in relation to sectors, groups of occupations, and education. The forecasts are based on the international classification systems adapted to Latvia and are internationally comparable. The forecasts for the sectors are based on the Statistical classification of economic activities in the European Community NACE rev. 2. National economy sectors are aggregated in 8 sectors of national economy.

The aggregation of occupational forecasts is based on the Latvian Classification of Occupations, which, in turn, is based on the International Standard Classification of Occupations (ISCO-08). Labour demand and supply forecasts are prepared for 125 small groups of the classification of occupations, which are summarised in 41 sub-major groups of occupations, 10 major groups of occupations, and at three occupation qualification levels.

Figure 3.2

Labour market forecasts classification and aggregation system




Occupation forecasts are closely related to the forecasts of labour demand and supply, by the acquired education. The aggregation of education forecasts are based on the Latvian Classification of Education, which is based on the International Standard Classification of Education (ISCED2011). The forecasts for education demand and supply are provided for three education levels (basic, secondary, and tertiary), by 23 thematic areas of education at each education level.

The labour market forecasts by occupations and education are synchronised by using the occupation-education matching matrix, developed by the MoE in cooperation with the MoES and the Ministry of Welfare in 2011, for the needs of medium and long-term labour market forecasts. The matrix is based on the Latvian Classification of Occupations and on the framework of the International Standard Classification of Occupations (ISCO08), as well as on the assumptions on the occupation skill levels and corresponding education levels. Furthermore, from 2017-2019, the occupation-education matching matrix was updated within the research "Possibilities of establishment of the system of anticipating changes in the labour market and linking of medium and long-term market forecasts with the action policy" in cooperation with SIA "AC Konsultācijas" within ESF project No. 7.1.2.2./16/I/001. MoE

revises occupation-education matching assumptions on a regular basis, taking into account changes in occupation standards and education content, as well as consulting with sectoral experts.

### Information and data sources used in forecasting

In the development of labour market forecasts mainly the data from national statistics programme are used, which have been regularly collected by the CSB. The most important source of information is the Labour Force Survey (LFS) data. The main forecast assumptions about the structure of demand and supply of labour force are based on the LFS. The 2022 MoE medium-term and long-term labour market forecasts use the anonymised LFS microdata of 2020 and the LFS aggregated data of 2021.

The MoE's demographic forecasts are based on the information provided by the CSB, in regard to the number and structure of the population in 2021 and at the beginning of 2022, as well as the demographic trends of the last two decades. The long-term assumptions about the fertility and mortality rates arise from the base scenario of the demographic forecast EUROPOP2019, developed by the Statistical Office of the European Union (Eurostat). The scenarios of international migration are closely related to the Latvian growth targets and the further development of the situation in the labour market.

For the modelling of the education system structure and the labour market entrants Education statistical data have been used. The main sources for education statistics are CSB's Report on vocational education institutions (prof-1) and Report on higher education institutions, colleges (1-higher education institution, college), as well as general education statistics.

## 3.2. ECONOMIC GROWTH ASSUMPTIONS AND DEMOGRAPHIC PROJECTIONS

### 3.2.1. TARGET SCENARIO OF ECONOMIC GROWTH

The MoE has prepared a Target scenario of economic growth and the corresponding macroeconomic. Although the Covid-19 pandemic and the geopolitical situation in the region have a negative impact on the economy, the long-term goals of economic development, which have already been identified in policy planning documents and are related to the need to increase exports and productivity of Latvian goods and services, remain unchanged. The initiatives launched by EEC, such as the Green Deal and digitisation, also remain on the Latvian policy agenda.

The scenario has been drafted according to priorities of the Latvian structural policy defined in policy documents – Sustainable Development Strategy of Latvia until 2030[1], National Development Plan of Latvia for 2021-2027[2], National Industrial Policy Guidelines until 2027[3]. The processes determining global economic development are also analysed[4].

Table 3.1

**Target scenario framework**
*annual average changes, %*

| | 2011-2019 | 2020-2021 | 2022-2030 | 2031-2040 |
|---|---|---|---|---|
| | Fact | | Forecast | |
| Number of inhabitants | -1.1 | -0.7 | -0.7 | -0.3 |
| GDP at current prices | 6.0 | 3.6 | 7.1 | 4.7 |
| GDP at reference prices | 3.3 | 0.3 | 4.2 | 3.0 |

Source: CSB data from 2011 to 2021, MoE forecasts starting from 2022

[1] https://pkc.gov.lv/lv/valsts-attistibas-planosana/latvijas-ilgtspejigas-attistibas-strategija
[2] https://pkc.gov.lv/lv/nap2027
[3] https://www.em.gov.lv/lv/industriala-politika
[4] Current information from the European Commission, OECD, IMF, Global Economic Forum, Oxford Economics, The Economist and other organisations was also taken into account in Global economic development trends.

Basic assumptions on the impact of the Covid-19 pandemic and the geopolitical situation on the Latvian economy

Impact of Covid-19 on the national economy

The Covid-19 pandemic has had a strong and lasting impact on the socio-economic situation on a global scale and also in Latvia. Under the influence the pandemic restrictions, accommodation and food service activities, and also arts, entertainment and recreation sectors experienced the most significant drop in volumes. The Covid-19 restrictions also had a significant impact on aviation, land transport and rail companies. Although GDP in 2021 slightly exceeded the pre-crisis level of 2019, the economic activity was seriously below this level in several sectors.

The introduction of measures to restrict Covid-19 has affected the situation in the labour market significantly – the labour-intensive industries directly linked to population movements and gathering were most negatively affected. In 2021, a gradual improvement in the epidemiological situation has led to tangible improvements in the labour market. The crisis has still left visible "traces" in the labour market. The number of the employed and the employment rate are still significantly lower than in 2019. The crisis has affected the economic activity of the population, which, along with demographic processes, is narrowing labour market supply and increases the risks of labour shortages.

The Covid-19 crisis has contributed to changes that are likely to persist after the pandemic, such as increased use of e-commerce and other digital solutions, forms of remote work, etc., increasingly localised global value chains.

Taking into account the situation in Europe and the vaccination coverage, the target scenario does not provide for any new or significant Covid-19 restrictions, however there is still high uncertainty regarding the situation in autumn 2022 if the virus mutates or there is a new outbreak of the pandemic.

Impact of the Russian invasion of Ukraine on the economy

On 24 February 2022, when Russia invaded Ukraine, the geopolitical situation has deteriorated and there is a big uncertainty as to how the war, related sanctions, and disruptions in supply chains will affect economic development. The MoE forecasts that economic growth will fall by at least 3 percentage points in 2022 due to geopolitical factors compared to the previous forecasts. High uncertainty will affect consumption of the population, investment of businesses, and foreign trade. At the same time, the scope of economic impact of the conflict is very unclear and will depend on the duration of the war and political reactions. It is, however, clear that growth will be significantly impeded and the inflation pressure will increase as a result of the war.

In 2021, exports of Latvian to Russia, Belarus and Ukraine amounted to 9.5%, but imports from these countries amounted to 12.7%. There are several groups of goods, which form almost one third of the total Latvia's imports from these countries – these are mainly raw materials such as metals, wood, mineral fertilisers. The Ukrainian conflict will not affect all businesses equally, those will be affected more, which export/import and for which it is more difficult to change/find new cooperation partners and outlets. New and diversified raw material supply markets, strengthening of energy independence of the state and reorientation from Russia to more solvent Western markets will increase the potential of the Latvian economy in the future.

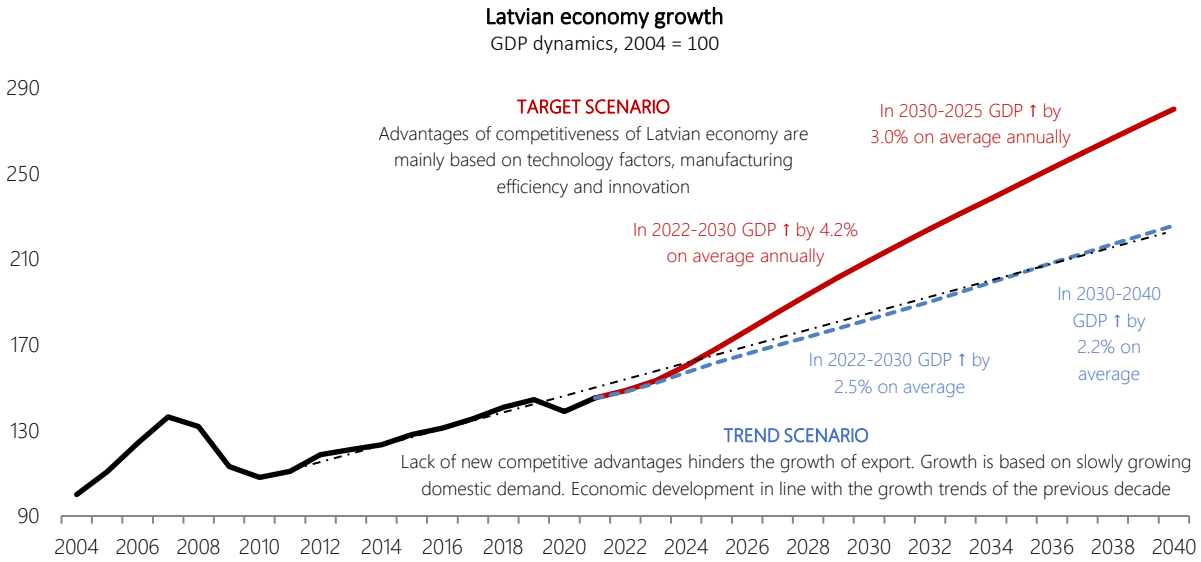
## Medium- and long-term macroeconomic framework

Due to the expected demographic trends, the decisive precondition for faster economic growth is to increase the productivity level. One of the main challenges is to create new competitive advantages, which is related investments in human capital, technologies, innovation and research, digitisation. The creation of new competitive advantages is an important condition for the extension of export outlet markets and growth in export volumes, which should become the main growth driver. Latvia's competitiveness in external and domestic markets will depend on its ability to close the productivity gap with the technologically developed countries. The increase in productivity is based not only on technological novelty, improvement of production process management, but also on reallocation of existing resources to produce products with higher value added.

In the medium term (from 2022 to 2030) the target scenario envisaged GDP growth by about 4.2% per year, where the fundamental precondition for this is to support economic competitive advantages by technological factors, manufacturing efficiency and innovation, as well as the ability to adapt and use the opportunities provided by global changes. In the long term (from 2031 to 2040) annual economic growth rates will become slower and may be within 3%.

In conditions of the open labour market, the convergence of wages will continue, which in turn might have an negative effect on competitiveness of Latvian companies in low value added segments. Population decline and lower increase of income in the long term as the base increases might have an impact on private consumption.

Figure 3.3




Source: CSB data until 2021, MoE forecasts starting from 2022

Table 3.1

**Overall assumptions for the target scenario. Summary**

| FACTOR | TARGET SCENARIO<br>*Investments and state support foster the transition to a higher productivity level* | RISKS |
|---|---|---|
| COVID-19 | The situation has normalised in 2022 as a result of vaccination. No new restrictions are necessary in autumn. E-commerce practices are developing in trade. Flexible forms of work are preserved. | Covid-19 keeps spreading in waves. New restrictions are possible. |
| EXTERNAL ENVIRONMENT | The geopolitical situation does not escalate. Businesses are looking for solutions to reorient their operations from the most severely affected sectors to new business niches and new outlets for goods. Supply chains adapt to new circumstances relatively quickly. | The most severely affected sectors recover slowly. Reaching of pre-crisis volumes in some sectors may require several years. Long-term problems in supply chains. |
| INVESTMENTS, TECHNOLOGIES | The funds available are mainly invested in reducing the productivity gap with technologically developed countries. Investments not only in technological novelty, improvement of production process management, but also on reallocation of existing resources to produce products with higher value added. Significant increase in private investment. | Investment activities are moderate. Investments mainly in preservation of existing business models. |
| INNOVATION, RESEARCH | Funding of R&D increases significantly, reaching 1.5% of GDP in 2027. Investments of businesses in research and innovation are growing. | Investments in research and development are growing slowly. Latvia remains weak among the EU Member States for a long time. |
| DIGITISATION | The current trend towards the spreading of digital services is intensifying. According to the digital maturity of each company, there is a continuing digital technology deployment process. New products and market niches are emerging. | The introduction of digital solutions, particularly in SMEs, is slow. Latvia has long been maintaining weak positions in the EU in the use of various digital solutions. |
| GREEN DEAL | Timely reorientation and preparation for change. Search for new business niches for developing and exporting green technologies. | The progress towards climate neutrality and additional costs have a negative impact on the competitiveness of Latvian companies in the global market. |
| HUMAN CAPITAL | Additional public and private investment for skills development, staff reskilling to the sectors with the greatest growth potential. The supply of adult education in the context of new digital technologies to all groups of society, thereby mitigating the risks of growing inequalities. Active involvement of employers in improving the competences of existing employees, as well as creating new skill sets to enable people to qualify for new occupations in the context of economic transformation and robotisation. | Labour and skills supply and demand mismatches are gradually growing. The lack of adequate skills hampers the growth of knowledge and technology-oriented industries and businesses. |

## Development trends of sectors

In accordance with the assumptions of the Target Scenario until 2040, the structure of economic sectors will gradually change compared to the current situation in favour of sectors with higher value added. Across major sectors, the share of business services sectors might increase by 2040. The share of IT and industrial sectors in the economy will grow as well. At the same time, the share of agriculture, transportation, financial services and public services sectors might slightly reduce.

Growth rates of agriculture in the medium and long term might be slower than those observed in the previous decade. Large enterprises, growth of which will mainly be underpinned by the increase in productivity, will play an increasingly more important role in the sector.

Table 3.2

**Development trends of sectors**

*annual average changes, %*

| | | 2011-2019 | 2020-2021 | 2022-2030 | 2031-2040 |
|---|---|---|---|---|---|
| | | Fact | | Forecast | |
| A | Agriculture, forestry, fishing | 3.3 | -3.1 | 3.1 | 2.3 |
| BDE | Other industry | -3.3 | 0.3 | 3.6 | 3.8 |
| B | Mining | 1.7 | 6.9 | 2.2 | 2.4 |
| D | Electricity, gas, heat supply | -5.8 | -1.6 | 4.4 | 4.4 |
| E | Water supply, wastewater, waste management | 0.7 | 0.1 | 2.7 | 3.1 |
| C | Manufacturing | 3.2 | 3.2 | 4.4 | 3.1 |
| *C10-12* | *Food, drinks* | *-0.1* | *-1.4* | *4.2* | *3.0* |
| *C13-15* | *Light industry* | *-1.2* | *0.3* | *3.6* | *2.6* |
| *C16* | *Wood processing* | *4.1* | *5.7* | *4.5* | *3.1* |
| *C17-19* | *Paper industry, publishing* | *3.6* | *8.0* | *3.8* | *2.4* |
| *C20-21* | *Chemicals, pharmacy* | *1.5* | *4.8* | *3.8* | *2.4* |
| *C22* | *Rubber and plastic* | *3.9* | *6.7* | *4.0* | *2.5* |
| *C23* | *Non-metallic mineral products* | *5.7* | *0.4* | *4.2* | *2.9* |
| *C25* | *Finished metal products* | *8.9* | *0.8* | *5.0* | *3.6* |
| *C26-28* | *Electrical devices, machinery and appliances* | *11.1* | *14.8* | *5.5* | *4.0* |
| *C29-30* | *Manufacture of vehicles* | *7.2* | *7.2* | *4.1* | *3.0* |
| *C31-32* | *Manufacture of furniture, etc.* | *3.6* | *6.3* | *3.5* | *2.1* |
| *C33* | *Repair of machinery* | *3.2* | *3.2* | *4.4* | *3.1* |
| F | Construction | 6.3 | -3.1 | 5.7 | 2.8 |
| G | Wholesale and retail trade | 3.8 | 2.8 | 4.3 | 2.7 |
| H | Transportation and storage | 3.9 | -4.9 | 4.0 | 2.7 |
| I | Accommodation and food services | 4.3 | -25.8 | 7.5 | 2.8 |
| J | Information and communication | 4.6 | 1.6 | 5.5 | 4.2 |
| K | Financial and insurance activities | -2.3 | 8.4 | 4.1 | 2.2 |
| L | Real estate activities | 1.4 | -1.1 | 2.9 | 3.0 |
| MNS | Business services | 3.5 | -0.6 | 5.0 | 3.0 |
| O | Public administration | 2.0 | 2.2 | 2.8 | 2.7 |
| P | Education | 2.5 | 1.9 | 3.1 | 3.0 |
| Q | Human health and social work activities | 5.4 | 13.0 | 3.2 | 3.0 |
| I | Arts, entertainment and recreation | 4.7 | -16.9 | 7.4 | 3.3 |
| B1G | GDP | 3.3 | 0.3 | 4.2 | 3.0 |

According to the Target scenario, the manufacturing industry will grow faster than economy in general in the medium and long term. At the same time, growth will not be so much related to extensive increases in material-intensive production volumes but to the use of the latest technological processes, digitisation, optimisation of

processes, etc. More rapid development due to the above-mentioned factors is expected in high and medium high technology sectors (for example, in electronics). Relatively rapid growth rates are also forecast in the largest manufacturing sector – woodworking. The development of sectors that are rather focused on the internal market (e.g. food industry) will primarily be affected by the domestic demand. Manufacture of other non-metallic mineral products will be closely related to trends in construction.

One of the fastest growths in main sectors of national economy in the Target Scenario is projected for information and communication, both in the medium and long term. This is related to the increasingly growing demand for digitalisation of production and services processes, as well as global IT sector development trends. Comparatively rapid growth rates are expected in accommodation and food service activities, which continue to recover from the negative effects of Covid-19.

Rapid growth is expected in the construction sector in the medium-term, which will be fostered by the implementation of large investment projects (for example, *Rail Baltica*) and by the need to gradually renew the current housing facilities.

Growth in transportation and storage will be largely fostered by the development of air transport and road transport sectors. At the same time, the dynamics in the transit sector will be considerably slower, underpinned by the need to search for new types of cargo and delivery paths to replace volumes of petroleum products and hard coal from Russia. The implementation of the *RailBaltic* project will play an important role in the long term, including its expected impact on railway industry education.

The development of sectors oriented to domestic demand – trade and other business services – will be closely related to the dynamics in private consumption and the demand created by other sectors of the economy. Public services sectors (public administration and defence, education, health and social work activities) are closely related to demographic trends.

**Global change in technologies and their impact on the Latvian economy**

In recent years, rapid and comprehensive changes have been taking place in the global market, the development of technological novelties and innovation has been accelerating. The digitisation of processes and new technologies play an increasing role in life aspects of society, and the impact of global climate change intensifies. Thus, the ability of the country to adapt its economy to future needs will be increasingly important gaining the greatest potential benefits from new production opportunities and market niches, while at the same time reducing risks and maintaining the ability to respond flexibly to new challenges.

The main global technology trends are related to IT development, digitisation and mobile internet – artificial intelligence and machine learning, the Internet of Things (IoT), big data and augmented analytics, smart cities, blockchain technologies, cloud computing, digital augmented reality, language digitisation and processing, voice interfaces, computer vision and face recognition, robots, autonomous vehicles, 5G technologies, genetics and gene sequencing, machine creativity and design, digital platforms, unmanned aircraft, 3D and 4D printers, cybersecurity, quantum computing. Nearly all surrounding things and devices will be connected, which will clearly change business models, while this connectivity will support more efficient and sustainable use and management of resources, while technology impacts may affect up to 50% of the world economy in the near future[1]. There will also be a change in demand structure, for example, people will increasingly use binding/appropriate services based on large-scale data analysis. Digitisation is an important set of factors that play a key role in productivity growth.

Also in Latvia, new technologies will influence almost all economic sectors. This will manifest as the use of new technologies in improving existing business processes, replacement of physical manual work with smart equipment, the use of big data in decision-making and demand satisfaction. In addition, the development of digital technologies creates new niches of products and services. Over the next few years, more than 1 trillion sensors are expected to be connected to the Internet. By 2025, around 10% of the planet's population will wear daily clothing, which is connected to the Internet and the first implantable mobile phones are expected to be available on the market. Today, smart materials have dynamic functions adapted to different life situations and needs, enabling them to adapt to the environment. Smart materials are present in both sensors, actuators, including in the future they will play a more important role in the various technological solutions in healthcare.[2] In the future, we are likely to be able to produce nanoparticles that can be incorporated into paints in order to effectively capture sunlight and convert it into electricity at low cost; or nanomaterials that can create new capabilities for batteries of high energy capacity and low weight. Nanoelectronic devices, such as nanocomputers, which can be incorporated into textiles and clothing and which provide a variety of functions as a result of the impact, such as hardness changes. Smart nanomaterials have the greatest impact in health care and medicine – implants, prostheses made of materials that can change their surface and biofunctionality in order to increase biocompatibility; or synthetic cells that can produce protein drugs when triggered by light, etc.[3] In some areas of technology, significant achievements have already been made in Latvia, such as 5G, unmanned aircraft, smart city, gene sequencing, language digitisation, big data. There are also developments and a scientific base for artificial intelligence and quantum computing.

[1] https://www.weforum.org/agenda/2016/01/what-are-the-10-biggest-global-challenges/
[2] https://www.researchgate.net/publication/273515631_The_Grand_Challenges_in_Smart_Materials_Research
[3] http://www.jscholaronline.org/full-text/JNSM/e101/Smart-materials-from-nanotechnology-for-global-challenges.php

Box continued

Rapid technological development will increase the pace of change and create new opportunities, but will exacerbate disunity of winners and losers. Automation and artificial intelligence threaten to change industries more quickly than the economy is able to adapt, potentially moving employees and limiting the normal development path of poor countries.

Latvia's economic development is also affected by Europe's common climate policy. The EU aims to achieve that Europe becomes climate neutral by 2050 – its economy reaches zero emissions of greenhouse gases. The Green Deal provides for actions to promote the efficient use of resources through the transition to a clean, circular economy and mitigation of climate change, loss of biodiversity and pollution[1]. The European Green Deal will affect **all sectors of the economy**, particularly transport, energy, agriculture and industry.

In the energy sector, decarbonisation is the biggest challenge. Energy production will have to place much more emphasis on renewable and alternative energy sources. The replacement of fossil resources under the Green Deal will mean a significant reduction in oil, natural gas and coal consumption across the EU. The current geopolitical situation will only accelerate this.

The introduction of cleaner types of private and public transport will have an impact on existing supply chains for manufacturers of internal combustion engines. At the same time, such a transition may create new business niches in the production chains of alternative fuels. The transformation of the transport sector will require the development of smart infrastructure for alternative fuels, such as smart grids, hydrogen networks or carbon capture, storage and use, and the development of energy storage solutions.

In order to reduce energy consumption and costs, renovation and heat insulation of buildings are essential. Renovation of buildings means both increased production of construction materials, opportunities for developing innovative products and additional demand for the construction industry.

A major shift is expected in the agricultural sector, which includes activities such as carbon management and storage in soil, better management of mineral fertilisers, innovative ways to replace existing chemicals used in plant protection.

The transition to climate neutrality also closely affects the industrial sector. There will be an increasing focus on innovation to help businesses transform their existing activities and help them to replace old equipment with new, more energy-efficient equipment, which in turn will have a positive impact on productivity. This is particularly the case in manufacture of cement, which is the focus of attention due to its high energy intensity. The transformation of one industry and all its value chains needs 25 years2. Therefore, industries should already take into account the potential effects of climate change when planning their long-term development. The Green Deal will require large financial investment and will be a labour-intensive process, while at the same time it can create new business opportunities.

In view of the rapid development of technology and the new climate initiatives, it is necessary to invest public resources wisely to maintain economic capacity in the short term and economic transformation measures in the medium and long term. To achieve faster productivity growth and to ensure sustainable economic growth, it is vitally important not only to invest available public finances in a sustainable manner, but also to encourage more private investment by stimulating lending growth, capital market development and the use of financial instruments.

### 3.2.2. DEMOGRAPHIC FORECASTS

According to the MoE's demographic forecasts target Scenario, until 2040 the population of Latvia will continue to reduce, at the same time negative dynamics in population will slow down affected by improvements in international migration flows and natural increase balance of the population. The main reason for the population decline in medium and long term will be population ageing trends, and therefore the negative gap between birth and mortality rates will be present up until 2040. The most significant decline is expected in working age population, therefore demographic processes will leave a visible impact on the labour market. At the same time, considering the increase in refugees of the Ukrainian war, the number of immigrants could exceed the number of emigrants already in 2023. However, such changes in migration flows could be temporary, taking into account the refugee outflow effect after the end of the war, therefore positive stable net migration is expected only around 2026/2027.

#### Changes in the number and age structure of the population

Overall, the total population of Latvia is expected to reduce to 1.73 million in 2040, which is by approximately 8.6% or 163.5 thousand less than at the beginning of 2021. It should be noted that compared to the MoE's target scenario of demographic forecasts of 2020[3], population count forecasts have been revised downwards (by 56.5 thousand less in 2040 than in the forecast of 2020), as they were affected by higher mortality rates during the

[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_lv
[2] Communication from the Commission. The European Green Deal. COM(2019) 640 final. Brussels, 11.12.2019 https://eur-lex.europa.eu/legal-content/LV/TXT/?qid=1588580774040&uri=CELEX:52019DC0640
[3] Informative report on medium and long-term labour market forecasts of MoE for 2020: https://www.em.gov.lv/lv/media/598/download

Covid-19 pandemic and lower birth rates, and also long-term net migration in 2020 and 2021 (MoE assessment) remained tangibly more negative than expected previously.

It should be noted that the population has been declining in Latvia for a long time, moreover, the most significant reduction in the past 10 years has been observed among working age population. The decline in working age population has been largely affected by economic emigration, in particular after the global financial crisis of 2008. It should be taken into account that the flow of economic emigrants mainly consists of the population in more economically active age groups, thus enhancing society ageing trends and having a generally negative impact on the population reproduction rates.

Table 3.3

Main indicators of natural population movement

*thousands*

| | 2021 | 2030 | 2040 |
|---|---|---|---|
| Population at the beginning of the year | 1893.2 | 1776.9 | 1729.7 |
| Changes in the population compared to 2021 | – | -116.4 | -163.5 |
| incl. migration impact | – | -0.3 | 43.7 |
| incl. natural growth impact | – | -116.1 | -207.2 |

Source: CSB data until 2021, MoE forecasts for 2030 and 2040

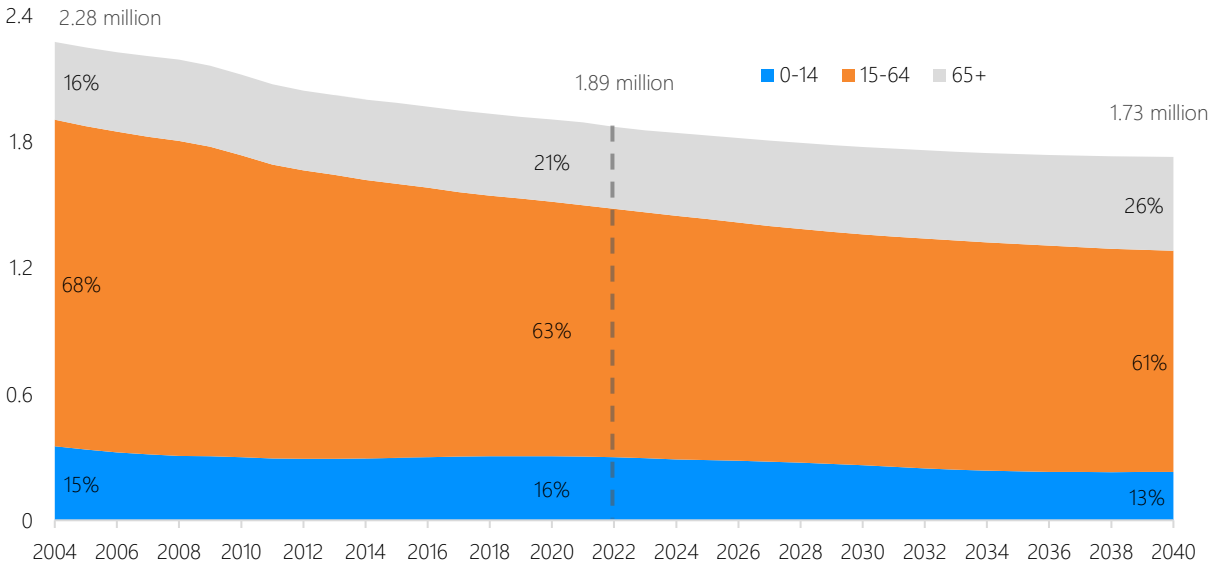
Overall, until 2040 the number of the population in the age group 15-64 is expected to reduce by 144.8 thousand or approximately by 12%, compared to the beginning of 2021, and at the same time the number of the population aged above 65 will increase by almost 54 thousand or by about 13.6%. Overall, these trends will determine the reduction of the share of the population aged 15-64 from 63% in 2021 to 61% in 2040.

Taking into account society ageing trends, by 2040 the average age of the population is expected to increase to 45.5 years – by an average of 2.6 years compared to the beginning of 2021.

Figure 3.4

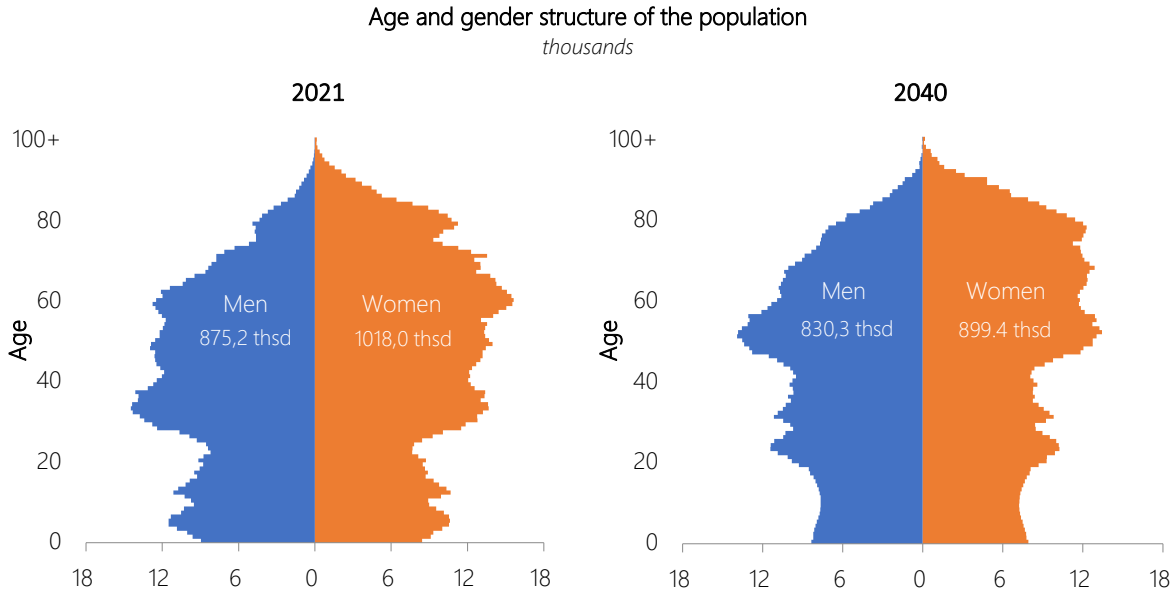
Breakdown of the population by age groups

*million and %*



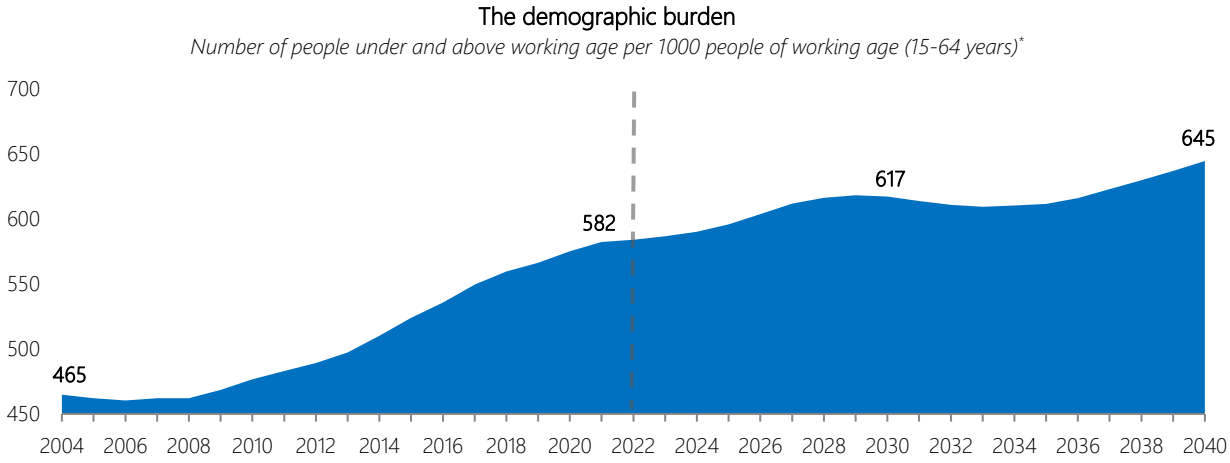

Source: CSB data until 2021, MoE forecasts starting from 2022

Figure 3.5




Along with the ageing of the society, the indicators of demographic burden will continue to rise in the future. By 2040, compared to 2021, the level of demographic burden is expected to rise by almost 10.7%, and it means that we will have 645 inhabitants out of working age per 1000 inhabitants of working age in 2040, moreover 66% of them will be aged above 64.

Figure 3.6




Source: CSB data until 2021, MoE forecasts starting from 2022

It should be noted that negative demographic trends have considerable impact on the labour market. Labour reserves have been shrinking in Latvia for a long time influenced by negative demographic trends – in the last 10 years (from 2012 to 2021) about 99% of the decline in the number of job seekers has been due to demographic processes. In order to reduce the negative impact of ageing populations on the labour market and social insurance system, measures to foster economic activity of the population are important in the medium term, as well as obstacles to faster entry of young specialists to the labour market should be reduced. At the same time, in long term we should continue to focus on equalisation of the negative demographic balance.

### Natural growth of the population

Although, in relative terms, the main naturally growing birth and death rates in the years to come will improve, in absolute terms there will still be a gap between newborns and deceased.

Overall, base trends of birth indicators are expected to remain positive in the medium and long term – the total fertility rate might increase by 16.8% by 2040 compared to 2021 and may reach the level, which was observed in Latvia at the beginning of the 1990s. At the same time, it should be taken into account that the number of women in reproductive age (aged 15 to 49) will continue to reduce (by 18.4% or 72.7 thousand by 2040), therefore, despite the increase in birth rate in the medium term the number of newborns in absolute terms will continue to shrink and an increase might be expected only after 2030. Overall, the number of newborns in 2030, compared to 2021, could be more than 2500 (14.7%) newborns less than in 2021, and 600 (3.7%) newborns less in 2040.

For a normal replacement of generations, the total fertility rate should not be less than 2. For the last time the aggregate birth rate has exceeded this level in Latvia at the end of the 1980s.

Table 3.4

Main indicators of natural population movement

| | Fact* | Forecast | |
|---|---|---|---|
| | 2021 | 2030 | 2040 |
| Number of newborns per 1000 inhabitants (general birth rate) | 9.1 | 8.2 | 9.5 |
| Death rate per 1000 inhabitants (general death rate) | 18.1 | 14.4 | 13.6 |
| Natural growth per 1000 inhabitants | -9.0 | -6.2 | -4.1 |
| Aggregate birth rate | 1.554 | 1.614 | 1.815 |
| Average life expectancy at birth (years) | 73.6 | 77.4 | 80.0 |

Source: * MoE assessment based on CSB data for 2021, MoE forecasts for 2030 and 2040

Along with improvements in the level of well-being of the population and wider access to health care services, overall mortality rates of the population will decrease in both the medium and long term. It is expected that by 2040, the relative mortality rates of the population will decrease in almost all age groups, which will also affect the overall decrease in the number of deaths per 1,000 inhabitants - it is expected that the number of deaths per 1,000 inhabitants could decrease by almost 1/4 by 2040. Also, the average life expectancy of newborns will increase from 73.6 years in 2021 (MoE estimate) to an average of 80 years in 2040.

Taking into account the above mentioned, the gap between the number of newborns and the number of deaths will gradually decrease in the coming years, however, taking into account significantly lower birth rates in absolute terms, the balance of natural growth could return to the level of 2019 (before the Covid-19 pandemic crisis) only around 2035.

### Long-term international migration of the population

Although there is still a negative net migration in Latvia and more people are still leaving than entering the country, the negative net migration is gradually shrinking along with the reduction of economic differences between Latvia and the main target countries for Latvia's emigrants. Overall, since 2016, the negative population long-term net migration in Latvia has decreased by 3.5 times from approximately -12.2 thousand in 2016 to approximately -3.5 thousand[1] in 2021.

It should be noted that more rapid economic growth (economic breakthrough) and more qualitative and well-paid jobs on the labour market is a precondition for the faster change in migration flows. To keep the population from leaving to seek for better employment possibilities outside the borders of the country, as well as to create a foundation for contemplations on returning in those, who emigrated from Latvia in the previous years, the average wage in Latvia should be at least at the level of minimum wage in main target countries of Latvian migrants. On January 2021, the average wage in Latvia was EUR 1,191/month, which was still around 1/3 less than the minimum

[1] MoE assessment.

wage rate at that time in Ireland (EUR 1,774.5/month), but by around 27% less than in Germany (EUR 1,621/month). Although the pay gap between Latvia and the old economies of Europe has narrowed significantly over the last 5 years (for example, the difference between the average wage in Latvia and the minimum wage rate in Ireland has decreased by 11 percentage points between January 2017 and January 2021, while between Latvia and Germany – by 15 percentage points), however, despite that, with the current wage convergence rates, Latvia could reach the minimum wage level of Germany only after about 8-9 years and of Ireland – after nearly 15 years. In view of this, it is important to accelerate Latvia's convergence with the economies of the EU's most developed countries in the coming years, which would allow the income gap between Latvia and the destination countries of Latvian emigrants to be levelled more rapidly.

Table 3.5

Main indicators of international migration of the population

| | 2021-2030 | 2031-2040 |
|---|---|---|
| Emigration, thsd | 119.4 | 111.7 |
| Immigration, thsd | 121.5 | 159.7 |
| **Net migration, thsd** | **2.1** | **48.0** |

Source: MoE forecasts

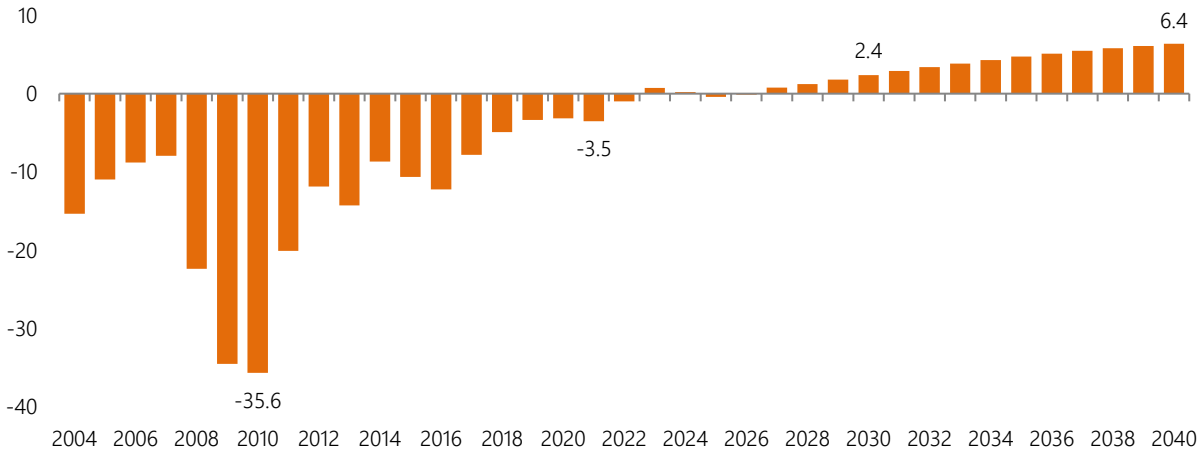
The assumptions of the scenario of international migration of the population are based on the target scenario of economic growth, which envisages that in the following years Latvian GDP per capita will continue to gradually approach the average EU level, thus generally closing the income gap with more economically developed EU Member States.

With the reduction of economic emigration stimulus, as well as taking into account the increase in asylum seekers from Ukraine, it is expected that the negative difference between the number of emigrated and immigrated residents in Latvia is likely to decrease significantly already this year and a positive flow of the known migration balance will be seen in 2023. However, this effect could be relatively temporary, as the situation in the war affected regions stabilises, some of the Ukrainian refugees could return home, or, given the small size of the Latvian labour market, go further to countries with wider employment opportunities.

Figure 3.7

Net international migration of the population

*thousands*




Source: CSB data until 2020, MoE forecasts starting from 2021

Similarly, Russia's aggressive policy in the region postpones/deters a rapid increase in immigration flows in Latvia for at least 2-3 years, which could potentially be related to both the return of Latvian nationals and the influx of economic migrants for employment purposes. In the meantime, potential risks of escalation of the conflict

generally increase the probability of emigration of the population, so no significant reduction in the number of emigrants from Latvia is expected in the coming years.

Sustainable changes in the long-term migration flow of the population with positive net migration could be seen around 2026/2027, when the political situation in the region would have stabilised and the gaps between the labour markets of Latvia and the EU's old countries have bridged. Improvements in the international migration balance will be one of the key factors in reducing long-term imbalances in the age structure of the population, which, in general, could also mitigate the negative effects of demographic trends on the labour market.

It should be noted that the migration target scenario assumes that overall Latvia's labour market will continue to converge to the labour markets of the EU's most developed countries up to 2040, particularly in terms of wages, which will reduce the emigration of the population encouraged by economic factors, while more visibly providing the basis for an increase in labour force immigration. In the medium term immigration of labour force will play an important role in securing a balanced labour market development , therefore the migration policy should provide sound support for economic growth in the medium term, on the one hand, and not creating the risks for long-term development, on the other hand. In the short and medium term, it is essential to ensure the rapid integration of Ukrainian war refugees into the Latvian labour market, particularly in sectors where there is a lack of labour and which make a significant contribution to the economy. In the long term, obstacles to the re-migration of Latvian nationals should be further reduced by ensuring housing accessibility, employment opportunities matching skills and rapid access to the education and health system.

At the same time, as the number of third-country employees in Latvia increases, it is essential to reduce the risks of discrimination of these employees in the labour market, since both the application of a lower rate of remuneration for guest workers and longer working hours generally reduces the competitiveness of the Latvian labour market compared to labour markets of other EU countries in terms of attraction of labour. Overall, lower hourly rates of remuneration for guest workers for work of similar size and content compared to local employees have a negative impact on average wages in the economy, particularly in sectors and occupations with a high proportion of guest workers, which can potentially contribute to the outflow of local labour to higher-wage areas in other EU countries.

## 3.3. LABOUR DEMAND AND SUPPLY

### 3.3.1. LABOUR DEMAND FORECASTS

Development opportunities for manufacturing sectors, which depend on the capacity to implement structural changes in the sector, are one of the most important issues in the change of the economic paradigm. It is a necessary precondition for strengthening the competitiveness of Latvia in the global markets, simultaneously raising the export profitability. Qualitative improvements of the labour market will play an increasing role in further development providing for a timely response to the main development challenges in the national economy – demography, rising labour costs, as well as mismatches between the skill supply and demand.

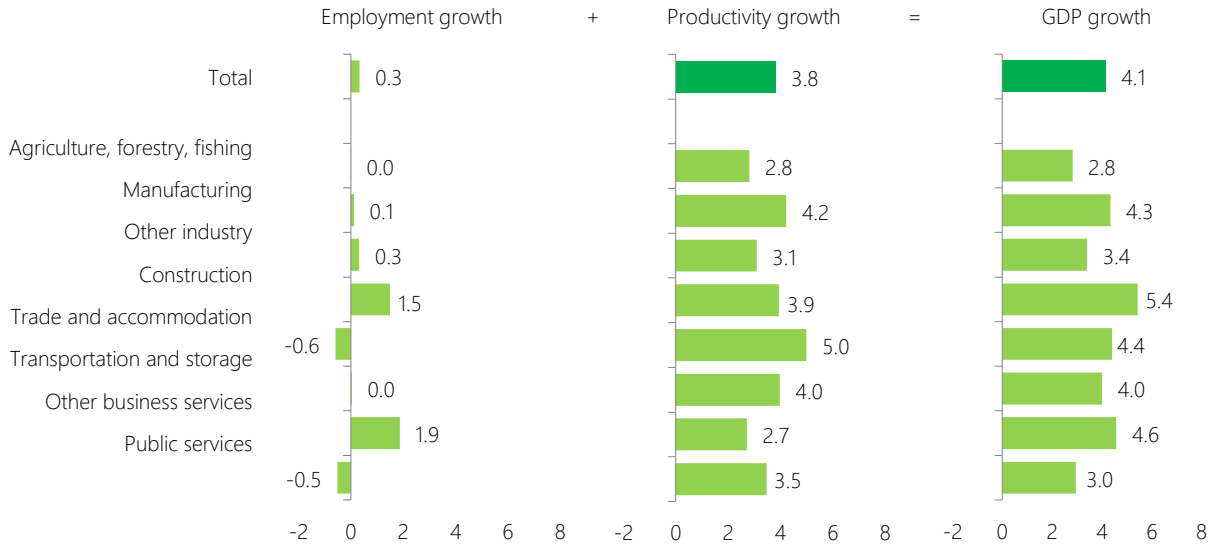
Following a gradual improvement in the epidemiological situation after the outbreak of the Covid-19 pandemic improvements are observed in the labour market, but in view of the escalation of the geopolitical situation, a wait-and-see situation is expected on the labour market in 2022. The resilience of Latvia's economy to external shocks has strengthened significantly in recent years, particularly in the financial sector, so a limited direct impact of sanctions and the narrowing of the export market on Latvia's labour market is expected. In 2022, the labour market will continue to be based on the phasing-out of the restrictions introduced due to the Covid-19 pandemic and on the construction of already started public infrastructure sites. The number of the employed is expected to increase by 0.9% or 8 thousand, but the unemployment rate might reduce to 7.1% in 2022. An increase will be seen in almost all sectors of the economy, with the exception of trade, transport and manufacturing. The economic activity of the population is also expected to grow. In the long term, although the expected growth rate is quite rapid, the demand for labour force will remain almost unchanged and will decline even more in some sectors, as growth should mainly rely on the increase in productivity. This specifically concerns tradable sectors and mainly the sector of manufacturing, which operates in open products and services markets where competitiveness is a decisive factor. Taking into account the Covid-19 pandemic and the Russian invasion of Ukraine, it is expected that the demand for labour force across the national economy in 2030 will be 2.2% lower than in 2019 and 3% higher than

in 2021. Consequently, labour demand will have reduced by 3.4% in 2040, in comparison to 2019, but increased by 1.7% compared to 2021, which is explained by the decline in the number of the employed from 2031 to 2040. Job opportunities will form mainly because of replacement demand when the existing labour force retires or leaves the labour market. Demographic trends and the retirement age are the main factors affecting changes in the number of the population who have left the labour market and the increase in demand for replacement labour.

Figure 3.8

**Changes in GDP, productivity and labour demand**

*2030 vs. 2021, annual average, %*



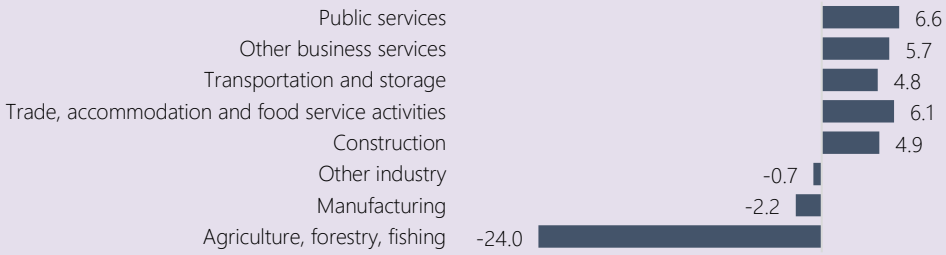

Source: MoE forecasts

**Skill demand projections in Europe***

According to Cedefop forecasts, the future situation on the EU labour market will be affected not only by the spread of the Covid-19 pandemic and the ability to contain it, but also by uncertainty over the existing geopolitical situation after Russia started hostilities in Ukraine. The changes will relate to refugee migration, supply chain breakdowns, food security issues and instability in the energy market, which will have an impact not only on the economy as a whole but also on the labour market. The changes will also be driven by rapid technological development, globalisation, demographic change (rising ageing and population education level) and the move towards service-based economy.

**Changes in the employed in the EU by sectors**

2030 vs. 2019, %




Source: *Cedefop*

In accordance with Cedefop projections, employment will increase by 3.4% in 2030, compared to 2021. Future increase in employment is expected to be underpinned mainly by services sectors, which will employ about half of the employed by 2030. The increase will mainly be driven by green economy and automation. However, supply trends – ageing of the population and increase in the level of education – should also be taken into account. In public services, the most rapid increase in employment is expected in human health and social work activities (increase by 9%) and education (increase by 6%), while in business services the most rapid increase is expected in information and communication (increase by 9%).

Box continued

An increase in the labour demand is projected also in accommodation and food service activities (by 10%), transportation and storage (by 5%), and construction (by 5%). It is expected that in 2030 construction will employ 6% of EU labour force. The construction sector will mainly be affected by the move towards green economy.

The most rapid shrinking of the employed is expected in agriculture (by ¼ by 2030), but the situation in different EU countries varies. It is expected that in 2030 this sector will employ 3% of EU labour force. A small decline in the number of the employed is also expected in industrial sectors, where the most rapid decline is expected in mining and quarrying (by 14%). In manufacturing industry a small decline in the number of employed population is expected (by 2%). Industry trends will be underpinned by the development of robotisation and investment in manufacturing. The demand will grow rapidly in the areas related to progressive industry and activities with high added value (mainly nanotechnology, material sciences, electronics, ICT and biotechnology). Therefore, the interest of employers to recruit new employees having knowledge in digital technologies, computer technologies, and people with analytical thinking will grow.

**Most of new job opportunities will come from the replacement demand**

Previous waves of technological development have led to the transformation of the labour market, making some jobs or occupations obsolete and also creating new jobs. Most of new job opportunities until 2030 will form mainly because of replacement demand – 92% of job opportunities will forms as the existing labour force retires, migrates or leaves the labour market. Accordingly, only 8% of new jobs will be created. By 2030, nearly 110 million vacancies will be filled by the replacement demand and the expansion demand. **Half of the new jobs will be high qualification jobs**, slightly less (40%) – medium qualification jobs and only 9% – low qualification jobs. Due to expansion demand new jobs will mainly be created in high qualification occupations.

**Future job opportunities in the EU until 2030 by occupation groups**


The biggest share of new job opportunities will form in different groups of professionals (information and communications technology professionals, science and engineering professionals, business and administration professionals, legal, social and cultural professionals) and in groups of technicians and associate professionals (legal, social, cultural and related associate professionals and business and administration associate professionals) and in the group of managers (administrative and commercial managers). In individual groups of occupations, new jobs will be created only due to replacement demand – clerical support workers, skilled agricultural, forestry and fishery workers and craft and related trades workers.

** According to Cedefop projections*

Technology progress will have a considerable impact on employment, which will develop even more rapidly due to the crisis caused by Covid-19. It should be noted that innovation cycles have become more rapid in recent years, big data/cloud computing, 3D printers, autonomous vehicles and platform economy are only part of innovation, which has changed traditional product and service markets and has a significant impact not only on business models but also on labour and skills demand. In the coming years, increasingly more jobs are expected to face automation trends, the largest drop in jobs is expected in occupations with a large proportion of manual and repeating activities, and in specialities related to direct service, such as shop assistants and cash register clerks in retail trade, call operators and similar occupations. In the long term, automation trends are most likely to have an impact on the number of medium qualification jobs. It should be noted that technology polarises the labour market by creating high-qualification, well-paid jobs on the one hand and leaving low-qualification, low-paid jobs on the other hand, while pushing medium-qualification jobs out of the labour market. Occupations that require high level of education, a lot of social interaction and abilities in managing, planning and coordinating complex environment/circumstances will be least affected by development of technology. In turn, jobs that require relatively low levels of formal education or do not involve relatively complex social interaction, as well as occupations involving routine manual work, are more exposed to automation.

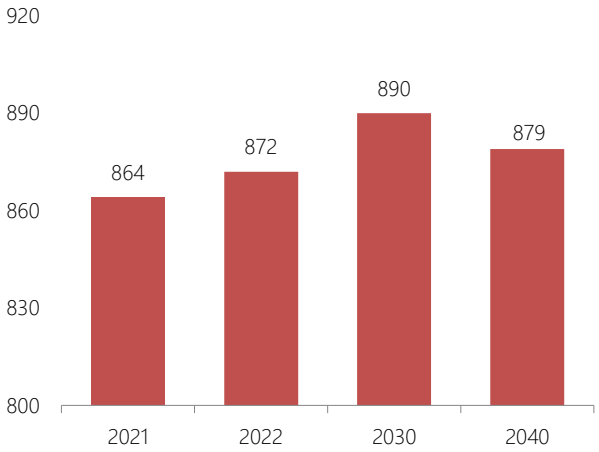
Labour demand will increase by 2030 in all sectors except trade and public services, and will stay the same in agriculture. In the long term, there will be an increase only in business services, construction and transport, while manufacturing will remain at the level of 2021.

Manufacturing is one of the most rapidly growing sectors. However, the demand for labour force will grow very moderately. For this sector to be competitive in the medium and long-term, more than 3/4 of the total increase in the sector have to be ensured by growing productivity – technology transfer in production, development of research, innovation, and rising of employees' qualifications and skills. It is expected that in the long-term the medium and high-technology sectors (such as production of devices, mechanisms, electric and optical devices, etc.) will contribute most to the manufacturing sector, while the contribution of traditional sectors like wood processing and food processing will relatively reduce.

Figure 3.9

Labour demand

*employed in the age group 15-74, thousands*




Source: CSB data for 2021, MoE forecasts starting from 2022

The number of the employed in agriculture and forestry will gradually reduce, similarly to EU average. The share of the employed working in this sector in 2030 will be 7% of the total employed (in accordance with Cedefop projections, about 3% in the EU). In 2021, agriculture and forestry accounted for 3.7% of total value added. It means that, productivity, which will be of crucial importance for the growth of a sector in the next years, in agriculture and forestry is lower in comparison with other sectors.

Table 3.6

Changes in the labour demand by sectors

*thousands*

| | 2020 | 2021 | 2030 | 2040 | Difference 2030-2021 | Difference 2040-2021 |
|---|---|---|---|---|---|---|
| Agriculture, forestry, fishing | 64 | 59 | 59 | 55 | 0 | -4 |
| Manufacturing | 115 | 109 | 111 | 109 | 1 | 0 |
| Other industry | 20 | 22 | 23 | 22 | 1 | -1 |
| Construction | 77 | 72 | 83 | 79 | 10 | 7 |
| Trade and accommodation | 160 | 158 | 150 | 138 | -8 | -20 |
| Transportation and storage | 69 | 67 | 67 | 67 | 0 | 1 |
| Other business services | 185 | 172 | 203 | 217 | 31 | 45 |
| Public services | 201 | 204 | 195 | 191 | -9 | -13 |
| **Total** | **893** | **864** | **890** | **879** | **26** | **15** |

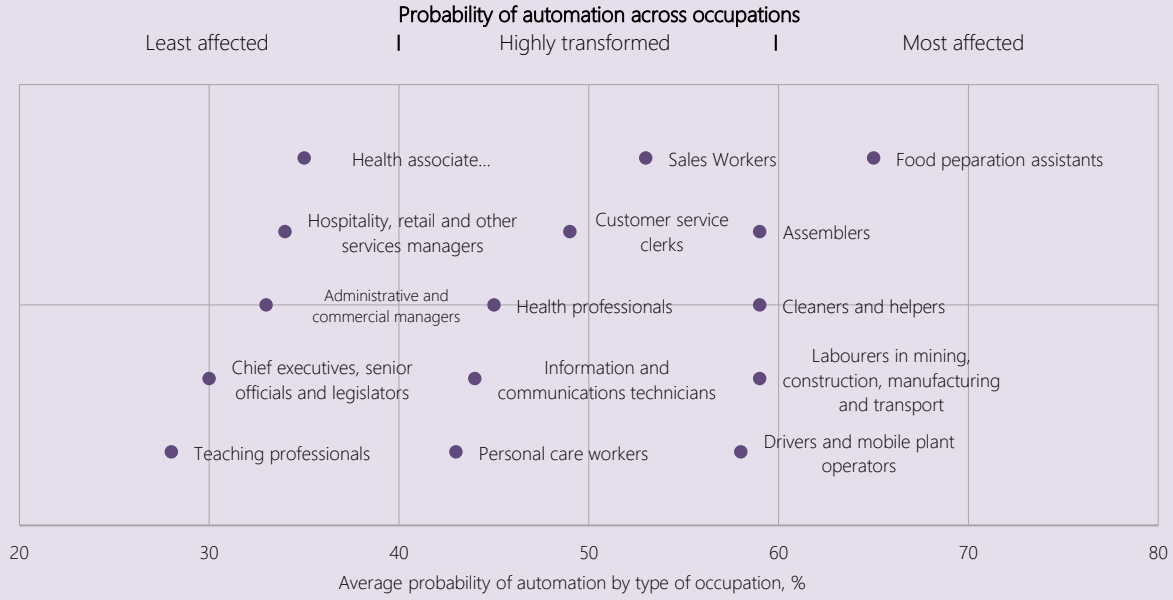
Source: CSB data until 2021, MoE assessment for 2021, MoE forecasts for 2030 and 2040

In the future, the demand for labour force will gradually increase in construction. However, it should be taken into account that the number of the employed in construction dropped significantly in 2009-2010. In the medium term the development of the construction sector will be largely secured by the implementation of large infrastructure projects and also by private investments. In the long term, the demand for energy efficiency and "green" construction will affect the development.

**Impact of automation of workplaces on the labour market**

Historically, the development of technologies has generally had a positive impact on employment, although many jobs can now be done more effectively and with fewer labour force contribution, the development of technologies has also brought many new job opportunities. At the same time, the current concern is that innovation cycles have become much more rapid, big data, cloud computing, 3D printing and platform economy are changing product markets, business models and jobs, and consequently the skills necessary in all sectors. Earlier, technology replaced routine, low-qualification work, but now it can perform non-routine jobs, such as financial market analysis, operations and legal services, etc. In addition, autonomous means of transport have become a reality, which may in future affect, for example, taxi or goods transport services. **Technology in general polarises the labour market by creating high-qualification, well-paid jobs on the one hand and low-qualification, low-paid jobs on the other hand pushing medium-qualification jobs out of the labour market.**

**Automation will have the most impact on the industry.** This sector is experiencing significant structural changes in relation to labour force requirements, which are largely driven by changes in manufacturing technologies, such as the move towards manufacturing of energy-efficient or so-called clean cars. The increase in manufacturing of electric cars is likely to reduce the number of assembly line jobs, manufacturing of these cars is less labour-intensive and fewer parts are needed. In the meantime, increasing demand for these types of vehicles will contribute to the creation of new jobs related to research and development, designing and executive positions in manufacturing. Demand for material science specialists, computer analysts, as well as chemical industry specialists, engineers, electricians, and specialists in industrial engineering, material science and engineering machinery will grow significantly. There will also be a need for knowledge related to the transition to highly sophisticated digital production (Industry 4.0) to bridge the lack of existing knowledge between the automotive and ICT sectors. The number of low- and medium-qualification jobs will drop accordingly.




Source: *European Commission (2019), The changing nature of work and skills in the digital age*

***Jobs that require relatively low levels of formal education or do not involve relatively complex social interaction**, such as influencing or persuading others, training others, managing other, caring for others, assisting, as well as occupations involving routine manual work, **are more exposed to automation**. Occupations that require high level of education, a lot of social interaction and abilities in managing, planning and coordinating complex environment/circumstances are least affected by development of technology.*

***Technologies may destroy jobs and create new ones, but most of them affect work content transformation**. The need to supplement digital skills with other technical skills, and not the least important, also personal and behavioural skills is an indication that people and technologies complement each other. Technologies may perform tasks and quickly collect and synthesise data, while the person should decide what the task will be and what these data mean.*

***Not only the content of work, but also its shape will change.** Part-time work, piecework and the share of self-employed persons will increase, while full-time employment will reduce. Work will become more flexible, and at the same time more insecure, less stable.*

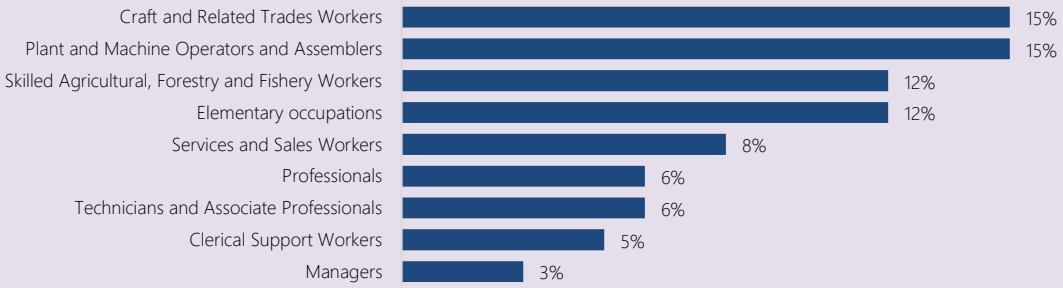
Box continued

### Automation of workplaces in the EU

Although the crisis created by the pandemic contributed to the use of online services, technologies replaced human work before (for example, self-checkout counters in retail). Higher economic growth and labour productivity may be accompanied by lower employment, when job losses in one sector are higher than the number of new jobs created in another sector. However, this does not mean that technologies will take over human work completely. Automation may not only be a replacement for manual work, but also the creator of new jobs.

The highest replacement of manual work is expected in occupations related to performance of routine work. In accordance with Cedefop data, already in 2020 the share of employees whose work is at the highest risk of automation was in the groups of occupations of craft and related trades workers, plant and machine operators and assemblers and agricultural occupations. There are many jobs the performance of which may be automated only partially. The lowest risk of automation is in high qualification occupations, such as managers, clerical support workers, and technicians and associate professionals. It is believed that only 2-3% of jobs can be automated in the group of occupations of managers. The share of employees at risk of automation is also low in the group of technicians and associate professionals. Those who work in ICT and health will be the most difficult to replace.

**Share of employees in the EU at high risk of automation by major groups of occupations in 2020,**
% of total employees in the occupation



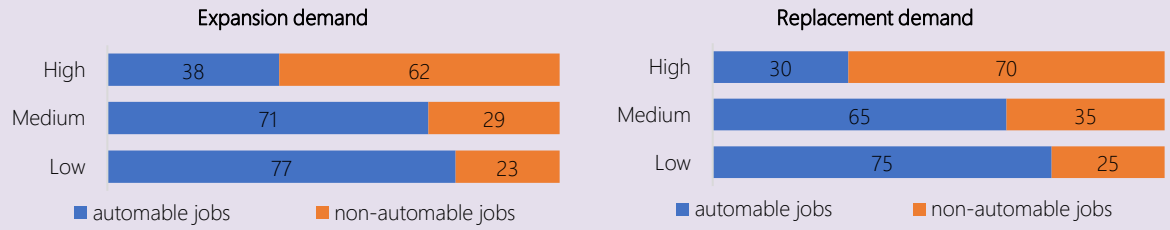

Source: https://www.cedefop.europa.eu/en/tools/skills-intelligence/automation-risk-occupations#1

Technologies not only put certain occupations at risk, but also create new jobs. It is expected that most of new jobs (increase in employment) in the EU that will be created until 2030 are not at risk of automation. Growing sectors (in terms of future employment) with the lowest risk of automation of new jobs are public administration and defence activities, education, ICT, electricity and gas.

It is just the opposite with replacement demand. Most of jobs requiring low or medium qualifications will be subject to automation, while high qualification occupations will show an opposite trend. This is an indication that the demand for skills is related to new technologies (the employees, who will have to work with technologies will mainly be highly qualified). However, this does not mean that high level works are protected from automation (for example, business and administration associate professionals).

The risk of automation reduces with the level of skills required to do the specific job. The new wave of technological progress spearheaded by artificial intelligence will mainly affect low qualification and low-wage jobs. This contrasts with trends of previous technological progress waves, where mainly medium qualification jobs were replaced.

**Job at risk of automation in the EU until 2030 by levels of qualification**




Source: Cedefop (2021), Digital, greener and more resilient. Insight from Cedefop's European skills forecast.

The pace of technology introduction is uncertain as it depends on a wide range of factors. Among them are the willingness to invest in research and development, the price of technology versus labour costs, the digital and other skills available in the workforce, social partner engagement in promoting upskilling, and legislation. Although the trend shows that increasingly more jobs will be automated, new jobs and new occupations will be created as a result of this automation.

The sharpest increase in the number of the employed is expected in business services. In 2030, the demand for labour force will exceed the level of 2021 by 18% and will account for 23% of all the employed across the economy, while in the long term the demand will grow by 26% thus constituting 1/4 of the total number of the employed across the economy. The growth of commercial services sector will mainly be facilitated by the development of other sectors of national economy and the growing demand for outsourced services.

In the medium and in the long term the demand for highly qualified specialists will grow the most. It will mainly be determined by the increase in the demand for labour force in business services, trade and construction. In the long term, the sharpest increase in demand is expected in business services and trade, as well as in manufacturing and construction.

Although in the medium term and in the long term demand in the group of medium qualification occupations will reduce, it will still remain high for craft workers. The most rapid increase in demand is expected in construction. At the same time, in the medium term the demand will shrink in all sectors, except agriculture, manufacturing, construction and business services. In the long term, the demand in the group of medium qualification occupations will reduce in all sectors, except manufacturing, construction and business services.

Table 3.7

Changes in the labour demand by occupational groups

%

| | Changes compared to 2021 | | Structure | |
|---|---|---|---|---|
| | 2030 | 2040 | 2030 | 2040 |
| Occupations in national armed forces | 23.5 | 49.1 | 0.9 | 1.1 |
| High qualification occupations, including: | 11.6 | 20.3 | 48.4 | 52.9 |
| Managers | 10.6 | 15.4 | 11.0 | 11.6 |
| Professionals | 10.1 | 19.1 | 21.4 | 23.5 |
| Technicians and Associate Professionals | 14.3 | 25.3 | 16.0 | 17.8 |
| Medium qualification occupations, including: | -1.2 | -7.7 | 40.8 | 38.6 |
| General Office Clerks | -12.9 | -33.6 | 3.9 | 3.0 |
| Services Workers | -6.7 | -16.2 | 13.1 | 11.9 |
| Skilled Agricultural Workers | -0.4 | -7.7 | 2.9 | 2.7 |
| Craft Workers | 8.8 | 9.6 | 12.1 | 12.4 |
| Plant and Machine Operators | 0.6 | -2.8 | 8.7 | 8.5 |
| Low qualification occupations | -15.0 | -37.0 | 9.9 | 7.4 |
| **Total** | **3.0** | **1.7** | **100** | **100** |

Source: MoE forecasts

The most rapid drop in labour demand will be observed in low qualification occupations. This will be common for all sectors. Taking into account the demographic trends, supply of labour force with an appropriate qualification might substantially decrease in the future, therefore the role of vocational secondary education will only increase.

Table 3.8

Changes in the employed in economic sectors by occupational groups

*compared to 2021, thousands*

| | Agriculture | Manufacturing | Other industry | Construction | Trade | Transport | Other business services | Public services | Total |
|---|---|---|---|---|---|---|---|---|---|
| | 2030 | | | | | | | | |
| Occupations in national armed forces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 1.5 |
| High qualification occupations, including: | 1.8 | 3.1 | 1.7 | 4.7 | 5.1 | 2.4 | 29.0 | -3.1 | 44.8 |
| Managers | 0.6 | 0.3 | 0.1 | 1.5 | 1.8 | 0.3 | 4.8 | -0.2 | 9.3 |
| Professionals | 0.6 | 1.2 | 0.6 | 1.3 | 1.3 | 0.6 | 13.8 | -1.8 | 17.6 |
| Technicians and Associate Professionals | 0.6 | 1.6 | 1.0 | 1.9 | 2.0 | 1.4 | 10.4 | -1.1 | 17.9 |
| Medium qualification occupations, including: | 0.0 | 1.0 | -0.2 | 7.4 | -10.9 | -1.3 | 3.5 | -3.9 | -4.5 |
| General Office Clerks | 0.0 | -0.5 | -0.1 | 0.0 | -1.2 | -0.9 | -1.0 | -1.5 | -5.2 |
| Services Workers | 0.0 | -0.1 | 0.0 | 0.0 | -9.6 | 0.0 | 3.0 | -1.8 | -8.4 |
| Skilled Agricultural Workers | -0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | -0.1 |
| Craft Workers | 0.0 | 0.9 | 0.0 | 6.7 | 0.1 | 0.2 | 0.8 | -0.1 | 8.7 |
| Plant and Machine Operators | 0.3 | 0.6 | -0.1 | 0.6 | -0.2 | -0.7 | 0.5 | -0.6 | 0.4 |
| Low qualification occupations | -1.8 | -2.9 | -0.8 | -1.7 | -2.4 | -0.9 | -1.3 | -3.8 | -15.6 |
| **Total** | **0.0** | **1.2** | **0.6** | **10.4** | **-8.2** | **0.2** | **31.2** | **-9.3** | **26.1** |
| | 2040 | | | | | | | | |
| Occupations in national armed forces | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.2 | 3.2 |
| High qualification occupations, including: | 2.9 | 5.8 | 2.6 | 5.6 | 8.3 | 5.2 | 49.0 | -1.1 | 78.4 |
| Managers | 1.0 | 0.5 | 0.0 | 1.3 | 2.8 | 0.7 | 7.2 | 0.1 | 13.6 |
| Professionals | 0.9 | 2.1 | 1.0 | 1.6 | 2.2 | 1.4 | 23.6 | 0.3 | 33.1 |
| Technicians and Associate Professionals | 1.0 | 3.2 | 1.6 | 2.8 | 3.3 | 3.1 | 18.1 | -1.4 | 31.6 |
| Medium qualification occupations, including: | -2.5 | 0.4 | -1.3 | 7.3 | -22.9 | -2.7 | 0.5 | -7.3 | -28.4 |
| General Office Clerks | -0.1 | -1.2 | -0.3 | -0.3 | -2.5 | -1.9 | -4.2 | -3.0 | -13.5 |
| Services Workers | -0.1 | -0.3 | 0.0 | 0.0 | -19.8 | 0.1 | 2.9 | -2.9 | -20.2 |
| Skilled Agricultural Workers | -2.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | -2.0 |
| Craft Workers | -0.1 | 0.9 | -0.2 | 7.3 | 0.0 | 0.5 | 1.2 | -0.1 | 9.5 |
| Plant and Machine Operators | -0.1 | 0.9 | -0.8 | 0.4 | -0.5 | -1.4 | 0.6 | -1.2 | -2.1 |
| Low qualification occupations | -4.4 | -6.5 | -2.0 | -5.9 | -5.5 | -1.9 | -4.8 | -7.3 | -38.4 |
| **Total** | **-4.0** | **-0.3** | **-0.6** | **7.1** | **-20.0** | **0.5** | **44.8** | **-12.5** | **14.8** |

Source: MoE forecasts

In the next years, job opportunities will form mainly because of replacement demand, when the existing labour force will retire or leave the labour market. Demographic trends and the retirement age are the main factors affecting changes in the number of the population who have left the labour market and the increase in demand for replacement labour. 327 thousand jobs are expected to be vacated by 2040 due to labour ageing and leaving the labour market, of which 147 thousand vacancies will be created in high qualification occupations, 139 thousand in medium qualification occupations, but 41 thousand in elementary occupations.

Figure 3.10

Changes in expansion and replacement demand until 2030

*reduction in jobs/job openings, thousand*


Source: MoE forecasts

The most significant increase in replacement demand in high qualification occupations is expected in occupations of professionals – nearly 2/5 of those currently employed in the corresponding occupations could leave the labour market by 2040. The most significant increase in replacement demand is expected in the sub-major group of teaching professionals, in the sub-major group of health care professionals, and in the sub-major group of science and engineering professionals. At the same time, the most significant increase in replacement demand in medium qualification occupations is expected in agricultural occupations, in occupations of drivers and mobile plant operators, lifting equipment and machine operators, handicraft and printing workers, as well as protective services workers. Overall, replacement demand could represent nearly 3/4 of the total increase in vacancies in the labour market by 2040.

### 3.3.2. LABOUR SUPPLY PROJECTIONS

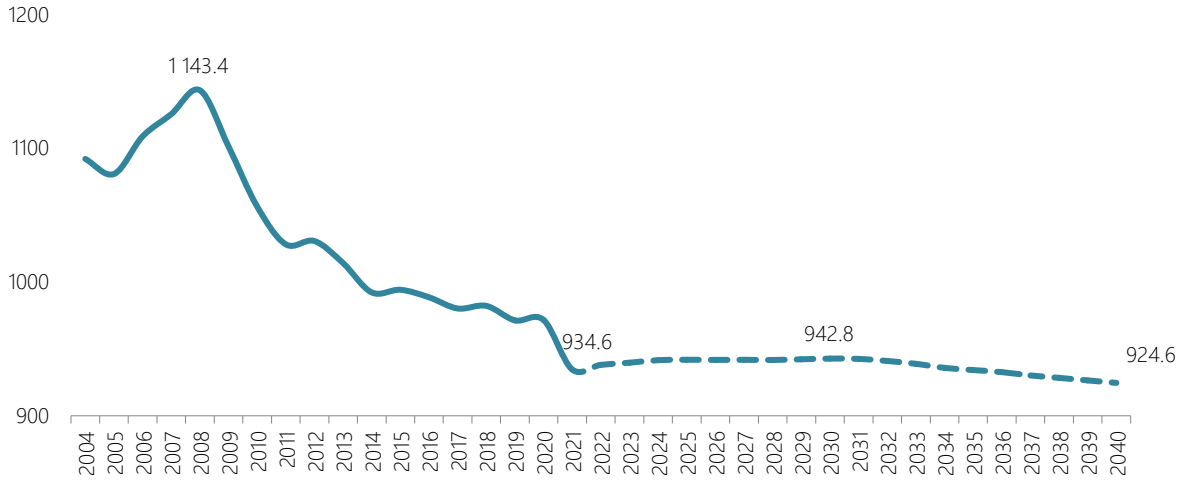
Based on economic growth and demographic scenarios, the MoE has developed labour force (economically active population) supply projections until 2040. It is generally expected that, compared to 2021, labour supply could slightly increase until 2030 – by 8.1 thousand (0.9%), which will mainly be underpinned by the increase in economic activity of the population thanks to the low base of economic activity of the population in the starting period of the forecasts. It should be noted that the Covid-19 pandemic generally had a negative effect on participation of population in the labour market, as in 2021 the economic activity rate of the population reduced by 1.7 percentage points compared to the pre-crisis period (2019).

At the same time, labour supply will be increasingly affected by demographic trends – the absolute reduction in working age population and changes in the age structure of the population. In view of the demographic trends, labour supply could fall by approximately 10 thousand or 9.3% by 2040, compared to 2021.

Figure 3.11

Labour supply

*in the age group 15-74, thousands*




Source: CSB data until 2021, MoE forecasts starting from 2022

Both the rate of participation of the population in the labour market and total labour supply might resume growth starting from 2022. At the same time, economic activity of the population could return to the level of 2019 only around 2024, but overall labour supply is likely to remain below the level of 2019 until 2040.

Overall, over the period from 2022 to 2030, labour supply will remain stable with a slight growth trend until 2030. This will mainly be underpinned by the increase in economic activities of the population and the reduction of the negative impact of migration on the number of the working age population. Economic growth, improvement of the situation in the labour market, as well as the increasing shortage of labour force will facilitate rising participation of the population in the labour market. An increase in the labour demand in the medium term, in the conditions of a limited availability of labour resources, will open wider possibilities to many groups of inactive population (housekeepers, students, retirement-age people, etc.). An increase in wages will also play an essential role in the promotion of participation of the population.

Table 3.9

Participation of the population in the labour market

*% of the total number of the population in the respective age group*

| | 2021 | 2030 | 2040 |
|---|---|---|---|
| **Total** | **67.7** | **72.0** | **74.0** |
| 15-24 | 32.7 | 39.8 | 45.4 |
| 25-34 | 86.4 | 92.8 | 93.8 |
| 35-44 | 88.1 | 95.4 | 96.2 |
| 45-54 | 86.9 | 93.9 | 94.7 |
| 55-64 | 72.2 | 80.9 | 82.5 |
| 65-74 | 20.7 | 26.0 | 27.6 |

Source: CSB data until 2021, MoE forecasts for 2030 and 2040

At the same time, in the period after 2030, the compensatory effects of increase of economic activity of the population on labour supply are likely to fade and demographic processes will prevail, so a downward trend in labour supply is expected in 2030 – 2040 as a whole.

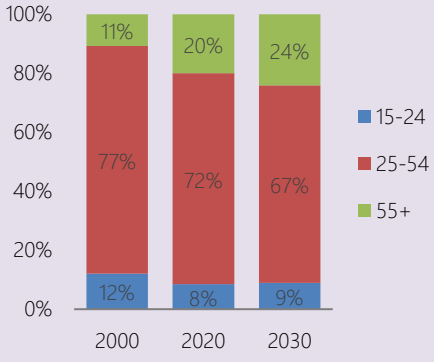
By 2040, the economic activity rate could generally rise by 6.3 percentage points compared to 2021 and reach 74% in the age group 15-74. The population aged 25-54 will continue to show higher economic activity. Furthermore, the most significant increase in economic activity is expected in the pre-retirement age group aged 60-64, as well as among the population aged 65-69.

**Labour supply projections in Europe**

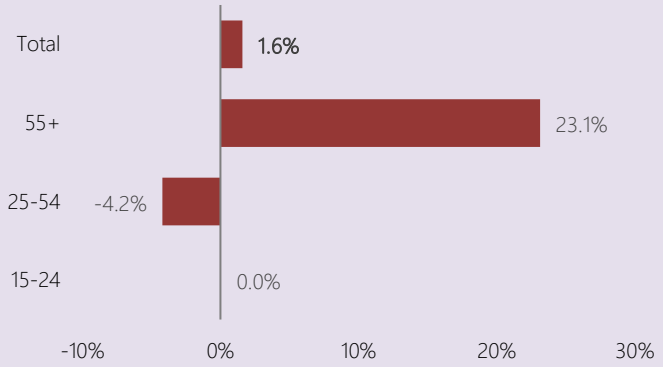
**Ageing of labour force will create more tensions also in the EU labour market.** As the lifespan of the population increases, the share of elderly people in the labour market will grow, while the number of working age population will reduce. In accordance with Cedefop projections, almost 1/4 of the total labour force is expected to be older than 55 by 2030. Labour supply will grow most rapidly specifically in older groups – in 2030, compared to 2020, the number of economically active population above 54 years will increase by 23%.

Ageing of the labour force may generally increase tensions in the EU labour market, creating a shortage of skills due to the ageing of skills and their mismatch with existing labour market requirements. Employers may have difficulty filling existing and new vacancies. Moreover, it should be taken into account that society ageing trends may influence not only the labour market, but also the health and social care system, the pension system and other areas.

**Labour supply structure in the EU**
by age groups



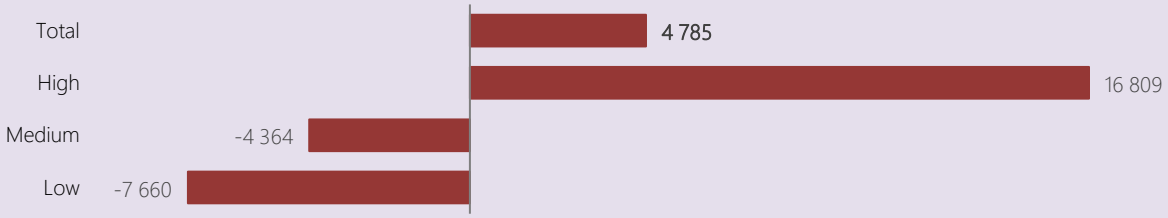

**Changes in labour supply in the EU**
2030 vs. 2020, %




**The share of high qualification labour will keep growing, while medium and low qualification labour supply will reduce.** In accordance with Cedefop projections, high qualification labour supply could increase by almost 24% or 16.8 million employees by 2030 and account for 2/5 of total labour supply in the EU in 2030. At the same time, the most significant decrease in labour force is expected in the low qualification group. Overall, low qualification labour supply could reduce by almost 19% or 7.7 million employees by 2030, compared to 2020.

Medium qualification labour supply will also continue to shrink – reducing by 4.2% or 4.4 million by 2030. At the same time, medium qualification labour will still account for most of total labour supply in 2030 – about 45% of 99.3 million employees.

**Changes in labour supply in the EU by education/qualification level**
2030 vs. 2020, thousands




Source: *Cedefop*

Before 2030 the most significant reduction in labour force is expected in the 25-34 age group. It is mainly related to the demographic hole caused by the low birth rates of 1990s entering the respective age cohort. Meanwhile, labour supply will mainly grow in the age group 15-24 and 65-74 affected by demographic changes (increase in the population in the respective age cohort) and increase in economic activity.

Table 3.10

Changes in the economically active population by age groups

*thousands*

| | Economically active population | | | Changes compared to 2021 | | Impact of changes in participation rate compared to 2021 | | Impact of demographic changes compared to 2021 | |
|---|---|---|---|---|---|---|---|---|---|
| | 2021 | 2030 | 2040 | 2030 | 2040 | 2030 | 2040 | 2030 | 2040 |
| **Total** | **934.6** | **942.8** | **924.6** | **8.1** | **-10.0** | **91.1** | **104.3** | **-83.0** | **-114.3** |
| 15-24 | 56.3 | 77.5 | 81.2 | 21.2 | 24.9 | 11.0 | 14.5 | 10.1 | 10.4 |
| 25-34 | 201.1 | 156.3 | 183.3 | -44.8 | -17.8 | 12.2 | 15.3 | -57.0 | -33.1 |
| 35-44 | 223.1 | 230.9 | 174.5 | 7.8 | -48.6 | 17.6 | 16.2 | -9.8 | -64.8 |
| 45-54 | 221.9 | 227.9 | 233.7 | 6.0 | 11.8 | 17.3 | 19.7 | -11.3 | -7.9 |
| 55-64 | 189.8 | 191.9 | 193.4 | 2.1 | 3.6 | 20.4 | 23.5 | -18.3 | -19.9 |
| 65-74 | 42.4 | 58.2 | 58.6 | 15.8 | 16.2 | 12.6 | 15.1 | 3.2 | 1.1 |

Source: CSB data until 2021, MoE forecasts for 2030 and 2040.

Taking into account that economic activity of the population is already close to its potential, further increase in participation of the population in the labour market is limited, therefore the impact of demographic trends on labour supply will be felt even more after 2030.

### Labour supply by obtained education

Overall, in the medium and long term labour supply with higher education will continue to increase, while a reduction is expected among economically active population with vocational and general secondary education. At the same time, labour supply with basic and lower education will increase in the medium term. Relevant changes in the coming years will mark a known polarisation of labour supply, increasing the supply of high qualification and also low qualification labour, on the one hand, but reducing the supply of medium qualification labour at the same time.

The share of labour supply with higher education in total labour supply could increase by almost 10 percentage points by 2040, while the share with vocational and vocational secondary education could reduce by 9 percentage points, and with general secondary education – by 1 percentage point. On the other hand, the share of labour supply with basic and lower education in total labour supply, could increase by 2.6 percentage points in the medium term by 2030, compared to 2021, and by 0.2 percentage points by 2040.

Overall, by 2040, labour supply with higher education could reach nearly half (49.3%) of total labour supply, 17.7% – with vocational education and secondary vocational education and 22% – with general secondary education, and 11% – with basic and lower education.

If the current education supply structure remains, **the largest increase in labour force with higher education is expected in the fields of social sciences, business, and law**. Consequently, the increase in the labour supply with the appropriate qualification will account for about 44% of the total labour force increase with higher education in 2040.

At the same time, a reduction in labour supply is expected in individual thematic groups in higher education due to the insufficient level of labour force reproduction – the number of young professionals entering the labour market is lower than the number of those leaving it due to retirement and other factors. In the coming years, labour force ageing will manifest the most in thematic groups of education like education, engineering, manufacturing and construction, as well as agriculture. It should be noted that in 2021 more than half of the total labour supply with corresponding education was over 45 years old – in the thematic group of education (65%), engineering, manufacturing and construction (55%), and agriculture (52%). More of them will leave the labour market in the next 10-20 years.

Table 3.11

Labour supply by thematic groups of education

| | thousands | | | structure, % | | | changes in thousands compared to 2021 | |
|---|---|---|---|---|---|---|---|---|
| | 2021* | 2030 | 2040 | 2021* | 2030 | 2040 | 2030 | 2040 |
| **Higher education, including:** | **370.2** | **416.2** | **456.2** | **39.6** | **44.1** | **49.3** | **46.0** | **86.1** |
| Education | 50.6 | 48.7 | 43.2 | 5.4 | 5.2 | 4.7 | -1.9 | -7.4 |
| Humanities and arts | 18.9 | 24.2 | 30.1 | 2.0 | 2.6 | 3.3 | 5.3 | 11.2 |
| Social sciences, business and law | 156.2 | 178.7 | 193.6 | 16.7 | 19.0 | 20.9 | 22.6 | 37.5 |
| Life sciences, mathematics and computing | 26.9 | 31.2 | 36.3 | 2.9 | 3.3 | 3.9 | 4.2 | 9.3 |
| Engineering, manufacturing and construction | 56.7 | 58.0 | 61.9 | 6.1 | 6.2 | 6.7 | 1.3 | 5.1 |
| Agriculture | 8.7 | 8.6 | 8.7 | 0.9 | 0.9 | 0.9 | -0.2 | 0.0 |
| Health and welfare | 26.3 | 36.1 | 48.4 | 2.8 | 3.8 | 5.2 | 9.8 | 22.0 |
| Services | 21.6 | 27.1 | 32.0 | 2.3 | 2.9 | 3.5 | 5.5 | 10.4 |
| Thematic groups n.e.c. | 4.2 | 3.6 | 2.2 | 0.4 | 0.4 | 0.2 | -0.6 | -2.0 |
| **Secondary education, including:** | **464.0** | **400.1** | **366.8** | **49.6** | **42.4** | **39.7** | **-63.9** | **-97.2** |
| **Vocational education and vocational secondary education:** | **249.4** | **195.8** | **163.4** | **26.7** | **20.8** | **17.7** | **-53.6** | **-85.9** |
| Education | 2.2 | 1.4 | 0.5 | 0.2 | 0.1 | 0.1 | -0.8 | -1.7 |
| Humanities and arts | 7.6 | 8.4 | 9.3 | 0.8 | 0.9 | 1.0 | 0.8 | 1.7 |
| Social sciences, business and law | 29.2 | 22.6 | 18.4 | 3.1 | 2.4 | 2.0 | -6.6 | -10.8 |
| Life sciences, mathematics and computing | 5.6 | 5.7 | 7.1 | 0.6 | 0.6 | 0.8 | 0.1 | 1.5 |
| Engineering, manufacturing and construction | 125.8 | 91.4 | 69.2 | 13.5 | 9.7 | 7.5 | -34.4 | -56.6 |
| Agriculture | 11.5 | 9.0 | 8.2 | 1.2 | 1.0 | 0.9 | -2.5 | -3.3 |
| Health and welfare | 11.2 | 9.7 | 9.7 | 1.2 | 1.0 | 1.1 | -1.5 | -1.5 |
| Services | 50.5 | 43.8 | 39.2 | 5.4 | 4.6 | 4.2 | -6.7 | -11.3 |
| Thematic groups n.e.c. | 5.7 | 3.8 | 1.9 | 0.6 | 0.4 | 0.2 | -1.9 | -3.8 |
| **General secondary education** | **214.6** | **204.3** | **203.3** | **23.0** | **21.7** | **22.0** | **-10.3** | **-11.2** |
| **Basic or lower education** | **100.5** | **126.3** | **101.6** | **10.8** | **13.4** | **11.0** | **26.0** | **1.1** |
| **Total** | **934.6** | **942.6** | **924.6** | **100.0** | **100.0** | **100.0** | **8.2** | **-10.0** |

Source: *MoE assessment of 2021 based on LFS data of 2020. MoE forecasts for 2030 and 2040.

Similarly, **drop-outs of students in STEM disciplines are still a serious problem**, which considerably limits the potential labour force increase in these areas. Every year, about 28% of students of STEM education programmes drop out of studies.

**Medium qualification labour supply will keep declining both in the medium and long term**. The most considerable drop is expected among the population with vocational education and vocational secondary education – labour supply will reduce by about 21% or 53.6 thousand by 2030, compared to 2021, and by almost 86 thousand or 34% by 2040. A more moderate labour supply reduction is expected with general secondary education – by about 10.2 thousand or 4.8% by 2030 and, overall, by 11 thousand or 5.1 percent by 2040.

Labour supply reduction with vocational secondary education is expected almost in all academic groups of education with the exception of life sciences and computing. The most considerable reduction is expected in the thematic group of engineering, manufacturing and construction, which currently accounts for about half of total labour supply with vocational education. It should be noted that about 64% of economically active population with education in this thematic group is aged above 45 years, therefore, almost 80 thousand of employees with relevant qualification could leave the labour market by 2040 at an average rate of 4200 specialists per year. At the same time, the relevant thematic group of education currently has about 2100 graduates per year, therefore, in order

to ensure preservation of labour supply with relevant qualification at the current level, at least twice more young specialists than presently should be prepared.

Overall, the number of students in vocational education is still significantly smaller than necessary to reduce the negative effect of ageing labour force trends on labour supply with medium qualification. In order to ensure reproduction of medium qualification labour supply, at least twice more students than today should be enrolled in vocational education, as well as student drop-outs should reduce. Adult education activities may also play an important role in increasing the flow of students in vocational education. Still approximately 295 thousand (29%) of the population aged 25-64 have insufficient levels of education (secondary general education, basic education or lower education) to successfully integrate into the labour market, so it is essential to provide these people with opportunities to return to the education system and to expand their professional skills/qualifications.

The supply of low qualification labour with basic and lower levels of education may grow in the coming years. In 2021, 8.2% of the population aged 20-64 had a level of education not higher than basic education. Approximately 65% or 58.3 thousand of them were aged between 20 and 44 years (approximately 12% of the total population in the age group concerned), and therefore a significant share of the corresponding population group will only continue to reach the highest economic activity age cohorts in the coming years (the highest economic activity of the population is generally observed between 30 and 54 years), therefore, increasing the supply of low qualification labour in the labour market as a whole.

The most significant increase in labour supply with basic and lower education could be seen until 2029, while this could gradually decrease starting from 2030. Overall, labour supply with basic and lower education levels could grow by 26 thousand by 2030.

The relatively high number of early school leavers in the second half of 1990s is having a significant impact on the increase in the supply of low qualification labour in the medium term. Drop-outs from secondary education also have a significant impact on the flow of the population with basic education – although they start studies, most do not complete them.

### 3.3.3. MATCHING OF THE LABOUR DEMAND TO THE LABOUR SUPPLY

In the medium term, after the Covid-19 crisis the situation in the labour market will improve, but become even more complicated, which, on the one hand, will be determined by growing labour demand (in terms of new jobs and replacement demand), which is necessary to maintain economic growth, and, on the other hand, falling labour supply under the influence of demographic trends. Thus, insufficiency of labour force across different sectors will become even more pronounced in the coming years. Also, the shortage of labour force will be intensified by the mismatch between skills demand and supply in the labour market, as well as labour market regional imbalances.

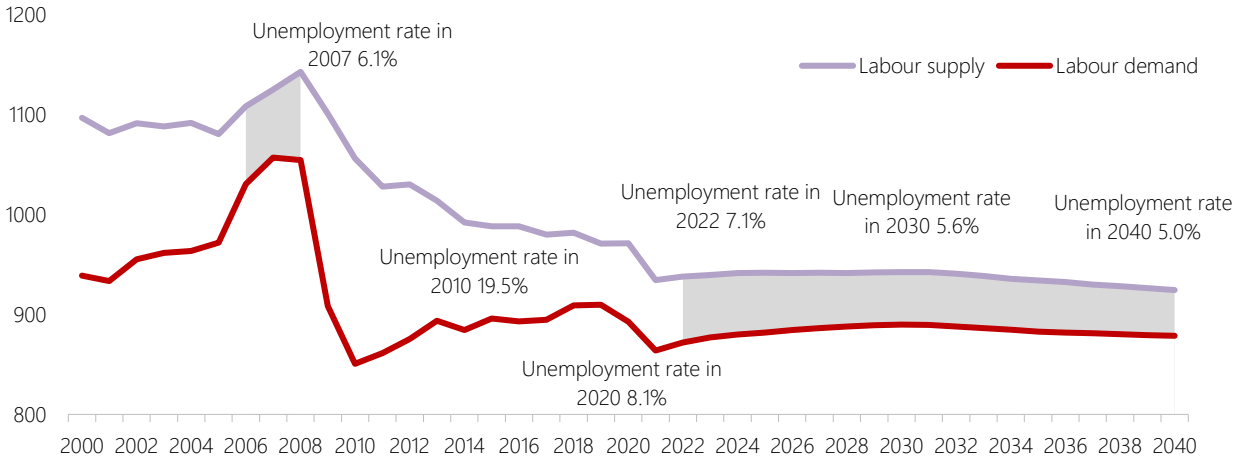
Overall, by 2030 free labour force reserves will reduce to 53 thousand (of current 71 thousand), but by 2040 this difference might reduce to 46 thousand. Overall, the number of job seekers/ unemployment in the medium and long term will be close to the natural level and will mainly consist of frictional and structural unemployment.

Economic growth will remain primarily based on productivity growth in the coming years. Taking into account the negative impact of the Covid-19 pandemic in 2020-2021, an increase in labour demand is expected until 2030 – the number of the employed might increase by 3% or 26 thousand compared to 2021. At the same time, labour demand might grow slower in the long term, taking into account increasing rates of automation of different jobs and replacement of labour force with technologies. Therefore, main job opportunities will be created by the replacement labour demand – an increase in vacancies due to current employees leaving the labour market (leave the labour market due to retirement, disease or other reasons).

Figure 3.12

Matching of labour demand to labour supply

*thousands and %*




Source: CSB data until 2021, MoE forecasts starting from 2022

Unemployment in 2022 will reduce as the economy recovers after the pandemic caused by Covid-19, and will reduce little by little in the next years approaching its natural rate. By 2030, unemployment might slide to the level of 5.6%, while the number of job seekers to 53 thousand. After 2030 unemployment indicators will stabilise at about 5%, while the negative effects of demographic trends on labour supply will still be largely compensated by the increase in economic activity of the population, as well as equalisation of labour force migration flows.

Table 3.12

Forecasts of key indicators of the employment and unemployment rates

*in the age group of 15-74*

| | 2021 | 2030 | 2040 |
|---|---|---|---|
| Population in private households, at the beginning of the year, thousands | 1401.8 | 1309.0 | 1249.9 |
| Number of the employed population, thousands | 864.0 | 890.1 | 878.8 |
| changes in the employed population, thousands compared to 2021 | – | 26.1 | 14.8 |
| changes in the employed population, % compared to 2021 | – | 3.0 | 1.7 |
| Economically active population, thousands | 934.6 | 942.8 | 924.6 |
| Number of job seekers, thousands | 70.6 | 52.6 | 45.8 |
| Employment rate, the employed to the total population | 62.5 | 68.0 | 70.3 |
| Participation rate, economically active population to the total population | 67.7 | 72.0 | 74.0 |
| Unemployment rate, percentage of the unemployed (job seekers) in economically active population | 7.6 | 5.6 | 5.0 |

Source: CSB data until 2021, MoE forecasts for 2030 and 2040

### Correspondence by thematic groups of education

By 2040 labour demand will continue shifting towards the demand for specialists with higher education. Similar trends will be observed in supply as well. At the same time, the ratio of labour demand and supply will not be equal in all segments of education.

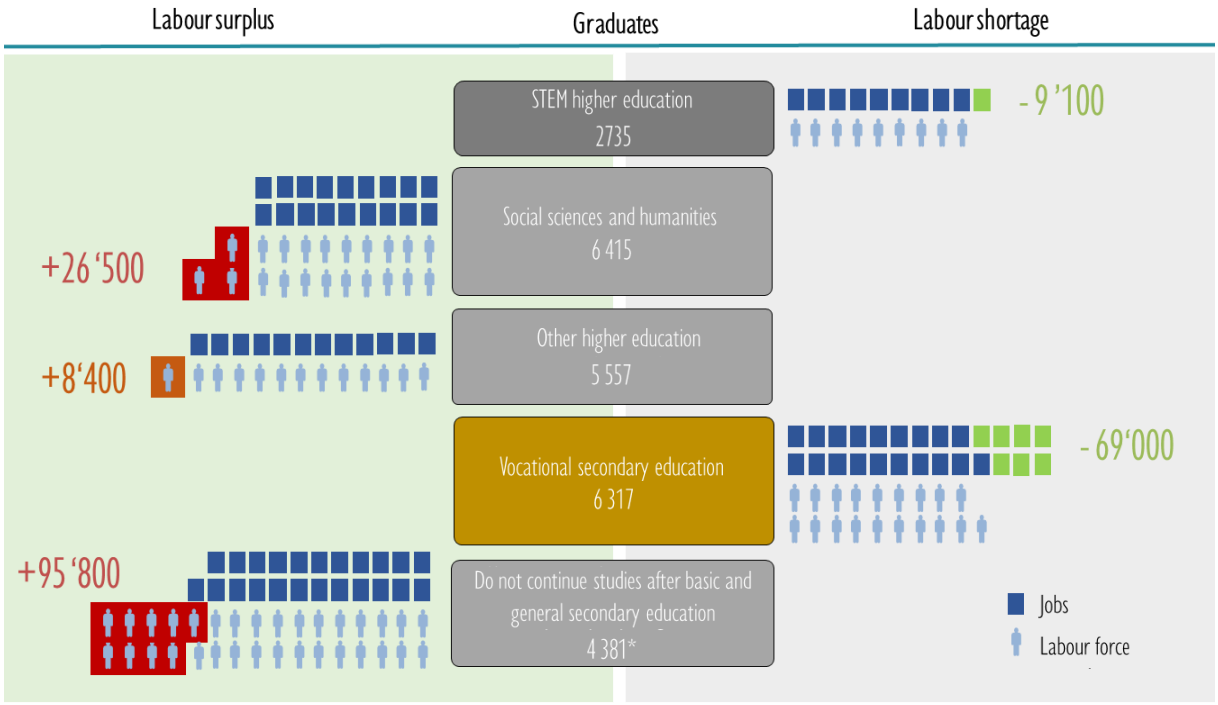
Overall, high qualification labour demand and supply in the medium and long term will be close to a balance, which means that the possibilities of manoeuvres in terms of attraction of highly qualified labour force will be strictly limited. Also, more evident shortage of specialists with vocational education will be observed. By 2030 the gap between labour demand and supply with vocational education might increase to 69 thousand. Therefore, part of medium qualification jobs might need to attract labour force without a professional qualification – with general

secondary education or basic education, which can generally reduce the total contribution of each individual job to the value added chain.

Figure 3.13

Projected labour force surplus/shortage and number of graduates by stages and areas of education

*difference between supply and demand in 2030, number of graduates in 2021*

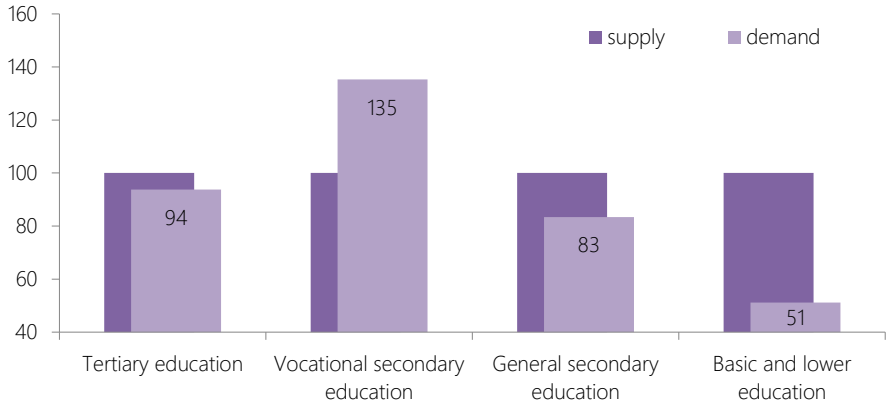



* MoE assessment, based on graduates of 2020.
Source: CSB data for 2021, MoE forecasts for 2030

At the same time, a significant surplus of labour force with general secondary education and basic education is expected. The surplus of labour force with such qualification might reach almost 96 thousands by 2030 (34 thousand with general secondary education and 62 thousand with basic education). The surplus of labour force in these groups will be largely predetermined by the drop in labour demand for that qualification – elementary occupations and manual work is increasingly replaced with different technological solutions. It is also expected that labour supply with basic education and lower education level in the medium term will increase, and therefore in 2030 half of these people might have problems in finding relevant job and get included in the labour market.

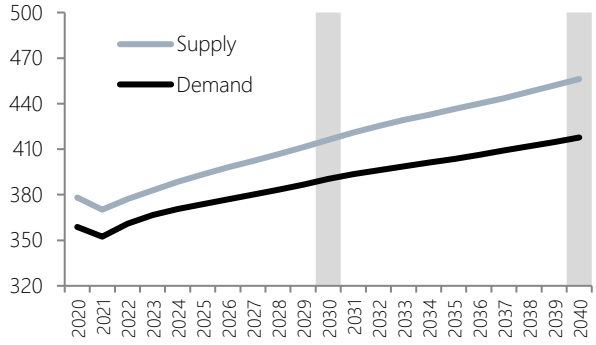
**Sufficiency of labour force by education levels**

*supply vs. demand in 2030, % supply vs. demand*



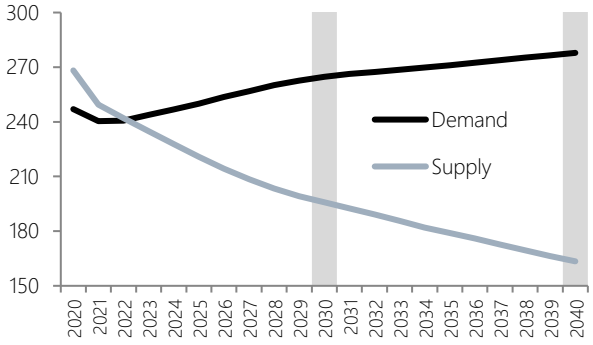

Higher education

*thsd*



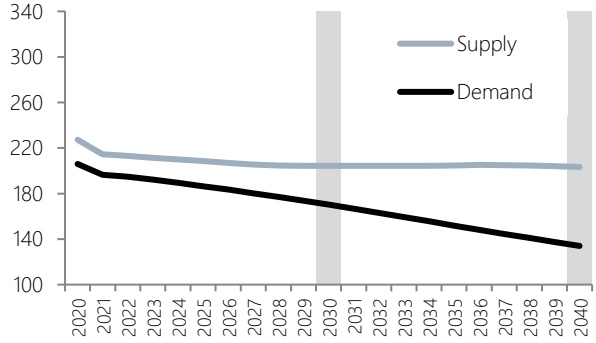

Vocational secondary education

*thsd*




General secondary education

*thsd*




Basic education

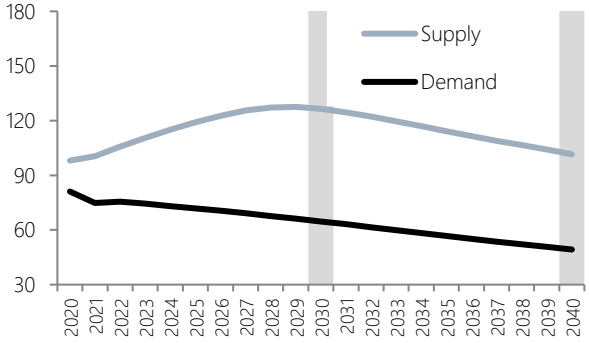
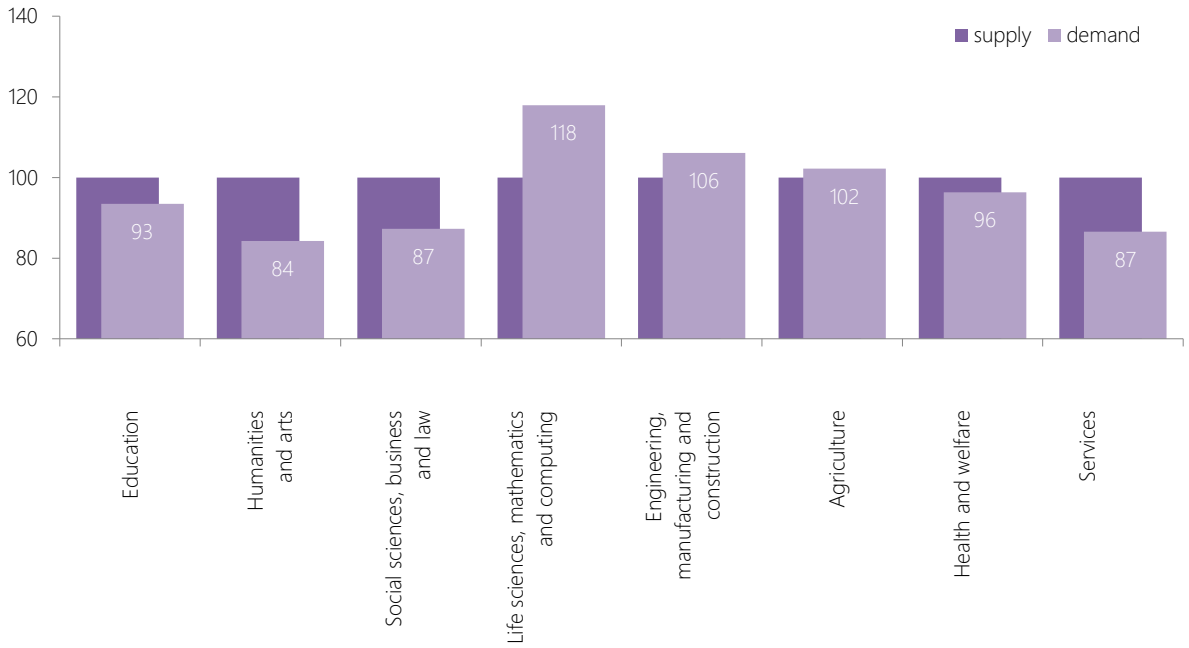


Figure 3.15

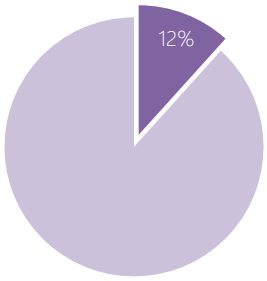
Forecasts of the labour supply and demand with higher education by thematic groups of education

*%, demand vs. supply in 2030*

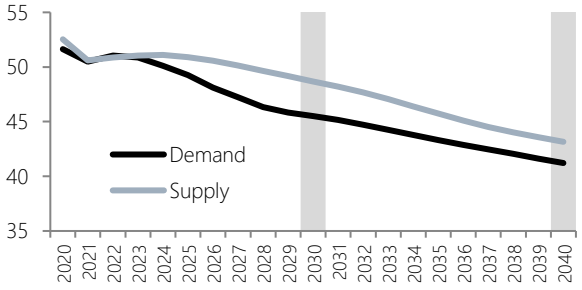



**Education**

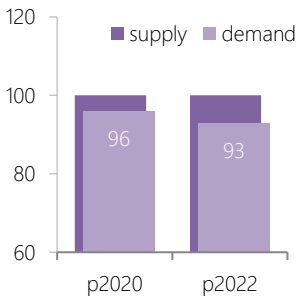
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

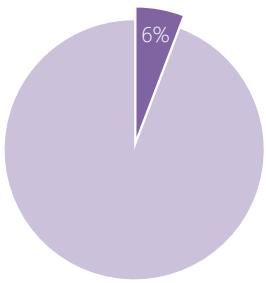



Mismatch
demand vs. supply,
%, in 2030

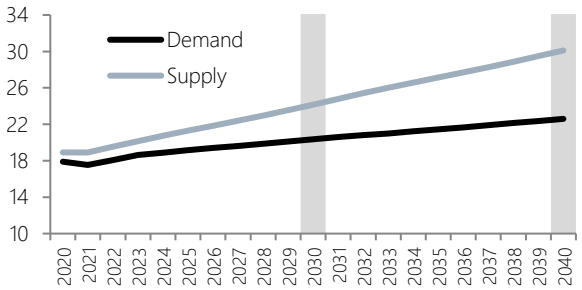



**Humanities and arts**

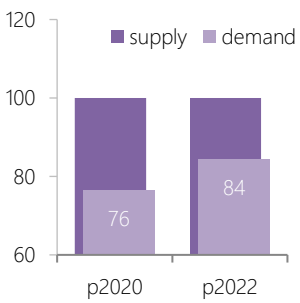
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

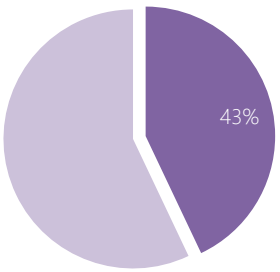



Mismatch
demand vs. supply,
%, in 2030

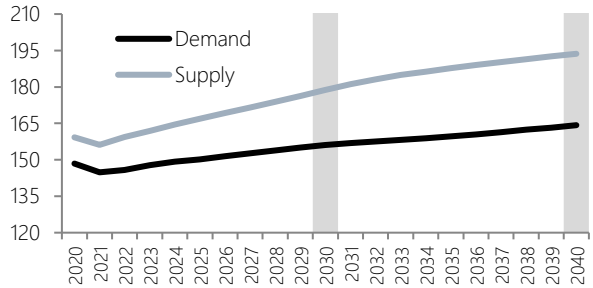


**Social sciences, business and law**

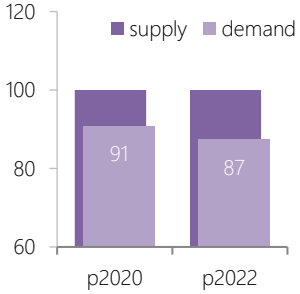
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

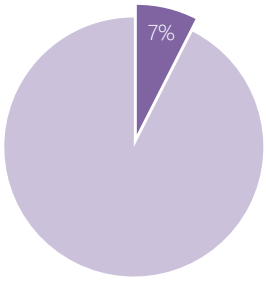



Mismatch
demand vs. supply,
%, in 2030

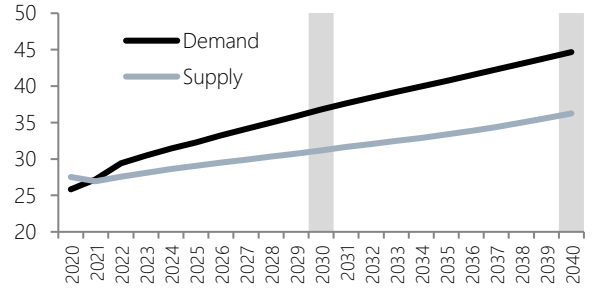



**Life sciences, mathematics and computing**

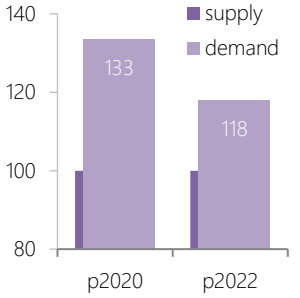
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

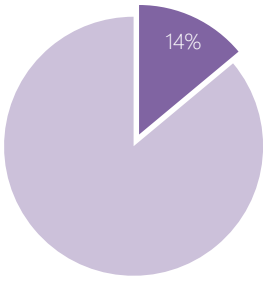



Mismatch
demand vs. supply,
%, in 2030

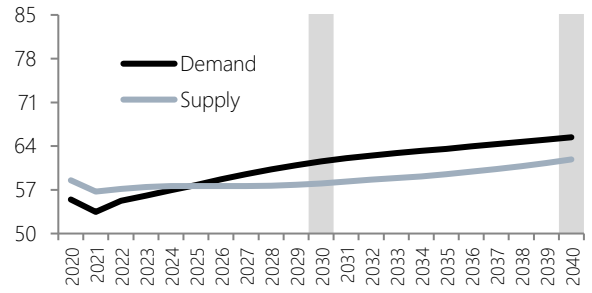



**Engineering, manufacturing and construction**

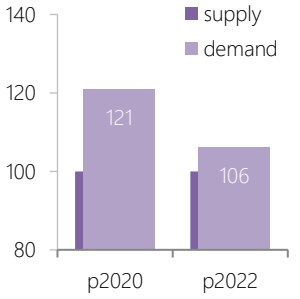
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

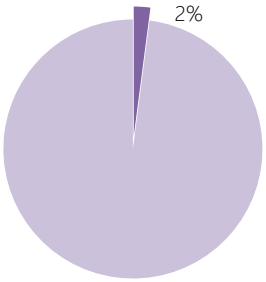



Mismatch
demand vs. supply,
%, in 2030

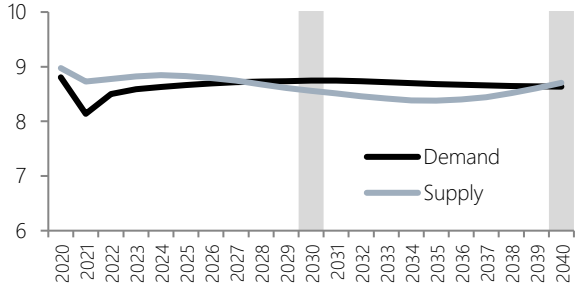


**Agriculture**

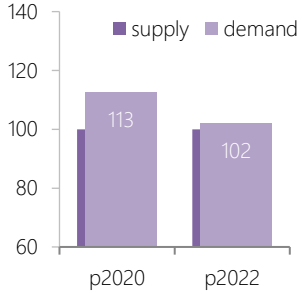
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

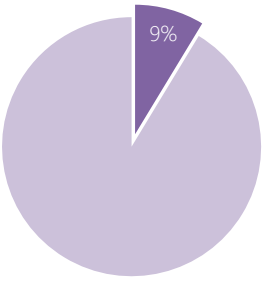



Mismatch
demand vs. supply,
%, in 2030

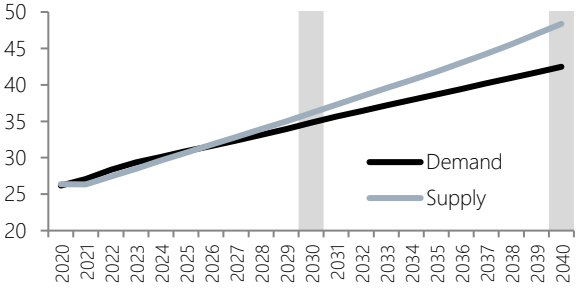



**Health and welfare**

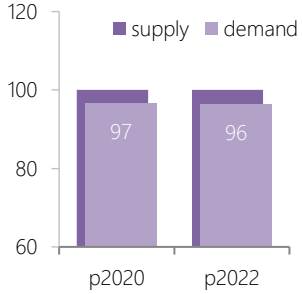
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

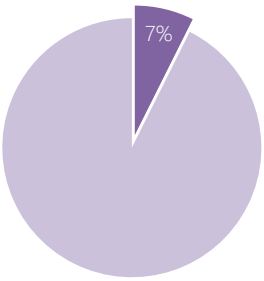



Mismatch
demand vs. supply,
%, in 2030

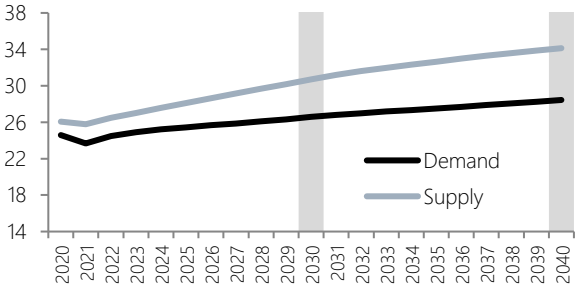



**Services**

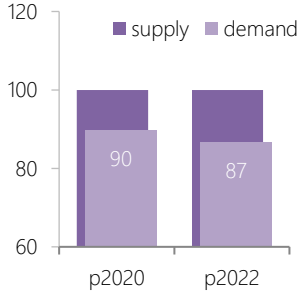
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands




Mismatch
demand vs. supply,
%, in 2030




Source: CSB data for 2019, MoE forecasts starting from 2020

If the structure of supply of higher education remains the same, the most significant shortage of labour force in the **higher education group** is expected among specialists with engineering, life sciences and ICT (STEM) education. By 2030, the shortage of specialists with relevant qualification might exceed 9 thousand, mainly in areas like computer sciences, architecture and building, physical sciences and engineering.

Despite the fact that less specialists with STEM education are prepared than the labour market will need in the following years, the situation has still clearly improved compared to MoE labour market forecasts of 2020, when shortage of more than 19 thousand specialists with STEM education was projected for 2030. It should be noted that the share of STEM graduates among all the graduates in the period from 2008 to 2021 has increased from 13% to 19%, which has also generally increased the supply of young specialists in the labour market.

In the thematic group of agriculture the projections of 2020 estimated that reproduction of labour force would be insufficient, so shortage of labour force could form up until 2030. Reviewed forecasts evidence that the situation has significantly improved in this group and labour demand and supply will be close to a balance. However, in the thematic group of agriculture the number of graduates has reduced in recent years and is still insufficient to compensate for the drop in the number of agricultural specialists due to ageing of labour force.

At the same time, the situation in the thematic group of health and social care keeps being balanced, where labour demand and supply will generally be close to a balance in the medium term. However, labour supply may slightly exceed demand in the long term. It should be noted that the number of graduates in health and social care education has increased by more than 20% over the last 5 years and has quintupled since 2000.

In relative terms, the largest surplus of labour force with higher education is projected in humanities and services thematic groups. It should be noted that the number of graduates in these education programmes has reduced by 30% since 2011.

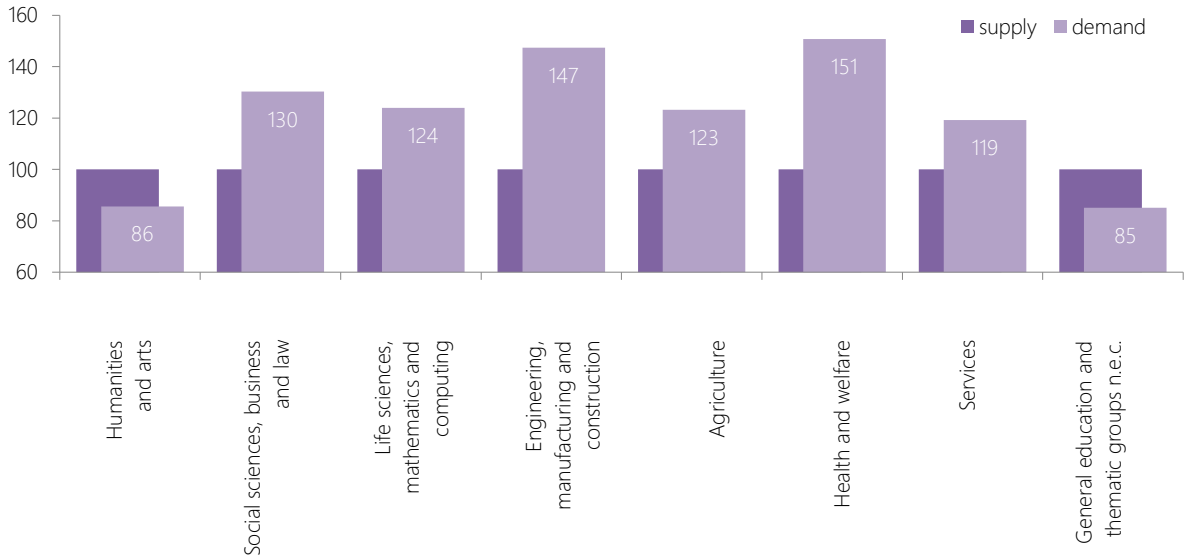
In absolute terms, the biggest surplus is still expected in labour force with education in social sciences and business, and the surplus has generally increased – by approximately 6.5 thousand specialists in 2030 – compared to the forecast of 2020. It should be noted that the number of graduated in social sciences and business programmes has been dropping rapidly in the last 10 years. If the number accounted for more than half of total graduates of higher education institutions 10 years ago, then it accounted for slightly more than one third in 2021. It should be taken into account that these changes in education supply will have a tangible effect on the labour market only in the long term – in 15-20 years, therefore the gap between supply of and demand for specialists with relevant qualification in the following years will continue to grow.

In both the medium and long term, the ratio of labour demand and supply in the thematic group “Education” will remain close to balance. It should be noted that overall labour demand for education specialists could decrease in the coming years due to both the optimisation of the school network and the overall decrease in the number of learners. At the same time, it should be noted that labour supply with respective qualification will reduce – the number of young professionals entering the labour market is lower than the number of those leaving it due to retirement and other factors. In 2021 more than half of the total labour supply with higher education in the thematic group of “Education” was over 50 years old, therefore, most of them will leave the labour market in the next 10-15 years.

Figure 3.16

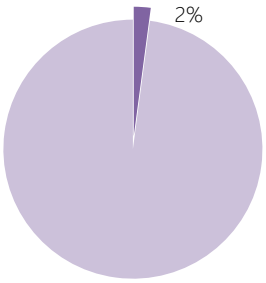
Forecasts of the labour supply and demand with secondary education by thematic groups of education

*%, demand vs. supply in 2030*

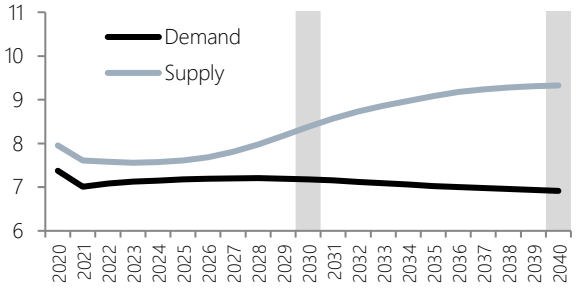



**Humanities and arts**

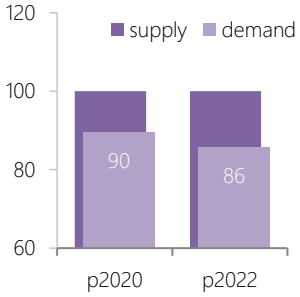
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

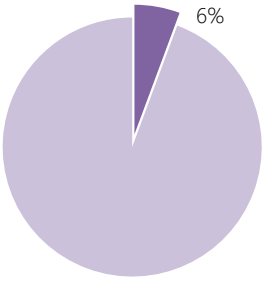



Mismatch
demand vs. supply,
%, in 2030

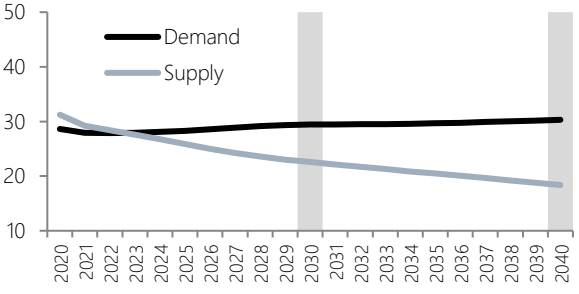



**Social sciences, business and law**

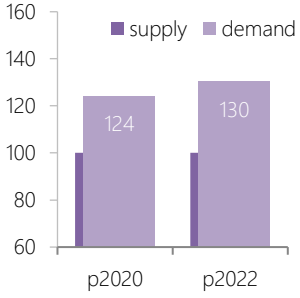
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

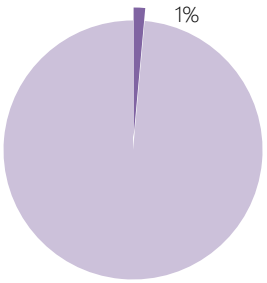



Mismatch
demand vs. supply,
%, in 2030

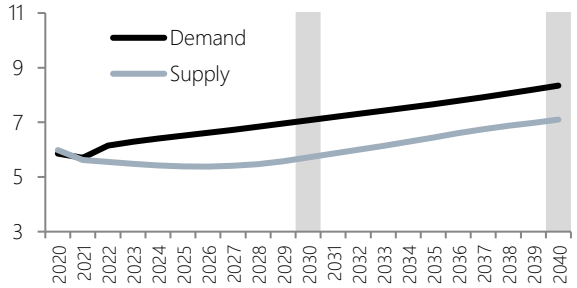


**Life sciences, mathematics and computing**

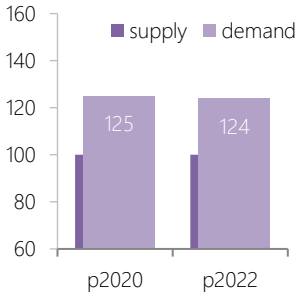
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

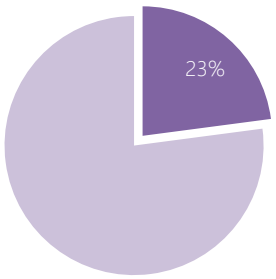



Mismatch
demand vs. supply,
%, in 2030

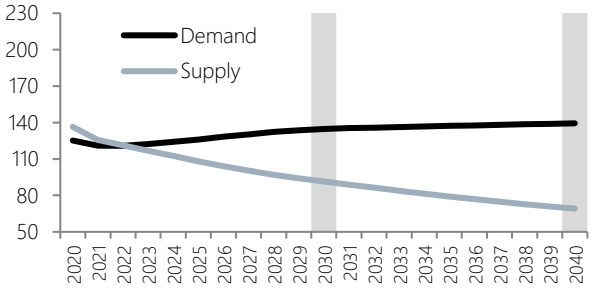



**Engineering, manufacturing and construction**

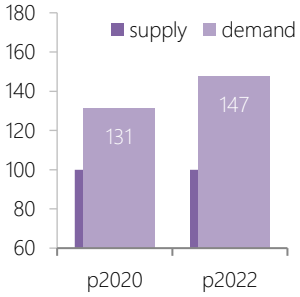
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

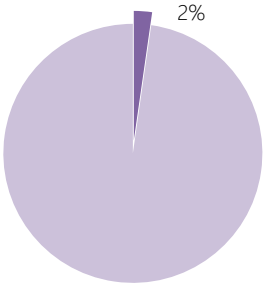



Mismatch
demand vs. supply,
%, in 2030

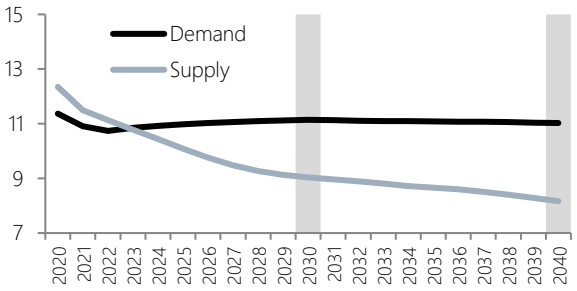



**Agriculture**

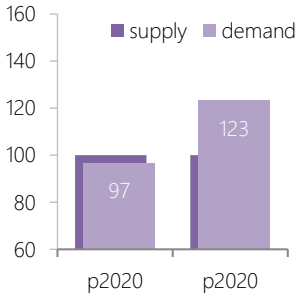
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

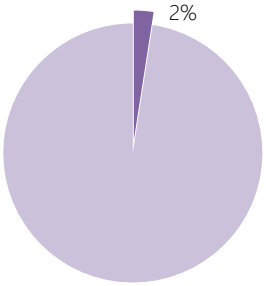



Mismatch
demand vs. supply,
%, in 2030

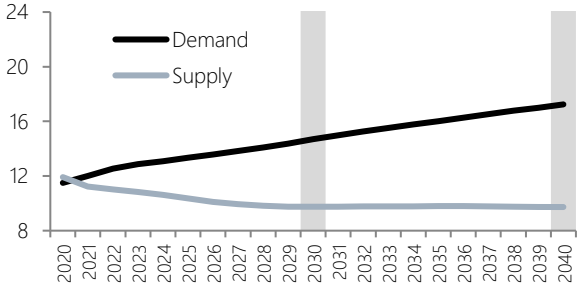


**Health and welfare**

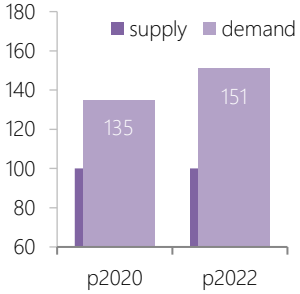
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

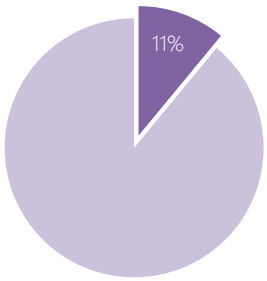



Mismatch
demand vs. supply,
%, in 2027

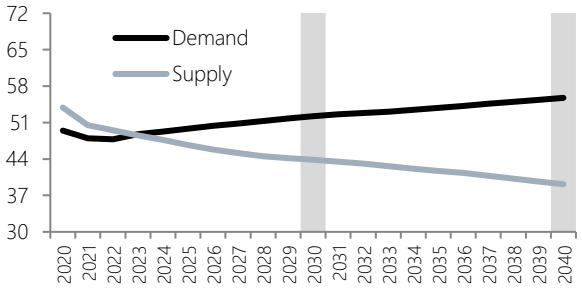



**Services**

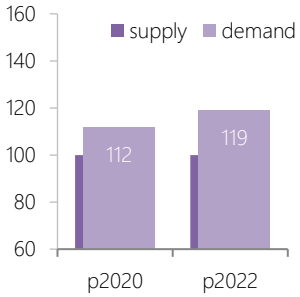
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands

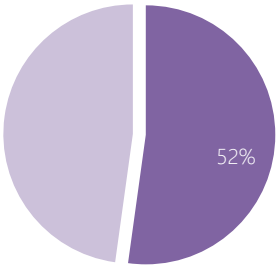



Mismatch
demand vs. supply,
%, in 2030

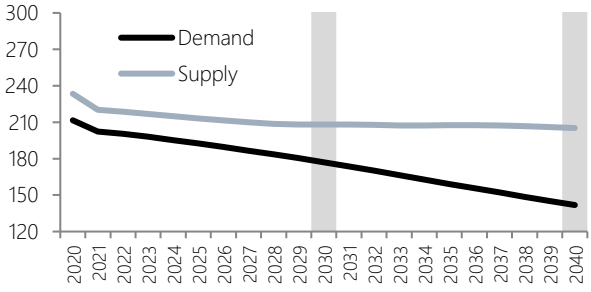



**General education and thematic groups n.e.c.**

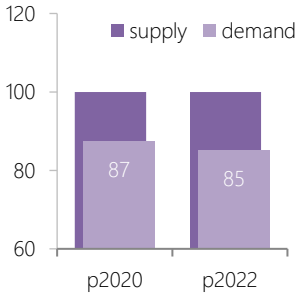
Supply structure
%, in 2030




Dynamics of the supply and demand
thousands




Mismatch
demand vs. supply,
%, in 2030




Source: CSB data until 2019, MoE forecasts starting from 2020

Insufficient labour supply **with vocational education** is expected almost in all thematic groups of education. The biggest shortage is expected in engineering, manufacturing and construction – mainly in areas like construction, and civil construction, mechanics and metal working, machine building, as well as woodworking technologies and manufacture of products. By 2030 shortage of medium qualification professionals in engineering, manufacturing

and construction might increase to about 43 thousand professionals. In relative terms, shortage of specialists with education in engineering and manufacturing has increased compared to the labour market forecasts of 2020, and the trend of a gradual growth of the shortage will exist in the long term, which largely reflects structural changes in the relevant education supply – since 2008 the share of enrolled students and graduates in the relevant academic discipline has dropped by 8 and 7 percentage points, respectively.

The ratio between labour demand and supply has grown also in social sciences, business and law, as well as in life sciences, mathematics and computing and health and welfare, and services. Similarly to engineering, the share of graduates in these thematic groups in the previous years reduced, except life sciences, mathematics and computing. Moreover, shortage in health and welfare increases also due to ageing of labour force, as well as many medical education programmes do not have vocational secondary education level anymore and mainly restructure into colleges, which means appearance of considerably less young professionals with appropriate qualification.

Table 3.13

Labour demand and supply forecasts by thematic groups of education

*If the current structure of labour force preparation is retained*

| | 2030 | | | 2040 | | |
|---|---|---|---|---|---|---|
| | demand thousands | supply thousands | matching % | demand thousands | supply thousands | matching % |
| Higher education, including: | 390.4 | 416.2 | 94 | 417.7 | 456.2 | 92 |
| Education | 45.5 | 48.7 | 93 | 41.2 | 43.2 | 95 |
| Humanities and arts | 20.4 | 24.2 | 84 | 22.6 | 30.1 | 75 |
| Social sciences, business and law | 156.0 | 178.7 | 87 | 164.3 | 193.6 | 85 |
| Life sciences, mathematics and computing | 36.8 | 31.2 | 118 | 44.7 | 36.3 | 123 |
| Engineering, manufacturing and construction | 61.6 | 58.0 | 106 | 65.4 | 61.9 | 106 |
| Agriculture | 8.7 | 8.6 | 102 | 8.6 | 8.7 | 99 |
| Health and welfare | 34.8 | 36.1 | 96 | 42.5 | 48.4 | 88 |
| Services | 26.6 | 30.7 | 87 | 28.4 | 34.1 | 83 |
| Secondary education, including: | 435.1 | 400.1 | 109 | 411.9 | 366.8 | 112 |
| Vocational secondary education, including: | 264.8 | 195.8 | 135 | 277.9 | 163.4 | 170 |
| Education | 1.6 | 1.4 | 117 | 1.1 | 0.5 | 225 |
| Humanities and arts | 7.2 | 8.4 | 86 | 6.9 | 9.3 | 74 |
| Social sciences, business and law | 29.4 | 22.6 | 130 | 30.3 | 18.4 | 165 |
| Life sciences, mathematics and computing | 7.1 | 5.7 | 124 | 8.3 | 7.1 | 118 |
| Engineering, manufacturing and construction | 134.7 | 91.4 | 147 | 139.4 | 69.2 | 201 |
| Agriculture | 11.1 | 9.0 | 123 | 11.0 | 8.2 | 135 |
| Health and welfare | 14.7 | 9.7 | 151 | 17.2 | 9.7 | 177 |
| Services | 52.2 | 43.8 | 119 | 55.7 | 39.2 | 142 |
| General secondary education | 170.3 | 204.3 | 83 | 134.0 | 203.3 | 66 |
| Basic and lower education | 64.7 | 126.5 | 51 | 49.3 | 101.6 | 48 |
| **Total** | **890.1** | **942.7** | **94** | **878.8** | **924.6** | **95** |

Source: MoE forecasts

At the same time, if forecasts of 2020 estimated surplus of labour force in the thematic group of agriculture, then the latest forecasts evidence that this group may have a shortage of labour force by 2030, and the difference between demand and supply will gradually grow due to ageing. The comparatively small supply of specialists with relevant qualifications in the labour market should also be taken into account.

## Matching of labour demand to labour supply by occupational groups

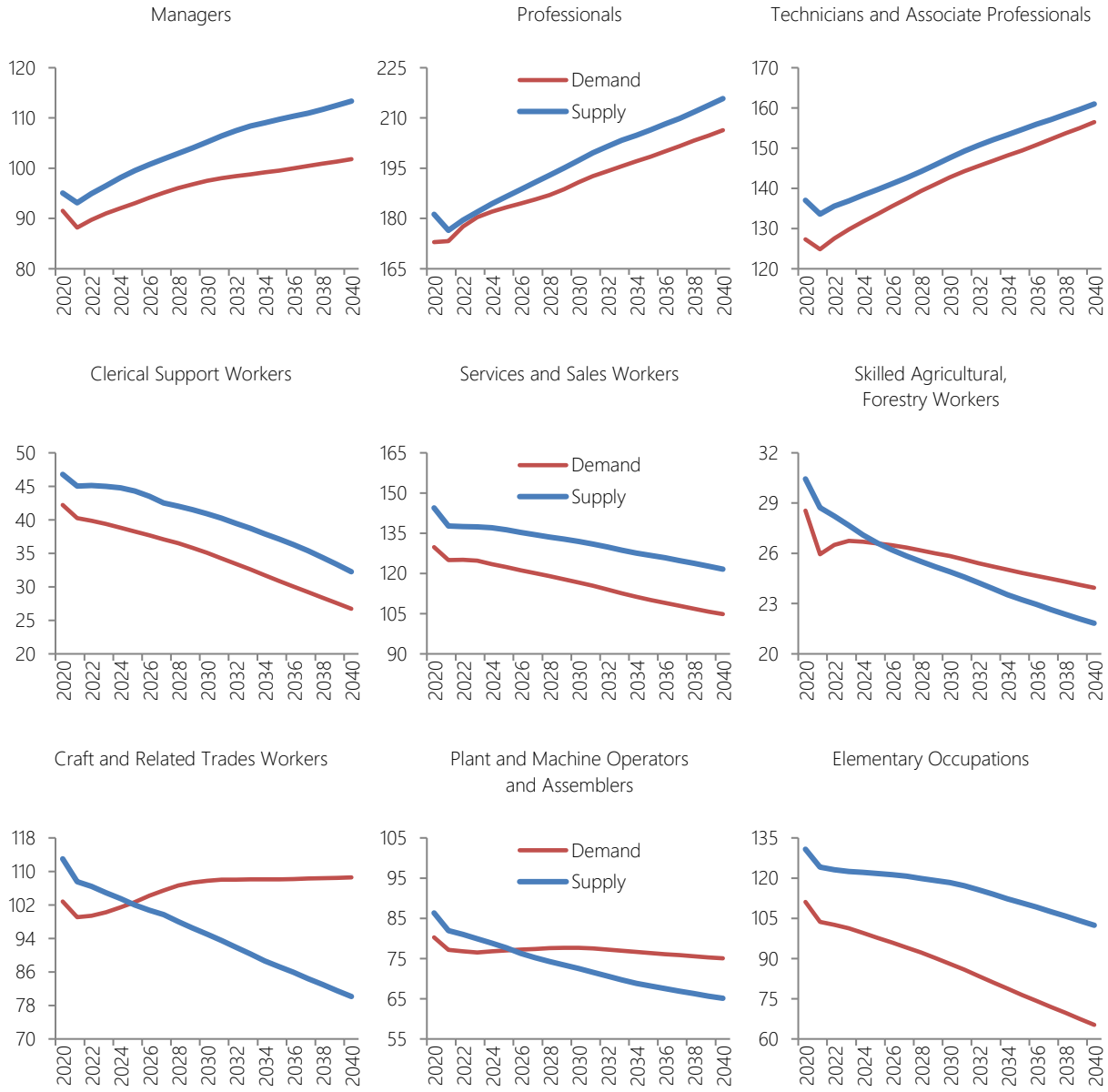
In the medium and long term, there will be **significant shortage of labour force among medium qualification employees** in occupations like building workers and woodworking workers, drivers and mobile plant operators, stationary plant and machine operators, metal and machinery trades workers, electrical and electronic trades workers. A drop in labour supply is expected in almost all of these specialities in the following years, which, on the one hand, is determined by ageing of labour force and exit of the labour force from the labour market, but, on the other hand, by insufficient supply of vocational education in relevant specialities.

At the same time, the biggest surplus of labour force will be in services and sales occupations, as well as in clerical support occupations, where most of the employed have general secondary education, while the number of job seekers with such education will remain high.

Figure 3.17

Forecasts of the labour supply and demand by occupational groups

*thousands*




Source: CSB data for 2019, MoE forecasts starting from 2020

Both labour demand and supply for **high qualification occupations** will continue to grow in the medium and long term, so the general demand and supply will keep their balance. At the same time, the most distinct shortage of labour force might form in individual high qualification occupations. The most serious shortage of labour force in the medium term might form in occupations of ICT professionals (database and network professionals, software and applications developers and analysts, information and communications technology operations and user support technicians, telecommunications and broadcasting technicians), in science and engineering occupations (mathematicians, actuaries and statisticians, process control technicians, electrotechnology engineers, physical and earth science professionals, architects, planners, surveyors and designers, as well as ship and aircraft controllers and technicians), health professionals (medical doctors and paramedical practitioners, nursing and midwifery associate professionals), as well as managers of different levels (sales and development managers, production managers in agriculture, forestry and fisheries, and in ICT).

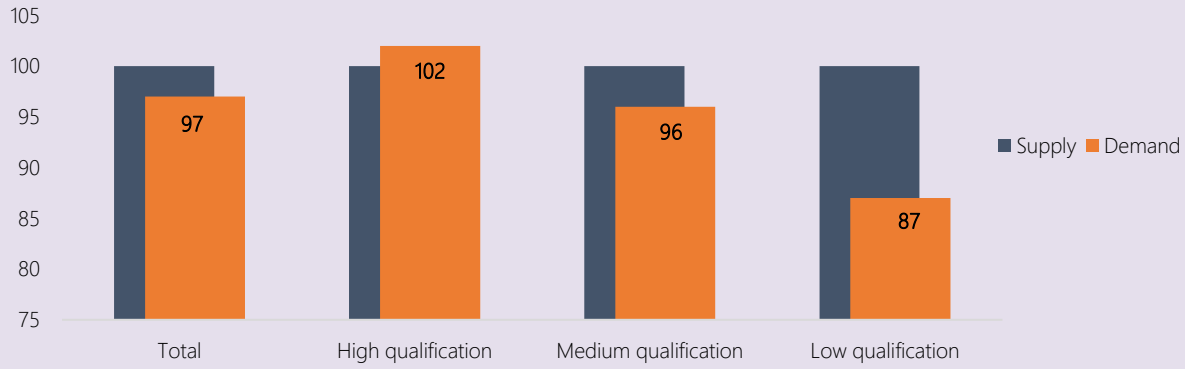
**Mismatches between skill demand and supply in Europe***

The pandemic is expected to lead to an increase in skill mismatches in Europe. The development of digital technologies will also lead to increasing imbalances in the labour market. The issue of population ageing and the challenges of the silver economy in the labour market will become increasingly more pressing. Policy initiatives on reskilling or improvement of existing skills will therefore be particularly important.

**The share of high qualification labour will grow.** According to Cedefop, high qualification labour will grow from 26% in 2021 to 40% in 2030 (compared to 21% in 2000), while low qualifications will decrease significantly and represent only 15% of the total labour force in 2030. Demand for low qualification labour force will be considerably below supply, and people with basic or no education will find it more and more difficult to find a job, because labour force with higher qualifications will force them out of the labour market. The share of labour force with medium qualification will remain almost unchanged and will account for 45% of the entire labour force in 2030.

**Ratio of EU labour demand to labour supply by level of qualification**

*2030, demand vs. supply, supply = 100*




Although demand for high qualification labour force will even slightly increase supply in 2030, in the nearest years, the demand for higher qualification labour force could grow more rapidly than supply. As young labour market entrants are higher educated than older cohorts leaving the labour market (many of which have the skills required but not the corresponding formal qualification), the share of higher-qualified workers is expected to increase. Some high-qualified workers will end up in positions typically requiring a lower qualification. At the same time, there was the expectation that occupations requiring high-level skills will be the ones with the most hiring difficulties in 2030, because automation will contribute to making the skills of current workers obsolete. This will create a situation, when a workforce has higher qualification/education, but insufficient professional skills.[1]

* according to *Cedefop* projections

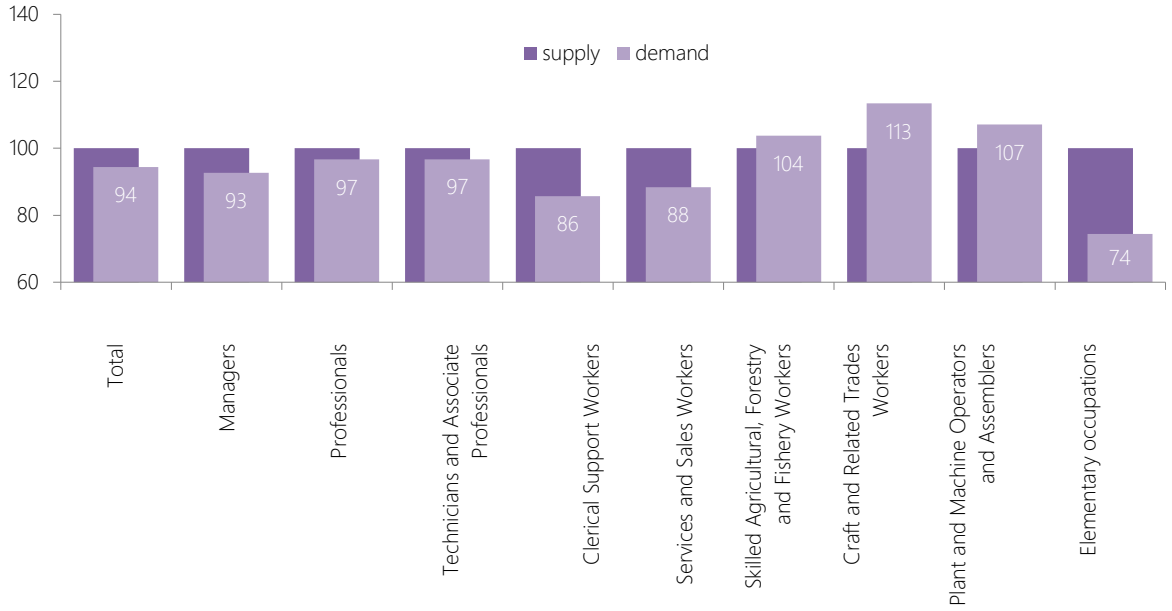
It is expected that a considerable surplus of labour force will still be in elementary occupations, taking into account the increase in labour supply with basic education in the medium term, as well as a considerable surplus of labour force with general secondary education. It should be taken into account that in the medium and long term, along with automation trends, a considerable drop in jobs is expected in occupations with high share of manual and repetitive actions.

[1] Cedefop (2021), Digital, greener and more resilient. Insight from Cedefop's European skills forecast.

Figure 3.18

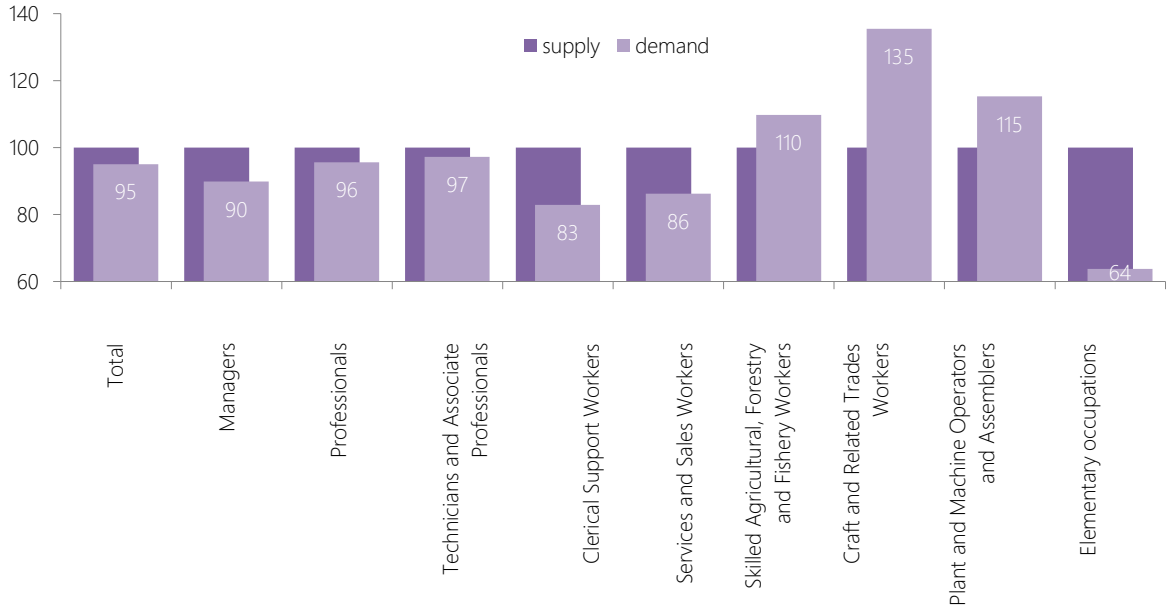
Ratio of the labour demand to labour supply by occupational groups

*2030, demand vs. supply, %*




Ratio of the labour demand to labour supply by occupational groups

*2040, demand vs. supply, %*




Source: MoE forecasts

If the current structure and volume of labour force is retained, in the long term disproportions in the aforementioned medium qualification occupations (plant and machine operators, as well as craft and related trades workers) will deepen and the supply in craft and related trades workers occupations will be considerably lower than the demand. Demand will exceed supply also in the group of skilled agricultural, forestry and fishery workers, as there is a high share of pre-retirement age people in this occupational group and at the same time a comparatively small number of newcomers from the education system.

# 4. OVERVIEW OF IMPLEMENTED AND PLANNED EDUCATION AND EMPLOYMENT MEASURES

The employment promotion and skills development measures implemented in recent years have generally had a positive impact on both the employment of the population and on sufficiency of labour force and skills matching. Overall, long-term trends show a more balanced structure of education supply, which is gradually reflected also in the labour market. At the same time, despite improvements in education supply, many structural problems remain relevant – insufficient preparation of STEM professionals, high percentage of young people who do not pursue secondary or higher education or leave the education system early, insufficient numbers of students in vocational education, and other problems. Similarly, the impact of educational measures is often slow and the scale of the impact is insufficient, while the opportunities provided by adult education are not sufficiently exploited and the involvement of the population in adult education is significantly lagging behind the set target.

Human capital development matters have raised significantly during the Covid-19 pandemic, considering its impact on the Latvian economy. The Strategy for Latvia for Mitigation of the Consequences of the Crisis Caused by COVID-19[1] developed in spring 2020 set maximum possible preservation of job, reduction of unemployment caused by Covid-19, improvement of digital skills of society as a short-term objective. In the Covid-19 crisis, it was vitally important to maintain the limited capacity of companies to enable them to resume their business quickly when the restrictions are removed. Overall, more than 200 million euro were disbursed during the crisis to support downtime and subsidised jobs, as well as over 560 million euro for working capital grants. The aid significantly mitigated the negative impact on the labour market. During the Covid-19 crisis, the number of unemployed did not exceed 80 thousand in any month. At the same time, support is also provided to vulnerable groups of the population, including the unemployed (an unemployment assistance benefit was introduced, the period of short-term employment without losing unemployment status was extended, employment support measures were extended, etc.).

The medium-term objective is the creation of a functional adult education system for reducing the share of persons with low education, continuous development of skills, abilities and competences and changing the socio-economic paradigm – the introduction of the concept of lifelong learning. Strengthening human capital and lifelong learning are among Latvia's development priorities also in the *National Industrial Policy Guidelines for 2021-2027*[2].

Directions for improvement of the education supply. On 21 June 2021, the CM approved the Education Development Guidelines 2021-2027 *"Future Skills for the Future Society"*[3], which cover all the types and degrees of education. In all areas of education the guidelines will mainly focus on the implementation of the initiated reforms and the development and provisions of necessary support systems (human resources, cooperation networks, governance, quality), thus strengthening the sustainability of changes. Major changes planned in four areas of education:

- general education – to introduce and strength the competence approach with a view to improving teaching, learning and performance of students, attracting new teachers, ensuring renewal of teachers and providing a targeted support system to strengthen inclusive education;
- vocational education – to strengthen vocational education institutions as centres of sectoral excellence and innovation, to develop flexible and sustainable education supply and to strengthen coordinated and strategic cooperation with representatives and employers of economic area;
- higher education – to strengthen the quality of academic staff and to ensure sustainable academic careers, to promote excellence in higher education and to strengthen the governance of higher education institutions;
- adult education – to increase participation in adult education, particularly for population groups less engaged in training, to increase the quality of adult education and create a sustainable and socially responsible funding system for adult education.

[1] https://www.em.gov.lv/lv/strategija-latvijai-0
[2] https://www.em.gov.lv/lv/industriala-politika
[3] https://likumi.lv/ta/id/324332-par-izglitibas-attistibas-pamatnostadnem-20212027-gadam

To achieve the objectives set out in the guidelines, a draft *Action Plan for 2021-2023* has been developed, which is planned to be approved by the CM in May 2022. In the three years of implementation of the plan a variety of activities are expected to be implemented related to the evaluation of existing systems, processes and approaches; the development of new and improved solutions, tools and methods (conceptual vision); the improvement of a regulatory base or the preparation of a new regulatory framework; the development of guidelines, criteria and methodologies; various types of informational, consultative and methodical support for a broad range of stakeholders (staff, students, managers, partners), development and strengthening of current skills (incl. digital) for different target groups (teachers, academic staff, students) and partnership building, exchange of experience and knowledge transfer, improvement of the learning environment and infrastructure, management of data and information (systems), as well as management of institutional and human resources.

**Improving and developing active labour market policy (ALMP) measures.** In September 2022, the CM approved *Social Protection and Labour Market Policy Guidelines for 2021-2027*[1]. The medium-term objective of ALMP is to establish an inclusive working environment for anyone and to take care of the quality of existing jobs, thus supporting long-term participation in the labour market. Plans until 2027:

- to achieve 80% employment rate of the population in age group between 20 and 64;
- to achieve 50% employment rate among persons with disabilities in age group between 20 and 64;
- to reduce the share a long-term registered unemployed to 15%.

The improvement and development of existing ALMP measures is planned in such a way that it would help all working-age population get included in the labour market, with special support for disadvantaged population and population at higher risk of unemployment (people with low levels of education, long-term unemployed, people with disabilities, elderly people, etc.). The development of an inclusive labour market involves the provision of timely and tailor-made support to improve employment or self-employment prospects, support for the transition from economic inactivity to employment and between different professions and sectors, the development of high-quality and secure workplaces, the prevention of the risk of poverty of the employed, the creation of opportunities for reskilling and education throughout the working life.

**Promoting internal labour mobility.** To reduce regional differences of the labour market and increase the involvement of the population in employment, as well as to increase opportunities of regions to respond to growing labour force needs and recruit necessary workers several measures were implemented to promote internal labour mobility:

- ***Promotion of the availability of rental housing in regions.*** The availability of labour force in regions with higher economic activity is delayed by the lack of high-quality housing corresponding to the paying capacity of the population. Within the scope of a cooperation project with OECD, proposals for effective support instruments for ensuring availability of housing in Latvia were developed in 2020. MoE has drafted a support programme for the construction of low rent paid housing in Latvian regions, and RRF funding of 42.9 million euro is available for that. This funding is intended for the construction of 700 low rent paid apartments, which will be available to households, which are too wealthy to receive benefits for resolution of housing matters, but at the same time not so wealthy to afford mortgage loans (the so-called missing middle). Support for real estate developers for the construction of housing will be provided as loan and capital discounts, and the support will be provided by *the state-owned development institution* JSC *"Altum"*. The beginning of implementation of the projects is planned for summer 2022.

  Through the EC's technical support instrument, MoE has also launched an additional cooperation project with the OECD in order to further explore foreign practices and the possibilities of introducing a *long-term housing affordability fund – a revolving fund in Latvia*, the necessary legal framework, financing options; and the fund management model. The project will last until spring 2023.

- ***Implementation of the housing support programme*.** The attraction of qualified labour force to regions is also promoted by state support for purchasing housing, which is available to highly qualified specialists (aged up to 35 and having higher or vocational education) from 1 March 2018. Young specialists having constant income, but having no sufficient savings to make the first instalment, can receive a guarantee for purchasing

[1] https://likumi.lv/ta/id/325828-par-socialas-aizsardzibas-un-darba-tirgus-politikas-pamatnostadnem-2021-2027-gadam

or construction of housing amounting to 20% of the loan amount, which does not exceed EUR 50 thousand. Over 4,300 guarantees have been granted to young specialists by May 2022 and the total amount of allocated guarantees is EUR 35 million.

– *Mobility support within the scope of ALMP measures*. In order to facilitate the acceptance of job or training offer outside the declared place of residence, the costs of transport and rental of accommodation are covered for participants upon request within the activities implemented by the SEA, when they start a new legal employment relationship (in the first four months) or start training (during the entire training implementation period). The financial compensation is paid for each month of the legal employment relationship, up to a maximum of EUR 150 per month to cover the accommodation rental costs or EUR 7 per day to cover transport costs. In 2021, regional mobility support was provided to 1,628 SEA customers (in 2019 – 3,864), but it should be noted that many measures were implemented remotely, and therefore the number of beneficiaries significantly decreased during the years of the Covid-19 pandemic.

The Employment Board composed of three ministers (ministers of economics, education and science, and welfare) has been functioning since 2016 and its goal is to implement strategic monitoring and coordinate inter-departmental cooperation required for planning, development and implementation of labour market reforms or re-arrangements, in order to reduce the disproportion in the Latvian labour market. The Board is a non-formal platform for discussions of ministers. The Employment Board has paid special attention to the matters of investment in human capital and the development of skills of labour force (in particular, low qualification labour force).

## 4.1. LATEST MEASURES IN GENERAL EDUCATION

Introduction of competence-based curriculum. The reform of the content of general education continues by gradually introducing a competence approach in the curriculum, which contributes to the compliance of education with changing labour market requirements. The introduction of the improved general education curriculum has been ongoing since school year 2019/2020, providing that at the end of school year 2022/2023 state examinations in basic education and general secondary education will be passed in accordance with the requirements of the new general education curriculum. The mastering of the curriculum of secondary education is intended not only at the optimal level, but also in optional subjects and courses – in depth at a higher level by promoting a more targeted path for young people to higher education. For the purpose of introduction of the competence approach, professional improvement has been provided to teachers, including the teachers implementing the education process for mastering advanced secondary school curriculum (at the highest level).

The increase of the minimum examination result threshold is planned in centralised examinations to receive a secondary education document. The increase of the minimum threshold is expected to take place gradually by increasing it by 5% every year for three years: the minimum examination result threshold will be 10% in 2022/2023, 15% in 2023/2024, and 20% in 2024/2025.

Promoting STEM education. Uniform learning outcomes in life sciences subjects have been created in a targeted way in the state education standard in basic and secondary education, thereby reducing the fragmentation of the curriculum, which makes it possible for the pupil to see the interrelation between these subjects and gain a deeper understanding and knowledge in STEM subjects. A significantly higher emphasis has been placed on research and the learning of patterns in a practical way, as well as on the use of technologies in STEM subjects.

With the help of ESF support, the curriculum and examples of teaching aids from preschool to secondary school in all areas of education, including STEM, have been developed. Good practice e-examples in mathematics and life sciences have been developed. Work on the development of digital learning and methodological aids in secondary education is ongoing. To encourage the entry of technology into schools, training for education technology mentors has been started, aiming to prepare 1600 technology mentors. The learning platform *skolo.lv* has been introduced, as well as the developed learning and methodological aids are available in digital format in the storage of learning resources *mape.skola2030.lv*.

To address the shortage of teachers, including in STEM areas, the short-term solution is the *"Teaching Power"* teacher education project. Within the project, people with pre-acquired higher education in a specific area are involved and prepared for teacher's work, enabling them to enter the education system quickly.

Support the development of individual competences of pupils. With the ESF support, measures to develop the competences of pupils, mainly in the field of STEM, have been implemented, both by providing support for advanced learning of the curriculum and by extending the opportunities for interest education in basic education. By May 2022, more than 195 thousand pupils have been involved in the activities. In cooperation with higher education institutions, it is planned to develop author solutions for promoting learning of basic and advanced STEM courses in secondary school. With the ESF support, support for the implementation of national and international measures for the development of talents of students is also provided. The organisation of olympiads and scientific contests in learning subjects at national and international level is ensured and support for the development of talented students and the professional improvement of teachers for work with talented learners, including for the development of achievements and talents of girls in the STEM area is provided.

Support for reducing early school leaving. Using support from EU funds, preventive and intervention measures are implemented with the support of EU funds involving local governments, schools, teachers and parents to identify in a timely manner the children and youths at risk of school leaving and provide them with customised support. Economic support (compensation for public transport, official accommodation facilities, catering expenses, acquisition of personal learning aids, etc.), individual advisory support (involvement of psychologists, speech therapists, and other professionals) and tutorials in subjects, incl. STEM, is provided. By the end of 2021, 584 education institutions have been involved and more than 73 thousand individual risk mitigation plans and support measures for pupils at risk of early school leaving have been provided within the support. The creation of an interactive tool has started to help educational institutions assess and manage the risks of early school leaving.

Young people who are not involved in employment, education or training (NEET) can receive mentor support by implementing an individual support programme or support for social inclusion, facilitating the return of young people to education or employment. 3,945 youths have engaged in the project by the end of 2021.

Career guidance helps pupils to take a conscious and motivated decision on their further education or work career, and thus also fosters the reduction of early school leaving. In order to increase career guidance accessibility, the ESF project *Career support in general and vocational education institutions* has been implemented since 2017. Educational institutions involved in the project (430 during the entire project) shall ensure the work of a teacher-career adviser and career support measures for students. 295 educational institutions participate in the project in academic year 2021/2022, including 15 VECC, involving 189 teachers-career advisers, 68.2 thousand pupils received career guidance.

Adjustment of the network of general education institutions. In order to provide each pupil with quality education regardless of his or her place of residence, since 2016 work has been ongoing on the arrangement of the network of general education institutions. In seeking the most appropriate solutions to ensure the efficiency of the high-quality education and school network, changes have been made to the network of local government general education institutions, with local governments deciding on the reorganisation or liquidation of the educational institutions they established. The measure *"Improvement of infrastructure and equipment of education institutions"* is intended within RRF, which provides support to local governments in the arrangement of the network of general education institutions, strengthening basic schools that are sustainable in terms of the number of pupils and were created as a result of the arrangement of the network of local government secondary schools. The measure will modernise the learning environment in 20 basic schools outside administrative centres of local governments.

The implementation of a new models of financing of wages of teachers of general education institutions (*Pupil in a municipality*) will contribute to further arrangement of the network of education institutions. From 1 September 2022, the state funding for the payment for teachers' wages is planned to be calculated and transferred to local governments (according to the number of students in the local government), which will further distribute it to their educational institutions, providing a quality education service appropriate to the needs of the population.

When calculating wages of teachers at the level of secondary education, the quality of each educational institution – the results of accreditation and the calculation of the mandatory centralised examination index – will be taken into account from academic year 2021/2022. An inter-institutional working group was created at the beginning of 2022, which will develop proposals to raise teachers' wages and to balance workloads from 1 September 2023.

Modernisation of infrastructure of general education institutions. By attracting ERDF co-funding, projects are implemented for the improvement of the learning environment in general education institutions creating a modern, ergonomic learning environment meeting sanitary requirements supplemented with necessary information and communication technology equipment and solutions. 45 projects will be implemented by 2023 (in previous national and regional development centres, in individual municipalities of the Pierīga Region and in the town of Viļaka), which provide for modernisation of 95 education institutions. New buildings for education institutions (e.g., in Ādaži and Ogre Municipality local governments), and also new outbuildings are intended to be constructed in individual local governments, where an increase in pupils is observed and the existing infrastructure is insufficient. The implementation of 23 projects completed in 2021 and 55 education institutions have been modernised. In addition, with support of state budget, in 2021-2022, high readiness projects for the improvement of ventilation systems are implemented in general education institutions established in 22 local governments.

## 4.2. LATEST MEASURES IN VOCATIONAL SECONDARY EDUCATION

The vocational education curriculum reform continues with support of EU funds ensuring (1) a transition to learning outcomes-based vocational education process, as well as (2) introducing a modular approach in the implementation of vocational education programmes. Its purpose is to establish an independent, qualitative vocational education system meeting the needs of continuous development of economic sectors, which is able to quickly respond to labour market demand by evaluating and updating education content in accordance with the sector qualifications structure.

To ensure that vocational education meets the requirements of the labour market, to increase its attractiveness, to strengthen cooperation with the social partners, and to continue the ongoing reform of vocational education, within the ESF project "Improving the sectoral qualification system for the development and quality assurance of vocational education" since 2016: 14 sectoral qualifications structures have been improved and a new sectoral qualification framework for Arts industry design and creative industries sector has been developed; 202 professional standards and/or professional qualification requirements (LQF level 2-5) have been developed; the content of professional qualification examinations for 206 professional qualifications has been developed; modular vocational education programmes for 185 professional qualifications (LQF levels 2-4) have been created; 31 digital learning aids have been developed or purchased and 138 simulation machines have been purchased.

With the ESF support, samples of vocational education programmes have been developed aiming to facilitate and ensure the process of development of education programmes for vocational education institutions, to ensure effective management and supervision of the quality of education, to reduce the administrative burden by simplifying processes of drafting and circulation of documents for licencing of education programmes.

The implementation of a new state vocational secondary education standard started in school year 2021/2022. The general education curriculum of the programmes is adapted in accordance with the requirements of the general secondary education standard.

On 1 April 2022, amendments to the *Vocational Education Law* entered into force: (1) the scope of the Law has been extended to cover all LQF levels, including professional higher education; (2) the typology of vocational education institutions has been updated, specifying which educational programmes according to the LQF level are implemented by each of them (four statuses of vocational education institutions – technical school, arts education competence centre, vocational secondary school and vocational continuing education centre have been specified); (3) the regulation for modular vocational education programmes, principles and procedures for the collection, transfer and recognition of learning outcomes, as well as documents certifying the mastering of a professional qualification part has been improved; (4) the functions and rights of the Sectoral Expert Council have been clarified, as well as it has been stated that the coordination of the activities of the Sectoral Expert Council will be financed from the state budget; (5) there are intentions to introduce the monitoring of graduates of vocational education programmes; (6) insurance of students against accidents during studies is intended; (7) a transition from the accreditation of programmes to the accreditation of an educational institutions has been defined; (8) the rules have been clarified and the possibilities have been extended for the mastering of vocational continuing education and professional improvement education programmes, etc.

**Improvement of competences of teachers.** Since the end of 2016, over 12 thousand persons in vocational education have involved in different courses within the ESF project *"Efficient management of vocational education establishments and raising the staff competence"*. In particular, in order to promote the implementation of modern teaching methods, vocational education teachers participated in workshops on the integration of digital tools in the learning process (particularly during and after the Covid-19 crisis) and mentoring training to support new teachers.

In addition, in 2020, with the state budget support, 14 thousand teachers improved their professional competence, including 2.1 thousand teachers learned digital skills. In 2021, this option was offered to 14.7 thousand teachers.

**The introduction of work-based learning (WB learning)** has been one of priorities, which involved qualitative reforms in the system of vocational education. Unlike the traditional form of acquisition of education WB learning uses another approach in the organisation of the training process (practice) with a small number of students in groups, the training is implemented at workplace and the duration of learning is different. Since 2017, the ECL, in cooperation with vocational education institutions and businesses, have been implementing the ESF project *"Participation of students of vocational education institutions in work-based learning and learning internships in enterprises"*, which aims to promote the introduction of WB learning. The implementation of the project strengthens the quality and popularity of vocational training as well as the preparation of qualified professionals for businesses in the sectors with the biggest shortage of professionals. 37 vocational education institutions and 2853 enterprises have been involved in the project. By March 2022, 2,721 students have been involved in WB learning and 8,909 students have been involved in learning internship in an enterprise.

**Adjustment of the network and modernization of infrastructure of vocational education institutions.** The number of secondary vocational education institutions under the MoES decreased from 60 institutions in school year 2009/2010 to 21 in school year 2017/2018, but the number secondary vocational education institutions under MoC reduced from 14 institutions in school year 2004/2005 to 10 institutions in school year 2017/2018. Until school year 2021/2022, the number of vocational education institutions under MoES and MoC has not changed. In order to further modernise the infrastructure of vocational education institutions, priority education programmes and their locations in regions, acquisition of the status of a Vocational Education Competence Centre (VECC) is fostered. A total of 23 vocational education institutions (incl. one college) obtained the status of VECC.

By May 2022, with ERDF support 14 projects for the modernisation of infrastructure of vocational education institutions (in vocational education institutions subordinate to MoES – 11, local governments – 2 and MoC – 2) have been completed and 10 projects continue. They provide for purchasing of equipment and devices, modernisation or construction of new infrastructure with classrooms and common-use premises and outdoor areas, strengthening of the functions of the methodical centre, equipment of and creation of new classrooms for natural sciences (physics, chemistry, biology) and maths, introduction of ICT and creation of an ergonomic learning environment. In total, by 2023 in 24 projects support will be provided to 23 vocational education institutions.

In addition to the implementation of high readiness projects (related to overcoming the Covid-19 crisis and to economic recovery), it is planned to invest almost 18 million euro of state budget funding for the continuation of projects for the modernisation of 8 MoES and 2 MoC vocational education institutions in Riga, Liepaja, Kuldiga, Daugavpils and Rezekne.

**Strengthening of cooperation with social partners and industry organisations** to ensure the preparation of specialists according to the labour market requirements. Starting from the beginning of 2016, a collegial advisory institution – convent, has been working in all of the vocational education institutions under MoES. The aim of this convent is to facilitate development of vocational education institutions setting the strategic direction of their operation in accordance with market demands.

The Sectoral expert councils (SEC) coordinated by ECL, the Agricultural Organization Cooperation Council (AOCC) and the Cultural Education Council continue to work with involvement of sectoral experts in the development, implementation of vocational education curriculum and evaluation of qualification examinations, as well as in the implementation of reforms in vocational education, incl. resolving the matters related to the demand and supply of professionals in the respective sector in the labour market.

## 4.3. LATEST MEASURES IN HIGHER EDUCATION

**Change of the internal governance model of higher education institutions and introduction of a new typology of higher education institution.** On 16 August 2021, amendments to the *Law on Higher Education Institutions* entered into force, which include two major changes: (1) determining the types of higher education institutions: universities of science, universities of arts and culture, universities of applied sciences and higher education institutions of applied sciences (the founder of the higher education institutions is expected to determine its type); (2) providing for the introduction of a new internal governance institution – a *council of the higher education institution* – in higher education institutions established by the state. It is defined that the council is a collegial decision-making body of a state higher education institution responsible for the sustainable development, strategic and financial supervision of the state higher education institution, as well as ensuring the functioning of the state higher education institution in accordance with the objectives set out in its development strategy. In September 2021, the CM approved types of 16 state higher education institutions. The establishment of councils of higher education institutions and their approval at CM ended in mid-April 2022.

In September 2021, the CM also supported a strategic advancement towards a stronger institutional higher education system. It is intended to reorganise Liepaja University by merging it with one of the universities of science and creating an ecosystem of a university of science in Liepaja. By reorganising Daugavpils University and Rezekne Academy of Technology a new state higher education institution will be established in Latgale, which will have higher international competitiveness, as well as a greater contribution to the region's economic development. The reorganisation solutions should be submitted to the CM for review by 1 September 2022. Furthermore, the transfer of the Maritime Academy of Latvia to Riga Technical University and Liepaja Marine College to Riga Technical University as an agency is planned, thus concentrating the implementation of maritime education in a unified and mutually integrated system.

Within the *National Recovery and Resilience Facility Plan* for 2023-2026, it is planned to strengthen strategic specialisation of higher education institutions and to focus the education supply by more efficient use of resources, including academic staff and infrastructure. The capacity of human resources is expected to be increased through the development and renewal of R&D staff oriented to the needs of industry and society development.

The **introduction of a new model of doctoral studies** will be gradual until 2026 in accordance with the solution included in the conceptual report *"On the Introduction of a New Model of Doctoral Studies in Latvia"* approved by CM on 16 June 2020. It aims to significantly improve the quality of doctoral studies and to introduce a new funding procedure, ensuring competitive remuneration for doctoral students during studies, as well as establish a uniform promotion procedure, thereby contributing to the renewal of human resources in higher education and research.

A gradual transition to the new funding model of doctoral studies (instead of the previous scholarships granting the remuneration of at least EUR 1000 per month for the doctoral student) takes place through with the support of EU funds and in accordance with the developed doctoral studies development plan coordinated with MoES. Until the end of 2023, support from EU funds is intended for 341 doctoral students. It is expected that, starting from 2024, the doctoral student's remuneration will be granted to all newly admitted doctoral students, who will have obtained a state budget funded study place in a competition, and it will be provided during the entire period of doctoral studies (three to four years if studies) for 0.5 workload. The second part of the workload (or at least part of the second workload) will be covered by the implementer of the doctoral study programme by involving and employing in research or study work.

The **development and implementation of the academic career reform** based on the recommendations of the project *"Latvia: Academic Career Model"* implemented by experts of the World Bank and proposals of higher education and science representatives will take place gradually in Latvia until the end of 2026. The new academic career framework will improve the attractiveness of academic career in Latvia and thus contribute to better involvement of academic staff and scientists, including from foreign countries, in work in Latvian higher education institutions and scientific institutes. This will also strengthen professional competences of Latvian academic staff and scientists, mutual cooperation and integration into global scientific developments, as well as cooperation with representatives of different economic sectors for the development of innovation capacity.

The new framework is expected to address a number of issues related to improving education supply: (1) providing the person acquiring a doctoral degree with pedagogical skills relevant to academic careers; (2) broad, systemic opportunities for continuous professional development of academic staff, particularly aimed at improving

pedagogical skills; (3) support for the professional development of inter-institutional academic staff, including mobility with a view to teaching; (4) the introduction of different teaching methods taking into account diversity and needs of students; (5) balancing educational and research workload at later stages of careers (research is often evaluated higher than pedagogical work, particularly at later stages of academic careers).

Funding of higher education. In 2015, a new three-pillar higher education financing model was introduced to promote progress of higher education and science towards excellence. In the second pillar, performance funding has been introduced in line with policy objectives on the renewal of academic staff and research-based higher education – indicators such as the research funding raised by the scientific institution, employees of the institution – new doctoral students and master students, as well as indicators on cooperation with merchants and raised international project funding – are taken into account when granting the funding. Every year, performance funding of 6.5 million euro in total is granted to 14 higher education institutions and colleges, which involved students and young scientists in research and creative work most successfully, and implemented international research projects and cooperated with merchants.

Reduction of fragmentation of study programmes, sharing of resources. The implementation of EU Structural Fund Programmes continues, within which until 2023 ESF funding will be invested in: (1) the creation of new, robust and internationally competitive study programmes; (2) targeted strengthening of academic staff (enhancing the competences and skills of teachers) in areas of strategic specialisation, including the recruitment of young teachers (doctoral students) and foreign teachers; and (3) improvement of the management and organisational processes of higher education institutions, including both enhancement of competences of management staff to establish a range of managers and leaders of higher education institutions who are competent to work at international level and promote a change management culture, as well as strengthening the cooperation between higher education institutions and the industry (for improvement of the curriculum of study programmes and its alignment with the needs of the sector). The projects are implemented both by state and private higher education institutions, including colleges. By April 2022, 7 joint doctoral study programmes, 61 study programmes in EU languages and 22 pedagogical study programmes have been developed. ESF support for attraction of 378 doctoral students and 239 foreign lecturers for work in higher education institutions, as well as for the improvement of professional competence of 1986 lecturers has been provided. The implementation of development strategies and result management has been supported in 18 higher education institutions.

The introduction and strengthening of a new teacher preparation system in higher education institutions, taking into account the education curriculum reform setting out conceptually different requirements to the preparation of new teachers. The development of new curriculum for education of teachers has started within the framework of EU funds projects, in cooperation with higher education institutions implementing teacher preparation programmes – work is underway to organise pedagogic study programmes, as well as to introduce a new one-year WB study programme for obtaining a teacher's qualification. EUR 11.3 million in total have been diverted to the development of teacher education. The new WB study programme for the preparation of teachers has been implemented since summer 2020 and will be open to applicants with already acquired higher education.

Development of innovation capacity of students. EU funds support the implementation of *Student innovation programmes* developed by higher education institutions, which are a set of measures aimed at developing innovation capacity, entrepreneurship and entrepreneurial capacity of students contributing to the development of a new highly qualified workforce. Students are involved in developing innovative solutions to address practical societal or sectoral challenges, thus using knowledge in practice and learning while doing. The new study approach aims to strengthen the implementation of research and practical experience based higher education. In particular, the cooperation of higher education institutions with businesses is strengthened, involving industry professionals and practitioners as student supervisors and mentors, evaluators and advisors for student papers. The implementation of the projects started in 2019 and will last until 2023; a total of 9 projects will be implemented.

Modernising the material-technical base of higher education institutions. With the support of EU funds, a number of measures are implemented to increase the quality of higher education, ensure closer link between higher education and the economy and scientific institutions, including in STEM areas, i.e., the implementation of medical and creative industries study programmes. The infrastructure of higher education institutions is improved, equipment is purchased, the study environment is modernised, including the study environment in colleges. The most significant objects completed by the end of 2021 are the construction of the House of Science of the Academic Centre of the University of Latvia, as well as the reconstruction of the study building of Riga Technical University at Ķipsalas iela, adapting it for the needs of the Faculty of Mechanical Engineering, Transport and Aeronautics.

# 4.4. LATEST MEASURES IN ADULT EDUCATION

**Raising awareness in the society of importance of adult education.** To raise awareness and understanding of the population about education as a permanent process throughout life and its role in variable modern economy, in 2021, the MoE implemented a broad public awareness campaign "*Be competitive! Dare to learn all your life!"*[1]. The campaign included a number of informative explanatory activities on the importance, benefits of lifelong learning and the opportunities to resume learning or change occupation, including stories of people on learning a new occupation, the experience of entrepreneurs in investing in the knowledge and skills of employees, articles on future labour market trends, and recommendations for learning new knowledge and skills or reskilling opportunities. In order to better reach persons with low level of education and offer more appropriate training supply, an *Evaluation of more effective involvement of the employed adults with low qualification into training* was carried out within the framework of EU funds evaluation support.

**Establishing a sustainable and socially responsible support system for adult education.** On 1 April 2022, amendments to the *Vocational Education Law* entered into force, which provide for the use of modular vocational education programmes in adult education, and define the educational documents issued for the mastering of a programme module. The introduction of a modular approach is restructuring of curriculum of vocational education programmes, enabling people to manage change effectively and adapt more quickly to new development trends in the sector. In accordance with amendments to the *Vocational Education Law*, a legal regulation has been developed determining the requirements and the procedure of recognition of a person's competence for enrolment in later stages of a vocational education programme. This legal regulation will make it possible for persons to return to the education system to continue education after their competence obtained in previous education or professional experience has been assessed, and to obtain a professional qualification.

In July 2021, the EC Directorate-General for Structural Reform Support, in cooperation with the OECD, started the implementation of the Technical Support Instrument project *"Support employers in promoting skills development in Latvia"* applied by the MoES[2]. The objective of the project is to support Latvia in the development of a new regulatory framework that will support and stimulate employers (especially small and medium-sized enterprises) to improve the skills of their employees or to promote reskilling. Strengthening the rights and obligations of employees and employers within the regulatory framework will provide the basis for a sustainable and socially responsible adult education support system. In addition, the establishment of a support system for employers is provided for by the delegation to the CM included in the *Education Law "to define support measures for employers for additional training of employees, including the criteria for receiving such support and the procedures for implementing support measures"*. The CM Regulations should enter into force by the end of 2022.

Significant investment in the development of adult education in Latvia are planned in Latvia in the EU funds programming period 2021-2027 with the total planned funding of EUR 56.17 million, incl. ESF+ co-funding of EUR 47.74 million (planned to be started in 2024). Support is also planned for the improvement of personal and professional skills and reduction of barriers to learning of employees based on company growth needs, which is planned to be implemented by establishing a public-private partnership, i.e. a *Skills Funds* concept corresponding to the Latvia's context.

**Supporting improvement of employee qualifications.** Since 2017, employed adults have the possibility to increase their professional competence and competitiveness by applying for training within the ESF project "*Improving the professional competence of employees*". As a priority, the support will be provided to employed persons from social risk groups. Since the launch of the project, training has been carried out in six application rounds, as well as in one remote training round, which was announced in addition in summer 2020 to mitigate the negative effects of the COVID-19 crisis. Training in the seventh application round started in 2022. Since the beginning of the project a total of 59 thousand employed have involved in the training, of whom 11 thousand employed were with low level of education. By the end of 2023, more than 87 thousand employed are intended to be involved (including more than 19 thousand employed with a low level of education). To reduce participation barriers and to extend training opportunities, the possibility for one person to learn twice within the project was introduced, the person's co-payment was reduced to 5% (previously 10%) of the tuition fee of vocational continuing education programmes, as well as support for travel expenses to the place of training of EUR 30 per month is available within the project. The employed, who have been granted the status of a low-income or poor person, are provided

[1] Information about the campaign and the materials developed is available here: https://www.em.gov.lv/lv/muzizglitibas-informesanas-kampana

2 More information at: https://www.oecd.org/skills/employer-training-support-Latvia.htm

support for regional mobility, as well as training for them is free of charge. The implementation of targeted measures, including media campaigns, is ensured to reach different adult audiences, particularly low-education adults, and to inform about adult education. Vocational education institutions, incl. colleges, higher education institutions and universities, training centres from all Latvian regions get actively involved in the project by offering various types of education – vocational continuing education programmes, professional improvement programmes, non-formal education programmes, modules and sets of modules of vocational education programmes, as well as study modules and study courses in more than 10 sectors.

Two support measures are being implemented for the training and skills development of employees of companies:

- Within the *"Support for employee training"*, the MoE, in cooperation with sectoral associations (ICT, manufacturing sub-sectors, accommodation and food service activates, sector of international business centres), support is provided to entrepreneurs to improve skills of their employees in order to provide undertakings with appropriately skilled workforce, which would contribute to productivity gains and development and introduction into production of new or improved products and technologies. In 2020, the range of training to be supported was extended by including in-depth training to promote digital transformation of undertakings, to improve business and digital skills. By the beginning of 2022, the support has been provided to 18,281 persons employed by 1000 undertakings;
- *"Support for ICT and non-technology learning, as well as learning aimed at attracting investors"*. The measure has been developed with the aim to promote the productivity and work efficiency of SMEs and large enterprises, by raising the employees' qualifications and skills in ICT areas, to provide undertakings with employees holding the relevant qualification, promoting introduction of nontechnological innovations (products, processes, marketing or organisation) in undertakings, as well as to provide support for learning thereby attracting investments. By the beginning of 2022, the support available to the support measure has been provided to 6,976 persons employed by 566 undertakings. In 2022, the IDAL is planning to start several new support activities within the measure targeted to the organisation of high-level training. The IDAL will provide companies Mini MBA trainings in innovation management and digital transformation, as well as will offer to master *Agile*, *Scrum* and *Prince* project management methods.

Also, to further provide individuals with the necessary support in learning knowledge and skills, the *Concept of individual learning accounts (ILA)* is developed, as currently employees often depend on the opportunities provided by and decisions of the employer when exercising their right to training. This instrument will make it possible for individuals to participate in mastering skill corresponding to the labour market and will enable them to manage their own careers, including by receiving support for determining learning needs and overcoming training barriers. It is planned that individual training opportunities will provide access to individualized budgets to cover the costs of training, consultations, skills assessment, mobility and other costs. Individual training rights can be accumulated and used also over a longer period of time.

Improvement of the quality of adult education. In order to introduce non-formal education quality criteria, amendments to the *Education Law* have been developed and submitted to the Saeima. They provide for the introduction of the principles of the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) in non-formal adult education. Respective draft CM Regulations *"Procedures for Licensing and Withdrawing Licences of Adult Non-Formal Education Programmes"* has been prepared (will be submitted to CM after the amendments to the *Education Law* enter into force).

To provide support for quality adult education by defining individual needs and combining the supply of training with assistance for overcoming training barriers, a *"Roadmap for Local Governments in Adult Education Management"* and a description of the position of adult education coordinator have been developed, a network of adult education coordinators has been established and strengthened, a competence improvement programme for adult coordinators has been developed and the piloting of the programme (training) is underway preparing local government adult education coordinators for work with adults. Two teacher professional competence improvement sample programmes for work with adults (for teachers and adult educators without pedagogical education) have been developed in cooperation with the Latvian Association of Higher Education Institutions for Lifelong Learning (LAKMA). Both programmes were piloted in cooperation with the University of Latvia, Riga Technical University, Rezekne Academy of Technology, Liepaja University, and Ventspils University of Applied Sciences.

Latvia has started to participate in the OECD's Programme for the International Assessment of Adult Competencies (PIAAC), which allows to evaluate literacy, numeracy and problem solving skills of 16-65 years old population and their use in daily life and at work. The first results of the OECD's PIAAC study will be published in 2024. The data obtained will allow for the analysis of discrepancies between the supply of skills and demand in the labour market and the impact of the respective skills on the amount of remuneration, as well as to compare the quality of Latvian human resources internationally.

Promotion of involvement of state vocational education institutions and higher education institutions in the implementation of adult education. All the vocational education institutions under MoES implement adult education, and their development and investment strategies for 2021-2027 in adult education plan to increase the number of adult learners and to offer vocational continuing education programme and assessment of competences obtained outside the formal education system in all professional qualifications.

By 2022, 138 vocational education teachers participated in professional competence improvement programmes for work with adults. In autumn 2022, a professional competence improvement programmes for work with adults will be implemented also for the staff of higher education institutions.

Improvement of activities for professional training, reskilling, and improvement of skills of the unemployed. 17.9 thousand people in total were involved in training activities for the unemployed and job seekers implemented by the SEA in 2020, and 12.8 thousand persons – in 2021. At the end of 2021, the target group for the training activities was extended – in future, individuals at risk of unemployment will be able to participate in them, in particular elderly employed persons, employed persons with disabilities, employed persons with a low level of education.

The cooperation between the SEA and employers to promote the improvement of skills of the unemployed and job seekers and labour force availability continues. The opportunities of employers to get involved in the selection of unemployed when looking for candidates for new jobs and also by fostering training of the unemployed at their immediate employer and mastering of skills at workplace are popularised through the involvement in the activity *"Training at the employer's"* are popularised. In order to prepare the unemployed and job seekers for work in the ICT, engineering and manufacturing industries, at the end of 2021, cooperation with associations of those sectors was extended, which will in future be able to receive a grant for coordination, management of training activities, recruitment of relevant teachers and other activities – 200 euro unemployed person involved in a training with an employer. Financial support for the organisation of practical training at the employer's from 2021 is linked to the level of professional qualification to be mastered (the higher the level of qualification, the higher the amount of the grant to the employer).

In 2022 and 2023, continuous improvement of knowledge and skills of 11.6 thousand unemployed, job seekers and persons at risk of unemployment will be promoted through the SEA by raising REACT-EU funding, in order to reduce the impact of the COVID-19 pandemic on the labour market.

To reduce skill mismatches and promotion of adult education in general for the unemployed, including those who have not completed vocational education programmes, yet have extensive work experience or have developed skills outside the formal education system, the possibility to get a document certifying qualification, which is recognised by the state, is offered by undergoing evaluation and recognition of competences obtained outside the formal education system. Similarly, the legal framework provides for modular vocational education programmes for the unemployed and other customers registered with the SEA, which correspond to the latest developments in vocational education in the EU, i.e. in a remote way (alongside remote training in higher education institution study modules). When implementing these training programmes, attention is also paid to quality aspects by setting additional requirements to education institutions with regard to the provision of the material and technical base, compliance with environment accessibility requirements, performance indicators set in the training process, etc. For more informed choice of training programmes, SEA customers have access to career consultations and ICT tools are publicly available on the SEA website (labour market forecasting tool, search of education institutions, etc.).

In accordance with the OECD assessment, which compared achievements in the labour market (employment indicators, amount of wage, time in unemployment and other criteria) of participants of the training measures and the control group (not participants), the impact of ALMP measures implemented in Latvia is very favourable. Participation in vocational and non-formal education programmes improves the possibilities of finding a job and receiving a higher wage in the future. In 2019 and 2020, about 41% of registered unemployed and 38% of job

seekers on average were permanently recruited after completion of vocational further education, improvement and non-formal education (language and ICT programmes) 6 months after the completion of the measure, which is considered to be a high impact assessment indicator also among EU Member States.

## 4.5. MEASURES FOR THE DEVELOPMENT OF DIGITAL SKILLS OF THE POPULATION

Reducing the digital gap in general and vocational secondary education. The Memorandum of Cooperation *Computer for every child* signed by senior officials of the state and Latvian Association of Local and Regional Governments on 14 May 2021 provides for the provision by 2025 of an appropriate computer for each pupil and teacher, as well as the creation of a computer library in schools. With funding of EUR 11.2 million available from REACT-EU, around 26 portable computers are planned to be purchased in 2022. They are primarily intended for students of forms 7-9. As part of RRF, portable computer equipment will be purchased for the most socially vulnerable students. Computer equipment for other groups of students will be purchased within the framework of the specific objective of the EU funds 2021-2027 programming period *"Supplying educational institutions for the quality introduction of improved learning content"*.

The development of digital skills in higher education will ensure governance efficiency, performance of academic staff, growth of quality of studies, international competitiveness, and the development of higher education institutions as centres of digital excellence. With the support of EU Funds, academic and scientific staff of Latvian higher education institutions and scientific institutions master high-level digital skills (latest trends and methods in the preparation and teaching of the content of technology courses) at the State University of New York at Buffalo. The purpose of these trainings is to ensure the transfer of mastered knowledge in Latvian higher education institutions. Since 2019, 36 lecturers of Latvian higher education institutions have mastered high-level digital skills. 22 more persons had the training in January 2022.

To ensure development of the ICT sector and satisfy the demand of other sectors for ICT specialists, trilateral cooperation between national regulatory authorities, leading ICT companies, and higher education representatives has been established in a targeted manner. A joint IT education platform called Baltic IT Society or *BITS.education* has been created. The platform collects IT education programmes to promote the preparation in Latvia of new IT professionals, who are ready for the international market, and creates digital campaigns to attract students from foreign countries.

Within the framework of the EU Recovery Assistance programme REACT-EU, investments (total funding of 7.8 million euro) are planned for the development of digital skills for students, improving the content of studies, training methodology and implementing appropriate digital technological solutions. The support will contribute to the development of ICT education by enabling all students to substantially improve their digital skills in line with the needs of today's labour market. Support is also intended for lecturers for the introduction of new digital content, training methodology and digital technological solutions. The implementation of projects of higher education institutions is scheduled to start in 2022 and to complete by the end of 2023.

Within the RRF digital transformation component, investments are planned for mastering high-level digital skills (total funding of EUR 17 million). In the next six years, it is intended to increase the number of specialists with high-level digital skills (DigiComp level 7-8), who are capable of using high technologies for the development of knowledge and technology-intensive new products and services in different sectors, at the same time contributing to the strengthening of Latvia's role in the preparation of high-level ICT specialists in the region. Investments in the implementation of training and related R&D activities are planned in three areas – quantum technologies, high performance computing and language technologies. It is planned to implement the projects from 2022 to 2026.

Support programmes for the development of digital skills will also be continued with other support measures in the EU Funds 2021--2027 programming period, where digital transformation is one of the EU's priorities.

Mastering of ICT skills and competences by the unemployed, job seekers, and persons at risk of unemployment. To overcome the Covid-19 crisis, the services and measures provided by SEA have been revised and improved, adapting them to the labour market situation and the restrictions in the country in relation to the variable epidemiological situation. Since 2020, several SEA services and activities have been offered remotely and the

availability of training programmes in the electronic environment has been developed. In February 2021, the supply of training organised by SEA was extended to additional digital skills/computing professional improvement education programmes, as well as to ICT modules from modular vocational education programmes in vocational continuing education and ICT higher education institution study courses/modules. Training for the acquisition of new digital skills was carried out both on-site and remotely – online. In September 2021, SEA launched the "*Future Skills Initiative"* pilot project. Within it, the unemployed, job seekers and (employed) persons at risk of unemployment who want to improve their skills and improve their competitiveness in the labour market are offered the possibility of receiving training support of up to EUR 500 for mastering of digital and other skills in demand on the labour market in open online course platforms such as *Coursera*, etc. (the person may learn up to five courses chosen by him/her). By February 2022, applications of 1,624 participants have been received for participation in the pilot project. 627 people started learning the courses, 295 of whom had completed their training.

in 2023, EU RRF funding of EUR 28.7 million will also be raised for the implementation of SEA training activities, which will improve skills of 20.5 persons in 2024-2025. As part of this project, emphasis will be placed on the development of digital skills of the unemployed, job seekers and persons at risk of unemployment in accordance with the digital transformation component included in the RRF plan.

Improving digital skills of the employed. In all training rounds of the ESF project *"Improving the Professional Competence of Employed"* implemented by SEDA support was provided for mastering of digital skills by the employed. More than half of the employed involved in the project (32 thousand of 59 thousand) improved their digital skills within the training. One fully remote training round was implemented in 2020 to reduce the negative consequences of the Covid-19 crisis. Further rounds (6 and 7) are also proposed to be implemented remotely if the specifics of the education programme permits. Application round 6, which was implemented in 2021, was fully devoted to mastering and improvement of digital skills. Over 10 thousand employees started this training mastering digital skills to ensure the training process in the field of education, data analysis, programming skills, digital sills in project management, accounting, marketing, etc.

Development of digital skills of undertakings. In April 2022, MoE and representatives of the international technology company Google signed a memorandum of cooperation to foster growth of local companies and strengthen resilience of business in the constantly changing world. Until the end of 2022, the programme *"Grow with Google"* will provide free training to at least 3,000 representatives of small and medium-sized enterprises extending their knowledge and skills in areas like e-commerce, export, digital marketing, cyber security and integration of technology in business.

An investment plan for the improvement of digital skills of employees of companies has been developed for the EU funds programming period 2021-2027. The total planned amount is investment is EUR 30 million (RRF and ERDF funding). At least 3000 undertakings are expected to be supported by RRF funding by the middle of 2026, while at least 1273 undertakings are expected to be supported by ERDF funding by 2029. The investment is expected to be divided into three parts: (1) Massive Open Online Courses on topics such as UX/UI design fundamentals, e-commerce, data analysis and visualization, database development and maintenance, programming, development of business intelligence systems; (2) the European Digital Innovation Centres will offer improvement of high-level digital skills by organising specialised training on topics such as cyber security, artificial intelligence and high performance computing; (3) MoE will continue its cooperation with industry associations to support the development of the digital skills of employees in key areas for their undertakings (storage of information on the internet, use of websites/social portals, software configuration, online sales, image, video and audio processing, preparation of presentations, basic programming skills, etc.).

Strengthening the digital skills management approach. Within RRF, until 2026 it is planned to develop and approbate the concept of *individual learning accounts* (ILA) corresponding to the Latvian context to stimulate participation of adults in education, particularly in the mastering of digital skills, as well as to make the world's best digital learning aids available to the Latvian educational system by using specialised high quality machine translation and other artificial intelligence technology solutions, including involving education experts in the validation and adaptation of localised content. The total planned funding is EUR 14.31 million. A major focus will be on expanding the supply of massive online training courses and self-learning materials in digital format, creating a technological environment appropriate for this purpose, and implementing such training popularisation measures.

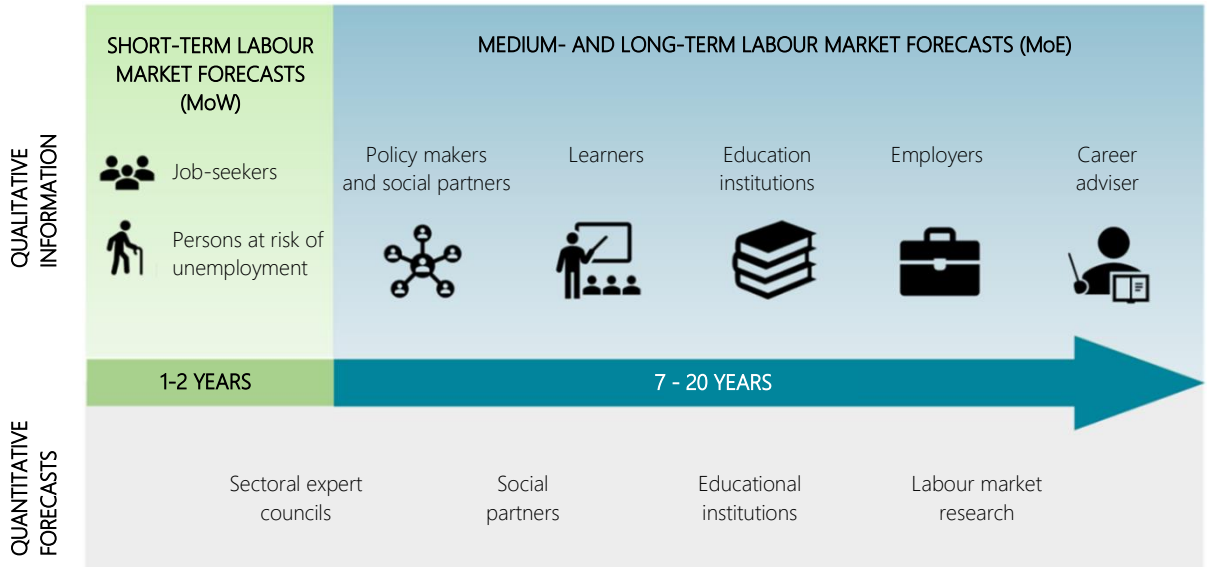
# 4.6. MEASURES TO MONITOR THE MATCH BETWEEN THE SKILL DEMAND AND SUPPLY

**Development of labour market forecasts.** Labour market forecasts are one of the tools that allow an early anticipation of formation of labour market mismatches in the future. In Latvia, short-term labour market forests are projected by SEA, while medium-term and long-term labour market forecasts are drafted by MoE. SEA short-term labour market forecasts characterise changes in labour demand in the short term (up to 1 year). Therefore SEA short-term forecasts are suitable in cases when one needs to decide what to do now so that the situation in one year is favourable. Meanwhile, medium-term and long-term labour market forecasts indicate the expected development of the situation over a longer period of time – in the medium term (up to 7 years) and in the long term (up to 20 years). For detailed information on MoE labour market forecasts see chapter 3.1 of the report.

As part of its short-term labour market forecasting, based on macroeconomic indicators and employer surveys, SEA forecasts changes in demand at the level of occupational groups and properly plans and organises training of the unemployed, job seekers and persons at risk of unemployment, coordinating the lists of training programmes with social partners and other stakeholders.

Figure 4.1

Labour Market Forecasting System in Latvia




**Interactive labour market forecast platform.** To extend the availability of forecasts and public awareness of future labour market trends and educational needs, a web-based interactive labour market forecast reflection platform[1] has been publicly available since 2021, which summarises both information on the current situation in the labour market and the SEA's short-term labour demand forecasts (https://prognozes.nva.gov.lv) and the MoE medium-term and long-term labour market forecasts (https://prognozes.em.gov.lv). The platform provides extensive options for analysis of forecasts. A video on the possibilities and use of the forecasts platform has been prepared.

**Strengthening the capacity of use of labour market forecasts.** Guidelines for interpretation and use of medium- and long-term labour market forecasts have been developed. This serves as an additional source of information for career advisers, but may be used by any interested party for professional and informative purposes.[2] Regional discussions/training seminars for career advisers on the use of the forecasts have been organised in cooperation with SEA.

[1] The interactive forecast platform was set up within the framework of the ESF project *"Improvement of the labour market forecasting system"* and the ERDF project *"Creation of a labour supply and demand forecasting and monitoring system"*.

[2] The guidelines are available on the MoE website: https://www.em.gov.lv/lv/media/604/download

To address insufficient involvement of sectors in the use of labour market forecasts, the use of labour market forecasts in the work of SEC has been extended – in cooperation with ECL/SEC discussion cycles on labour needs in sectors were organised, individual sectors were further analysed in the context of medium- and long-term labour market forecasts.

To promote comprehensive public discussions on future labour market trends and needs, regional workshops presenting labour market forecasts are organised (by SEA in cooperation with MoE). Such workshops are planned in the future as well. The participants of the workshops are informed about the topical issues of the labour market, the results of the express surveys conducted by the SEA and the latest labour market forecasts.

The **monitoring of graduates** makes it possible to obtain information on future success of graduates of higher education and vocational education institutions (employment, income, social indicators, career growth, and competitiveness in the labour market) to ensure data-based decision-making at individual, education institution, local government, regional and national level. Information on the results of graduates in the labour market make it possible to make an assessment of the relevance of the skills and knowledge of graduates to the needs of the labour market and the economy as a whole. The Latvian Open Data Portal has been publishing data on the monitoring of graduates of higher education institutions[1] for three years, while the implementation of the monitoring of graduates of vocational education institutions continues, the first data are available (see also the box in section 2.3 of the report).

Since 2021, a tool for monitoring of graduates of higher education programmes is available on the public portal of the State Education Information System[2], where monitoring results are published.

**Teaching staff forecasting and employment planning system.** By the end of 2023, a system for forecasting the demand and supply of teachers and planning employment in general and vocational education is expected to be developed, which will enable timely response to the needs of the system in preparation and improving professional competence of teachers, effective employment planning of teachers in education institutions, and planning of support activities at local government and national level.

[1] Information on graduates of Latvian higher education institutions in 2017, 2018 and 2019; in the taxation/monitoring years 2018, 2019 and 2020: https://data.gov.lv/dati/lv
[2] Tool for monitoring of graduates of higher education programmes: https://www.viis.gov.lv/monitoringa-riki

# 5. SUMMARY AND RECOMMENDATIONS

The report describes the current situation in the Latvian labour market and includes the updated medium and long-term labour market forecasts, which are one of the elements in the process of adjustment of labour supply. Labour market forecasts are the quantitative basis for further discussions among employment, education and structural policy makers, social partners, scientists and other stakeholders in order to crystallise action directions, promoting a balanced development of the labour market.

## I. MACROECONOMIC FRAMEWORK AND ASSUMPTIONS OF THE FORECASTS

The labour market forecasts are based on the economic growth scenario developed by MoE and the corresponding macroeconomic forecast.

From 2022 to 2030, the target scenario foresees the economic growth by an average of 4.2% per year, but from 2031 to 2040 annual growth rates will slow down and will be within an average of 3%. The preconditions for growth in the medium and long term are to support economic competitive advantages by technological factors, manufacturing efficiency and innovation, as well as the ability to adapt and use the opportunities provided by the global changes. Although the Covid-19 pandemic and the geopolitical situation in the region have a negative impact on the economy, the long-term goals of economic development, which have already been identified in policy planning documents and are related to the need to increase exports and productivity of Latvian goods and services, remain unchanged. The initiatives launched earlier by EC, such as the Green Deal and digitisation, also remain topical.

The target growth scenario has been drafted according to goals of the Latvian structural policy defined in policy documents – Sustainable Development Strategy of Latvia until 2030, National Development Plan of Latvia until 2027, National Industrial Policy Guidelines until 2027. The processes determining global economic development were also taken into account.

**The Latvian economy has been able to adapt to the challenges posed by the Covid-19 pandemic, but the recovery of certain sectors can be quite long.** Although there is still high uncertainty in relation to potential virus mutations and new outbreaks of the pandemic, the target scenario generally does not foresee new and significant Covid-19 restrictions. At the same time, the Covid-19 pandemic has had a strong and lasting impact on the socio-economic situation on a global scale and also in Latvia, for example, increased use of e-commerce and other digital solutions, forms of remote work, more localised global value chains, etc., these changes are likely to persist also after the pandemic. Although Latvia's economy has largely adapted to new the circumstances and GDP in 2021 was already above the pre-crisis (2019) level, economic activity in certain sectors of the economy remains significantly lower than in the pre-crisis period, for example, in accommodation and food service activities, arts, entertainment and recreation, as well as transport. The recovery of these sectors may be quite long.

**Economic growth in the medium term may be impeded by the uncertainty in the geopolitical situation in relation to Russia's hostilities in Ukraine.** The geopolitical situation has deteriorated significantly after Russia invaded Ukraine. There is a big uncertainty how the war and related sanctions, as well as disruptions in supply chains will further affect economic development. The MoE forecasts that economic growth will fall by at least 3 percentage points in 2022 due to geopolitical factors compared to the previous forecasts. High uncertainty will affect consumption of the population, investment of businesses, and foreign trade. Overall, the scope of economic impact of the conflict is very unclear and will depend on the duration of the war and political reactions, and growth can be significantly impeded and the inflation pressure will increase as a result of that. However, in the long term, new and diversified raw material supply markets, strengthening of energy independence of the state and reorientation from Russia to more solvent Western markets will generally increase the potential of the Latvian economy in the future.

**The decisive precondition for faster economic growth is to increase the productivity level.** Due to the expected demographic trends, the decisive precondition for faster economic growth is to increase the labour productivity level. One of the main challenges is to create new competitive advantages, which is related investments in human capital, technologies, innovation and research, digitisation. The creation of new competitive advantages is an

important condition for the extension of export markets and growth in export volumes, which should become the main growth driver. Latvia's competitiveness in external and domestic markets will depend on its ability to close the productivity gap with the technologically developed countries. The increase in productivity is based not only on technological novelty, improvement of production process management, but also on reallocation of existing resources to produce products with higher value added. In the medium and long-term, more rapid development is expected in the sectors, which are able to boost their productivity through overcoming the technological lag, modernisation of production and investments, investments in human capital, research and innovation.

**The decline in the population will become slower until 2040, but ageing of society will continue and working age population will reduce.** Until 2040 the population of Latvia is expected to continue to reduce, at the same time negative dynamics in population will slow down affected by improvements in international migration flows and natural increase balance of the population. The main reason for the population decline in medium and long term will be population ageing trends and the negative gap between birth and mortality rates will be present up until 2040. The most significant decline is expected in working age population, therefore demographic processes will leave a considerable impact on the labour market. At the same time, considering the increase in refugees of the Ukrainian war, the number of immigrants could exceed the number of emigrants already in 2023. However, such changes in migration flows could be temporary and positive stable net migration is expected only around 2026/2027. Overall, the Latvian population will decrease to approximately 1.73 million or by almost 164 thousand by 2040, compared to the beginning of 2021. The reduction of the population in the age group 15-64 is expected by almost 144.8 thousand or about 12%. Meanwhile, the share of elderly people will continue to increase – the population above 64 years will increase by almost 54 thousand or about 14% by 2040.

## II. MEDIUM- AND LONG-TERM LABOUR MARKET TRENDS

**The labour market is gradually recovering from the shock of the Covid-19 pandemic, however, structural effects of the crisis may persist.** Along with the increase in economic activities, the overall situation in the labour market is gradually stabilizing. At the same time, the Covid-19 crisis has also left visible "marks" on the labour market. The number of employees and the level of employment are still significantly lower than in 2019. The largest job cuts are observed in accommodation and food service activities, retail trade, transport, as well as arts, entertainment and recreation. Moreover, in many of the sectors directly affected by the crisis, the number of jobs may not return to the previous levels for a long time. The crisis has also affected the labour participation rates, which, along with demographic processes, is narrowing labour supply and increases the risks of labour shortages. The protracted crisis has also increased the share of long-term job seekers, which, together with regional labour market disproportions increases structural unemployment risks, as well as exacerbates the problem of labour availability. The Covid-19 crisis has also brought many positive changes. It has significantly influenced the change of society's habits, creating new opportunities and needs in the labor market. The use of different ICT solutions in everyday life has increased significantly, providing the necessary infrastructure for remote work, education, shopping, supplies of goods and other processes. Much more extensive remote work opportunities have also shown during the crisis – about 1/5 of employees worked remotely in 2021. It should be noted that remote work in general can have a positive impact on productivity of employees, as well as reduces costs, such as transport costs. Sectors with high opportunities for remote work show better performance in times of crisis. Many of these processes open up a new phase of societal development and are likely to remain in the post-crisis period. The sectors less affected by the crisis are also expected to recover more quickly and will be a strong driver for economic growth in the long term.

**In view of the escalation of the geopolitical situation, it is expected that the situation on the labour market in 2022 will be tentative.** The resilience of Latvia's economy to external shocks has strengthened significantly in recent years, particularly in the financial sector, so the direct impact of sanctions and the narrowing of the export market on the Latvian labour market is expected to be limited. In 2022, the labour market will continue to be supported by both the gradual lifting of the restrictions introduced by the Covid-19 pandemic, as well as the construction of state infrastructure facilities that have already started. It is expected that in 2022 the employment may increase by 0.9% or 8 thousand, while the unemployment rate may decrease to 7.1%. An employment increase might be observed in almost all sectors, with the exception of trade, transport and manufacturing. Also a slight increase in the labour participation rate is expected. Overall, employment and unemployment rates could return to the levels of 2019 around 2024-2023, while the number of employees in absolute terms is not likely to return to the previous level, considering both the overall demographic processes and the increase in labour productivity.

**Medium-term and long-term unemployment will be close to its natural level.** Taking into account the demographic trends, overall unemployment will continue to decrease in both the medium and long term. It is expected that unemployment rate could drop below 7% already in 2023, while it could fully return to the level before the Covid-19 pandemic (level of 2019) around 2025. Overall, unemployment in the medium and long term will be close to its natural level (within 5-6%) and will mainly consist of frictional and structural unemployment. The highest unemployment risks are expected among the population with low level of education and without professional skills/professional qualification.

**The number of employees may not return to the pre-Covid-19 crisis level, economic growth will be based on productivity growth.** In the next 3-4 years, the labour market will be dominated by the low base effect, which could lead to an average increase in the number of employees at a faster rate than before the Covid-19 crisis. Both in the medium term and in the long term, trends in labour demand and employment dynamics will be largely determined by the increase in labour productivity, which is an essential prerequisite for maintaining Latvia's global competitiveness, thus the number of employees could grow slowly in the coming years. The increase in labour productivity over the period from 2022 to 2030 could be around 3.8% a year on average, which constitutes more than 93% of economic growth in the relevant period, while from 2031 to 2040 economic growth could be fully based on productivity growth. In view of this, the employed population could grow by approximately 26 thousand or 3% by 2030, compared to 2021, and decrease by approximately 11 thousand (1.3%) by 2040, compared to 2030. The number of employees is not expected to return to the level before the Covid-19 crisis until 2040.

**Demographic processes will continue to maintain pressure on labour supply.** Overall, the Covid-19 pandemic crisis has had a negative effect on participation of population in the labour market – in 2021 the economic activity rate of the population was by 1.7 percentage points lower than before the crisis in 2019, reducing also the total labour supply in the labour market during this period. As economic activity in the economy increases, participation of the population in the labour market is also expected to gradually resume growth. The level of economic activity of the population could generally increase from 2022 onwards and fully return to pre-crisis levels around 2024. However, despite the increase in economic activity of the population, overall labour supply is likely to remain below the level of 2019 until 2040. It should be noted that the population of working age will continue to decline in the coming years, having a negative impact on overall labour supply. It is expected that labour supply could fall by approximately 10 thousand or 9.3% by 2040, compared to 2021.

**The most significant increase in new jobs in the medium term is expected in professional, scientific and technical services, information and communications, and construction.** Overall, the above-mentioned sectors will create around 34.6 thousand jobs by 2030, representing around 2/3 of all new jobs in the economy as a whole in the corresponding period. At the same time, in the long term (up to 2040), the most significant contribution to new jobs could be made by professional, scientific and technical services, information and communication services, as well as health and social care services, which will be largely affected by the general ageing trends of the population and by increased demand for various health maintenance, rehabilitation and other services related to the "silver economy". A significant increase in jobs in the long term is also expected in accommodation and food service activities, taking into account the general extension of the tourism sector.

**The change in the structure of the economy will increase the demand for high qualification labour and reduce the number of low and medium qualification jobs.** The increase in productivity levels will be largely driven by the restructuring of the economy from low and medium-low-technology sectors to high-technology sectors, thereby affecting not only overall labour demand, but also its structure by increasing the share of high qualification jobs on the one hand, but reducing the share of low and medium qualification jobs on the other hand. Overall, by 2040, the share of high qualification jobs could increase by approximately 8.1 percentage points in total labour demand, while the share of medium- and low qualification occupations could decrease by 3.7 percentage points and 4.4 percentage points, respectively, compared to 2021. Proportionally, changes in the structure of the economy are likely to have an impact on elementary occupations. By 2040, labour demand might reduce by more than 35% or 36.5 thousand jobs in elementary occupations and by more than 27 thousand or 7.4% in medium qualification jobs. The number of higher qualification jobs could grow by more than 75 thousand by 2040, thus creating 462 thousand jobs, or more than half (almost 53%) of the total number of jobs in the economy. The increase in higher qualified jobs as a whole will increase demand for labour force with higher education. Labour demand with higher education is expected to increase by more than 63 thousand by 2040. At the same time, it should be noted that nearly 25% of the higher qualification occupations currently employ employees with secondary (24%) or lower (1%) education, but these employees will be gradually replaced in the coming years.

**The labour market will keep being increasingly affected digitisation trends and job automation.** It should be noted that innovation cycles have become more rapid in recent years. Big data/cloud computing, 3D printers, autonomous vehicles and platform economy are only part of innovation, which has changed traditional product and service markets and has a significant impact not only on business models but also on labour and skills demand. In the coming years, increasingly more jobs are expected to face automation trends, the largest drop in jobs is expected in occupations with a large proportion of manual and repeating activities, and in specialities related to direct service, such as shop assistants and cash register clerks in retail trade, call operators and similar occupations. In the long term, automation trends are most likely to have an impact on the number of medium and low qualification jobs. It should be noted that less prone to automation are those occupations that require a high level of education, high social interaction and the ability to manage, plan and coordinate complex environments/circumstances. In turn, jobs that require relatively low levels of formal education or do not involve relatively complex social interaction, as well as occupations involving routine manual work, are more exposed to automation.

**Main job opportunities will be created by replacement demand.** 327 thousand jobs can be vacated by 2040 due to labour ageing and leaving the labour market, of which 147 thousand vacancies could be opened in high qualification occupations, 139 thousand in medium qualification occupations, but 41 thousand in elementary occupations. The most significant increase in replacement demand in high qualification occupations is expected in occupations of professionals – nearly 2/5 of those currently employed in the corresponding occupations could leave the labour market by 2040. The most significant increase in replacement demand is expected in the sub-major group of teaching professionals, in the sub-major group of health care professionals, and in the sub-major group of science and engineering professionals. At the same time, the most significant increase in replacement demand in medium qualification occupations is expected in agricultural occupations, in occupations of drivers and mobile plant operators, lifting equipment and machine operators, handicraft and printing workers, as well as protective services workers. Overall, replacement demand could make up almost 3/4 of all vacancy openings in the labour market by 2040.

**Labour force ageing trends, as well as the low reproduction rates will have the greatest impact on the availability of medium qualification labour force in the medium and long term**. By 2040, the economically active population with vocational secondary education might reduce by more than 1/3 or almost 86 thousand, but shortage of labour force with relevant qualification might increase up to 114 thousand employees. The shortage of medium-skilled labour might be most pronounced in sectors like transport services and storage, construction, manufacturing, as well as agriculture and trade industries, where the proportion of medium-skilled jobs is approximately 50% and more, and there is also a high proportion of pre-retirement workers.

**Regional labour market disparities may hamper normal labour market recovery, create risks of structural unemployment and reinforce labour shortages.** Uneven regional growth largely determines that jobs and job opportunities are mainly created and concentrated in the most economically active regions of Latvia – mainly in the agglomeration of Riga, while the largest number of job seekers (labour reserves) is mostly located in less developed regions, such as Latgale Region. As Latvia gradually recovers from the shock caused by Covid-19, it will be essential to provide the necessary labour resources for economic growth. However, it should be noted that the participation of the population in the labour market in the coming years may be lower than in the past, while the attraction of foreign labour force may remain limited, so an efficient access to local labour force might play a critical role for balanced development of Latvian labour market in the future. It is essential not only to increase the regional mobility of the workforce, or the ability to quickly change the place of work and life, but also to ensure the restructuring of investment and work opportunities on a regional basis.

**In terms of productivity, Latvia still significantly lags behind the EU average, a rapid increase in labour costs may have a negative effect on Latvia's global competitiveness.** In terms of labour productivity Latvia still lags significantly behind Europe's most economically developed countries – in 2021 productivity (GDP per employed) in the Latvian national economy reached 55.7% (73.5% according to PPS) of the EU average. Overall, the increase in labour productivity during the Covid-19 crisis period has lagged behind the increase in labour costs by approximately 2.5 times. During 2020 to 2021 the labour productivity has grown by 5.3%, while the labour costs have increased by 13.3%, thus Latvia is rapidly losing its competitive advantage in low-cost market segments. Wages are an important factor of cost competitiveness, so wage growth must be balanced with productivity growth, otherwise competitiveness in tradable industries might be lost, resulting in a lack of sustainable growth.
It should be noted that the shortage of specific skills and structural changes in employment needs during the Covid-19 pandemic crisis have generally fostered a rapid increase of wages and labour costs – the average increase in gross wage in 2021 reached almost 12%, but labour costs were 11% higher than a year ago. At the same time,

labour costs in Latvia are still one of the lowest in the EU member states, moreover, in open labour market conditions with free movement of labour, the possibilities of keeping labour costs at a low level for a long time are limited, therefore to maintain Latvia's competitiveness, it is essential to accelerate the growth of labour productivity.

## III. MAIN LABOUR MARKET MISMATCHES

**The negative effects of the Covid-19 pandemic on the labour market have generally been mitigated by the implemented state support measures**, which along with the implemented active labour market policy measures partly allowed preserve jobs, income and economic activity of the population. At the same time, convergence of wages and a slightly more open labour recruitment policy continue to reduce the negative impact of migration trends on both population dynamics and overall labour availability. Similarly, in the past 5 years also the education supply has become more balanced, thus allowing previously estimated labour market imbalance risks to be partially mitigated. However, it should be taken into account that the impact of the policies is overall slow, so the main structural problems identified earlier still remain relevant.

**In general, the supply of higher education over the last 10-15 years has become more balanced and closer to the labour market needs**, which has contributed to the increase of the higher qualification labour force both in terms of the structure and in absolute numbers, thus allowing more high-skilled jobs to be created in the economy, as well as overall promoting the development of more knowledge-intensive activities. The overall supply of higher education has also become structurally more balanced, which has reduced labour shortages in the fields of life sciences, ICT and engineering. The number of students enrolled in STEM disciplines has grown by approximately 7 percentage points since 2008, and has reduced by 15 percentage points in social sciences and humanities. **However, in the last 3-5 years, structural changes between STEM and social and humanities have stopped** and even increased in humanities and arts, social sciences, business and law, but reduced in engineering, construction and manufacturing programmes. The number of students enrolled in social sciences, business and law in 2021 increased by 889 students, compared to 2017, while in the thematic group of humanities and arts –by 167 students, thus generally increasing the risks of surplus of labour force with the relevant qualification in the medium and long term.

**The risk of shortage of medium qualification labour force with vocational education continues to grow.** The number of students who have been enrolled and have obtained qualification in vocational education institutions continues to decline. Although the share of youth, who continue with vocational education after primary education, generally keeps growing, taking into account the reduction in the total number of youths in the education system, it is still insufficient to completely reproduce the needs for medium qualification labour.

**There is still a large proportion of young people entering the labour market without a specific qualification and skills.** In 2020, 4.1% of young people do not continue their studies after completing primary education, although the indicator has decreased by 2.1 percentage points during the year, it is still high and in the future may increase the population share with low level of education. Similarly, nearly 1/3 of graduates of general secondary education chose not to continue their studies after the graduation. Also considering the student dropout rates at various stages of education, more than 1/3 of young people enter the labour market with general secondary and primary education, while the demand for such a workforce will decrease rapidly in the coming years.

**The participation levels in adult education remains low.** In view of demographic processes and the reduction of traditional educational flows, adult education supply plays an important role in reducing labour market disproportions. The involvement of the population in adult education increased significantly in 2021 – by 2 percentage points compared to 2020. In spite of this, the overall involvement of adults in the education process is still insufficient and significantly lower than the previously established goal - by 2020, to reach 15% of the population aged 25 to 64 involvement in adult education activities. It should also be noted that the current supply of adult education does not fully address the surplus of the low qualification labour force. The participation of people with primary education in adult education activities is still the lowest among all population groups – only 3.4% in 2019.

**Most of the implemented measures have a slow and insufficient impact on the labour market.** While there are some improvements in certain segments of the labour market, the major risks of labour market mismatches remain high. Meanwhile, the impact of most of the implemented education measures on the labour market is slow and changes may become visible only after 5-10 years. Similarly, the effectiveness of measures in traditional

education/labour force preparation channels is reduced by demographic processes – the number of young people aged 16-18 has decreased by almost 27% over the past 10 years and those aged 19-22 by more than 2/5. Therefore, adult education plays a key role in addressing skills demand and supply mismatches.

According to the medium and long term forecasts, the following major disproportions of the labour market are expected:

- Shortage of high qualification specialists in life sciences, ICT and engineering. Until 2030 the shortage of high qualification specialists in STEM disciplines may increase to ~9.1 thousand. In comparison with the forecasts of 2020, the shortage has reduced more than 2 times (earlier ~19.4 thousand in 2030);
- Surplus of higher qualified labour force with education in social sciences, business and law. Until 2030 the surplus of labour force with higher education in social sciences, business and humanities may increase to ~26.5 thousand. In comparison with the forecasts of 2020, the projected shortage has increased by more than 1/5 (earlier ~21.8 thousand in 2030);
- Shortage of labour force with vocational secondary education. In the medium term may increase the shortage of labour force with secondary vocational education (to around ~69 thousand), the shortage will be observed almost in all thematic groups of education, especially in engineering and manufacturing. In comparison with the forecasts of 2020, the projected shortage has increased by almost 16 thousand (earlier ~53.1 thousand in 2030);
- Surplus of labour force with general secondary education, primary education and lower education level. Labour surplus with general secondary education, primary education and lower education level is expected to increase in the medium term. Until 2030 the surplus of such labour force may reach ~95.8 thousand (~34 thousand with general secondary education, ~61.8 thousand with basic and lower education). In comparison with the forecasts of 2020, the forecast surplus has reduced by approximately 1.7 thousand (previously ~97.5 thousand in 2030). The projected labour surplus has mainly reduced in the primary and lower education group, but increased in the general secondary education group.

These labour market imbalances might be exacerbated by the negative demographic trends and regional labour market disparities.

## IV. RECOMMENDATIONS FOR REDUCTION OF LABOUR MARKET IMBALANCES

In order to reduce the possible labour market disproportions in the future, the problems have to be solved in a complex manner. For example, it is difficult to increase the number of students in life sciences and engineering, if the pupils of primary and secondary schools have poor knowledge and little interest in the exact sciences. It should also be taken into account that the possible solutions in the higher, secondary, vocational secondary and basic education will give visible results only in the long-term. Changes in formal education have relatively little impact on the medium term problems. Therefore, effective adult training and continuing education play an important role in the improving professional qualifications and reducing labour market disproportions. It is very important to increase the participation of people with primary and general secondary education in adult education activities. Such people usually are economically inactive – no job, not registered as job seekers. Both higher education institutions and professional education institutions, as well as employers, play an important role in providing a sound and appropriate continuing education for adults.

It should be noted that most of the measures focusing on balancing of the labour market supply are already being implemented, however, they are often not mutually coordinated and structured according to their purpose. In order to reduce the expected labour market mismatches and disproportions in the future, it is necessary to pay increased attention to the following areas:

### i. Reduction of the shortage of high qualification labour force with STEM education, particular in ICT programmes:

- expansion of adult education supply in higher education institutions in STEM, and in particular in ICT directions – renewal and deepening of knowledge in the obtained speciality, re-qualification opportunities for persons with higher education;

- Reduction of student dropouts – strengthening of the quality of studies of mathematics and life sciences, as well as ICT in general and vocational education for preventive reduction of student drop-outs in higher education institutions; improvement of the system of selection of students to be admitted;
- strengthening of the career guidance system for young people motivating them for studies in STEM areas, including the development of information campaigns and the development of methodological materials for career advisers;
- strengthening of the quality of STEM education – improvement of the accreditation system of study programmes, raising the amount of financing per study place, building student-centred educational supply, incl. the introduction of the supply of modular programmes;
- renewal of academic staff and strengthening of competences in STEM, incl. ICT disciplines – increasing qualification criteria for academic staff, incl. developing criteria for evaluating the competences of applicants for academic positions and academic staff, improving the conditions for employment and remuneration of academic staff, ensuring professional improvement of academic staff, strengthening digital competence and competences for ensuring inclusive study process, increasing the involvement of doctoral students in academic and research work, as well as obtaining a doctoral degree within an optimal period of time (three to four years), while at the same time reducing drop-outs of doctoral students;
- development and strengthening of transversal competences in STEM and ICT areas, in particular formation of business, innovation capacity, social and communication competences, in the study process;
- STEM, incl. ICT study programme update in line with the industry development needs, as well as introducing WB learning in the study process, promoting the involvement of employers in the efficient use of resources in higher education, reducing fragmentation of study programmes and ensuring the development and export of robust research-based study programmes corresponding to the strategic specialisation of the higher education institution;
- improving the technical provision and equipment of higher education institutions in STEM, incl. ICT disciplines, in particular to strengthen digital performance, including to ensure the implementation of a remote study process;
- development of the scholarship system, including support for individual social risk groups (e.g. support for students' parents, students from poor and socially vulnerable families);
- extending the availability of study and student loans in STEM, incl. ICT disciplines;
- support programmes in STEM, incl. ICT disciplines to ensure access to education for people with disabilities (support for providing assistant service in higher education).

ii. Reduction of shortage of medium qualification labour force:

- expansion of vocational education, in particular of construction, mechanics and metal working, machine building, manufacture of woodworking and printing products, as well as transport services education program groups;
- vocational education curriculum reform – to continue working on modular approach to the implementation of education programmes and development of interdisciplinary programmes;
- increasing the share of WB training in vocational education – more active involvement of employers in WB learning should be promoted, as well as WB learning should be extended to the higher education level;
- promotion of further studies of graduates of vocational education institutions in higher education – synergy between vocational secondary education programmes and 1st level professional higher education programmes in colleges, as well as between study programmes of colleges and relevant bachelor's study programmes in higher education institutions should be strengthened;
- extension of the supply of adult education in vocational education with a focus on extension of the adult education supply for people with general secondary education and basic education ensuring that they obtain a professional qualification;
- strengthening of capacity of SECs, including revision of their composition and functions, incl. creating a co-financing instruments for financing of sectoral expert councils in the medium-term;
- extension of convents of vocational education institutions – ensuring regional level representation.

iii. Reduction of the share of labour force with low education:

- reduction of the proportion of young people entering the labour market without a specific qualification and skills – reduction of the number of students, who leave school early or do not continue studies after primary education and general secondary education, as well as reduction of drop-out rates at all education stages;
- targeted adult education measures for the population with general secondary education, primary and lower education, regardless of the status of their economic activity;
- measures to improve motivation of labour force with low education to get involved in the education process, reducing the barriers to participation – maintaining and extending existing support for the participation of the poorly skilled people in education, such as scholarships, mobility benefits, nursing services for dependent family members;
- extension of the availability of employment consultations to the population with general secondary education, primary and lower education, incl. addressing the target groups, which are not registered at SEA.

iv. Horizontal measures to reduce labour shortages

*a) Strengthening the capacity of the education system*

- *to continue the arrangement of the teachers remuneration system, moving towards a remuneration model that would ensure the average remuneration of pedagogues no less than 1.3 times the average salary of those working in the public sector with higher education, which corresponds to paragraph 1.3 of policy result indicators to be reached in Education Development Guidelines 2021-2027[1];*
- *ensuring proper funding for the support staff of education institutions (career advisers, school psychologists, etc.);*
- *to continue to strengthen the quality of education at all stages of the education system, including by reducing the education quality gap between regions and education institutions.*

*b) Reduction of the negative impact of demographic trends on labour supply*

- promotion of population reproduction – state support to families with 2 and more children (increase of the state family allowance, support to the availability of public services, incl. discounts in public transport);
- return migration support measures – to maintain a network of regional return migration coordinators, which provides information and helps families of emigrants to return to Latvia;
- measures to increase the economic activity of the population – support to the population with general secondary education, primary education or lower education, who are not registered at the SEA; provision of training for unemployed by the employer; regional mobility support;
- targeted measures for quick integration of refugees in the Latvian labour market and their involvement in employment – provision of a one-stop contact point;
- smart labour force migration – simplified attraction of highly qualified labour force in areas where local labour force shortages are observed.

*c) Reduction of labour market regional disparities*

- mobility support within the scope of active employment measures – transportation and rent compensation to promote mobility of the unemployed;
- restructuring of investments and the cohesion policy in favour of less weakly developed regions, thus promoting creation of jobs and employment opportunities in territories with higher unemployment;

[1] Education Development Guidelines 2021-2027 "Future Skills for the Future Society"

- promoting the availability of labour force in territories with growing employment – improvement of the housing guarantee programme, support programme for construction of houses for rent in regions.

*d) Development of adult education:*

- development of a flexible adult education system based on the individual and labour market needs – support is provided for different target groups through a more appropriate approach for each of them (adult education based on individual needs, training at the request of employers and industries);
- creation of a sustainable adult education financing model, incl. creation of a Skills Fund – within the form of a pilot project setting up a training fund for the needs of sectors, where employers make their contributions and which would further serve for preparation of the specialists in shortage;
- to continue introducing a culture of continuous education in the society, thereby ensuring the renewal and development of skills according to the labour market needs.

*e) Development and strengthening the labour market needs anticipation system (LMNAS):*

- to continue to introduce new elements of the labour market needs anticipation system, including the establishment of high-quality forecasting platforms and regional forums;
- to strengthen the analytical and research capacity of LMNAS stakeholders;
- expanding the dimensions and the profile of labour market forecasts by extending the forecasts with a skill profile, as well as by detailing the dimensions of occupations and education profiles.

In order to ensure a faster adaptation of labour supply to the needs of the future labour market, apart from the measures for improvement of labour supply, it is essential to strengthen competitiveness of Latvian producers and promote restructuring of the economy from low to medium and high technology sectors.

Minister of Economics I.Indriksone

**Annex***

## Table of contents



* Detailed medium and long-term labour market forecasts

## Development trends of sectors

*%, growth compared to the previous year*

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| **Gross domestic product** | **1.9** | **3.9** | **2.4** | **3.3** | **4.0** | **2.5** | **-3.8** | **4.5** |
| Agriculture, forestry, fishing | 9.7 | 2.7 | -4.3 | 1.9 | -3.6 | 19.8 | 0.8 | -6.8 |
| Mining | -13.7 | 14.8 | -2.8 | 9.1 | 9.1 | -5.2 | 8.8 | -6.9 |
| Manufacturing | -1.6 | 4.4 | 1.7 | 6.8 | 7.5 | 3.7 | -0.9 | 7.4 |
| Food industry | -2.5 | 2.5 | -1.0 | -2.0 | 10.0 | -3.7 | -1.6 | -1.3 |
| Light industry | -6.8 | -12.0 | 1.7 | 10.6 | 6.5 | -8.7 | -9.4 | 11.0 |
| Wood processing | 4.9 | 2.3 | 1.5 | 8.5 | 15.2 | 2.4 | 4.6 | 6.8 |
| Paper industry and publishing | 1.1 | -1.2 | -1.9 | 7.4 | 2.4 | 17.5 | 4.9 | 11.2 |
| Chemical industry | -19.8 | 4.0 | 1.7 | 7.9 | 14.4 | 24.7 | -3.8 | 14.1 |
| Manufacture of other non-metallic mineral products | -2.4 | -8.4 | 11.5 | 8.3 | 5.3 | 6.2 | -1.3 | 2.2 |
| Metalworking | -4.0 | -2.1 | 3.3 | 18.0 | 2.9 | 17.9 | -3.2 | 4.9 |
| Manufacture of electrical and optical equipment | -9.2 | 44.2 | 1.1 | 13.9 | -1.9 | -2.2 | 14.2 | 15.4 |
| Manufacture of vehicles | 17.0 | -7.4 | 12.0 | 6.7 | 5.0 | -11.0 | -15.2 | 35.5 |
| Manufacture of furniture | -0.1 | 4.0 | 2.9 | 4.9 | 7.5 | 3.3 | -7.0 | 21.6 |
| Other manufacture | -12.5 | 0.5 | -1.0 | 5.9 | -15.9 | -6.3 | -29.4 | -14.2 |
| Electricity and gas supply | -14.3 | 18.1 | 12.1 | -2.5 | -28.5 | 1.2 | -3.9 | 3.4 |
| Construction | 3.8 | -0.4 | -9.6 | 14.7 | 12.4 | 1.3 | 0.1 | -6.1 |
| Trade | 5.4 | 7.0 | 4.5 | 2.6 | 3.9 | 6.2 | -3.0 | 8.9 |
| Transportation and storage | 0.1 | 1.2 | 1.7 | 6.6 | 3.8 | 3.5 | -14.6 | 5.9 |
| Accommodation and food service activities | -2.0 | 8.9 | 4.4 | 9.3 | 7.6 | -3.9 | -42.0 | -5.2 |
| Information and communication | -1.2 | 2.3 | 5.0 | 8.7 | 9.6 | 4.4 | -7.0 | 10.9 |
| Financial and insurance activities | 1.2 | 13.3 | -0.2 | -17.7 | -2.4 | -9.6 | -2.0 | 19.8 |
| Real estate activities | 4.5 | -2.4 | 1.6 | -1.6 | 2.3 | -3.6 | -0.6 | -1.7 |
| Commercial services | 0.6 | 1.9 | 3.9 | 4.6 | 2.7 | 0.4 | -3.7 | 2.6 |
| Public administration and defence; compulsory social security | 2.4 | 2.4 | 1.5 | 3.8 | 2.8 | 3.6 | 1.5 | 2.9 |
| Education | 2.9 | 3.2 | 1.1 | 4.3 | 3.0 | 2.7 | 0.8 | 3.0 |
| Human health and social work activities | 7.9 | 5.2 | 1.2 | 4.4 | 9.3 | 9.6 | 2.4 | 24.8 |
| Arts, entertainment and recreation | -7.5 | 8.2 | 5.0 | 5.1 | 6.1 | 2.8 | -28.6 | -3.3 |

Table 2

## GDP growth rates and forecasts

*%, growth compared to the previous year*

| | Fact | | | | | | | Forecast | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023-2030 annual average | 2031-2040 annual average |
| **GDP** | **1.9** | **3.9** | **2.4** | **3.3** | **4.0** | **2.5** | **-3.8** | **4.5** | **2.4** | **5.4** | **2.9** |
| Agriculture, forestry and fishing (A) | 9.7 | 2.7 | -4.3 | 1.9 | -3.6 | 19.8 | 0.8 | -6.8 | 4.1 | 3.0 | 2.3 |
| Manufacturing (C) | -1.6 | 4.4 | 1.7 | 6.8 | 7.5 | 3.7 | -0.9 | 7.4 | 0.9 | 5.0 | 3.0 |
| Other types of industry (BDE) | -14.3 | 17.6 | 10.1 | -1.5 | -25.0 | -0.3 | -2.1 | 2.1 | 0.7 | 4.2 | 3.7 |
| Construction (F) | 3.8 | -0.4 | -9.6 | 14.7 | 12.4 | 1.3 | 0.1 | -6.1 | 3.1 | 6.4 | 2.7 |
| Trade, accommodation and food service activities (GI) | 4.6 | 7.2 | 4.5 | 3.3 | 4.3 | 5.0 | -7.2 | 7.9 | 3.2 | 4.8 | 2.6 |
| Transportation and storage (H) | 0.1 | 1.2 | 1.7 | 6.6 | 3.8 | 3.5 | -14.6 | 5.9 | -0.9 | 4.9 | 2.6 |
| Other business services (JKLMNRST) | 1.4 | 2.1 | 2.6 | -0.4 | 3.3 | -1.4 | -4.7 | 3.9 | 3.0 | 4.7 | 3.1 |
| Public services (OPQ) | 3.7 | 3.3 | 1.3 | 4.1 | 4.3 | 4.8 | 1.5 | 8.7 | 2.4 | 3.1 | 2.8 |

Table 3

## Key indicators of employment and unemployment

*%, age 15-74*

| | Fact | | | | | | | Forecast | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2030 | 2040 |
| Employment rate (the employed to the total population) | 59.1 | 60.8 | 61.6 | 62.9 | 64.5 | 65.0 | 64.2 | 62.5 | 63.6 | 68.0 | 70.3 |
| Participation level (economically active population to the total population) | 66.3 | 67.5 | 68.2 | 68.9 | 69.6 | 69.4 | 69.9 | 67.7 | 68.4 | 72.0 | 74.0 |
| Unemployment rate (share of the unemployed (job seekers) in economically active population) | 10.8 | 9.9 | 9.6 | 8.7 | 7.4 | 6.3 | 8.1 | 7.6 | 7.1 | 5.6 | 5.0 |

Number of the employed in economic sectors and labour demand forecasts

*thousands*

| | Fact | | | | | | | Forecast | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021* | 2022 | 2030 | 2040 |
| **Total** | **884.6** | **896.1** | **893.3** | **894.8** | **909.4** | **910.0** | **893.0** | **864.0** | **871.9** | **890.1** | **878.8** |
| Agriculture, forestry and fishing (A) | 66.4 | 71.1 | 68.7 | 61.4 | 63.3 | 66.3 | 64.3 | 58.6 | 59.9 | 58.6 | 54.6 |
| Manufacturing (C) | 118.8 | 116.4 | 123.5 | 120.9 | 116.9 | 115.1 | 114.5 | 109.4 | 108.4 | 110.6 | 109.1 |
| Other types of industry (BDE) | 18.8 | 23.5 | 25.7 | 24.5 | 23.3 | 19.3 | 19.7 | 22.2 | 22.4 | 22.8 | 21.5 |
| Construction (F) | 73.2 | 71.9 | 66.1 | 63.1 | 74.6 | 81.1 | 76.5 | 72.4 | 73.1 | 82.8 | 79.5 |
| Trade, accommodation and food service activities (GI) | 161.6 | 159.2 | 154.7 | 161.0 | 171.7 | 169.6 | 160.2 | 158.3 | 157.8 | 150.1 | 138.3 |
| Transportation and storage (H) | 84.8 | 85.3 | 83.3 | 79.6 | 80.7 | 74.3 | 69.3 | 66.9 | 65.4 | 67.1 | 67.4 |
| Other business services (JKLMNRST) | 165.0 | 169.9 | 173.2 | 183.2 | 179.2 | 178.3 | 185.1 | 172.3 | 179.4 | 203.5 | 217.0 |
| Public services (OPQ) | 195.7 | 198.3 | 197.5 | 200.6 | 198.1 | 204.6 | 201.4 | 203.9 | 205.6 | 194.6 | 191.4 |

* MoE estimation

Distribution of the employed by sectors and age groups

*2021, %*

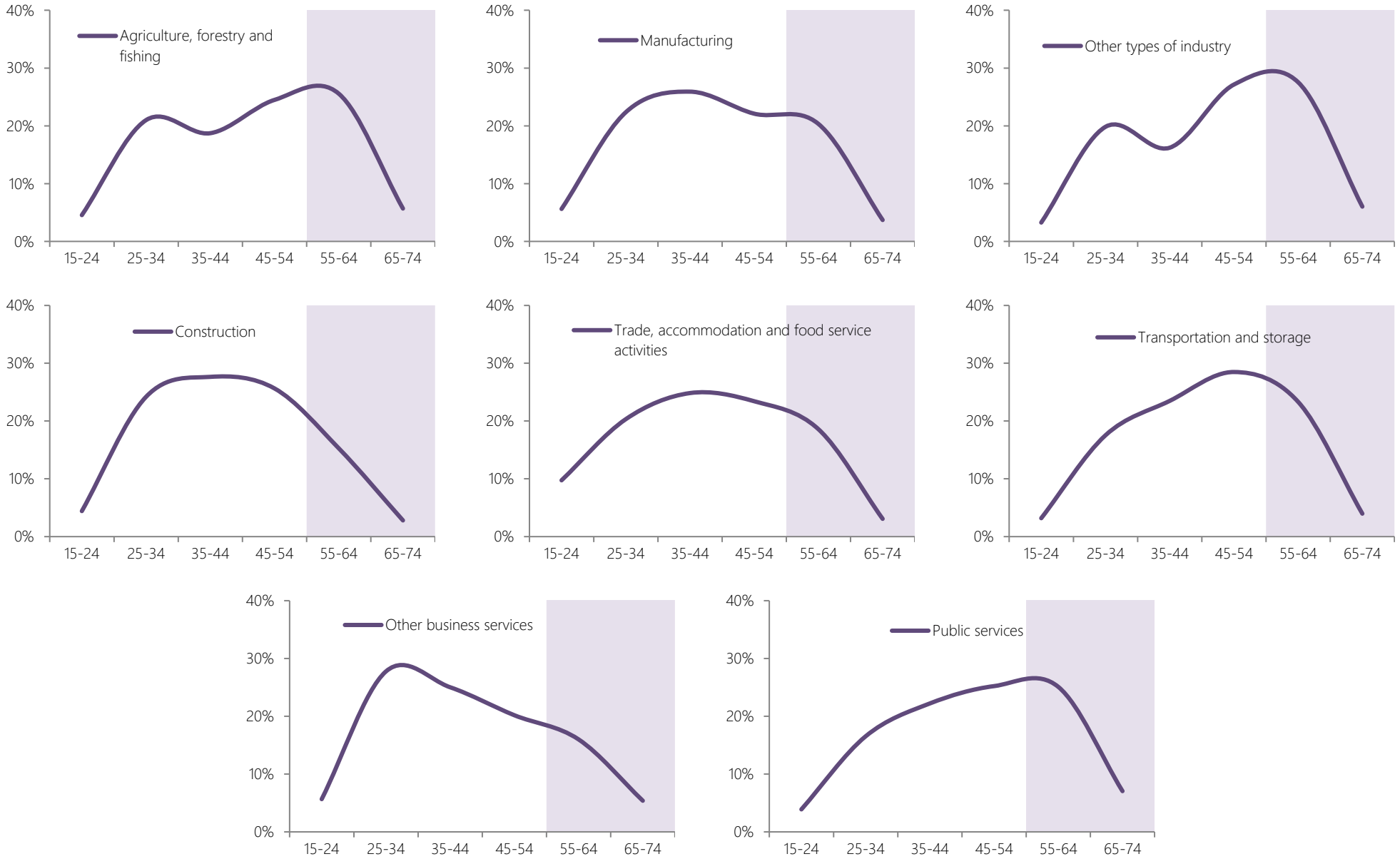


Table 5

## Structure of the employed by occupational sub-major groups

*2021*

| Degree of qualification of occupation | Major groups of occupations | OC code | Sub-major groups of occupations | Occupations | % |
|---|---|---|---|---|---|
| High qualification occupations | Managers | 11 | Chief Executives, Senior Officials and Legislators | Chief Executives, Senior Officials and Legislators | 9.9 |
| | | | | Managing Directors and Chief Executives | 90.1 |
| | | 12 | Administrative and Commercial Managers | Business Services and Administration Managers | 84.5 |
| | | | | Sales, Marketing and Development Managers | 15.5 |
| | | 13 | Production and Specialized Services Managers | Production Managers in Agriculture, Forestry and Fisheries | 9.5 |
| | | | | Manufacturing, Mining, Construction and Distribution Managers | 38.4 |
| | | | | Information and Communications Technology Services Managers | 9.7 |
| | | | | Professional Services Managers | 42.4 |
| | | 14 | Hospitality, Retail and Other Services Managers | Hotel and Restaurant Managers | 16.6 |
| | | | | Retail and Wholesale Trade Managers | 39.4 |
| | | | | Other Services Managers | 44.0 |
| | Professionals | 21 | Science and Engineering Professionals | Physical and Earth Science Professionals | 10.9 |
| | | | | Mathematicians, Actuaries and Statisticians | 1.1 |
| | | | | Life Science Professionals | 5.8 |
| | | | | Engineering Professionals (excluding Electrotechnology) | 41.1 |
| | | | | Electrotechnology Engineers | 15.1 |
| | | | | Architects, Planners, Surveyors and Designers | 26.1 |
| | | 22 | Health Professionals | Medical Doctors | 30.6 |
| | | | | Nursing and Midwifery Professionals | 36.2 |
| | | | | Traditional and Complementary Medicine Professionals | 8.9 |
| | | | | Paramedical Practitioners | 2.1 |
| | | | | Veterinarians | 22.2 |
| | | 23 | Teaching Professionals | Other Health Professionals | 6.7 |
| | | | | University and Higher Education Teachers | 7.0 |
| | | | | Vocational Education Teachers | 18.4 |
| | | | | Secondary Education Teachers | 51.6 |
| | | | | Primary School and Early Childhood Teachers | 16.2 |
| | | 24 | Business and Administration Professionals | Other Teaching Professionals | 22.8 |
| | | | | Finance Professionals | 62.1 |
| | | | | Administration Professionals | 15.1 |

Table 5 cont.

| | | | | | |
|---|---|---|---|---|---|
| High qualification occupations | | 25 | Information and Communications Technology Professionals | Software and Applications Developers and Analysts | 57.6 |
| | | | | Database and Network Professionals | 42.4 |
| | | 26 | Legal, Social and Cultural Professionals | Legal Professionals | 34.9 |
| | | | | Librarians, Archivists and Curators | 13.6 |
| | | | | Social and Religious Professionals | 23.1 |
| | | | | Authors, Journalists and Linguists | 12.6 |
| | | | | Creative and Performing Artists | 15.9 |
| | Technicians and Associate Professionals | 31 | Science and Engineering Associate Professionals | Physical and Engineering Science Technicians | 48.5 |
| | | | | Mining, Manufacturing and Construction Supervisors | 17.3 |
| | | | | Process Control Technicians | 10.0 |
| | | | | Life Science Technicians and Related Associate Professionals | 2.2 |
| | | | | Ship and Aircraft Controllers and Technicians | 22.0 |
| | | 32 | Health Associate Professionals | Medical and Pharmaceutical Technicians | 21.9 |
| | | | | Nursing and Midwifery Associate Professionals | 38.0 |
| | | | | Traditional and Complementary Medicine Associate Professionals | 1.1 |
| | | | | Veterinary Technicians and Assistants | 4.8 |
| | | | | Other Health Associate Professionals | 34.1 |
| | | 33 | Business and Administration Associate Professionals | Financial and Mathematical Associate Professionals | 23.4 |
| | | | | Sales and Purchasing Agents and Brokers | 30.5 |
| | | | | Business Services Agents | 12.8 |
| | | | | Administrative and Specialized Secretaries | 21.3 |
| | | | | Government Regulatory Associate Professionals | 12.0 |
| | | 34 | Legal, Social, Cultural and Related Associate Professionals | Legal, Social and Religious Associate Professionals | 31.7 |
| | | | | Sports and Fitness Workers | 20.8 |
| | | | | Artistic, Cultural and Culinary Associate Professionals | 47.5 |
| | | 35 | Information and Communications Technicians | Information and Communications Technology Operations and User Support Technicians | 70.3 |
| | | | | Telecommunications and Broadcasting Technicians | 29.7 |
| Medium qualification occupations | Clerical Support Workers | 41 | General and Keyboard Clerks | General Office Clerks | 15.9 |
| | | | | Secretaries | 43.1 |
| | | | | Keyboard Operators | 41.0 |
| | | 42 | Customer Services Clerks | Tellers, Money Collectors and Related Clerks | 62.9 |
| | | | | Client Information Workers | 37.1 |
| | | 43 | Numerical and Material Recording Clerks | Numerical Clerks | 82.0 |
| | | | | Material Recording and Transport Clerks | 18.0 |
| | | 44 | Other Clerical Support Workers | Other Clerical Support Workers | 100.0 |

Table 5 cont.

| | | | | | |
|---|---|---|---|---|---|
| Medium qualification occupations | Services and Sales Workers | 51 | Personal Services Workers | Travel Attendants, Conductors and Guides | 24.4 |
| | | | | Cooks | 14.4 |
| | | | | Waiters and Bartenders | 23.7 |
| | | | | Hairdressers, Beauticians and Related Workers | 22.9 |
| | | | | Building and Housekeeping Supervisors | 8.9 |
| | | | | Other Personal Services Workers | 5.7 |
| | | 52 | Sales Workers | Street and Market Salespersons | 70.7 |
| | | | | Shop Salespersons | 5.0 |
| | | | | Cashiers and Ticket Clerks | 6.7 |
| | | | | Other Sales Workers | 17.5 |
| | | 53 | Personal Care Workers | Child Care Workers and Teachers' Aides | 44.8 |
| | | | | Personal Care Workers | 55.2 |
| | | 54 | Protective Services Workers | Protective Services Workers | 100.0 |
| | | 61 | Market-oriented Skilled Agricultural Workers | Market Gardeners and Crop Growers | 53.0 |
| | | | | Animal Producers | 43.0 |
| | | | | Mixed Crop and Animal Producers | 3.9 |
| | | 62 | Market-oriented Skilled Forestry, Fishery and Hunting Workers | Forestry and Related Workers | 99.5 |
| | | | | Fishery Workers, Hunters and Trappers | 0.5 |
| | | 63 | Subsistence Farmers, Fishers, Hunters and Gatherers | Subsistence Mixed Crop and Livestock Farmers | 100.0 |
| | Craft and Related Trades Workers | 71 | Building and Related Trades Workers (excluding Electricians) | Building Frame and Related Trades Workers | 33.3 |
| | | | | Building Finishers and Related Trades Workers | 11.3 |
| | | | | Painters, Building Structure Cleaners and Related Trades Workers | 42.1 |
| | | 72 | Metal, Machinery and Related Trades Workers | Sheet and Structural Metal Workers, Moulders and Welders, and Related Workers | 46.6 |
| | | | | Blacksmiths, Toolmakers and Related Trades Workers | 80.3 |
| | | | | Machinery Mechanics and Repairers | 10.3 |
| | | 73 | Handicraft and Printing Workers | Handicraft Workers | 9.4 |
| | | | | Printing Trades Workers | 93.0 |
| | | 74 | Electrical and Electronic Trades Workers | Electrical Equipment Installers and Repairers | 7.0 |
| | | | | Electronics and Telecommunications Installers and Repairers | 48.5 |
| | | 75 | Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers | Food Processing and Related Trades Workers | 51.5 |
| | | | | Wood Treaters, Cabinet-makers, and Related Trades Workers | 60.9 |
| | | | | Garment and Related Trades Workers | 26.1 |
| | | | | Other Craft and Related Workers | 6.3 |

Table 5 cont.

| | | | | | |
|---|---|---|---|---|---|
| Medium qualification occupations | Services and Sales Workers | 81 | Stationary Plant and Machine Operators | Mining and Mineral Processing Plant Operators | 8.8 |
| | | | | Metal Processing and Finishing Plant Operators | 4.3 |
| | | | | Chemical and Photographic Products Plant and Machine Operators | 11.0 |
| | | | | Rubber, Plastic and Paper Products Machine Operators | 10.6 |
| | | | | Textile, Fur and Leather Products Machine Operators | 14.6 |
| | | | | Food and Related Products Machine Operators | 26.8 |
| | | | | Wood Processing and Papermaking Plant Operators | 13.9 |
| | | | | Other Stationary Plant and Machine Operators | 10.1 |
| | | 82 | Assemblers | Assemblers | 100.0 |
| | | 83 | Drivers and Mobile Plant Operators | Locomotive Engine Drivers and Related Workers | 37.3 |
| | | | | Car, Van and Motorcycle Drivers | 23.5 |
| | | | | Heavy Truck and Bus Drivers | 4.0 |
| | | | | Mobile Plant Operators | 29.8 |
| | | | | Ships' Deck Crews and Related Workers | 5.4 |
| Low qualification occupations | Elementary Occupations | 91 | Cleaners and Helpers | Domestic, Hotel and Office Cleaners and Helpers | 45.1 |
| | | | | Vehicle, Window, Laundry and Other Hand Cleaning Workers | 54.9 |
| | | 92 | Agricultural, Forestry and Fishery Labourers | Agricultural, Forestry and Fishery Labourers | 100.0 |
| | | 93 | Labourers in Mining, Construction, Manufacturing and Transport | Mining and Construction Labourers | 63.0 |
| | | | | Manufacturing Labourers | 36.8 |
| | | | | Transport and Storage Labourers | 0.2 |
| | | 94 | Food Preparation Assistants | Food Preparation Assistants | 100.0 |
| | | 95 | Street and Related Sales and Services Workers | Street and Related Services Workers | 80.3 |
| | | 96 | Refuse Workers and Other Elementary Workers | Refuse Workers | 19.7 |
| | | | | Other Elementary Workers | 8.8 |

Distribution of the employed by occupations and age groups

*2021, %*

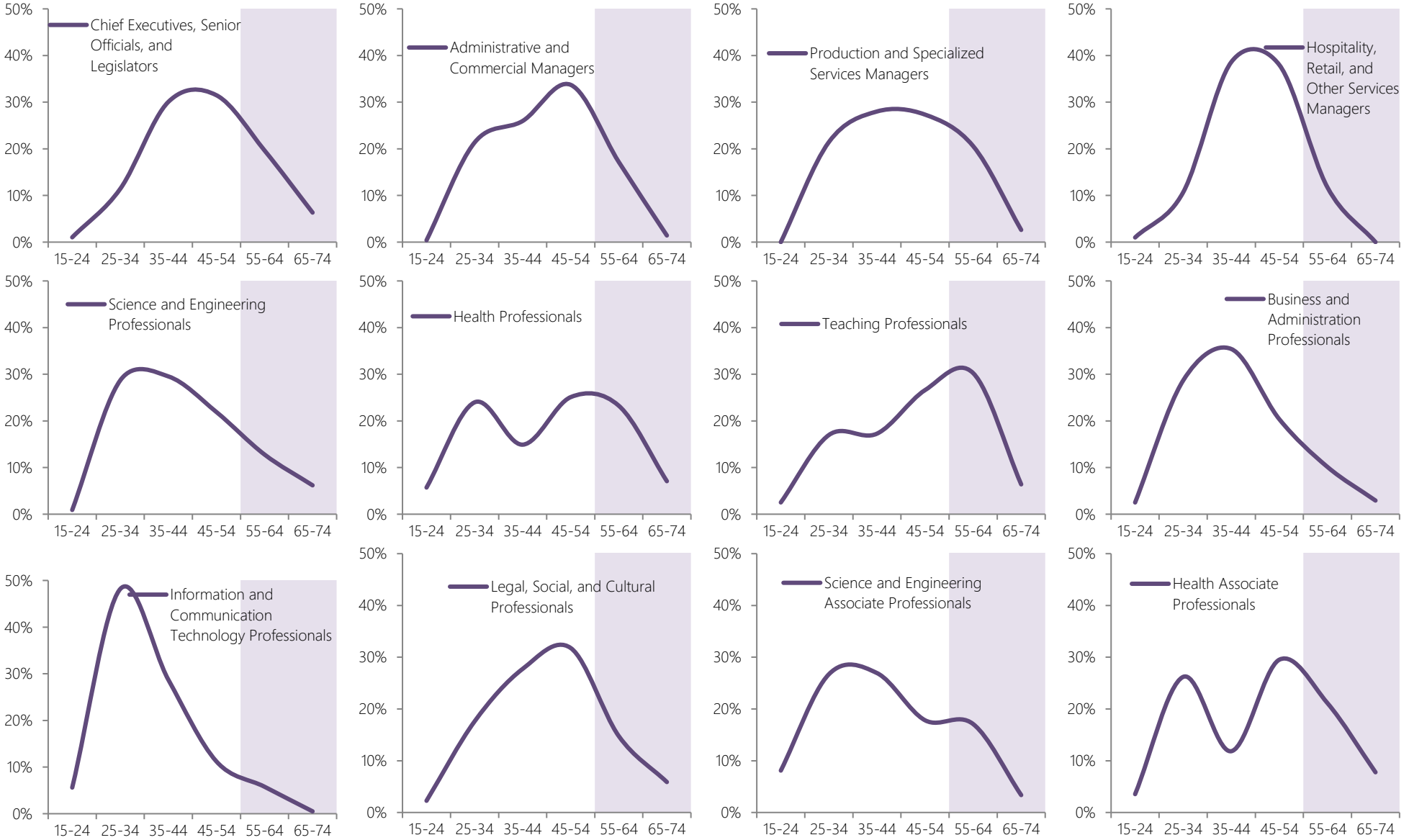


Figure 2 cont.

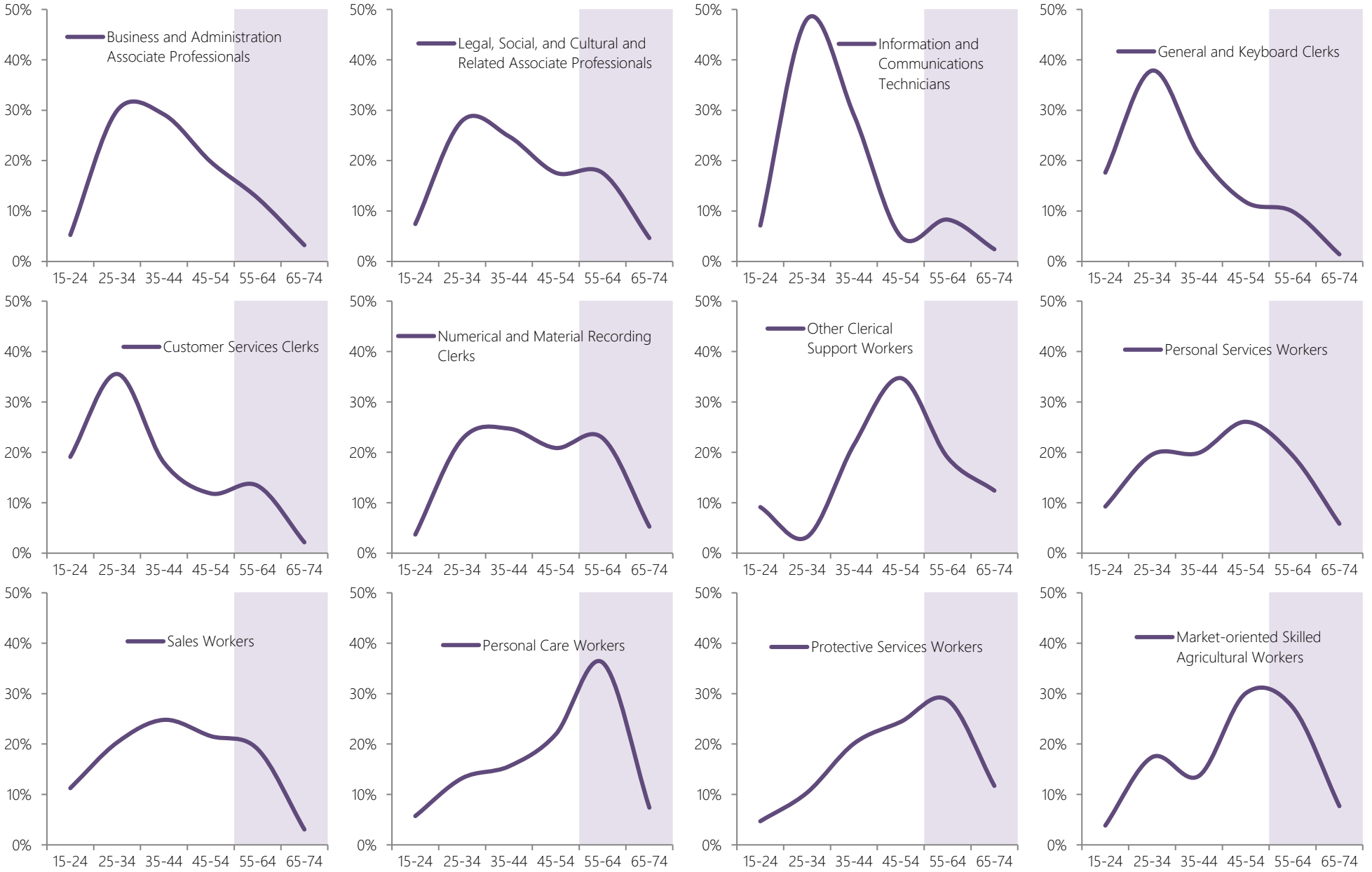


Figure 2 cont.

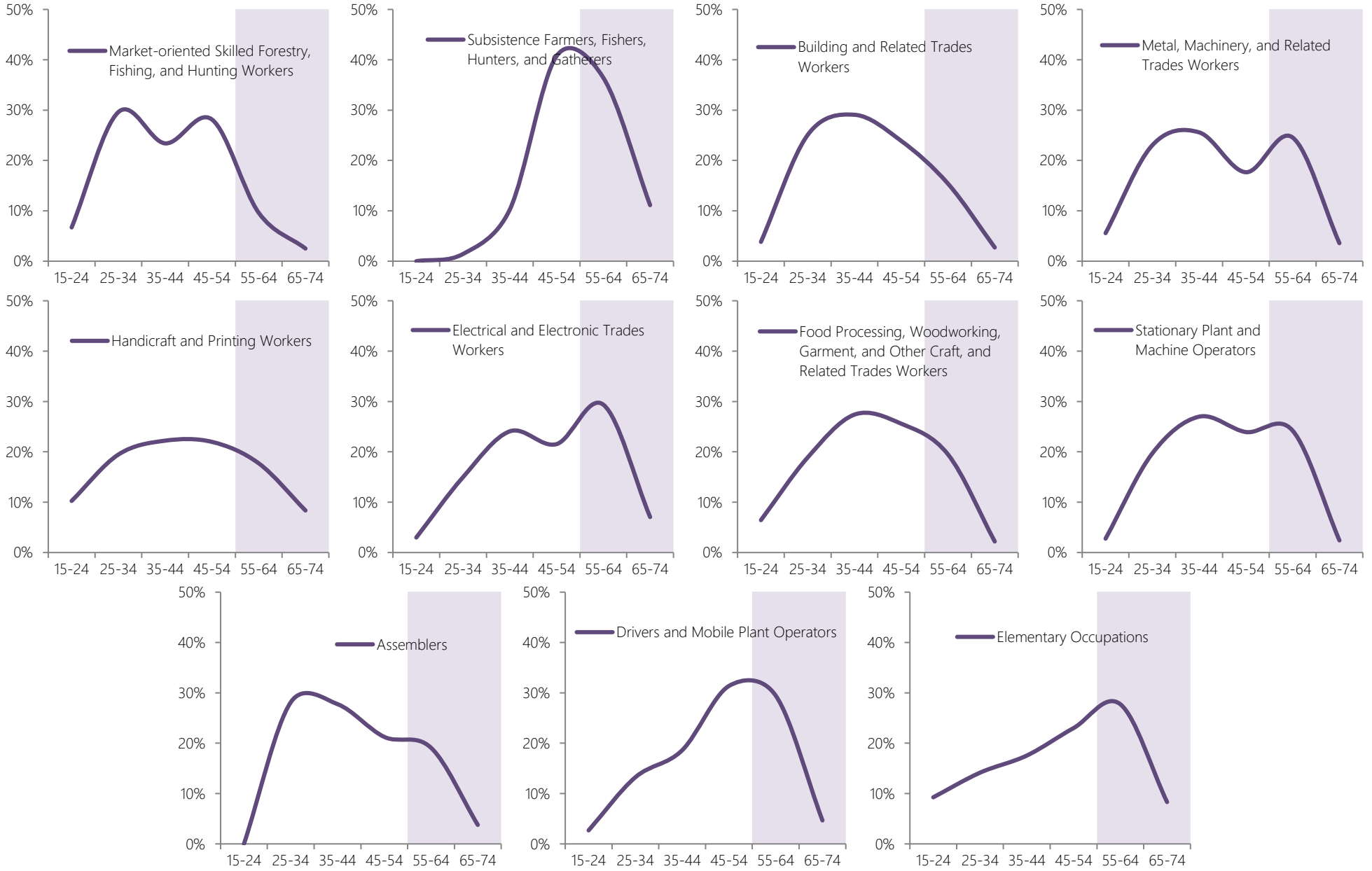


Table 6

Classification of occupations (ISCO-08) and description of sub-major groups

| Code | Sub-major group of occupations | Explanation |
|---|---|---|
| | | High qualification occupations |
| | | I Managers |
| 11 | Chief Executives, Senior Officials and Legislators | This sub-major group includes legislators, senior officials and chief executives who define and formulate the public policy, make, ratify and amend laws and regulations, represent the country and act on behalf of it, supervise the implementation of the public policy and observation of laws and regulations, or perform similar tasks in the interests of organisations of national scale; chief executives of enterprises who define and formulate main principles of operation of their enterprise, plan, manage and coordinate the work of business units. |
| 12 | Administrative and Commercial Managers | Managers in this sub-major group manage any forms of property and enterprise having any type of economic operation, develop their technical, economic and social development prospects; finance, administration and business services managers of business units plan, direct and coordinate their actions being directly controlled by their immediate superior in the enterprise consulting with managers of other business units. |
| 13 | Production and Specialized Services Managers | Production and specialized services managers in this sub-major group manage any forms of property and enterprise having any type of economic operation, develop their technical, economic and social development prospects; managers of business units plan, direct and coordinate production processes, provision of services and other activities of their enterprises being directly controlled by their immediate superior in the enterprise consulting with managers of other business units. |
| 14 | Hospitality, Retail and Other Services Managers | Hospitality, retail and other services managers in this sub-major group manage any forms of property and enterprise having any type of economic operation, develop their technical, economic and social development prospects; managers of business units plan, direct and coordinate production processes, provision of services and other activities of their enterprises being directly controlled by their immediate superior in the enterprise consulting with managers of other business units. |
| | | II Professionals |
| 21 | Science and Engineering Professionals | Professionals in this sub-major group perform education work, research, develop and improve theories, concepts and operational methods, and apply their knowledge in sectors of physics, astronomy, meteorology, chemistry, geophysics, geology, mathematics, statistics, computing, biology, zoology, botany, ecology, physiology, agronomy, biochemistry, microbiology, architecture, construction and technology. |
| 22 | Health Professionals | Professionals in this sub-major group conduct scientific research, improve and develop theories, concepts and operational methods, and apply scientific knowledge in medicine, patient care, dentistry, veterinary medicine, pharmacy, and promotion of health. |
| 23 | Teaching Professionals | Professionals in this sub-major group teach the theory and practice of one or more disciplines, conduct research, and improve and develop concepts, theories and operational methods pertaining to their particular discipline, prepare scholarly papers and books, give private lessons, teach and educate mentally handicapped people, design and modify curricula, inspect and advise on teaching methods and aids, participate in discussions concerning the organisation of teaching and related activities at schools and universities, teach subjects for children and organise educational activities for children below primary school age, teach subjects for students and organise educational activities for vocational purposes and professional improvement, organise extra-curricular activities and hobby groups, organise the work of a boarding school and dormitory at an education institution, as well as teach how to fly aircraft, navigate ships, drive motor vehicles, railway and other engines, machine tools, and perform evaluation of competence. |
| 24 | Business and Administration Professionals | Professionals in this sub-major group conduct research, improve and develop theories and operational methods, and apply knowledge relating to information dissemination and organisation and management of business, as well as to industrial property, philosophy, psychology, economics, history, sociology, anthropology, other social sciences, linguistics, application of laws, creative activity and organisation of plays. Draft laws, regulations and methodological documents, plan the development of a national economy sector or branch, necessary materials and financial resources, conduct analytical work, examine applications of the population, organise and manage guarding and control of the Latvian state border, enforce deprivation of liberty as a criminal punishment and arrest as a security measure. |
| 25 | Information and Communications Technology Professionals | Professionals in this sub-major group conduct research, plan the design of information and communications technology, write tests, provide advice and improve information technology systems, hardware and software and related concepts for specific applications, develop, maintain and support databases and other information systems to ensure optimal performance and data integrity and security. |

| | | |
|---|---|---|
| 26 | Legal, Social and Cultural Professionals | Professionals in this sub-major group conduct research, improve and develop theories and operational methods, and apply knowledge relating to information dissemination and organisation, and management of business, as well as to philosophy, psychology, history, sociology, anthropology, other social sciences, linguistics, application of laws, creative activity and organisation of plays, conduct analytical work. |
| | | III Technicians and Associate Professionals |
| 31 | Science and Engineering Associate Professionals | Associate professionals in this sub-major group perform technical tasks connected with research, the application of concepts and operational methods in the fields of technical science, life science, as well as computing and engineering science, work with technical devices, control operation of aircraft and ship systems, study manufacturing and other processes, and safety and safety performance of manufactured products. |
| 32 | Health Associate Professionals | Associate professionals in this sub-major group perform technical functions in the fields of medicine, veterinary medicine, sanitation, pharmacy and related fields. |
| 33 | Business and Administration Associate Professionals | Associate professionals in this sub-major group perform technical tasks connected with the practical application of knowledge relating to finance, sales, business administration, bookkeeping, legal, statistical and other services, government activities relating to job placement, guarding and control of the Latvian state border, customs operations, taxation, social security, licensing, police. |
| 34 | Legal, Social, Cultural and Related Associate Professionals | Associate professionals in this sub-major group perform technical tasks in the field of legal, statistical and other types of services, government activities related to social area, recreation, sport and religion. |
| 35 | Information and Communications Technicians | Technicians in this sub-major group provide technical support for users of communications systems, computer systems and networks, perform technical tasks related to telecommunications, broadcast image and sound as well as other types of telecommunications signals on land, sea or in aircraft. |
| | | Medium qualification occupations |
| | | IV Clerical Support Workers |
| 41 | General and Keyboard Clerks | Clerks in this sub-major group perform tasks necessary for management of a body to solve manufacturing or supply problems efficiently and successfully; process financial, statistical, bookkeeping and other information and systematise it by use of computer technology or other office equipment. |
| 42 | Customer Services Clerks | Clerks in this sub-major group deal with clients directly, perform money-handling operations, arrange travels, inform clients, organise business meetings. This sub-major group also includes clerks operating telephone switchboards. |
| 43 | Numerical and Material Recording Clerks | Clerks in this sub-major group process financial, statistical, bookkeeping and other information and systematise it by use of computer technology or other office equipment. |
| 44 | Other Clerical Support Workers | Clerks in this sub-major group process information and systematise it by use of computer technology or other office equipment. |
| | | V Services and Sales Workers |
| 51 | Personal Services Workers | Workers in this sub-major group provide personal services, arrange travels, provide housekeeping, catering services. |
| 52 | Sales Workers | Workers in this sub-major group sell different goods, art articles, knitting, newspapers, periodicals in wholesale or retail shops, at stalls and on markets and streets; demonstrate goods, explain their classification and quality, as well as display clothing, pose as models for photography, sculpture or painting, or pose for films in the field of advertising. |
| 53 | Personal Care Workers | Workers in this sub-major group provide care, supervision and assistance for children, patients, convalescent, disabled and elderly persons in residential, medical and social settings, assist medical, nursing and social work professionals, veterinary, pharmaceutical or other medical professionals in hospitals, other medical and social settings. |
| 54 | Protective Services Workers | Workers in this sub-major group extinguish fires, rescue people, property and material values during and after fires, maintain law and order, arrest suspected offenders, provide certified guarding services to legal and natural persons, provide continuous guarding, isolation and control of detained persons at places of detention. |
| | | VI Skilled Agricultural, Forestry and Fishery Workers |
| 61 | Market-oriented Skilled Agricultural Workers | Skilled agricultural workers grow and harvest agricultural cultures suited for the Latvian conditions, produce a variety of animal husbandry products, breed animals, cultivate, conserve and exploit forests, keep bees. Products are delivered to marketing organizations or sold at markets. |
| 62 | Market-oriented Skilled Forestry, Fishery and Hunting Workers | Skilled forestry, hunting and fishery workers hunt animals, breed and raise, harvest and catch fish, cultivate, conserve and exploit forests and deliver products to marketing organizations or sell at markets. |

| | | |
|---|---|---|
| 63 | Subsistence Farmers, Fishers, Hunters and Gatherers | Subsistence farmers, fishers, hunters and gatherers who produce for subsistence, grow crops, vegetables, fruit and other cultures, breed, raise and tend livestock, gather wild fruit and plants, hunt animals, and harvest and catch fish. |
| | | VII Craft and Related Trades Workers |
| 71 | Building and Related Trades Workers (excluding Electricians) | Workers in this sub-major group construct, maintain and repair buildings and other structures, shape and finish stone for building and other purposes. |
| 72 | Metal, Machinery and Related Trades Workers | Workers in this sub-major group make moulds and cores for casting metal; weld, cut and shape metal; erect heavy metal structures; perform similar works under the surface of water; forge steel and other metals to make tools, machinery, articles; set and operate various machine tools, fit, maintain and repair engines, including electrical and electronic devices. |
| 73 | Handicraft and Printing Workers | Workers in this sub-major group make and repair precision instruments – nautical, meteorological, optical and other instruments, make jewellery and precious metalware; make, paint and decorate porcelainware, ceramics and glassware; produce handicraft articles from wood, flowers, textile, leather and related materials; perform printing works. |
| 74 | Electrical and Electronic Trades Workers | Workers in this sub-major group assemble, adjust, fit and repair electrical machinery and other electrical apparatus and devices in buildings, plants, workshops and in other places, audio and video equipment, install, service and repair information technology and telecommunication equipment in central sites or individual locations, install, lay and repair supply lines and cables. |
| 75 | Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers | Workers in this sub-major group treat and process agricultural and manufacturing raw materials into food and other products, produce and repair goods made of wood, textiles, leather and other materials, perform control and inspection operations. |
| | | VIII Plant and Machine Operators and Assemblers |
| 81 | Stationary Plant and Machine Operators | Operators in this sub-major group require experience and knowledge to operate and monitor industrial machinery and equipment. They frequently need to cope with machine-paced operations and adapt to technological innovations in machinery and equipment. |
| 82 | Assemblers | Assemblers in this sub-major group assemble prefabricated parts or components according to instructions and technological requirements. |
| 83 | Drivers and Mobile Plant Operators | Operators in this sub-major group drive and tend trains and motor vehicles, drive motor vehicles at plants, drive agricultural machinery and equipment; operate tractor equipment and other machinery used for quarrying and mining, construction of buildings, tunnels and roads; carry out deck duties on board ships and other water-borne craft. |
| | | Low qualification occupations |
| | | IX Elementary Occupations |
| 91 | Cleaners and Helpers | Workers in this sub-major group perform cleaning tasks in households, hotels, offices, hospitals and other establishments, as well as in aircraft, trains, coaches, trams, trolleybuses and similar vehicles. |
| 92 | Agricultural, Forestry and Fishery Labourers | Labourers in this sub-major group perform simple and routine tasks in agriculture, forestry, fishery, hunting using simple hand-held tools, manual labour and physical effort. |
| 93 | Labourers in Mining, Construction, Manufacturing and Transport | Labourers in this sub-major group perform simple and routine tasks in mining, quarrying, building, manufacturing and transport operations using simple hand-held tools, manual labour and physical effort. |
| 94 | Food Preparation Assistants | Assistants in this sub-major group assist in food preparation tasks and kitchen tasks. |
| 95 | Street and Related Sales and Services Workers | Workers in this sub-major group clean shoes on streets and in other public places, wash car windows or run errands, sell different non-food items on streets or in other public places such as stadiums, cinemas, theatres. |
| 96 | Refuse Workers and Other Elementary Workers | Workers in this sub-major group collect garbage from buildings, streets and other public places, sweep streets, pavements, squares, deliver correspondence or goods, carry luggage, stand guard at public places, perform cloakroom attendant duties, collect money from sold goods, parkings and other vending machines, read meters of utility services and perform other tasks not elsewhere classified. |

## Labour demand and supply forecasts by occupational groups

*If the current structure of labour force preparation is retained*

| Degree of qualification | Major groups of occupations | OC code | Sub-major groups of occupations | Employed population – demand, thousands | | | | Economically active population – supply, thousands | | | | Supply vs demand, % | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Forecast | | | | Forecast | | | | |
| | | | | 2021* | 2022 | 2030 | 2040 | 2021* | 2022 | 2030 | 2040 | 2030 | 2040 |
| | | | **Kopā** | **864.0** | **871.9** | **890.1** | **878.8** | **934.6** | **938.1** | **942.8** | **924.6** | 94 | 95 |
| High qualification occupations | Managers | 11 | Chief Executives, Senior Officials and Legislators | 36.2 | 36.7 | 38.7 | 38.8 | 38.2 | 38.9 | 43.3 | 45.8 | 89 | 85 |
| | | 12 | Administrative and Commercial Managers | 19.9 | 20.2 | 21.9 | 23.1 | 20.7 | 21.0 | 22.5 | 23.8 | 98 | 97 |
| | | 13 | Production and Specialized Services Managers | 25.2 | 25.6 | 28.6 | 31.1 | 26.4 | 27.0 | 30.4 | 34.1 | 94 | 91 |
| | | 14 | Hospitality, Retail and Other Services Managers | 7.6 | 7.9 | 9.2 | 10.0 | 8.5 | 8.7 | 10.1 | 11.1 | 91 | 90 |
| | Professionals | 21 | Science and Engineering Professionals | 26.7 | 27.9 | 34.8 | 41.7 | 27.5 | 28.1 | 34.0 | 41.1 | 102 | 101 |
| | | 22 | Health Professionals | 16.7 | 17.5 | 23.0 | 29.8 | 15.8 | 16.3 | 21.2 | 29.3 | 108 | 102 |
| | | 23 | Teaching Professionals | 45.9 | 46.2 | 41.6 | 39.7 | 45.5 | 46.2 | 46.7 | 46.4 | 89 | 86 |
| | | 24 | Business and Administration Professionals | 44.0 | 44.4 | 44.3 | 43.1 | 47.3 | 47.7 | 49.2 | 49.0 | 90 | 88 |
| | | 25 | Information and Communications Technology Professionals | 19.8 | 21.0 | 24.9 | 29.2 | 19.3 | 19.9 | 22.0 | 23.6 | 113 | 124 |
| | | 26 | Legal, Social and Cultural Professionals | 21.4 | 22.1 | 23.9 | 25.2 | 22.4 | 22.7 | 26.1 | 28.9 | 92 | 87 |
| | Technicians and Associate Professionals | 31 | Science and Engineering Associate Professionals | 24.2 | 25.0 | 31.9 | 38.4 | 25.6 | 26.0 | 30.8 | 37.8 | 103 | 102 |
| | | 32 | Health Associate Professionals | 11.2 | 11.6 | 13.6 | 15.8 | 11.3 | 11.7 | 12.9 | 14.3 | 105 | 110 |
| | | 33 | Business and Administration Associate Professionals | 70.5 | 71.0 | 72.7 | 72.7 | 76.0 | 76.8 | 79.6 | 80.1 | 91 | 91 |
| | | 34 | Legal, Social, Cultural and Related Associate Professionals | 13.6 | 14.1 | 15.6 | 16.6 | 15.7 | 15.8 | 16.1 | 16.9 | 97 | 98 |
| | | 35 | Information and Communications Technicians | 6.3 | 6.9 | 10.3 | 14.7 | 5.9 | 6.3 | 9.6 | 13.8 | 107 | 106 |
| Medium qualification occupations | Clerical Support Workers | 41 | General and Keyboard Clerks | 4.4 | 4.4 | 3.6 | 2.4 | 4.9 | 4.9 | 4.4 | 3.3 | 81 | 73 |
| | | 42 | Customer Services Clerks | 13.6 | 13.6 | 11.1 | 6.6 | 16.2 | 16.5 | 16.2 | 11.5 | 68 | 57 |
| | | 43 | Numerical and Material Recording Clerks | 19.5 | 19.2 | 17.8 | 15.2 | 20.9 | 20.9 | 17.7 | 15.1 | 101 | 101 |
| | | 44 | Other Clerical Support Workers | 3.1 | 3.0 | 2.9 | 2.8 | 3.3 | 3.2 | 2.9 | 2.8 | 99 | 100 |

Table 7 cont.

| Degree of qualification | Major groups of occupations | OC code | Sub-major groups of occupations | Employed population – demand, thousands | | | | Economically active population – supply, thousands | | | | Supply vs demand, % | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Forecast | | | | Forecast | | | | |
| | | | | 2021* | 2022 | 2030 | 2040 | 2021* | 2022 | 2030 | 2040 | 2030 | 2040 |
| Medium qualification occupations | Services and Sales Workers | 51 | Personal Services Workers | 39.9 | 41.2 | 44.3 | 45.5 | 46.2 | 45.9 | 44.3 | 44.4 | 100 | 103 |
| | | 52 | Sales Workers | 52.3 | 50.7 | 39.5 | 27.1 | 57.6 | 57.8 | 53.5 | 41.5 | 74 | 65 |
| | | 53 | Personal Care Workers | 20.9 | 21.3 | 21.5 | 22.3 | 20.7 | 20.6 | 20.8 | 21.9 | 103 | 102 |
| | | 54 | Protective Services Workers | 12.8 | 12.9 | 12.4 | 11.1 | 14.3 | 14.1 | 14.6 | 15.3 | 85 | 73 |
| | Skilled Agricultural, Forestry and Fishery Workers | 61 | Market-oriented Skilled Agricultural Workers | 17.2 | 17.7 | 17.8 | 17.2 | 18.8 | 18.5 | 17.1 | 16.7 | 104 | 103 |
| | | 62 | Market-oriented Skilled Forestry, Fishery and Hunting Workers | 4.2 | 4.4 | 5.0 | 5.4 | 5.1 | 5.0 | 4.5 | 3.6 | 111 | 150 |
| | | 63 | Subsistence Farmers, Fishers, Hunters and Gatherers | 4.7 | 4.7 | 3.3 | 1.6 | 5.1 | 4.9 | 3.5 | 1.8 | 94 | 88 |
| | Craft and Related Trades Workers | 71 | Building and Related Trades Workers (excluding Electricians) | 32.7 | 33.2 | 39.4 | 41.2 | 36.9 | 36.7 | 34.3 | 29.4 | 115 | 140 |
| | | 72 | Metal, Machinery and Related Trades Workers | 31.6 | 31.6 | 33.2 | 33.8 | 33.0 | 32.6 | 29.2 | 25.4 | 114 | 133 |
| | | 73 | Handicraft and Printing Workers | 2.5 | 2.6 | 2.7 | 2.6 | 2.7 | 2.7 | 2.5 | 1.8 | 110 | 143 |
| | | 74 | Electrical and Electronic Trades Workers | 9.1 | 9.1 | 9.5 | 8.9 | 9.4 | 9.2 | 7.3 | 5.4 | 130 | 165 |
| | | 75 | Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers | 23.8 | 23.6 | 23.9 | 23.3 | 26.2 | 25.9 | 22.7 | 19.1 | 105 | 122 |
| | Plant and Machine Operators and Assemblers | 81 | Stationary Plant and Machine Operators | 13.2 | 13.2 | 13.7 | 13.8 | 14.6 | 14.5 | 13.0 | 11.8 | 106 | 117 |
| | | 82 | Assemblers | 4.5 | 4.5 | 4.7 | 4.7 | 4.9 | 4.9 | 4.6 | 4.6 | 103 | 102 |
| | | 83 | Drivers and Mobile Plant Operators | 60.1 | 59.7 | 59.9 | 57.4 | 63.0 | 62.2 | 55.7 | 49.5 | 108 | 116 |
| Low qualification occupations | Elementary Occupations | 91 | Cleaners and Helpers | 23.2 | 23.2 | 20.5 | 16.4 | 25.7 | 25.0 | 23.2 | 21.4 | 88 | 77 |
| | | 92 | Agricultural, Forestry and Fishery Labourers | 10.4 | 10.5 | 8.9 | 6.7 | 12.8 | 12.7 | 12.0 | 10.0 | 74 | 67 |
| | | 93 | Labourers in Mining, Construction, Manufacturing and Transport | 50.0 | 48.9 | 41.5 | 29.2 | 61.7 | 62.2 | 63.1 | 54.8 | 66 | 53 |
| | | 94 | Food Preparation Assistants | 4.2 | 4.3 | 4.2 | 3.7 | 5.5 | 5.5 | 4.8 | 3.7 | 87 | 100 |
| | | 95 | Street and Related Sales and Services Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | | 96 | Refuse Workers and Other Elementary Workers | 16.6 | 16.4 | 13.7 | 10.1 | 19.3 | 18.6 | 16.3 | 13.8 | 84 | 73 |

* MoE estimation, based on LFS 2020 data

Labour demand and supply distributed by education fields

*thousands*

| | Forecast | | | |
|---|---|---|---|---|
| | 2021* | 2022 | 2030 | 2040 |
| **Total demand,** including: | **864.0** | **871.9** | **890.1** | **878.8** |
| Higher Education | 352.4 | 360.9 | 390.4 | 417.7 |
| Vocational secondary education | 240.4 | 240.6 | 264.8 | 277.9 |
| General secondary education | 196.4 | 194.9 | 170.3 | 134.0 |
| Basic education | 74.8 | 75.5 | 64.7 | 49.3 |
| **Total supply,** including: | **934.6** | **938.1** | **942.8** | **924.6** |
| Higher Education | 370.2 | 377.2 | 416.2 | 456.2 |
| Vocational secondary education | 249.4 | 242.0 | 195.8 | 163.4 |
| General secondary education | 214.6 | 213.1 | 204.3 | 203.3 |
| Basic education | 100.5 | 105.7 | 126.5 | 101.6 |

* MoE estimation, based on LFS 2020 data

HIGHER EDUCATION

Labour demand and supply forecasts distributed by education areas

*thousands*

| Code | Academic discipline | Employed population – demand Forecast | | | | Economically active population - supply Forecast | | | | Difference between the labour supply and demand | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2021* | 2022 | 2030 | 2040 | 2021* | 2022 | 2030 | 2040 | 2030 | 2040 |
| | **Augstākā izglītība kopā** | **352.4** | **360.9** | **390.4** | **417.7** | **370.2** | **377.2** | **416.2** | **456.2** | **25.8** | **38.5** |
| 14 | Teacher training and education science | 50.5 | 51.1 | 45.5 | 41.2 | 50.6 | 50.9 | 48.7 | 43.2 | 3.2 | 1,9 |
| 21 | Arts | 7.4 | 7.6 | 10.4 | 13.4 | 8.2 | 8.5 | 11.7 | 16.3 | 1.3 | 2,9 |
| 22 | Humanities | 10.2 | 10.5 | 10.0 | 9.2 | 10.7 | 11.0 | 12.4 | 13.8 | 2.5 | 4,6 |
| 31 | Social and behavioural science | 51.2 | 51.6 | 48.8 | 44.0 | 56.5 | 56.7 | 56.6 | 52.2 | 7.8 | 8,2 |
| 32 | Journalism and information | 3.3 | 3.4 | 3.2 | 2.9 | 3.8 | 3.9 | 4.3 | 4.8 | 1.1 | 1,9 |
| 34 | Business and administration | 61.7 | 62.0 | 72.8 | 83.1 | 66.1 | 68.4 | 84.0 | 99.6 | 11.2 | 16,5 |
| 38 | Law | 28.7 | 28.9 | 31.2 | 34.2 | 29.8 | 30.3 | 33.8 | 37.1 | 2.6 | 2,8 |
| 42 | Life sciences | 2.3 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.9 | 3.3 | 0.5 | 0,9 |
| 44 | Physical sciences | 6.5 | 6.8 | 7.9 | 8.7 | 6.6 | 6.6 | 6.4 | 6.9 | -1.4 | -1,8 |
| 46 | Mathematics and statistics | 2.5 | 2.5 | 3.2 | 3.9 | 2.4 | 2.3 | 2.2 | 2.3 | -1.0 | -1,6 |
| 48 | Computing | 15.8 | 17.7 | 23.3 | 29.6 | 15.4 | 16.0 | 19.7 | 23.7 | -3.6 | -5,9 |
| 52 | Engineering and engineering trades | 29.8 | 30.8 | 33.9 | 35.6 | 31.2 | 31.5 | 32.6 | 36.9 | -1.2 | 1,2 |
| 54 | Manufacturing and processing | 4.1 | 4.2 | 4.2 | 4.0 | 4.6 | 4.6 | 4.1 | 3.7 | -0.1 | -0,2 |
| 58 | Architecture and building | 19.6 | 20.3 | 23.5 | 25.8 | 20.9 | 21.1 | 21.4 | 21.3 | -2.1 | -4,5 |
| 62 | Agriculture. forestry and fishery | 6.7 | 7.0 | 7.1 | 6.8 | 7.1 | 7.2 | 6.7 | 6.4 | -0.4 | -0,5 |
| 64 | Veterinary | 1.4 | 1.5 | 1.7 | 1.8 | 1.6 | 1.6 | 1.9 | 2.3 | 0.2 | 0,5 |
| 72 | Health | 22.0 | 23.2 | 29.9 | 37.9 | 21.2 | 22.2 | 29.7 | 40.9 | -0.2 | 3,0 |
| 76 | Social services | 5.0 | 5.1 | 4.9 | 4.6 | 5.1 | 5.2 | 6.4 | 7.5 | 1.6 | 2,9 |
| 81 | Personal services | 5.6 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 8.0 | 9.9 | 1.9 | 3,8 |
| 84 | Transport services | 6.4 | 6.6 | 8.8 | 11.0 | 6.9 | 6.9 | 6.8 | 6.8 | -2.0 | -4,2 |
| 85 | Environmental protection | 2.3 | 2.3 | 2.1 | 1.7 | 2.5 | 2.6 | 3.2 | 3.8 | 1.1 | 2,1 |
| 86 | Security services | 5.7 | 6.0 | 6.5 | 7.1 | 6.0 | 6.3 | 9.1 | 11.5 | 2.6 | 4,3 |
| | Academic disciplines n.e.c. | 3.7 | 3.7 | 3.2 | 2.4 | 4.2 | 4.2 | 3.6 | 2.2 | 0.4 | -0.3 |

* MoE estimation, based on LFS 2020 data

SECONDARY EDUCATION

Labour demand and supply forecasts distributed by education areas

*thousands*

| Code | Academic discipline | Employed population – demand | | | | Economically active population - supply | | | | Difference between the labour supply and demand | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Forecast | | | | Forecast | | | | |
| | | 2021* | 2022 | 2030 | 2040 | 2021* | 2022 | 2030 | 2040 | 2030 | 2040 |
| | **Secondary education, total** | **436.7** | **435.5** | **435.0** | **411.9** | **464.0** | **455.1** | **400.1** | **366.8** | **-35.0** | **-45.1** |
| | Vocational education and vocational secondary education, including: | 240.4 | 240.6 | 264.8 | 277.9 | 249.4 | 242.0 | 195.8 | 163.4 | -69.0 | -114.4 |
| 14 | Teacher training and education science | 2.0 | 2.0 | 1.6 | 1.1 | 2.2 | 2.2 | 1.4 | 0.5 | -0.2 | -0,6 |
| 21 | Arts | 6.9 | 6.9 | 7.1 | 6.8 | 7.5 | 7.4 | 8.3 | 9.3 | 1.2 | 2,5 |
| 22 | Humanities | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | -0,1 |
| 31 | Social and behavioural science | 3.6 | 3.7 | 3.0 | 2.1 | 3.8 | 3.7 | 2.5 | 1.4 | -0.5 | -0,7 |
| 32 | Journalism and information | 0.6 | 0.6 | 0.6 | 0.4 | 0.7 | 0.7 | 0.5 | 0.3 | -0.1 | -0,2 |
| 34 | Business and administration | 23.5 | 23.4 | 25.7 | 27.6 | 24.4 | 23.8 | 19.4 | 16.6 | -6.3 | -11,0 |
| 38 | Law | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.0 | 0,0 |
| 42 | Life sciences | 0.6 | 0.6 | 0.5 | 0.3 | 0.6 | 0.6 | 0.4 | 0.1 | -0.1 | -0,2 |
| 44 | Physical sciences | 0.8 | 0.8 | 0.7 | 0.5 | 0.8 | 0.8 | 0.6 | 0.4 | -0.1 | -0,1 |
| 46 | Mathematics and statistics | 0.9 | 0.9 | 0.8 | 0.5 | 0.9 | 0.8 | 0.3 | 0.1 | -0.4 | -0,5 |
| 48 | Computing | 3.4 | 3.8 | 5.1 | 7.0 | 3.3 | 3.4 | 4.4 | 6.5 | -0.8 | -0,5 |
| 52 | Engineering and engineering trades | 69.1 | 69.3 | 72.7 | 71.9 | 71.6 | 68.8 | 50.5 | 38.0 | -22.1 | -33,9 |
| 54 | Manufacturing and processing | 31.4 | 31.4 | 34.0 | 34.5 | 32.6 | 31.3 | 23.0 | 15.3 | -11.0 | -19,1 |
| 58 | Architecture and building | 20.5 | 20.2 | 28.0 | 33.0 | 21.6 | 21.1 | 17.9 | 15.8 | -10.2 | -17,2 |
| 62 | Agriculture. forestry and fishery | 8.9 | 8.7 | 9.2 | 9.2 | 9.3 | 9.0 | 7.3 | 6.5 | -1.9 | -2,7 |
| 64 | Veterinary | 2.1 | 2.1 | 2.0 | 1.8 | 2.2 | 2.2 | 1.8 | 1.7 | -0.2 | -0,1 |
| 72 | Health | 11.5 | 11.9 | 13.2 | 14.8 | 10.9 | 10.7 | 9.0 | 8.0 | -4.3 | -6,8 |
| 76 | Social services | 0.5 | 0.7 | 1.5 | 2.5 | 0.3 | 0.3 | 0.8 | 1.7 | -0.7 | -0,7 |
| 81 | Personal services | 30.5 | 30.9 | 34.6 | 38.0 | 32.6 | 32.1 | 30.1 | 30.0 | -4.5 | -8,0 |
| 84 | Transport services | 14.8 | 14.2 | 15.4 | 16.2 | 15.0 | 14.5 | 10.5 | 5.9 | -5.0 | -10,3 |
| 85 | Environmental protection | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0,0 |
| 86 | Security services | 2.6 | 2.7 | 2.2 | 1.5 | 2.8 | 2.9 | 3.2 | 3.1 | 1.0 | 1,6 |
| 99 | Not known or unspecified | 5.9 | 5.6 | 6.8 | 7.8 | 5.7 | 5.5 | 3.8 | 1.9 | -3.0 | -5,9 |
| | General Secondary Education | 196.4 | 194.9 | 170.3 | 134.0 | 214.6 | 213.1 | 204.3 | 203.3 | 34.0 | 69.4 |

* MoE estimation, based on LFS 2020 data

Aggregation of economic sectors

| Aggregated economic sectors | Matching sectors of national economy at NACE 2 letter level |
|---|---|
| Agriculture | A Agriculture, forestry and fishing |
| Manufacturing | C Manufacturing |
| Other types of industry | B Mining and quarrying |
| | D Electricity, gas, steam and air conditioning supply |
| | E Water supply, sewerage, waste management and remediation activities |
| Construction | F Construction |
| Trade, accommodation and catering services | G Wholesale and retail trade; repair of motor vehicles and motorcycles |
| | I Accommodation and food service activities |
| Transportation and storage | H Transportation and storage |
| Other business services | J Information and communication |
| | K Financial and insurance activities |
| | L Real estate activities |
| | M Professional, scientific and technical activities |
| | N Administrative and support service activities |
| | R Arts, entertainment and recreation |
| | S Other service activities |
| Public services | O Public administration and defence; compulsory social security |
| | P Education |
| | Q Human health and social work activities |

Discussion of labour market matters in involved councils

| Council | Organisations involved in the council | Objective |
|---|---|---|
| | | National level councils |
| National Tripartite Cooperation Council (NTCC) | Representatives nominated by the Cabinet of Ministers, Employers' Confederation of Latvia, and Free Trade Union Confederation of Latvia | Ensures and facilitates the cooperation among the government, employer and employee organisations at a national level with the aim to ensure coordinated solving of socio-economic development problems in line with public and national interests, by drafting and implementing strategies, programmes and regulatory acts, in relation to social and economic matters. Examines draft policy planning documents and regulatory acts, provides proposals for their improvement to the respective ministries, including in relation to employment. |
| Tripartite Sub-council for Co-operation in Vocational Education and Employment (PINTSA) | 15 authorised persons – representatives proposed by the Cabinet of Ministers, Employers' Confederation of Latvia, and Free Trade Union Confederation of Latvia | Part of the NTCC institutional system. Its goal is to facilitate the cooperation among the government, employer and employee organisations in the field of national policy of vocational education and employment, development and implementation of strategies, including to review the national development plans, concepts, draft regulatory acts in the field of vocational education and human resource development and employment, to provide proposals for their improvement and to evaluate proposals and provide suggestions to state institutions and public organisations, related to vocational education and employment. |
| Demographic Affairs Council | Representatives of the Cabinet of Ministers, Saeima, NGOs, social partners, scientists | An advisory and coordinating state institution, which was established in order to facilitate a single national demographic policy and its implementation on all levels of state administration. The Council evaluates and coordinates the implementation of the national demographic policy, and informs mass media on demographic policy matters. |
| Higher Education Council (HEC) | 12 Council members: representatives of the Employers' Confederation of Latvia, MoES, Latvian Academy of Sciences, Rectors' Council, Student Union of Latvia, etc. | An independent institution of the Republic of Latvia, which drafts the national higher education strategy, realizes cooperation between higher education institutions, state institutions and the society, with regard to higher education development, supervises the quality of higher education and ensures adoption of qualitative decisions, in the field of higher education. |
| | | Advisory Councils |
| National Economy Council (NEC) | MoE, Latvian Chamber of Commerce and Industry, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia, Latvian Association of Local and Regional Governments, representatives of sector associations, experts | An advisory institution, which was established by the Ministry of Economics, Latvian Chamber of Commerce and Industry, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia, Latvian Association of Local and Regional Governments.<br>The goal of the NEC is to facilitate drafting and implementing of a business-friendly environment policy in Latvia, as well as to promote the implementation of principles of sustainable development in the national economy. |
| Employment Board | MoE, MoES, MoW ministers | The goal is to coordinate inter-sectoral cooperation required for planning, development, implementation, and monitoring of labour market reform or re-arrangement, thereby reducing the disproportion in the Latvian labour market. |
| 12 sectoral expert councils (SEC) | Sectoral employers' organisations or their associations, sectoral trade union organisations, Latvian Chamber of Crafts, MoES, MoE, MoW, Ministry of Culture, Ministry of Transport, Ministry of Agriculture, Ministry of Environmental Protection and Regional Development, SEA and other institutions participate in SECs voluntarily. The work of SECs is managed by a SEC secretariat, which is comprised of advisers from the Free Trade Union Confederation of Latvia, Employers' Confederation of Latvia and National Centre for Education. | Its goal is to forecast the development of the sector, studying and ensuring the demand and supply in education and labour market. |

Table 12 cont.

| Council | Organisations involved in the council | Objective |
|---|---|---|
| Adult Education Management Council (AEMC) | Representatives of MoES, MoW, MoE, Ministry of Defence, Ministry of Culture, Ministry of Health, Ministry of Agriculture, Ministry of Justice, Cross-Sectoral Coordination Centre, Employers' Confederation of Latvia, Latvian Chamber of Commerce and Industry, Latvian Association of Local and Regional Governments, Latvian Association of Large Cities, LPIA, LABS, planning regions | An inter-sectoral consultative institution to ensure coordination of measures of the Adult Education Management Model Implementation Plan for 2016-2020 and supervision of the implementation of the plan. The tasks envisage to determine and approve objectives and tasks of adult education, to set priority target groups for adult education, to approve the curriculum to be implemented, to decide on funding allocation principles, to assess the results of the implementation of adult education on a regular basis, etc. |
| MoW Commission for establishing fields of training for unemployed, job seekers and persons subject to risk of unemployment | MoW, MoE, MoES, SEA, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia, Latvian Association of Local and Regional Government, other experts | A commission set up by the MoW for determining training sectors, occupations, as well as basic social and professional skills, where training for the unemployed and job seekers should be provided. |
| Advisory Council "Education to Everyone" | The Council is chaired by the MoES Minister. Representatives of ministries and other state administration institutions, local and regional governments and private sector, public and international organisations | Its goals are to facilitate the development of lifelong learning and access to education for all the population, to promote integration of vulnerable and socially excluded persons, by offering various learning opportunities, to widen the interaction of formal and non-formal education, by providing lifelong learning opportunities and facilitating people's inclusion in the society and their competitiveness in the labour market, to facilitate the development of basic skills of people and their ability to use them according to their personal and public needs. |
| Cooperation Council for the Career Guidance System | MoES, National Centre for Education, State Service of Education Quality, MoW, SEA, Social Integration State Agency, MoE, Latvian Career Development Support Association, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia, Latvian Association of Local and Regional Governments, Latvian Adult Education Association and State Education Development Agency | An inter-sectoral institution for information exchange and consultations, with the aim to develop and facilitate career guidance measures and to enhance their quality and promote choice of a further education or professional career direction that would suite the abilities, interests and age of everyone. |
| MoW Commission for establishing fields of training for unemployed, job seekers and persons subject to risk of unemployment | MoW, MoE, MoES, SEA, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia, Latvian Association of Local and Regional Government, other experts | A commission set up by the MoW for determining training sectors, occupations, as well as basic social and professional skills, where training for the unemployed and job seekers should be provided. |

Sectoral associations – include enterprises representing a single sector, are aware of the situation in the specific sector.
Planning regions – five planning regions have been created in Latvia. Their aim is to ensure the planning of regional development and the coordination and cooperation among local governments and other state administration institutions in Latvia.

Minister of Economics I.Indriksone