INFORMATIVE REPORT ON

MEDIUM AND LONG-TERM LABOUR MARKET FORECASTS

2020

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 2027 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 development scenarios, medium-term and long-term labour market forecasts, an overview of implemented education and employment measures, including a description of the system of anticipating changes in the labour market, a summary with recommendations 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.

ABBREVIATIONS

CEDEFOP	European Centre for the Development of Vocational Training
CSB	Central Statistical Bureau
DOM	dynamic optimisation model
LFS	Labour Force Survey
EC	European Commission
MoE	Ministry of Economics
ERDF	European Regional Development Fund
EU	European Union
ESF	European Social Fund
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
MoW	Ministry of Welfare
CM	Cabinet of Ministers
NACE	Statistical Classification of Economic Activities in the European Community
SEC	Sectoral expert councils
SEA	State Employment Agency
OECD	Organisation of Economic Cooperation and Development
STEM	Science, technology, engineering and mathematics
ULC	unit labour costs
SRS	State Revenue Service

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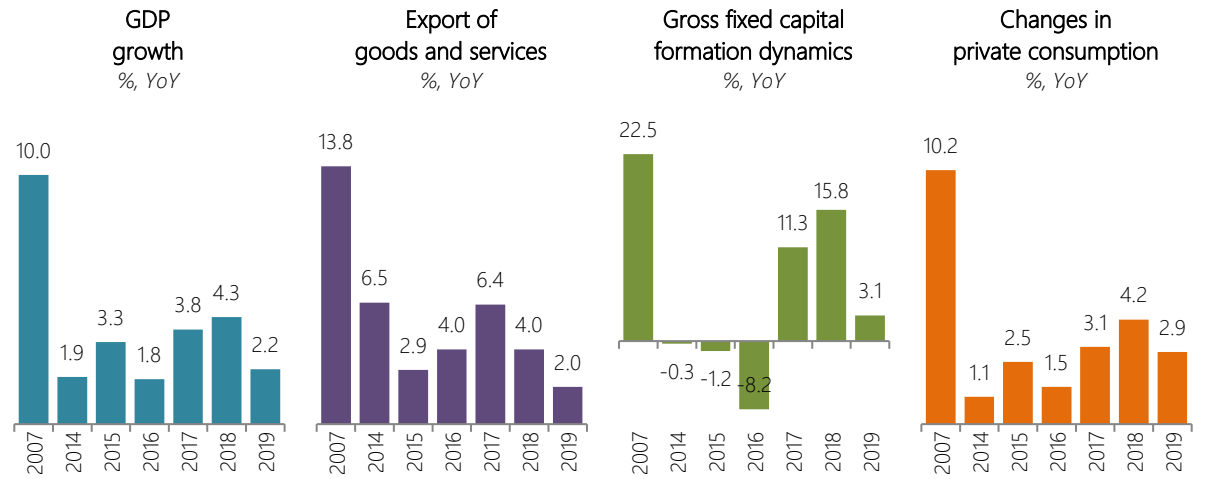
1. ECONOMIC AND LABOUR MARKET DEVELOPMENT

1.1. MACROECONOMIC SITUATION AND DEVELOPMENT OF INDUSTRIES

Stable economic growth in Latvia has been continuing with its rates exceeding the EU average since 2011. From 2011 to 2019, GDP grew by 3.3% per year on average. In 2019, GDP exceeded the pre-crisis level of 2007 by 6.2 per cent.

In 2019, growth of the economy became more moderate. GDP grew by 2.2%. The deceleration of growth rates was underpinned by both internal factors (the investments from EU funds have reached their maximum, developments in the financial sector, etc.) and external factors (review of global trade relations, *Brexit*, slower growth in EU countries). In 2019, a moderate increase in exports was observed. Exports of services increased more rapidly, while exports of goods grew slowly. Private consumption continued to grow, although at slower rates fostered by a stable increase in wages. After the rapid rise in exports in 2017 and 2018, growth rates of investments reduced significantly in 2019. Public consumption was also growing slower than in the previous years.

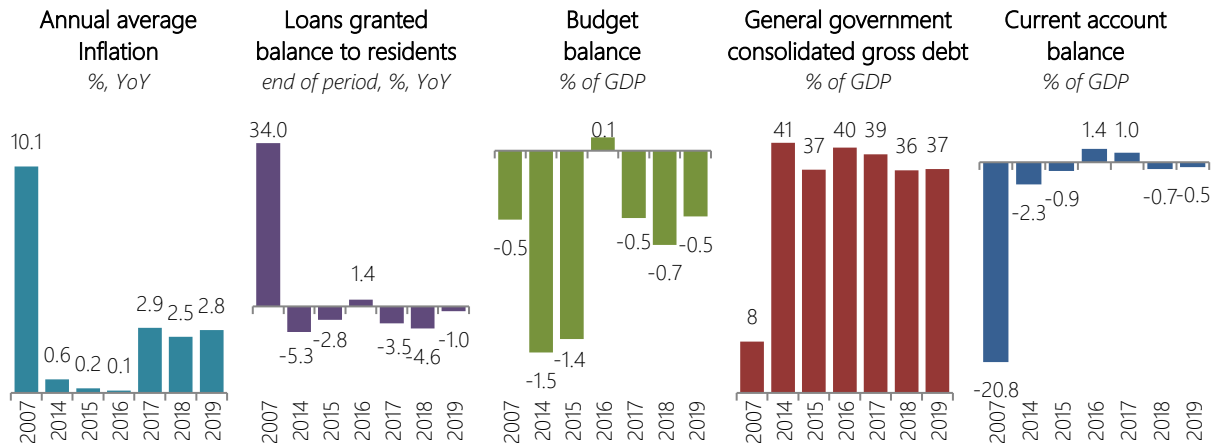
Figure 1.1



Source: CSB

In the previous years, distinct macroeconomic imbalances of the "fat" years have been eliminated and risks of economic vulnerability due to internal and external shocks have been reduced in the Latvian economy. At present, macroeconomic stability is retained – the situation was characterised by small public debt, budget close to balance, balanced balance of payments. Although inflation is growing, this is mainly caused by supply-side factors.

Figure 1.2



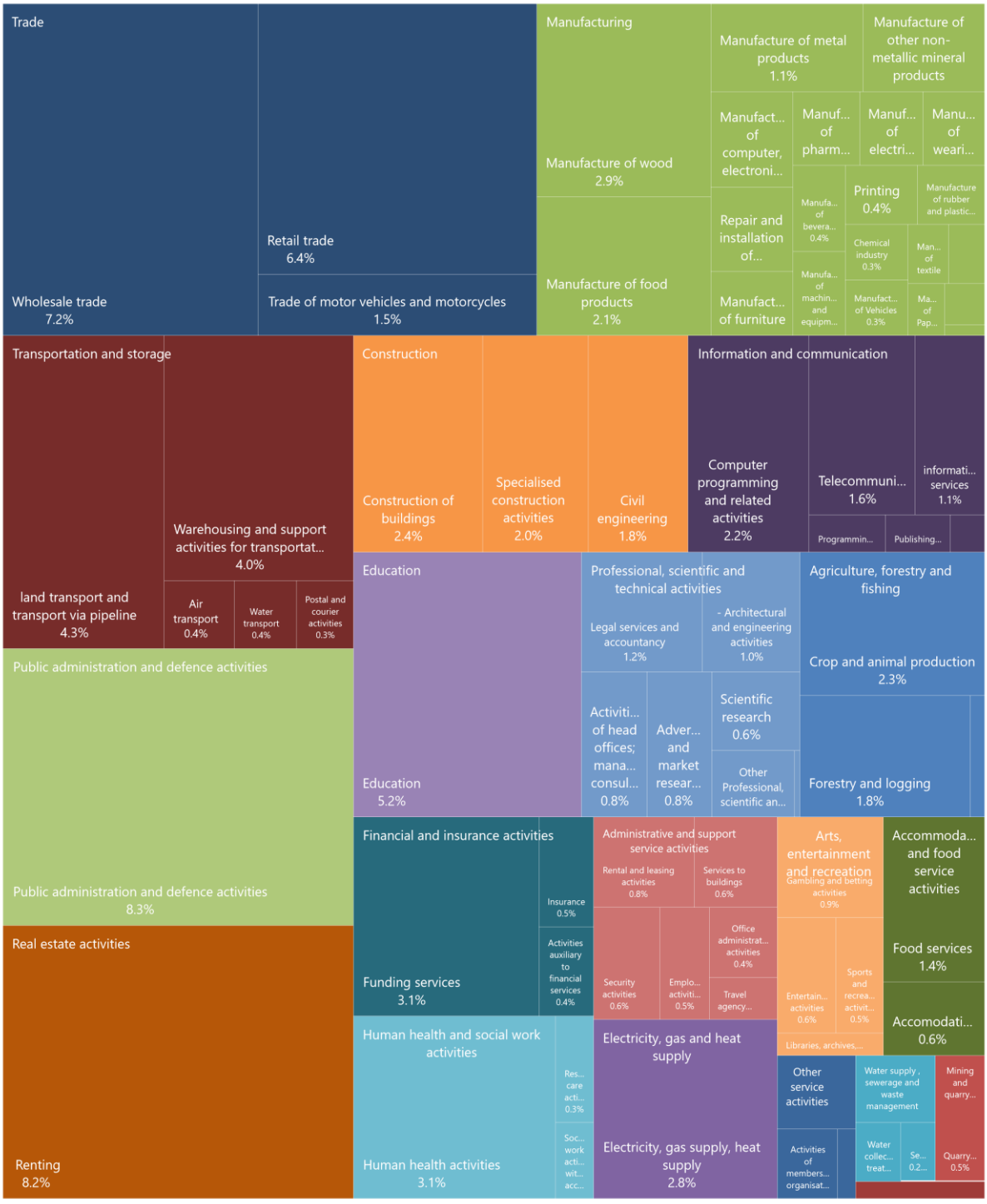
Source: CSB

In 2009-2010, as labour costs reduced, competitiveness of Latvian producers improved, which served as a basis for an increase in export volumes and also the development of tradable industries. In the last 10 years, the structure of the national economy has changed. In 2008, tradable sectors (agriculture, forestry, industry, as well as transport services) accounted for only 26.4% of total value added, in 2010 the share of these sectors reached 33.2%. In 2019, the share of these sectors shrank – to 27.7%. In 2019, the share has reduced in all sectors, with the exception of construction, business services and public services sectors compared to 2010. In 2014-2016 growth continued in all sectors, with the exception of construction and transport, while in 2017-2019 the increase in construction volumes had one of the biggest effects on growth.

Figure 1.3

Structure of national economy

2019, %



Source: CSB

In 2009-2010, as labour costs reduced, competitiveness of Latvian producers improved, which served as a basis for an increase in export volumes and also the development of tradable industries. In 2008, tradable sectors (agriculture, forestry, industry, as well as transport services) accounted for only 26.4% of total value added, in 2010 the share of these sectors reached 33.2%. In 2019, the share of these sectors shrank – to 27.7%. In 2019, the share has reduced in all sectors, with the exception of construction, business services and public services sectors compared to 2010. In 2014-2016 growth continued in all sectors, with the exception of construction and transport, while in 2017-2019 the increase in construction volumes had one of the biggest effects on growth.

Overall, uneven growth is observed in **agriculture, forestry and fishing**, because the industry is closely linked to weather. Moderate growth was generally observed in 2018 mainly underpinned by growth in the forestry sector. In turn, in 2019, a rapid increase in volumes of the industry was observed due to favourable weather and rapid growth of crop production.

The development of **manufacturing** is fostered by improved competitiveness of Latvian manufacturers, as well as demand dynamics in the largest export markets. Manufacturing increased by 2.1% in 2019. At the same time, trends in the sub-sectors of the industry differ considerably. Manufacturing volumes in the largest sector – wood processing in 2019 remained at the level of 2018. The sector was affected both by the process of exit of the United Kingdom from the EU and an extensive drop in prices of products due to the expansion of fir bark beetles in Europe. In 2019, production volumes shrank in the food industry, manufacture of construction materials and furniture. At the same time, a stable increase in 2019 continued in metalworking, manufacturing of electronics, electrical and optical equipment. In 2019, the manufacturing turnover at current prices increased slightly more rapidly than output volumes. Volumes of products sold in the domestic market grew more rapidly, while volumes of exported products – more moderately.

Other industries (mining, electricity and gas supply), after their rapid drop in 2015-2016, saw a decline in volumes in 2017-2019 due to the drop in electricity and gas supply sectors. The dynamics in sales volumes in electricity and gas supply sectors is related to weather, as amounts of electricity and heat produced depend on this. Taking into account that weather in the winter months of 2017-2019 was much warmer, less electricity and heat energy was consumed.

The development of the **construction sector** is very cyclic and is mainly related to public orders and projects of the EU funds. In 2019, growth in the construction sector was 2.9% being considerably slower than in the previous two years, because the volumes of investments of EU funds in 2019 actually remained at the level of 2018 and there were no so big projects of private investors in 2019, compared to the previous years. In 2019, construction volumes increased in all main groups of construction with the increase of volumes of construction of buildings by 7.8% making the most considerable contribution. The development of civil engineering and specialised construction activities throughout the year was considerably lower.

The volume of services provided in the **trade sector** continues to grow. Trade sector was positively influenced by an increase in private consumption, an increase in wages and improvements in the labour market. The trade sector has been growing stably since 2013. It grew by 4.1% in 2019. Retail trade turnover increased by 2.4% in 2019. The fastest increase was observed in non-food retail trade volumes. Meanwhile, the retail trade turnover at current prices increased by 4 per cent in 2019.

In the **transportation and storage sector** volumes of the industry increased by 1.1% per year on average in the period from 2014 to 2019, which, inter alia, was affected by the decline in transit freight transport, mainly due to the Russian transport policy and growing competition. Since the end of nineties Russia has been forwarding the goal to develop its own transportation infrastructure to be independent from transit countries. Despite the drop in transit freights by railway and in ports, growth of the sector was fostered by the increase in freight transport by road, as well as the increase in passengers in the airport and sea ports. In 2019, the drop in the industry was underpinned by a drop in freight transport and warehousing and support activities for transportation. Freight transport reduced in all modes of transport, while carriage of passengers increased by 7% and postal and courier activities – by 18 per cent.

A moderate increase is observed in **sectors of business services**. In 2019, the biggest effect came from the increase in volumes of services in the fields of professional, scientific and technical activities and administrative and support service activities. The increase in volumes of real estate activities, information and communication and arts, entertainment and recreation sectors had a minor increasing impact. Meanwhile, volumes of financial and insurance activities reduced mainly due to the reduction of the volume of non-resident business in Latvia and merging of banks and reduction of the number of the employed.

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 2013. In 2017, it was the fastest since 2006. The sector continued to grow rapidly also in 2019. Public consumption on the increase of defence capabilities of the state, health and education has increased considerably in recent years.

In 2020, due to the effects of the demand and supply shock caused by Covid-19, the economy is expected to see recession and volumes of production and services provided by most sectors will shrink. At the same time, the unclarity about the effect of Covid-19 on economic development is extreme, because it is unclear how long and how extensively the coronavirus will continue to spread in Europe and in the world. At the same time, the path back to growth depends on different conditions (see chapter 3.2.1).

1.2. EMPLOYMENT AND UNEMPLOYMENT OF THE POPULATION

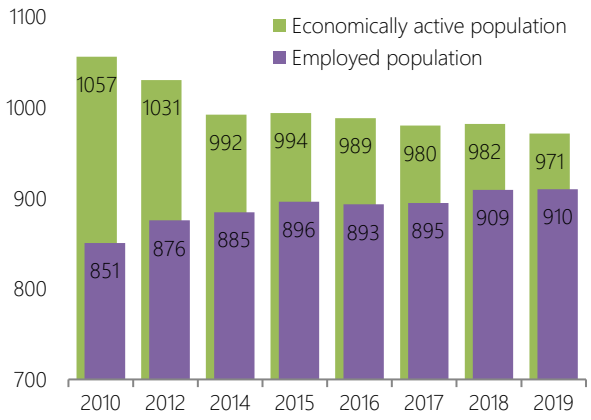
The labour market is close to its potential – the low base effect in the labour market has disappeared and in 2019 the labour market approached its saturation point, which, along with the decrease in working age population, limits further increase in employment. Domestic demand oriented sector development still remained the main driver of the labour market in 2019. Both the construction and trade saw an increase in jobs. At the same time, demographic processes affect the labour market the most. The reduction of the number of working age population affect the potential labour supply thus changing free labour reserves.

The drop in economic growth rates affects labour demand. In 2019, it showed generally slow growth – the number of occupied posts increased only by 1%, but the number of the employed – by 0.1% or 0.6 thousand. In total, 910 thousand people aged 15-74 years were employed in 2019.

Figure 1.4

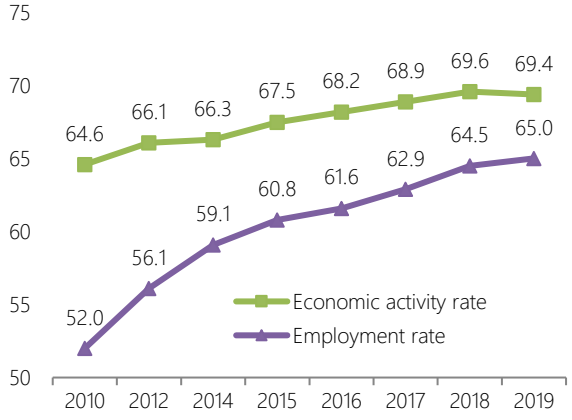
The employed and economically active population

in age group 15-74, thsd



Employment and economic activity rate

%



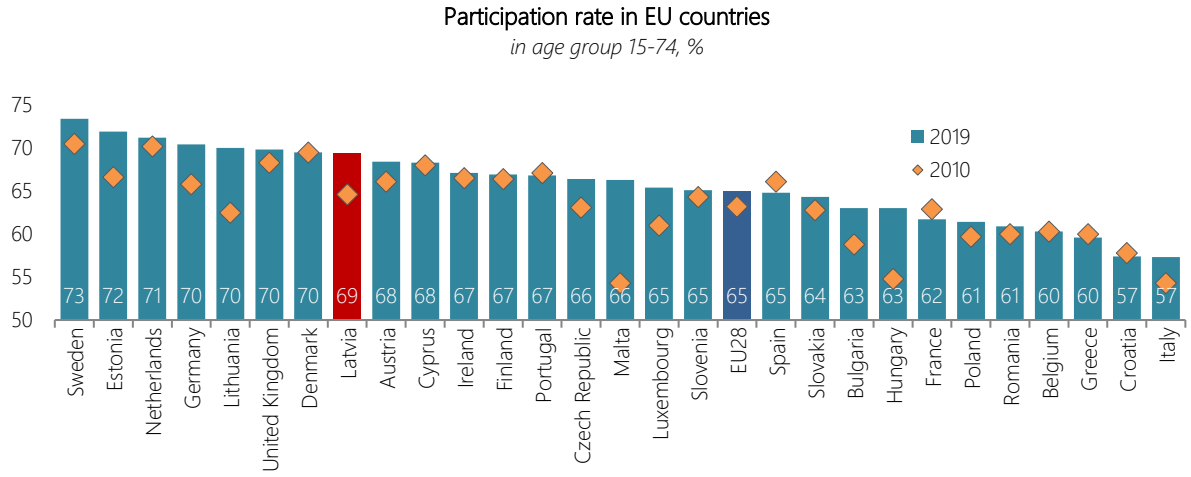
Source: CSB

Along with the decline in economic activity in the national economy, demographic trends have also been affecting stagnation in the number of the employed for a long time. It should be taken into account that the reduction in working age population and changes in the age structure restrict significantly the involvement of new working hands in the labour market finally affecting the total dynamics in numbers of the employed.

The increase in productivity counterbalances the needs of labour force even more, and thus the number of employees required for performing a specific job reduces.

The proportion of the employed people in the overall population in 2019 was by 3 percentage points higher than in 2008 and reached its highest historical mark of 65%. The increase in the employment rate in the last years is mainly attributed to relatively quicker drop in the number of working age population compared to the reduction in the number of the employed. In 2019, the population aged 15 to 74 reduced by almost 14 thousand or 1 per cent compared to 2018.

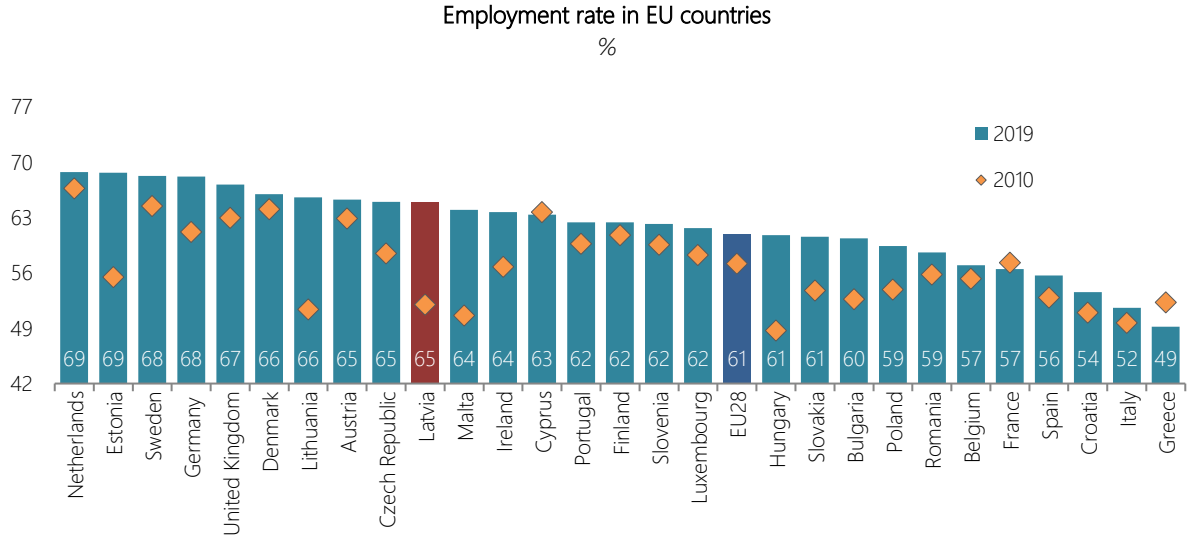
Figure 1.5



Source: Eurostat

Participation rate in Latvia is among the highest among EU countries. In 2019, the economic activity of the population was by 4.4 percentage points higher than the EU average (65%).

Figure 1.6

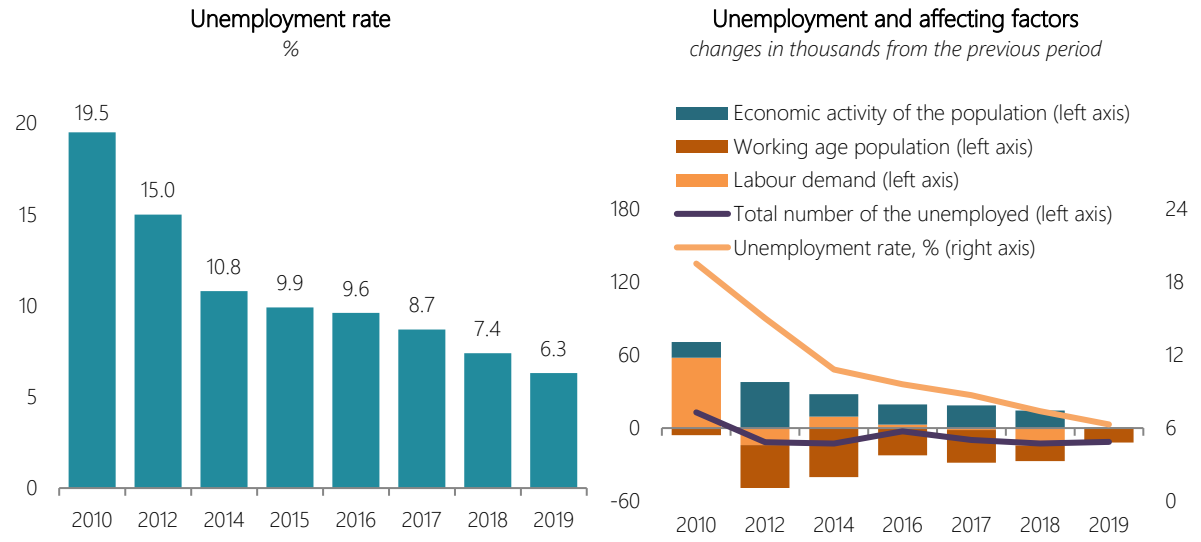


Source: Eurostat

In terms of employment rate, Latvia also is ahead of the majority of EU countries and in 2019 the employment rate of the population aged 15 to 74 was 4.1 percentage points higher than the EU average. Since 2010, the increase in employment rate in Latvia has been among the most rapid in the EU.

The unemployment rate fell to 6.3% on average in 2019, which was 1.1 percentage point less than in 2018 and was 13.2 percentage points less than in 2010, thus approaching rapidly the level of 2007. Overall, the number of the unemployed recued to 61.3 thousand in 2019, which was 11.5 thousand less than in the year before. The decline in unemployment is still mainly affected by demographic trends – the absolute reduction in working age population and changes in the age structure of the population.

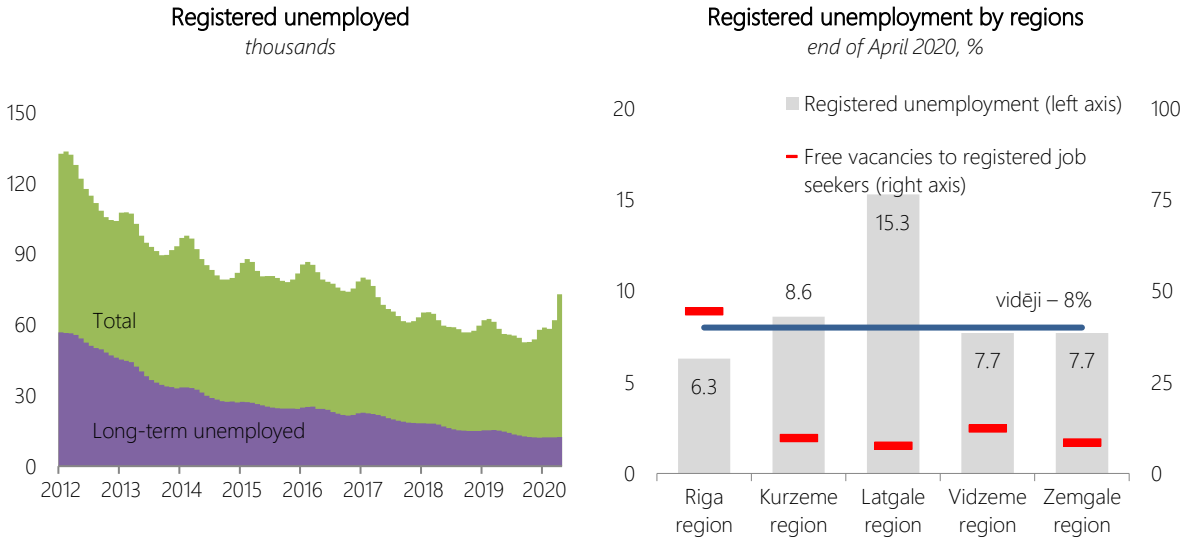
Figure 1.7



Source: CSB

Also, the registered unemployment rate in the past years has shrank significantly and reached 6.2% in December 2019. At the same time, along with the rapid spreading of the coronavirus 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 labour market. The registered unemployment rate has increased by almost 2 percentage points since the beginning of March – to 8% at the end of April 2020. Overall, the number of registered unemployed increased by almost 15 thousand in 2 months.

Figure 1.8



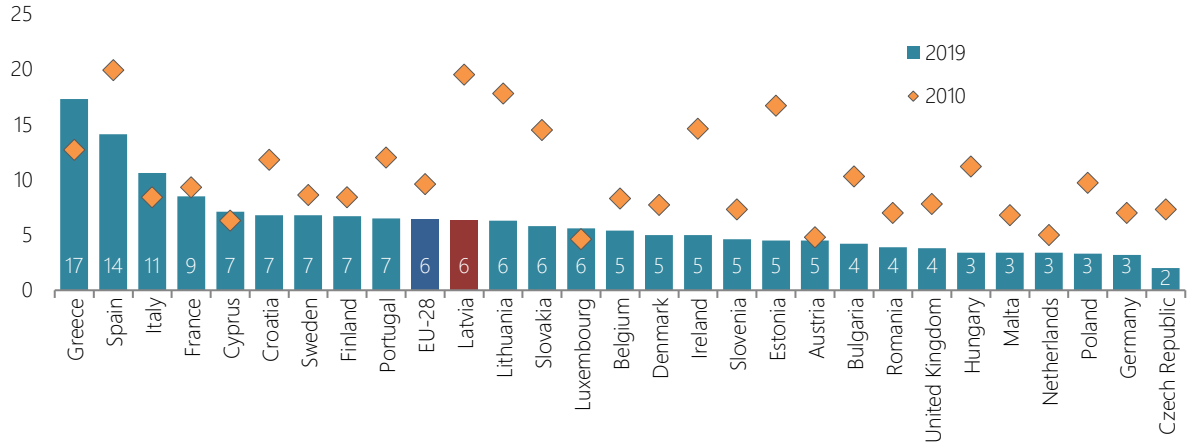
Source: Eurostat

In 2019, the average unemployment rate in the EU Member States was 6.4%. In comparison with 2010, the unemployment rate decreased most rapidly in all the three Baltic countries and in 2019 was below the EU average.

Figure 1.9

Unemployment rate in EU countries

%



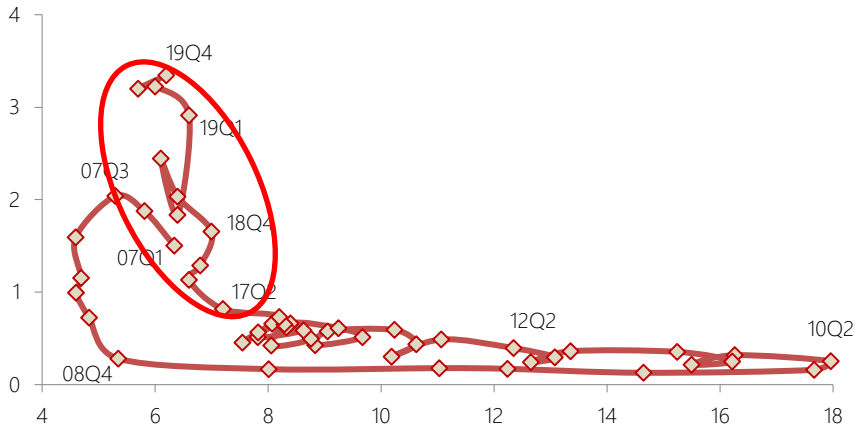
Source: Eurostat

Although the uneven regional distribution of labour resources and vacancies is currently one of the most vivid structural risks of the labour market, however, it is not the only risk. Risks are caused also by the high share of long-term unemployed people – approximately 1/5 of registered job seekers have been out of employment longer than a year. It should be taken into account that high long-term unemployment 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, because they are not what is 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 1.10

Beveridge curve in Latvia

2007-2019, vertical axis – number of free vacancies in thousands; horizontal axis – unemployment rate in %



Source: CSB, SEA

In the period from 2007 to 2013, the Beveridge curve in Latvia shifted to the left – the unemployment rate and the percentage of free workplaces reduced. At the beginning of the recession, the number of free workplaces drastically reduced, while unemployment was growing quite moderately. Whereas, during the 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 the 2nd quarter of 2010.

An upwards change in the direction of the Beveridge curve can be observed from the 3rd quarter of 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 reduced. Therefore, the creation of new jobs has restored. 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.

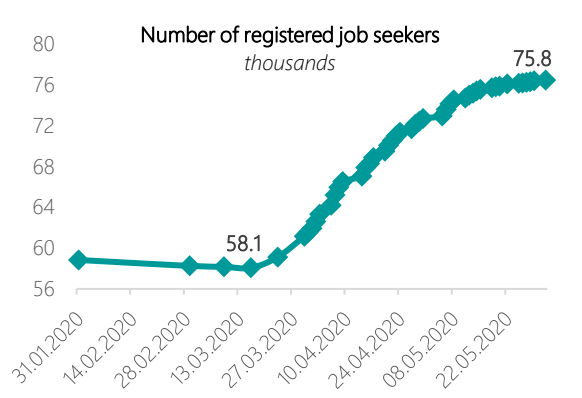
Since 2017, structural non-compliances of the labour market have become even more distinct hindering a faster decrease in unemployment. The number of vacancies has been growing faster than the share of job seekers, which is an evidence of indications of structural unemployment. It should be noted that the number of registered vacancies at the end of February 2020 was 33% higher than a year before. At the same time, the registered unemployment rate has decreased by 0.4 percentage points only during this period. The shift of the Beveridge curve to the right is mainly explained by massive regional differences in the Latvian labour market and low labour force mobility.

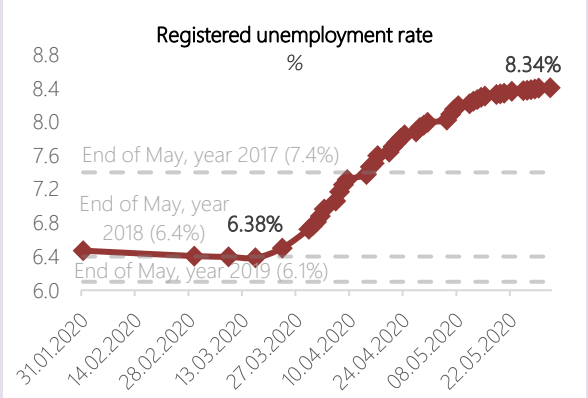
Impact of the coronavirus Covid-19 on the Latvian labour market

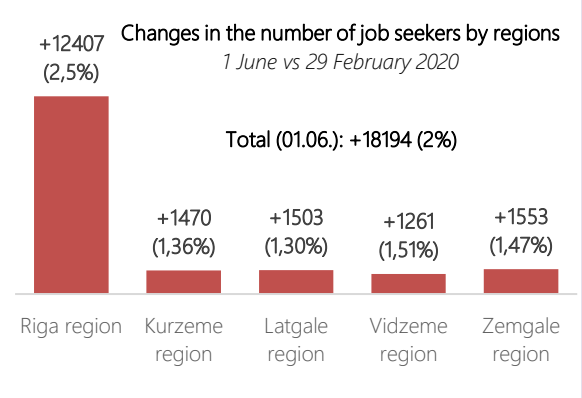
Along with the rapid spreading of the coronavirus Covid-19 in the world and the decline in economic activity, a rapid drop in activity has been observed starting from the beginning of March 2020 also in the labour market. The registered unemployment rate has increased by 2 percentage points since the beginning of March – to 8.3% in the middle of May 2020. At the same time, the number of registered vacancies has also reduced rapidly in the respective period – by more than 14 thousand.

Since the beginning of May, the situation on the labour market has generally stabilised, the increase in unemployment is slowing down, but the number of vacancies has resumed growth.

At the same time, it should be noted that further impact depends to a large extent on the length of restrictions related to the spread of Covid-19. The longer the restrictions are kept, the higher the risk of job losses and rising unemployment. The impact will be observed almost in all sectors of the national economy, and a reduction in the economic activity of the population is expected (mainly among youths and pension/pre-pension age population). The sectors, which have been directly hit by the crisis (aviation, restaurants, bars, public catering, international passenger transport, art, 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) will suffer the most severally. In 2020, the reduction in the number of the employed under the effects of Covid-19 may reach 7.5% or 69 thousand, but the average unemployment rate in 2020 might grow to 11%.

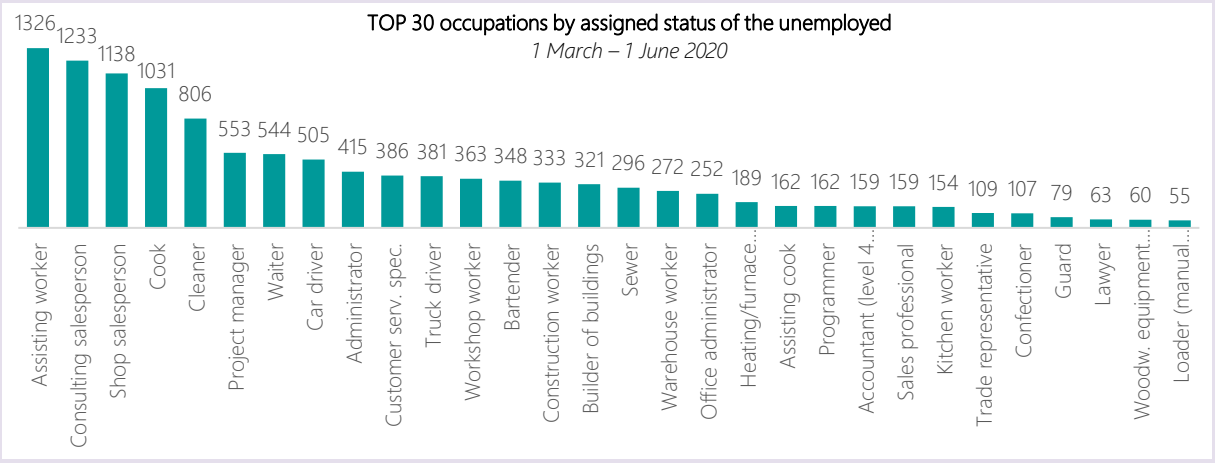


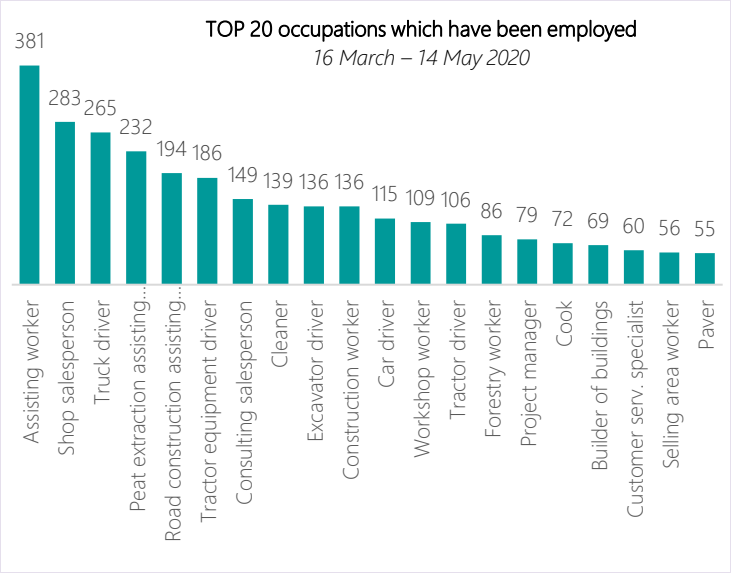


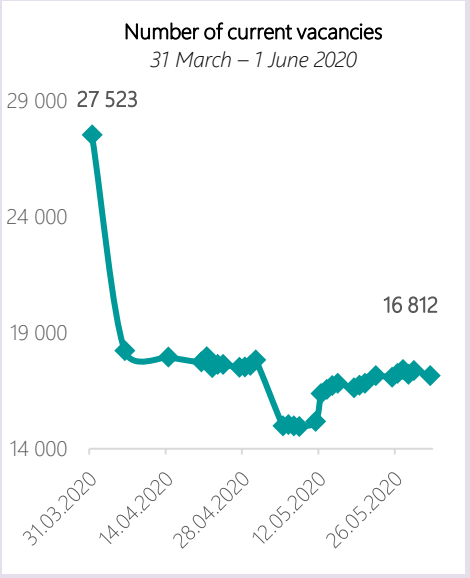


Source: SEA, MoE calculations

Box continued







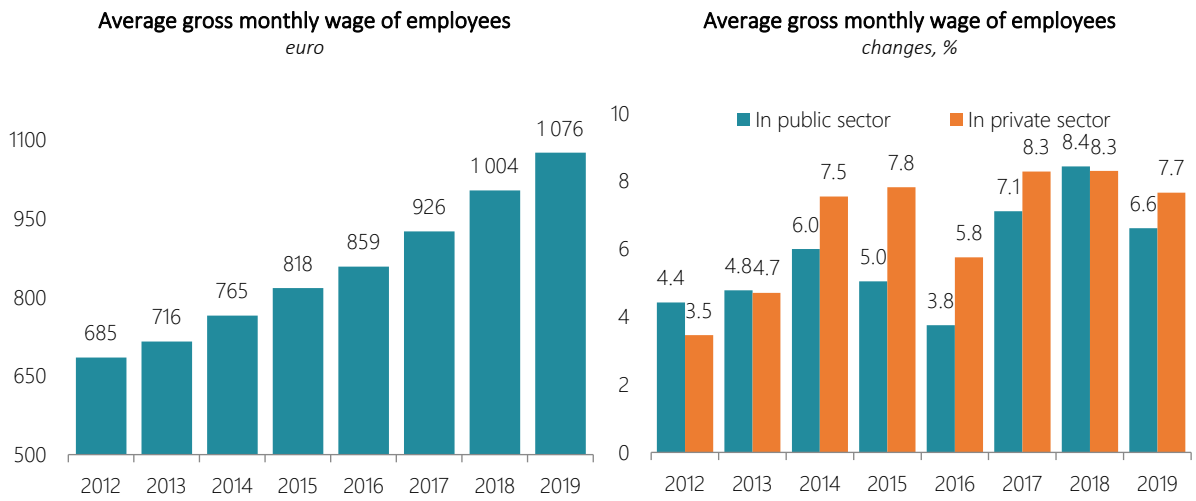
Source: SEA, MoE calculations

1.3. WAGES AND PRODUCTIVITY

In the 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 2018, with gross wages increasing by 8.4%. In 2019, the average gross wage continued to grow – by 7.2% and reached 1076 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-crisis level of 2008, the gross wage has grown by almost 58 per cent.

Since 2011, wages have been growing in both the private and public sector. In 2019, wages grew more rapidly in the private sector – by 7.7%, whereas in the public sector – by 6.6%. In recent years, the difference in wages in the private and public sector has reduced rapidly. If the average gross wage in the private sector was by 22.4% lower than in the public sector in 2008, then this difference was only 2.7 per cent in 2019.

Figure 1.11

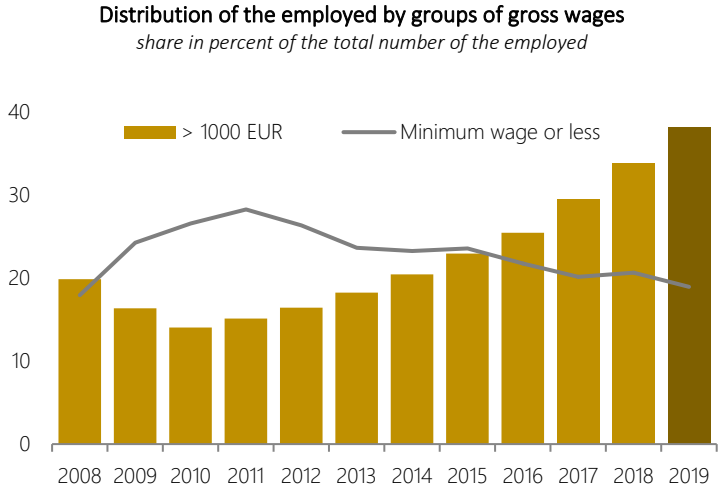


Source: CSB

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. The real wage grew slower – by 3.9 per cent in 2019.

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 was 38% of the total number of the employed in 2019.

Figure 1.12



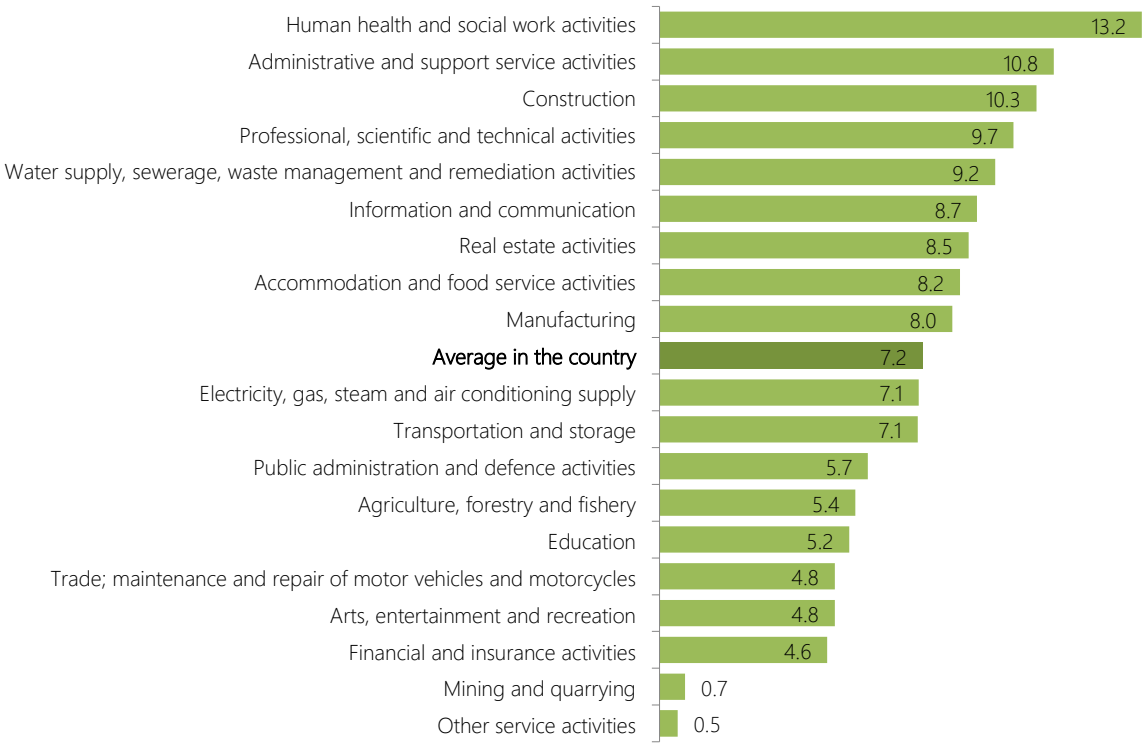
Source: CSB

Wages have in fact been growing in all sectors of the economy since 2013, however their dynamics varied. In 2019, the fastest growth of wages was observed in health – 13.2%. In turn, there was a more moderate increase in other service activities (include activities of membership organisations, repair of personal and household goods, dry-cleaning shops, hairdressing, other beauty treatment, burial and other services) and mining.

The highest gross wage was still in financial and insurance activities – 2083 euro, which is almost twice higher than the average wage in the national economy. At the same time, the smallest wage in 2019 was in accommodation and food service activities – 767 euro.

Figure 1.13

Changes in gross wage by sectors
2019, %

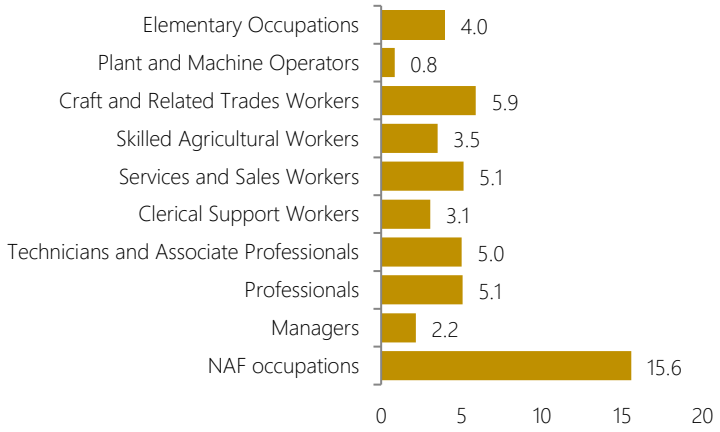


Source: CSB

In manufacturing the average gross wage has been growing more rapidly, in total, than in the national economy on average. The average gross wage in manufacturing increased by 8% in 2019, compared to 2018. Compared to 2012, the average gross wage in manufacturing has grown by 64% unlike the average in the national economy, where it has increased by approximately 57 per cent.

Figure 1.14

Changes in wages by occupations*
December 2019 vs. December 2018, %



Source: State Revenue Service

In 2019, wages across occupations increased. In essence, wages increased in all groups of occupations with the most rapid increase in National Armed Forces – 15.6%. Wages of craft and related trades workers increased more moderately, where the most serious increase in this group of occupations was in building frame and related trades workers, professionals – more rapidly – in occupations of health professionals, and technicians and associate

professionals – in occupations of health professionals. In turn, the smaller increase was observed in occupations of plant and machine operators.

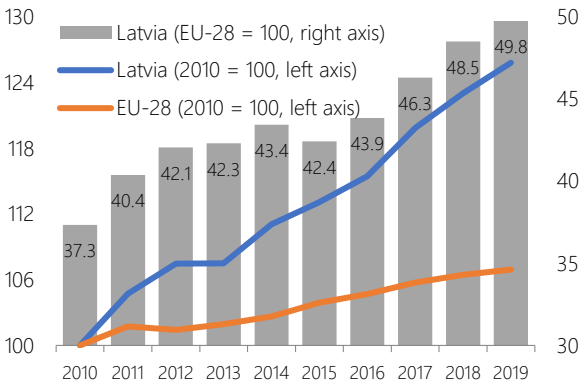
Wage is a significant cost competitiveness factor, therefore the rise in wages should be balanced with a rise in productivity. Otherwise, the competitiveness in tradable sectors is lost, which does not result in a stable growth of total income (welfare).

Latvian economic growth is supported by the increase in productivity. Its dynamics in the last years have been more rapid than in the EU on average. In the last three years (2017-2019), productivity has increased by 9% (by 2.1% on average in EU28). In 2019, productivity (GDP per employed) in the Latvian national economy generally reached 49.8% (almost 69% according to PPS) of the EU average and, compared to 2016, the productivity gap reduced by 6 percentage points. However, in comparison with several developed countries of the EU, the productivity gap is still large.

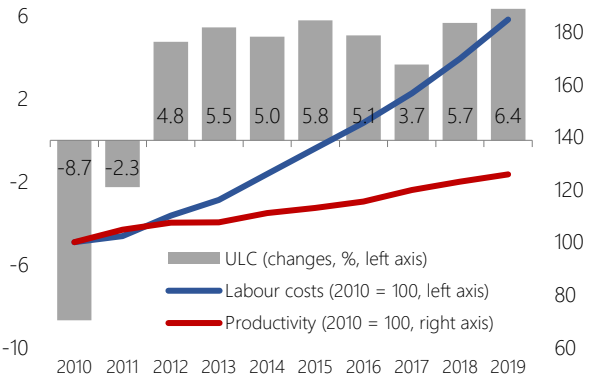
Latvia is in one of the leading positions by productivity growth rates among the EU Member States, yet wages have been growing faster than productivity, weakening competitiveness of Latvian businessmen in the field of costs. The increase in nominal unit labour costs (ULC) also evidences of the growing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

Figure 1.15

Productivity dynamics



Dynamics of labour costs and productivity



Source: Eurostat

The serious adjustments to product and labour markets, created by the global financial crisis in 2009-2011 bridged the gap between the dynamics of productivity and labour costs. However, after the economic recovery ULC increased as well affected by a strong increase in wages and a comparatively more moderate increase in labour productivity.

Significant growth of nominal ULC is observed in all the Baltic countries. In the last three years (2017-2019), nominal ULC increased by 16.5% in Latvia, by 15.7% in Estonia and by 16.5% in Lithuania, which is much faster than in the EU on average (4.1%), and the threshold set for this indicator in the EU Alert Mechanism for countries of the Euro area (MIP) has been exceeded.

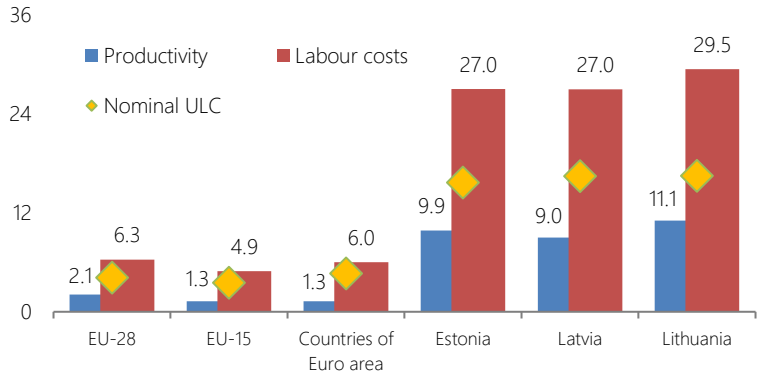
Cost competitiveness reduction risks are observed in tradable and non-tradable sectors. The dynamics of labour costs in the last three years (2017-2019) in tradable sectors increased slower than in non-tradable sectors – by almost 7.4% and 9% on average every year, respectively, however, productivity dynamics in tradable sectors was slightly more rapid than in non-tradable sectors – by 3.2% and 2.4%, respectively. Therefore, also the nominal ULC increase in tradable sectors was more moderate.

Financial services face the highest rise in ULC affected not only by the increase in labour costs, but also by the drop in productivity. Furthermore, the increase in productivity in industries of the primary sector exceeded the increase in labour costs. Labour costs in other sectors grew more rapidly than productivity.

Figure 1.16

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

2019/2016 (%)



Source: Eurostat

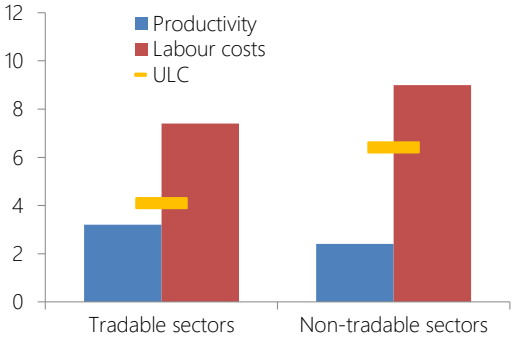
In manufacturing, the gap between productivity and labour costs increase rates is slightly more moderate than in the national economy on average, however it has increased in the last three years. Annual changes in nominal ULC are rather volatile being mainly affected by factors on the goods market, while labour costs show stable upward dynamics. Labour costs in manufacturing have been growing three times faster than productivity in the last three years (2017-2019).

Figure 1.17

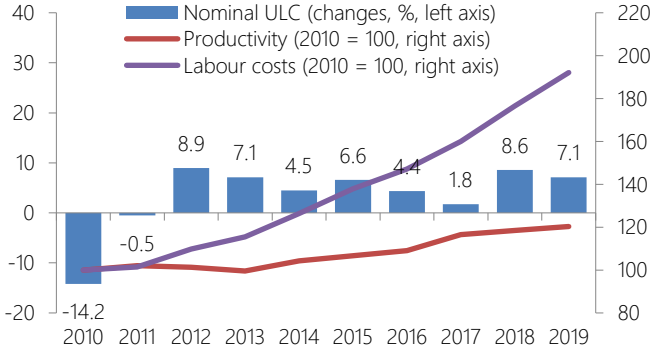
ULC, labour costs and productivity

In national economy sectors

increase in 2017-2019, annual average, %



In manufacturing



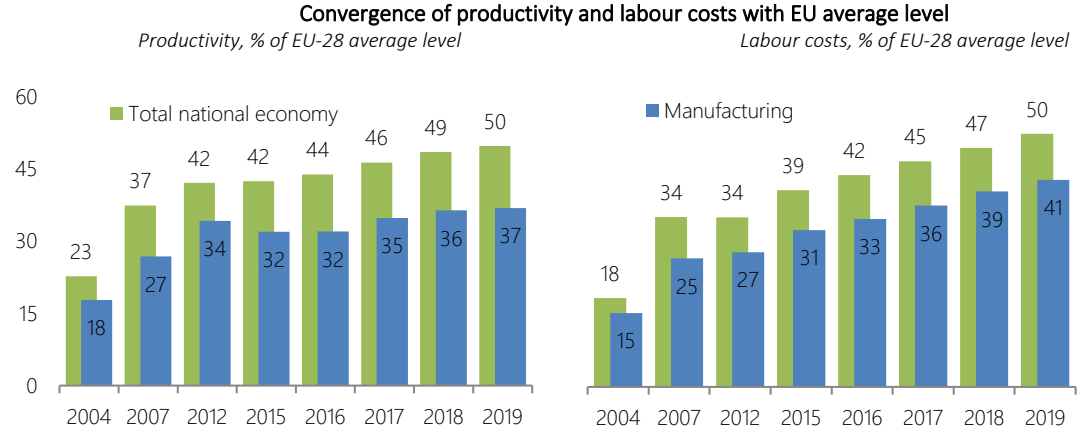
Source: Eurostat

The labour costs dynamics in Latvian manufacturing exceeds significantly EU average labour costs and nominal ULC growth rates. Taking into account that the EU countries are our main trade partners, such trends evidence of growth threats for reduction of cost competitiveness. The competitiveness of Latvian producers in external markets is also adversely affected by slower wage increase rates in high income countries of the EU.

Trends in recent years show that as economic activities are growing, price and cost competitiveness indicators get worse, and wage convergence is one the most important factors here.

Figure 1.18

Convergence of productivity and labour costs with EU average level



Source: Eurostat

Labour costs in Latvia are one of the lowest in EU Member States. In 2019, labour costs per employed in the economy of Latvia were 50% of the EU average in total, whereas in the manufacturing industry – 37%. Compared to 2016, in 2019, labour cost gap has decreased by 8.1 percentage points, (by 7.7 percentage point in manufacturing). However, based on the productivity indicator in the national economy lagging behind the EU average reduced by 6 percentage points, and by 4.8 percentage points in manufacturing. This means that the wage convergence process is faster than productivity convergence. On open EU labour markets, wage equalisation (convergence) is unavoidable, and this has to be taken into account. Therefore, strengthening of Latvia's competitiveness will largely depend on the ability to reduce the productivity gap.

2. LABOUR DEMAND AND SUPPLY

2.1. CHANGES IN AND STRUCTURE OF THE LABOUR DEMAND

As economic activity grows, since 2011 the number of employees in almost all main sectors of the national economy, with the exception of agriculture and other industry, has been growing. However, it should be noted that the number of employees in most sectors still lags significantly behind the level of 2008. The demand for labour force is also influenced by the cyclicity of the economy. In 2019, economic growth, due to unfavourable situation in the external environment, was slower than in the previous two years.

Table 2.1

Number of the employed in economic sectors

thousands

	2008	2010	2012	2014	2015	2016	2017	2018	2019
Total	**1054.9**	**850.7**	**875.6**	**884.6**	**896.1**	**893.3**	**894.8**	**909.4**	**910.0**
Agriculture, forestry, fishing	83.9	73.3	73.3	66.3	71.1	68.7	61.4	63.3	66.3
Manufacturing	156.4	112.2	122.5	118.8	116.3	123.5	120.9	116.9	115.1
Other industry	29.5	26.4	20.6	18.9	23.6	25.7	24.5	23.2	19.3
Construction	124.1	57.6	62.3	73.2	71.9	66.1	63.1	74.6	81.1
Trade, accommodation	197.2	162.0	155.7	161.6	159.3	154.7	161.0	171.6	169.6
Transportation and storage	88.1	71.4	75.1	84.8	85.3	83.3	79.6	80.7	74.3
Other business services	156.8	154.1	163.9	165.3	170.3	173.8	183.7	181.0	179.7
Public services	218.9	193.7	202.2	195.7	198.3	197.5	200.6	198.1	204.6

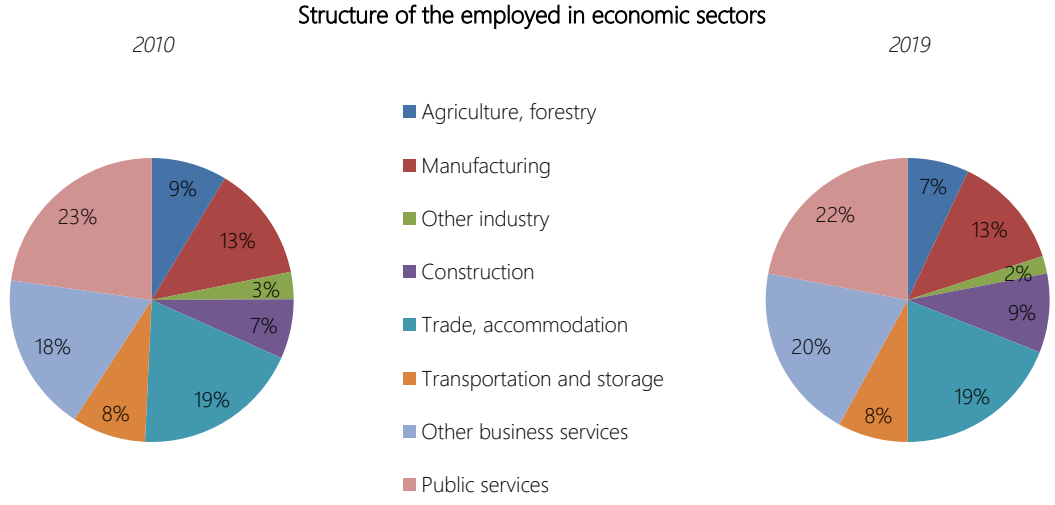
* Starting from 2014, labour force survey methodology has changed – quarterly average population residing in households (previously population at the beginning of the year) is used for generalisation of the quarterly data

Source: CSB

In 2019, according to the labour force survey data, the number of the employed was 910 thousand, which was by 0.1% or 0.6 thousand more than in 2018. The number of the employed grew most rapidly in construction and agriculture, and reduced in other industry.

Figure 2.1

Structure of the employed in economic sectors

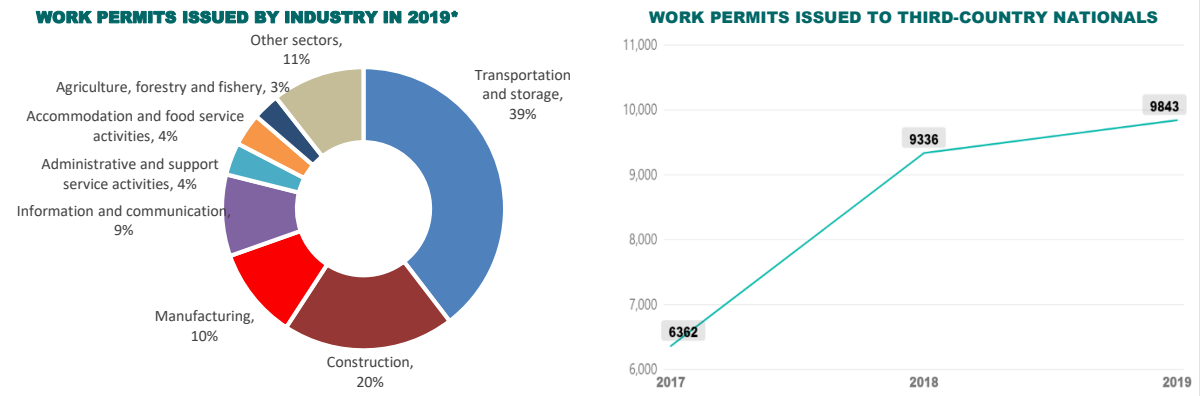


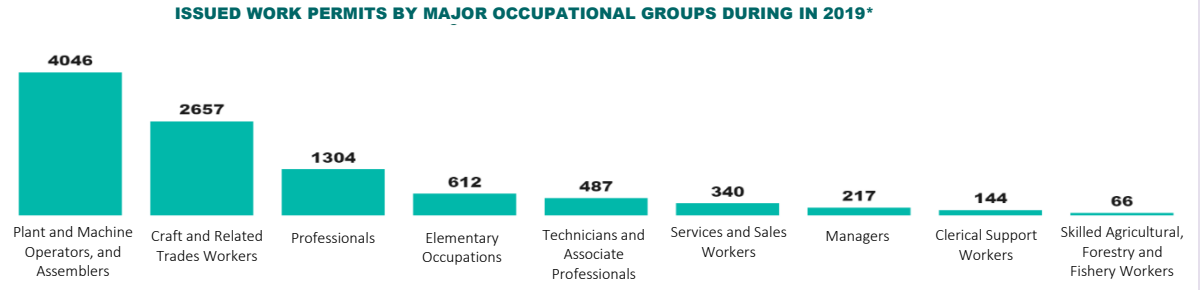
Source: CSB

The largest percentage of the employed in 2019 was in public services sectors (22%), business services (20%), trade and accommodation (19%), 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, other industry and public services, but grown in business services and construction, while the percentage of the employed in transport, trade and manufacturing has not changed in the total number of the employed.

Demand for foreign labour force – work permits issued to third-country nationals

In view of the gradual depletion of local labour reserves and the consequent rapid increase in wages, demand for foreign labour force continued to increase in previous years, which partly reflected in the dynamics of work permits issued to third-country nationals. In total, over 9800 third-country nationals were granted employment rights between January and September 2019, which amounts to about 3500 more work permits than in 2017 as a whole. Nearly 4/5 of all work permits were issued to employees in 4 sectors – transport services (39%), construction (20%), manufacturing (10%), information and communication (9%). Nearly 2/5 of all work permits were issued to employees in the transport service sector, mainly road transport services, in occupations of truck drivers. At the same time, in construction and manufacturing, guest workers are mainly attracted to occupations of craft and related trades workers – nearly 85% of all work permits have been issued in the major group of occupations in construction and around 70% in manufacturing. Meanwhile, in ICT services, around 85% of all work permits issued in the sector are issued in the occupations of professionals – mainly in occupations of programmers, system analysts, programming engineers and IT project managers. Most (more than 4/5) of employment rights were granted to citizens from the existing and former CIS countries – Ukraine, Belarus, Russia and Uzbekistan.





Source: OCMA data and MoE calculations
* Data on the 9 months of 2019

According to the calculations of the Ministry of Economics, in 2019, 384.1 thousands or 42% of all the employed were employed in high qualification occupations. Most (37%) 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

2019, thousands

	Agriculture	Manufacturing	Other industry	Construction	Trade, accommodation	Transportation and storage	Other business services	Public services	Total
High qualification occupations, including:	11.4	26.4	6.8	21.1	51.3	19.6	105.7	141.7	384.1
Managers	5.1	8.9	1.2	10.1	18.8	6.6	20.9	17.6	89.1
Professionals	2.9	6.8	2.2	3.8	9.1	4.6	43.1	88.6	161.2
Technicians and Associate Professionals	3.4	10.8	3.3	7.2	23.5	8.4	41.7	35.5	133.8
Medium qualification occupations, including:	42.6	65.8	7.9	47.0	99.0	49.1	51.1	44.9	407.3
General Office Clerks	1.0	5.2	0.8	0.9	9.5	8.2	14.8	6.3	46.8
Services Workers	0.7	1.1	0.2	0.4	71.7	3.9	24.6	33.5	136.0
Skilled Agricultural Workers	27.6	0.5	0.0	0.0	0.0	0.0	1.5	0.4	30.1
Skilled Workers	1.5	40.7	2.6	38.3	13.3	5.1	7.2	1.8	110.5
Plant and Machine Operators	11.8	18.2	4.2	7.4	4.5	32.0	2.9	2.9	83.9
Low qualification occupations	12.2	22.9	4.6	13.0	19.3	5.6	23.1	17.9	118.6
Total	**66.3**	**115.1**	**19.3**	**81.1**	**169.6**	**74.3**	**179.9**	**204.5**	**910.0**

Source: CSB, MoE calculations

In 2019, 407.3 thousand, which is almost half of all the employed, were employed in medium qualification occupations. One fourth in this occupational group were employed in trade, and 16% in manufacturing. Occupations with low qualification had 118.6 thousand employed persons in 2019, one fifth of which were employed in business services and one fifth in manufacturing, and 14% in agriculture and other industrial sectors together.

In comparison to 2018, in 2019 high qualification occupations had by 11.2 thousand more employed (increase by 3%). The biggest increase was in public services, and a drop in number in manufacturing and transport. Medium qualification occupations had by 10.4 thousand less employed (drop by 2.5%). The biggest drop was in transport, trade and manufacturing, and an increase – in construction. In 2019, low qualification occupations had 0.2 thousand less employed, compared to 2018. The biggest drop was in public services, and an increase – in business services.

Table 2.3

Sectoral employment changes by occupational groups

2019 vs. 2018, thousands

	Agriculture	Manufacturing	Other industry	Construction	Trade, accommodation	Transportation and storage	Other business services	Public services	Total
High qualification occupations, including:	2.0	2.3	-1.7	1.5	2.4	-1.7	2.0	4.2	11.2
Managers	0.8	0.3	-0.1	2.6	-0.6	-2.0	-1.4	-1.9	-2.3
Professionals	1.2	0.1	-0.6	-1.9	-0.1	1.4	0.2	5.1	5.4
Technicians and Associate Professionals	0.0	2.0	-1.0	0.9	3.1	-1.1	3.2	1.1	8.1
Medium qualification occupations, including:	0.8	-3.9	-2.2	4.1	-4.2	-4.7	-3.3	3.0	-10.4
General Office Clerks	0.3	0.6	-0.4	-1.2	-1.2	-2.3	-1.9	1.2	-4.7
Services Workers	-0.6	-1.1	0.0	-0.2	0.7	-1.0	-1.2	2.2	-1.0
Skilled Agricultural Workers	-0.6	0.0	0.0	0.0	0.0	0.0	0.2	0.2	-0.1
Skilled Workers	-0.3	-2.5	-1.3	5.2	-3.0	-0.1	0.0	-0.3	-2.3
Plant and Machine Operators	2.0	-1.0	-0.6	0.2	-0.8	-1.3	-0.5	-0.3	-2.2
Low qualification occupations	0.1	-0.3	0.0	0.9	-0.3	0.0	0.2	-0.8	-0.2
Total	**3.0**	**-1.8**	**-4.0**	**6.5**	**-2.1**	**-6.4**	**-1.1**	**6.5**	**0.6**

Source: CSB, MoE calculations

Labour demand has drastically changed under the influence of the global financial crisis of 2008-2009. The number of the employed has reduced rapidly. When labour costs dropped, competitiveness of the Latvian producers improved. In manufacturing, growth rates were significantly faster than the total economic growth, and the demand for qualified workers rapidly increased in this sector. In other tradable sectors, such as transportation and services, growth after the crisis restored faster than in other economic sectors and the demand for services workers increased. A rapid increase in recent years has been observed also in construction.

Table 2.4

Sectoral employment changes by occupational groups

2019 vs. 2010, thousands

	Agriculture	Manufacturing	Other industry	Construction	Trade, accommodation	Transportation and storage	Other business services	Public services	Total
High qualification occupations, including:	0.5	0.0	0.3	3.3	5.2	2.3	26.7	7.0	45.2
Managers	0.1	-1.3	-0.3	0.1	-0.7	-0.6	3.6	1.0	1.9
Professionals	0.1	-1.6	0.4	-0.3	-0.4	2.2	6.6	8.1	15.3
Technicians and Associate Professionals	0.3	2.9	0.2	3.4	6.3	0.7	16.5	-2.2	28.1
Medium qualification occupations, including:	-2.4	0.0	-5.1	12.0	-3.7	0.3	6.8	4.2	12.1
General Office Clerks	0.3	0.9	-0.9	0.1	-3.8	0.2	2.4	-0.5	-1.2
Services Workers	-0.1	-1.4	0.1	0.0	-1.8	0.3	2.9	6.6	6.6
Skilled Agricultural Workers	-3.3	0.2	0.0	0.0	0.0	0.0	0.8	0.0	-2.3
Skilled Workers	-1.3	-0.5	-3.2	9.9	0.9	-1.5	1.9	-0.8	5.5
Plant and Machine Operators	1.9	0.9	-1.1	2.0	0.9	1.3	-1.3	-1.1	3.5
Low qualification occupations	-8.5	0.7	2.0	4.9	6.7	-1.4	-6.9	-2.9	-5.4
Total	**-10.4**	**0.7**	**-2.8**	**20.2**	**8.1**	**1.1**	**26.6**	**8.3**	**52.0**

Source: CSB, MoE calculations

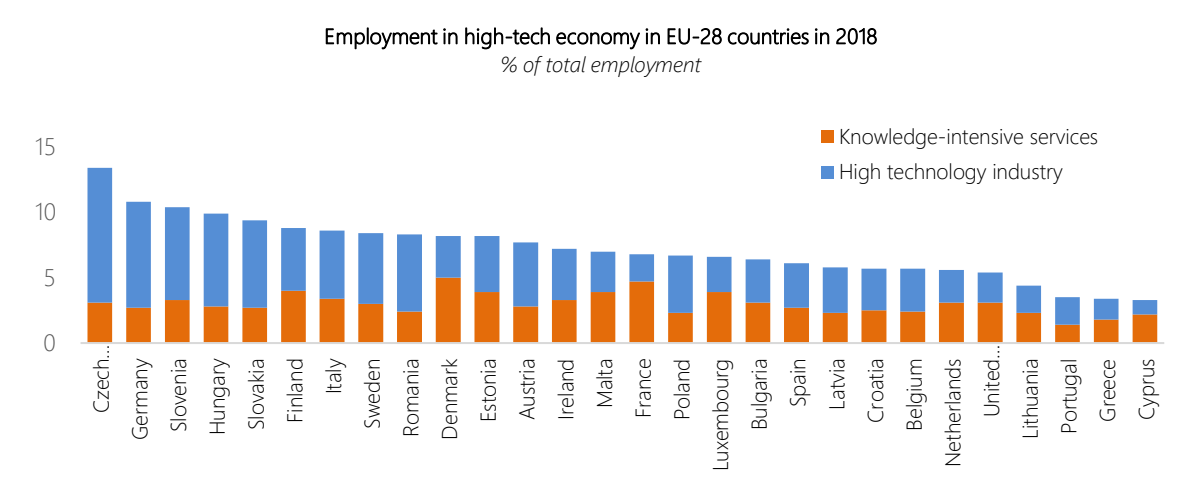
In comparison to 2010, in 2019 high qualification occupations had by 45.2 thousand more employed (increase by 13.3%). The most extensive increase was observed in business services – by 26.7 thousand, and in public services – by 7 thousand. The number of the employed remained practically unchanged in manufacturing (a drop by 14 employees).

Medium qualification occupations had by 12.1 thousand more employed in 2019 compared to 2010 (increased by 3.1%). The most extensive increase by 12 thousand was observed in construction, and by 6.8 thousand – in business services. A drop in the number of the employed was by 5.1 thousand in other industry, and by 3.7 thousand – in trade.

In 2019, low qualification occupations had by 5.4 thousand less employed, compared to 2010. The most extensive decline – by 8.5 thousand was in agriculture and by 6.9 thousand – in business services, but the most extensive increase of the employed – by 6.7 thousand was in trade and by 4.9 thousand in construction.

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 the Czech Republic in 2018 (13.4% of total number of the employed), Germany (10.8%) and Slovenia (10.4%), while the lowest – in Cyprus (3.3%), Greece (3.4%) and Portugal (3.5%). Latvia's share of high-tech industries in general is only 5.8%, thus ranking it only the 20th among the 28 European countries by the share of employees in high-tech industries. Consequently, the question remains whether the EU labour market is ready to transition to high value added industries. It should be noted that currently 4 out of 10 employers have difficulties filling vacancies. This problem could intensify in high value added industries.



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

Since 2011 the number of **occupied posts** has also been growing in all main sectors of national economy, however, their numbers still lag behind the pre-crisis level, except agriculture and business services, where the number of occupied posts in 2019 exceeds the level of 2007. In 2019, the number of occupied posts was 914.3 thousand, which was by 1% or 9 thousand higher than in 2018 and by 17.7% higher than in 2010.

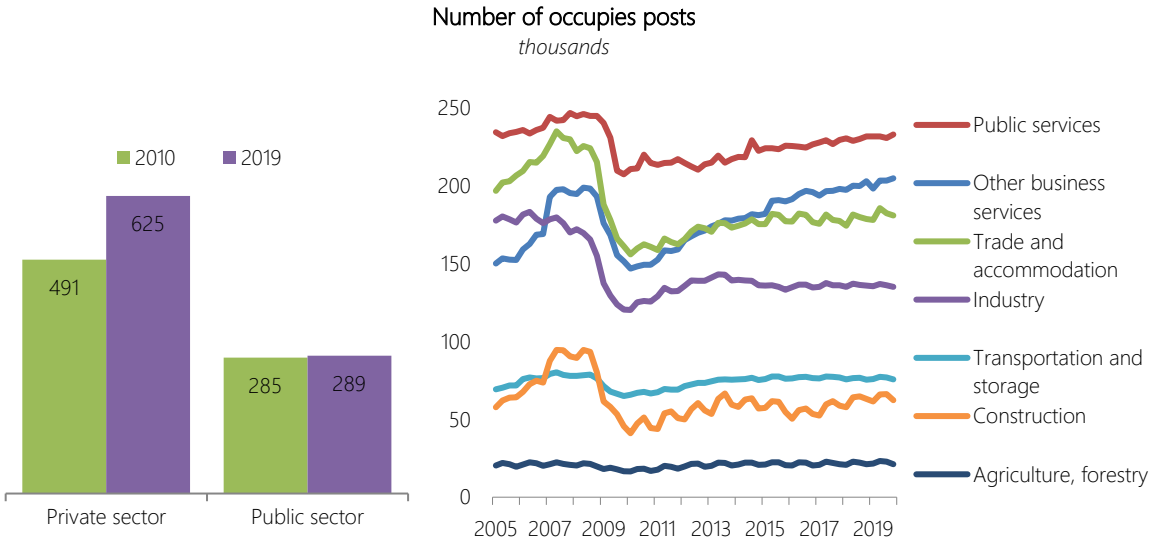
The number of jobs in the private sector still continues to grow rapidly. After a 30% decline during the crisis, in the period from 2011 to 2019 the number of jobs in the private sectors increased by 27 per cent.

At the same time, there has been a relatively slow increase in the number of jobs in the public sector, where the number of occupied posts grew only by 1.4% from 2011 to 2019. A more rapid increase in the number of occupied jobs in the public sector was observed in 2014, when the number of occupied jobs increased by 2.6%, compared to 2013.

In the period from 2011 to 2019, the number of jobs across sectors increased in all sectors with the exception of financial and insurance activities, where the number of jobs reduced by 2.5 thousand or 12.7%. A more rapid

increase in the number of occupied posts was observed in construction, which increased by 17.9 thousand or 39 per cent.

Figure 2.2



Source: CSB

A considerable number of occupied posts was observed also in health, information and communication, administrative and support service activities, professional, scientific and technical activities. A more moderate increase was in accommodation and food service activities, manufacturing, transport and trade. At the same time, the lowest increase in labour demand was in mining and education. Furthermore, labour demand in public administration and defence activities has remained practically 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 Latvian continuous Labour Force Survey.

In the Latvian Labour Force Survey 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: 15-64 and 15-74.

Occupied posts

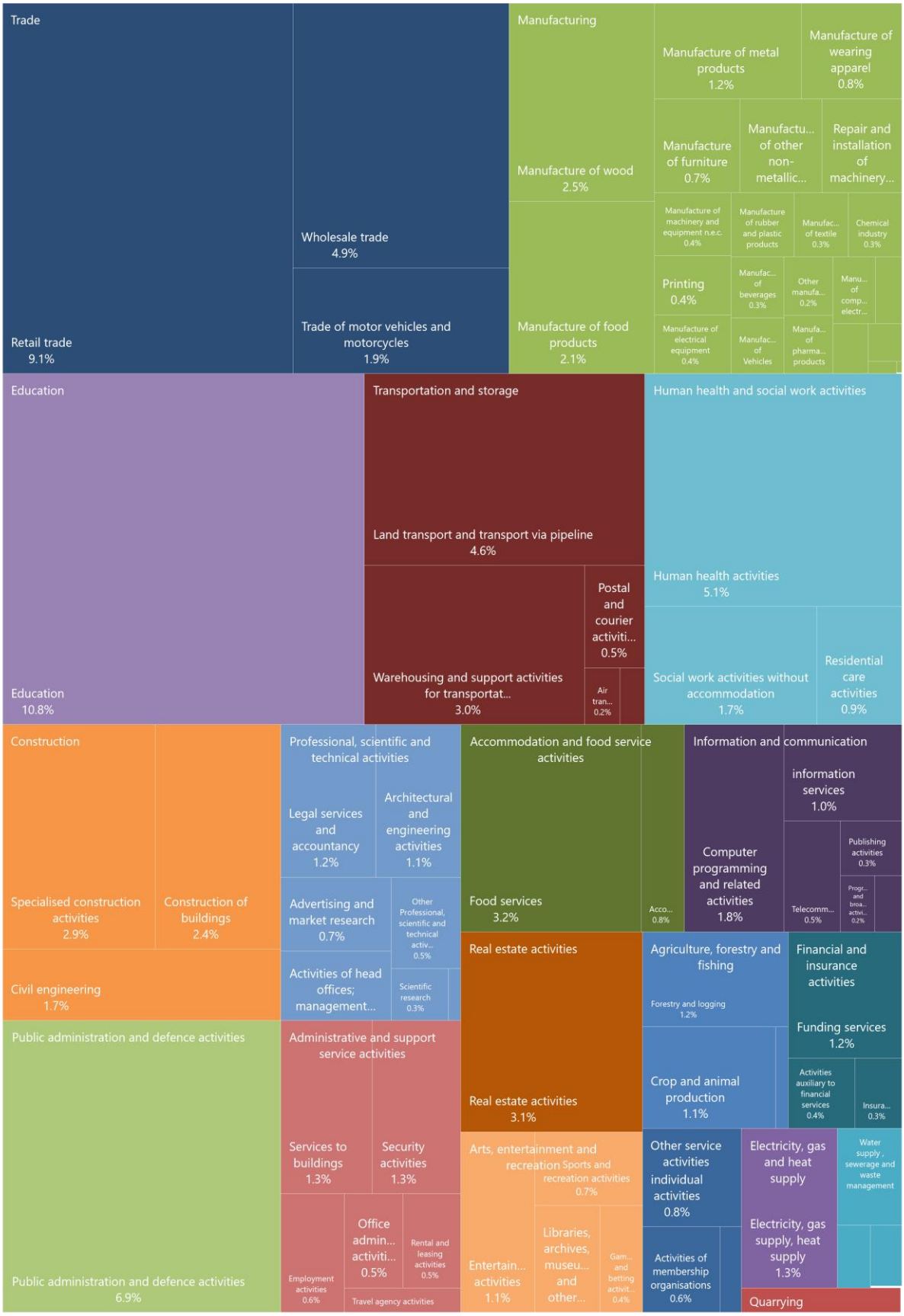
An occupied post is a job on wage, where an employee is employed. The number of occupied posts includes full-time and part-time workers, whose working hours should be registered in accordance with the Labour Law (including those who have a contractor's agreement, but whose working hours are registered 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 2019, %



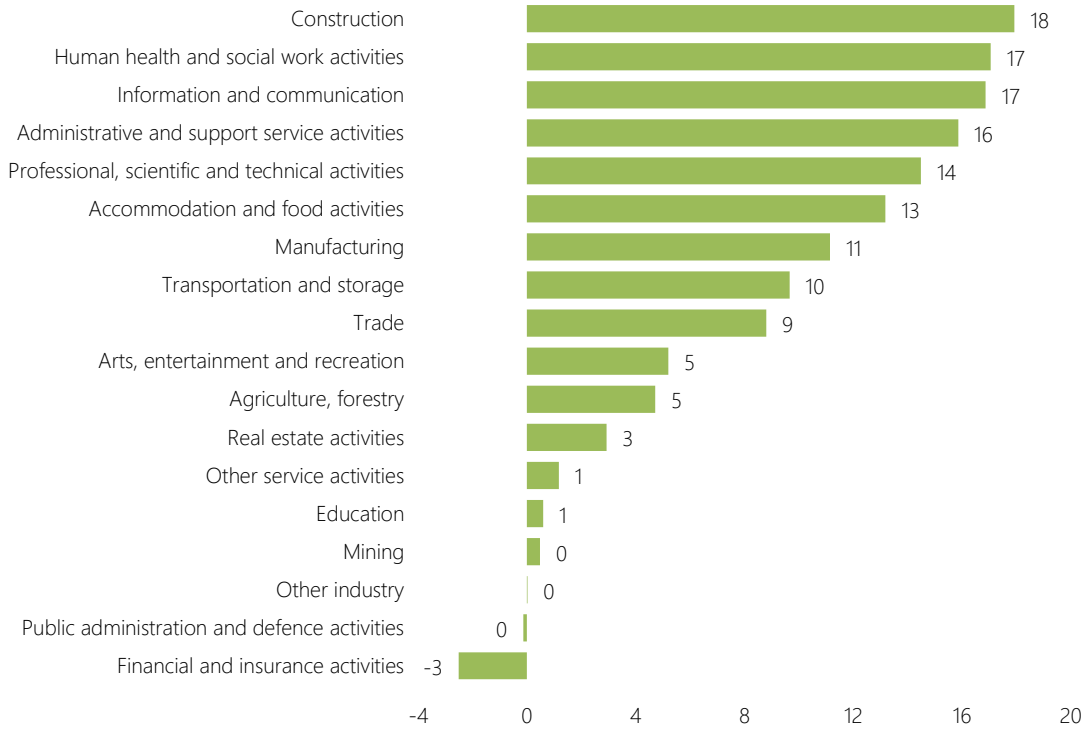
Source: CSB

Although the number of persons employed in agriculture significantly reduced from 2011 to 2019, the number of occupied posts in the sector increased, which is explained by a different data registration system. Occupied posts in agriculture increased due to the increase in jobs on wage, while the number of employees reduced due to the drop in the number of self-employed.

Figure 2.4

Changes in the number of occupied posts

2019 vs. 2010, thousands



Source: CSB

In 2019, almost 2/3 of the increase in the total number of occupied posts was created by three sectors – health, administrative and support service activities and trade. Last year, the number of occupied jobs in the health grew by 2.2 thousand or 3.3%. At the end of 2019, the number of occupied posts in the sector reached 70 thousand and was the only public services centre, which exceeded the pre-crisis level. Also, a significant increase in labour demand is observed in administrative and support service activities, where the number of occupied posts increased by 1.8 thousand in 2019. The number of jobs mainly increased thanks to the growing labour demand in services related to employment activities.

Furthermore, by the most extensive increase in occupied posts in the previous years, in 2019 more labour demand was observed in construction, which was largely affected by completion of large private construction projects and the flow of investments from EU structural funds, which has reached its maximum. At the same time, the most serious drop in labour demand in 2019 was in public administration and professional, scientific and technical activities.

2.2. DEMOGRAPHIC SITUATION AND LABOUR SUPPLY

2.2.1. DEMOGRAPHIC TRENDS

The Latvian population continues to reduce. Over the past two decades, the total population reduction in Latvia is approaching 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 2020, 1908 thousand inhabitants lived in Latvia, their count decreased by 12 thousand compared to the beginning of 2019. It should be noted that this has been the smallest decline in population over a year since 1990.

Birth rates are insufficient to reproduce the existing population, they have been low for a long time. With the increase of the total income level, birth rates have also started to improve from 2005 — both the number of newborns and the birth rate have risen. Due to the economic crisis, the number of newborns reduced in 2009, but in 2012 birth rate started to increase again. In the last decade, the highest number of newborns was in 2015 and 2016. Unfortunately, this indicator has been dropping since 2017 falling to the lowest level in the last decade in 2019. Birth rate trends of recent years have highlighted the need to increase targeted birth rate stimulation measures at national level.

The death toll has been gradually dropping since 2007. In the period since 2014 the indicator has stabilised. The death toll reduced by 3.8% in 2019 compared to 2018.

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. The natural migration coefficient was -4.7 per 1000 inhabitants in 2019.

The ageing process of the population continues – the average age of the Latvian population is increasing. It has increased by 4.4 years in the period from 2000 to 2020 and reached 42.7 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. At the same time, since 2012 the decline in the population below working age has stopped thanks to a small increase in birth rates.

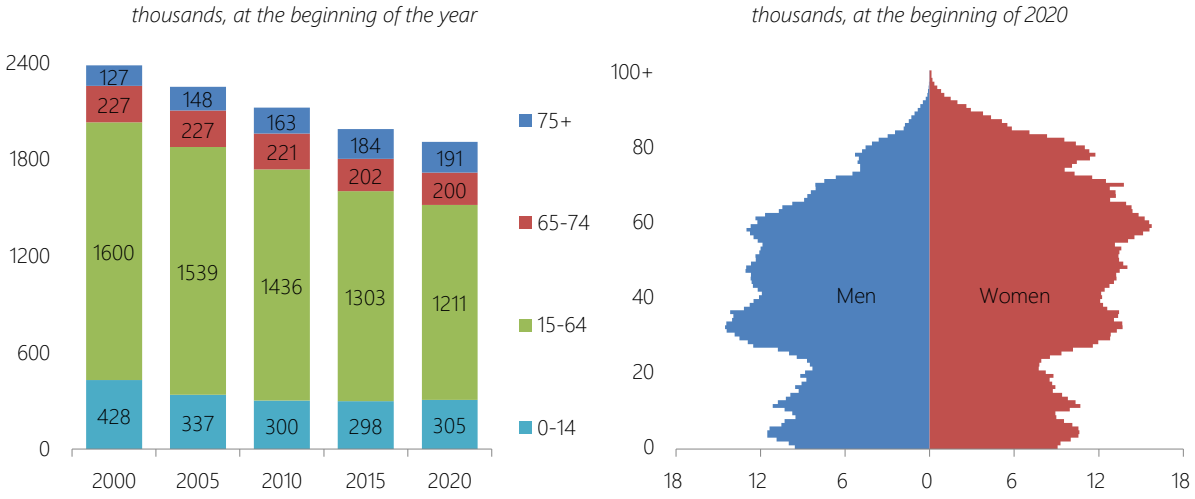
In 2019, population aged 15 to 74 continued to reduce. At the beginning of 2020, these were 1411 thousands and there were 11 thousand less of them than at the beginning of 2019. The most considerable decline in the population was observed in the following population groups of working age: 20-24 years (by 3.1 thousand or 3.5%), 25-29 years (by 8.2 thousand of 6.7%) and 55-59 years (by 3.1 thousand or 2.2%).

Over the past 10 years, the negative international migration 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 of the country has decreased by a total of 474 thousand in the period from 2000 to the beginning of 2020, of which 286 thousand or 3/5 of the total reduction applies to migration.

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 the country was searching for job opportunities abroad. Majority of emigrants are people of working age, and people from younger age groups are especially mobile.

Figure 2.5

Age structure of the population

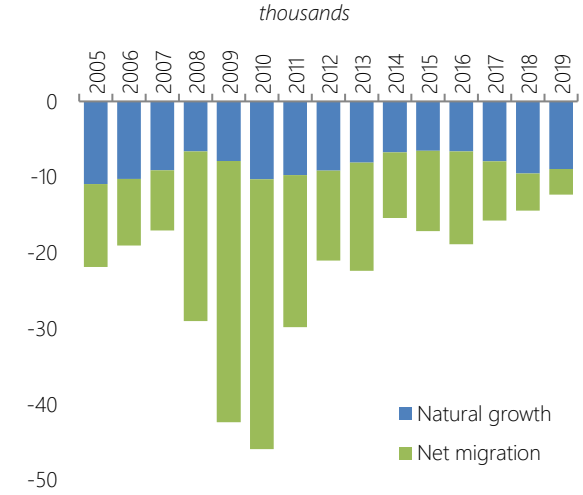


Source: CSB

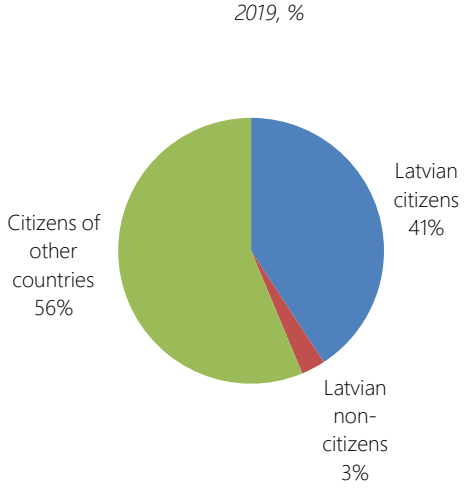
Migration rates have been improving from 2011. Negative net migration was improved not only by the reduction in the number of emigrants, but also by the increase in the number of immigrants. However, since 2014 a small drop has been observed in the number of immigrants and the number of emigrants tended to increase. The situation improved in 2017, as the immigrating population increased and the emigrating population decreased. The increase in wage and job opportunities in the country reduce emigration stimuli. Negative net migration has been reducing in recent years. In 2019, the population reduced by 3.4 thousand due to migration, which was 31.5% less than in 2018.

Figure 2.6

Factors affecting the changes in the number of the population



Long-term immigrants by citizenship



Source: CSB

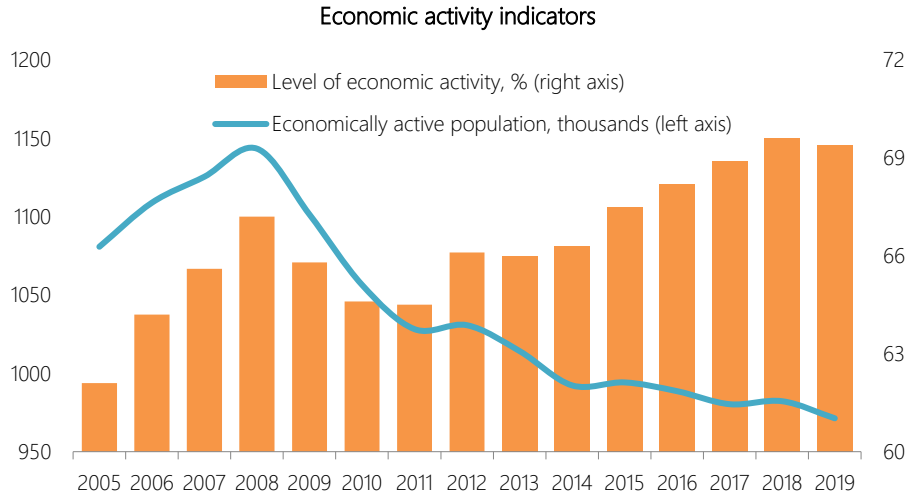
The increase in labour shortage, as well as more open migration policy have generally changed the national composition of migrants. By 2017, Latvian citizens and non-citizens dominated in the overall flow of the immigrant population. Starting from 2018, their number is less than half, and in 2019 the share of Latvian citizens and non-citizens in the total number of long-term immigrants amounted to only 44%.

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 job.

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

The labour supply side is represented by economically active population consisting of employed population and job seekers.

Figure 2.7

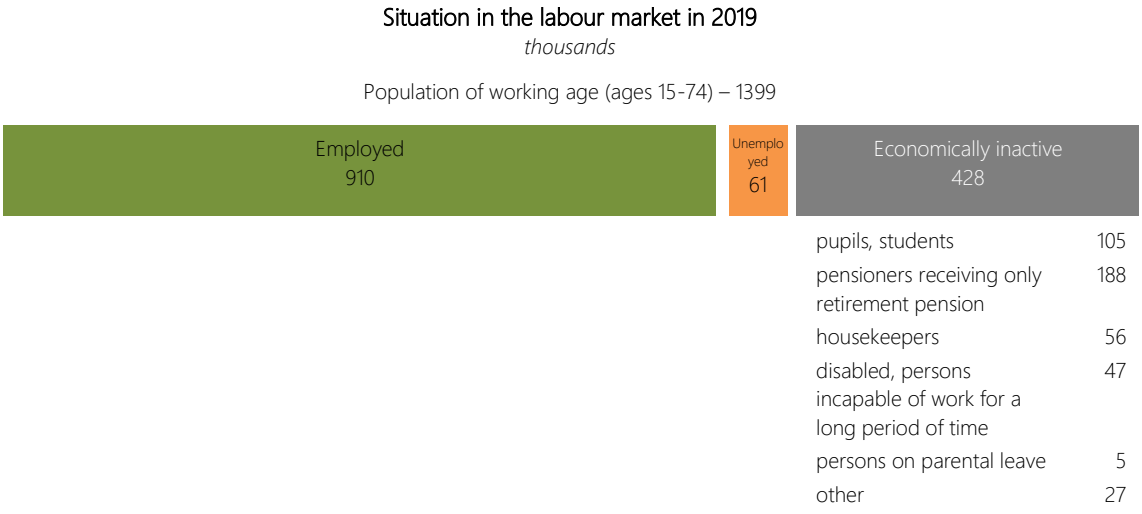


Source: CSB

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. Economically active population has been reducing since 2008. In recent years this trend tends to slow down. In the period from 2008 to 2019 this reduction reached 172.1 thousand, and in 2019 economically active population dwindled by 10.9 thousand.

In 2010 and 2011 the lowest level of economic activity of the population in recent years was experienced. In the following years, this level has been gradually growing, and in 2015 the pre-crisis rate of 2008 was reached. In the next years, the level of economic activity continued to increase reaching the level of 70%. The level reached 69.4% in 2019.

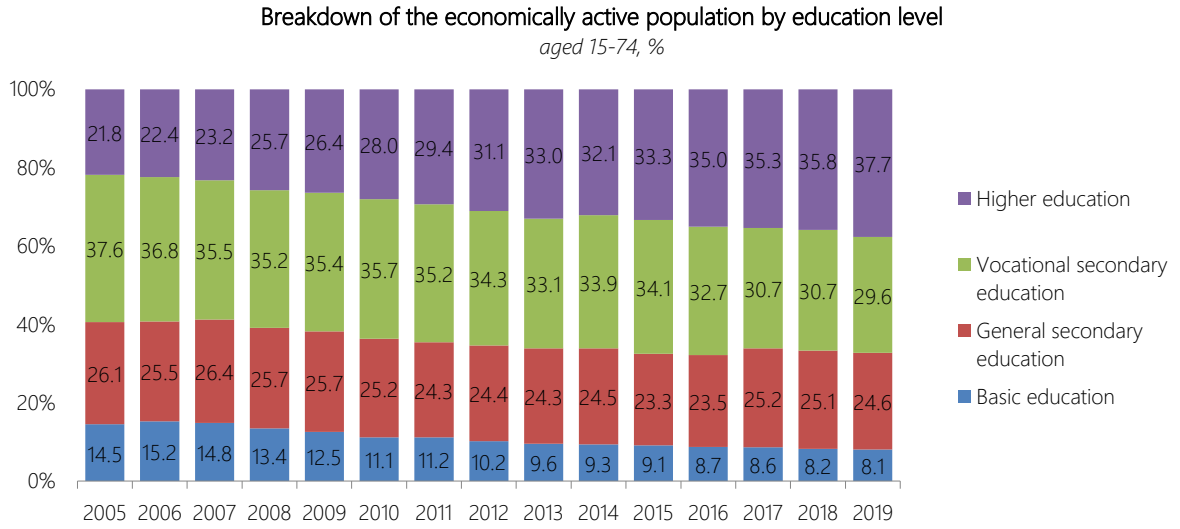
Figure 2.8



Source: CSB

The level of economic activity is relatively stable in almost all age groups, as only insignificant fluctuations have been observed over the last few years. The biggest 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.

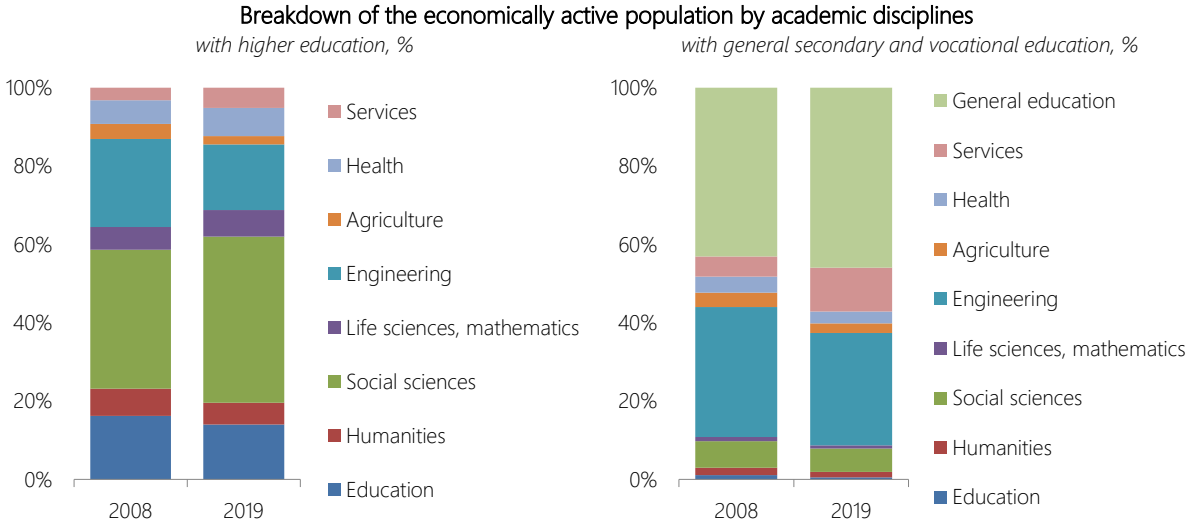
Figure 2.9



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, and it was by 12 percentage points higher in 2019 than in 2008.

Figure 2.10



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 this academic discipline. There has been the most remarkable increase of economically active population in this group since 2008. The next largest academic discipline groups of economically active population are engineering, manufacturing and construction, as well as education. Thanks to the implemented education policy measures, in recent years there has been a gradual even though small decrease in the share of the thematic group of social sciences, business and law education and an increase in the share of the thematic group of engineering, manufacturing and construction.

Figure 2.11

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

2019, % of the number of the employed in the respective sub-major group

Source: CSB, MoE calculations

Since 2008, the structure of the economically active population at secondary education level by academic disciplines 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 biggest labour supply for vocational secondary education is in engineering, manufacturing and construction. Attention should be paid that an increase in the share of this thematic group has been observed in recent years. The most rapid increase is observed in the thematic group of services, and its share has almost 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.

Across sectors the largest share of the employed 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 in public services (especially in the education sector and human health and social work activities sector).

The percentage of the employed above 50 years of age, 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, teaching professionals, as well as the share of older employees in the age structure of production and specialized services managers is higher than the average indicators for occupations with this qualification.

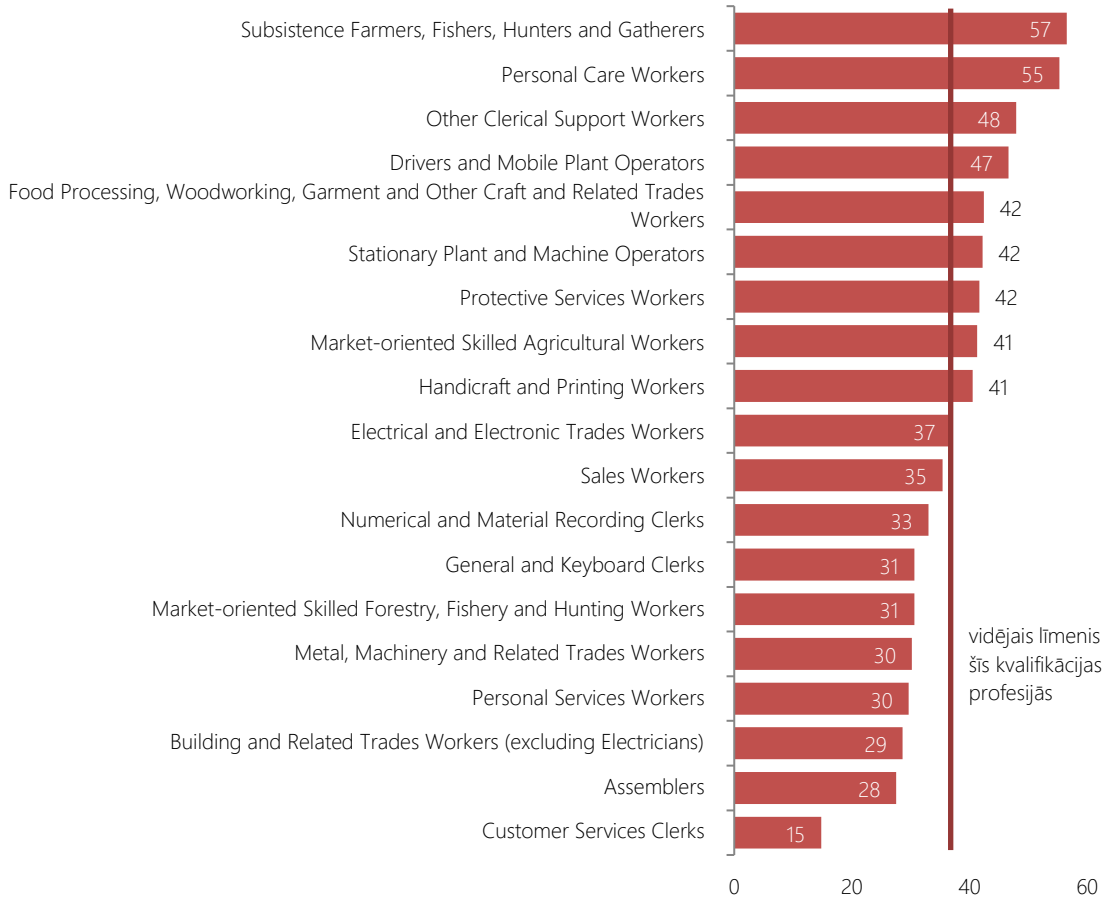
The percentage of the employed above 50 years of age in medium qualification occupations is 37%. Negative development trends of the labour age structure also affect a range of medium qualification occupation groups. This trend mostly affects personal care workers, other clerical support workers (library clerks, mail carriers and sorting clerks, etc.) and drivers and mobile plant operators.

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.

Figure 2.12

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

2019, % of the number of the employed in the respective sub-major group



Source: CSB, MoE calculations

2.3. MATCHING OF LABOUR MARKET DEMAND AND SUPPLY

Unemployment indicators in Latvia have been improving since 2011, and in 2019 unemployment continued to decline. The number of job seekers was 61.3 thousand. Compared to 2018, it was 11.5 thousand lower. The unemployment rate reduced to 6.3% of the economically active population being the second lowest indicator since 2007.

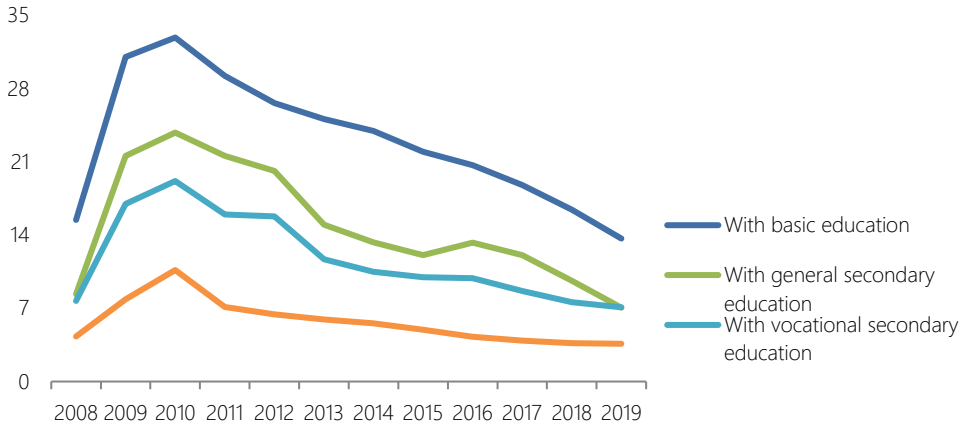
People with higher education level are less subjected to the risk of unemployment. In 2019, the unemployment rate among people with higher education was 3.6%. The lowest unemployment rate among the population with higher education was in the thematic groups of services and agricultural education. Whereas, the highest unemployment rate was among the population in the thematic group of humanities and arts.

At the same time, it should be noted that obtaining an occupation as a whole reduces the risk of unemployment – unemployment rates are, on average, lower among people with vocational education compared to those who have obtained secondary education only. However, it should be borne in mind that as labour shortages are growing, this pattern is no longer so pronounced and the differences gradually level out. In 2019, the unemployment rate among people with vocational secondary education and general secondary education did not differ from the average level – 7.1%. The lowest unemployment rate among the population with secondary education was in the health and welfare group and in the life sciences, mathematics and computing group of education. At this level of education, the highest unemployment was in the thematic group of services and in the thematic group of agriculture.

Figure 2.13

Unemployment rate

% to economically active population



Source: CSB

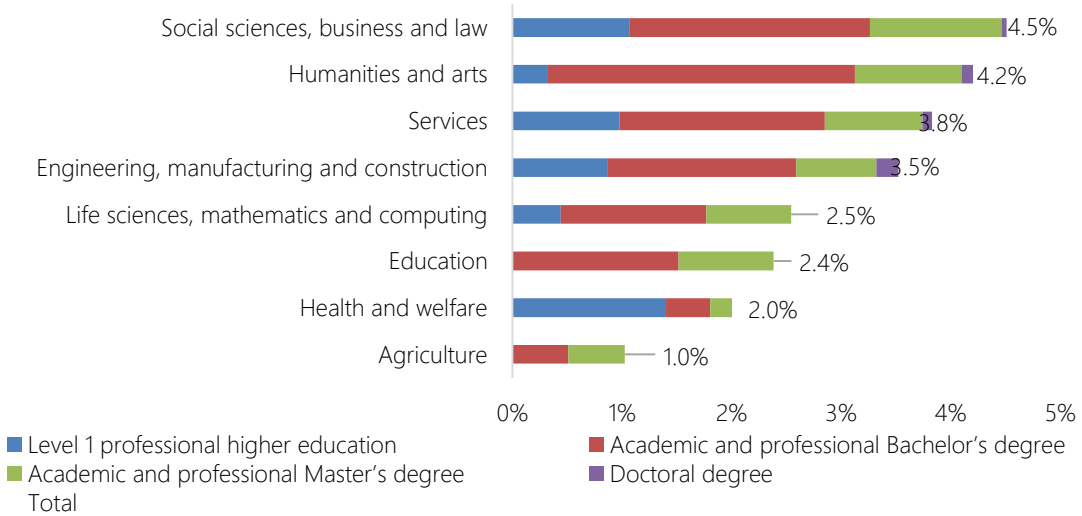
Results of the monitoring of higher education graduates – unemployment among graduates

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 has started in Latvia for the first time, and data are currently available on the jobs of graduates of 2017 one year after the end of their studies. Each year's group of graduates is expected to be monitored over a 10-year period. The data are used as part of higher education quality monitoring, incl. to promote conscious, actual labour market situation based choice of a study programme.

According to the results of the monitoring of graduates, around 87% of all graduates of 2017, on which information is available, were employed in 2018, while the average unemployment rate among the economically active graduates was 3.4%, which is generally lower than the national 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 higher education institutions by level of education and thematic group of education

graduates of 2017, %



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 programmes. At the same time, the lowest unemployment among graduates is observed among graduates in the fields of agriculture, as well as health and social welfare.

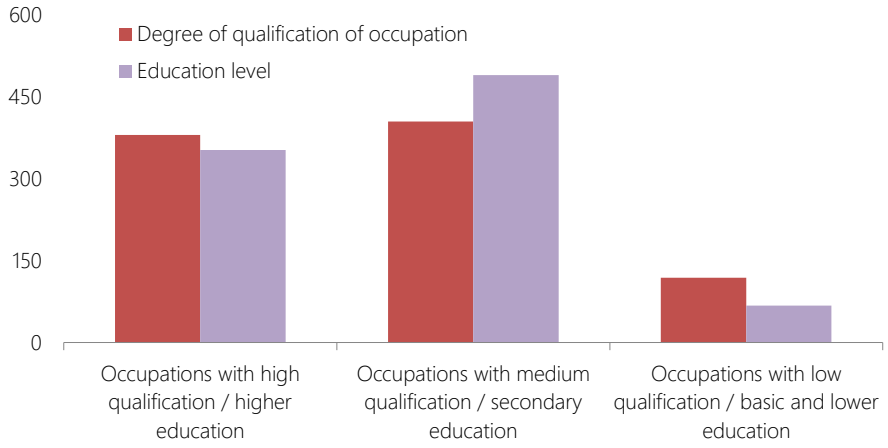
It should be noted that more than half of all graduates hold a Bachelor's degree (51%), which was also reflected in the unemployment structure/decomposition by the level of education – 48% of all job seekers hold a Bachelor's degree.

If we characterise 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)** the following long-term trends can be observed in the labour market. Compared to the breakdown of the employed population by education levels and occupational qualification groups, it is visible 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. In 2019, more than 1/5 of all the employed with higher education were employed in medium or low qualification occupations. Meanwhile, 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.

Figure 2.14

The employed by level of education and occupational qualification

2019, thousands



Source: CSB, MoE calculations

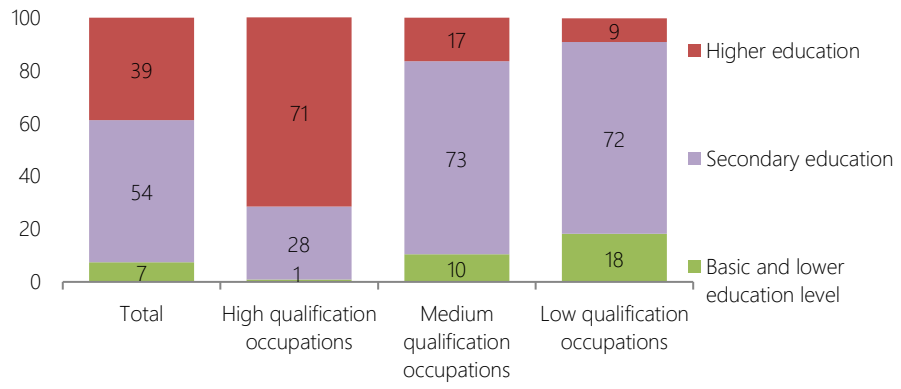
At the same time, it should be noted that significant structural inconsistencies are observed also within groups of occupations. The most pronounced insufficiency of skills is observed in high qualification occupations, where only a little more than 2/3 (71%) of employees had higher education in 2019. 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

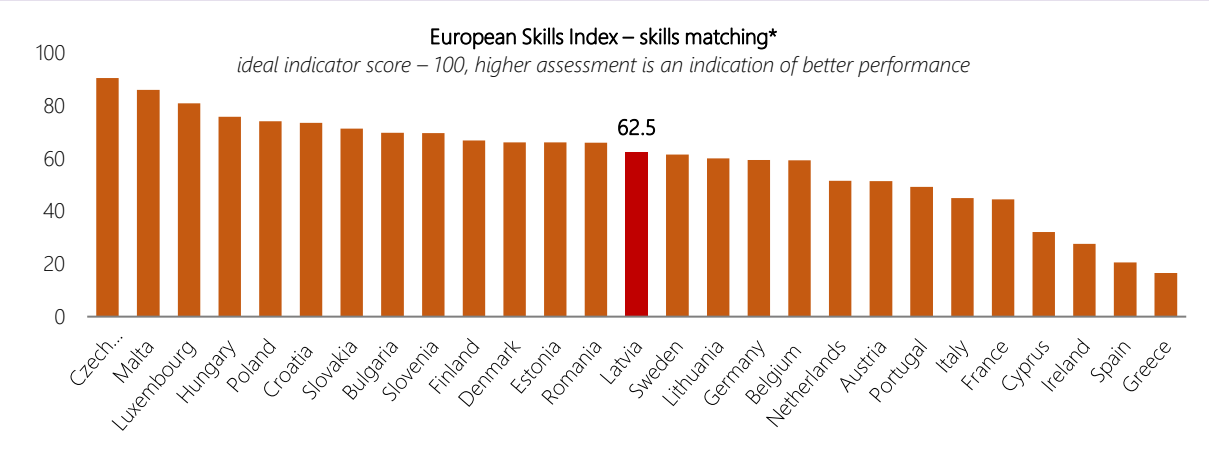
2019, %



Source: CSB, MoE calculations

European Skills Index 2020 – 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 the Czech Republic, Malta and Luxembourg, which are closest to the perfect performance, while the most pronounced mismatches are in Greece, Spain and Ireland. Latvia as a whole is slightly above the average in terms of skills matching (59%, 14th place among the EU27 countries) generally slightly overtaking Lithuania (60%), however lagging behind Estonia (66%). It should be noted that Latvia is also ahead of highly developed countries such as Sweden and the Netherlands, which are a step ahead of Latvia in terms of skills development and activation.



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).*

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

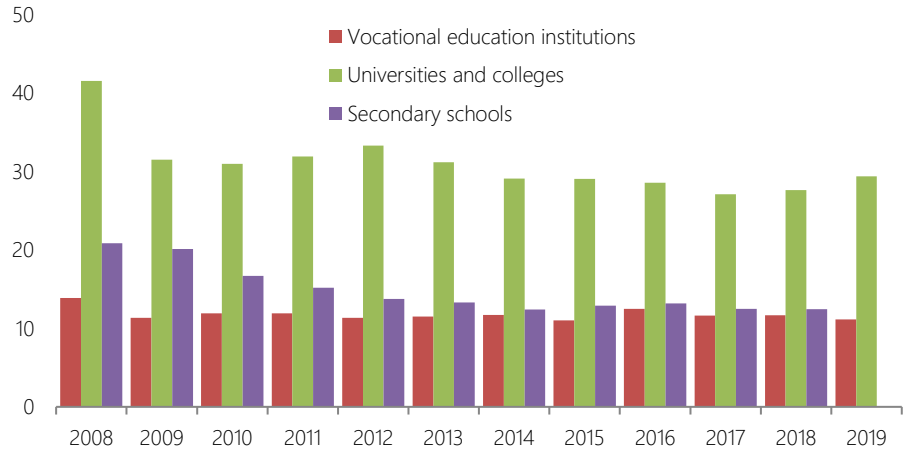
Impact of demographic trends on the number of students

The number of students in general secondary education has been dropping for a long time both at the level of basic school and secondary school. The declining trend is also applicable to the number of students in vocational secondary education. The main reasons are persistently low birth rate and emigration of the population. Over the last years the drop in the number of general and vocational secondary education pupils and students has stopped, which is largely explained by the improvement in birth rates in the period from 2004 to 2008.

Figure 2.16

Students enrolled into education institutions

thousands



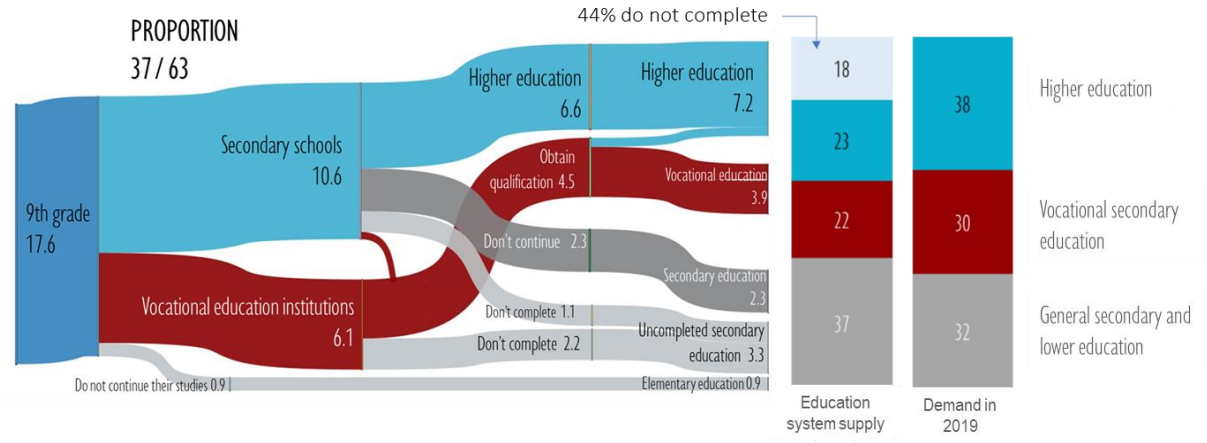
Source: CSB

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 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 reproduction of medium qualification specialists in the labour market.

Figure 2.17

The education system

*thousands, reflected using the structure of education career in academic year 2018/2019**



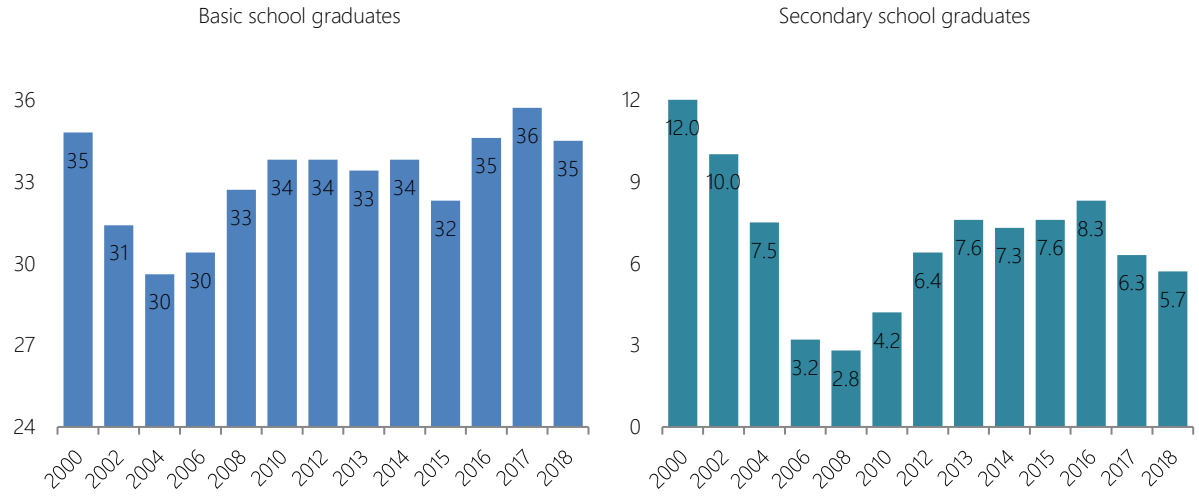
Source: CSB, MoE calculations

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 2018, has shrank.

Figure 2.18

Students continuing their studies in vocational education institutions

% of total graduates



Source: CSB

Latvia has set a target for 2020 to ensure that at least 50% of the total number of students acquiring secondary education study at vocational secondary education programmes. Although the share of vocation education students has slightly grown in recent years, the student count ratio in vocational secondary education versus general secondary education was 39/61 in academic year 2018/2019. 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 is to reach 27% of the total number of graduates. However, in 2019, graduates of the target group constituted only 19.2% of all graduates. This indicator has not significantly changed in recent years. In order to achieve this goal it is necessary to implement targeted measures for the involvement of secondary education students into these academic disciplines more actively. It should also be noted that high drop-outs affect the share of graduates in exact study directions.

The number of matriculated students has been reducing in recent years, which is explained by demographic and economic reasons. The inflow of foreign students also does not compensate for this decline. At the same time, the number of foreign students, who want to study in Latvia is growing. In 2019, those were almost 13% (10.5% in 2018) of enrolled students.

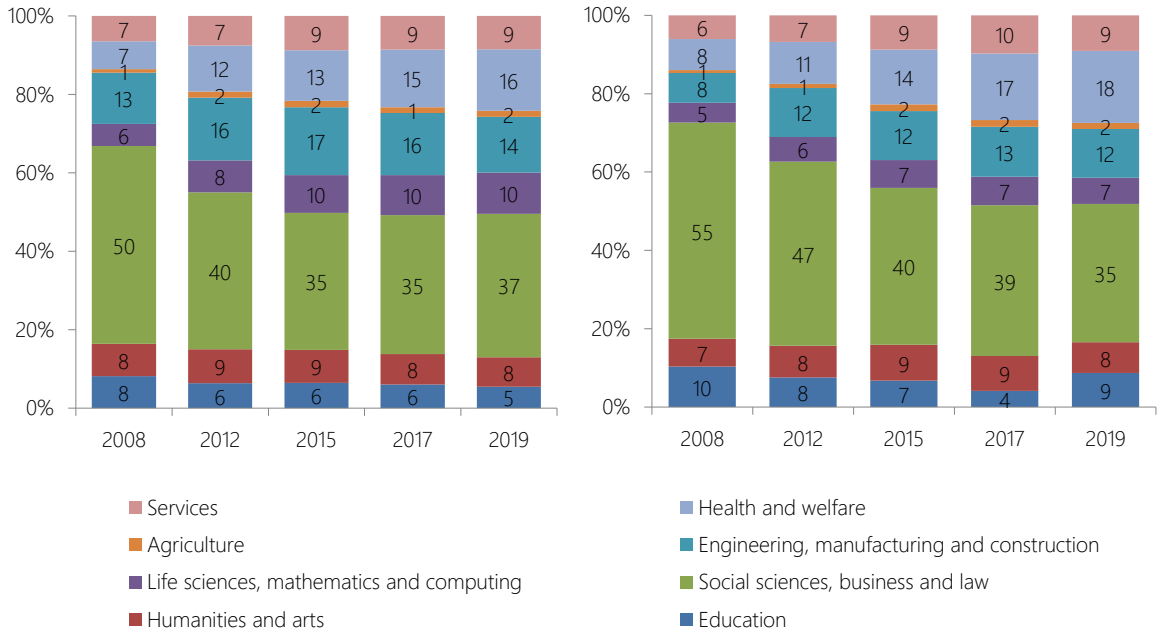
As the economic situation deteriorated in 2009, the possibility of studying for state budget funds became more important, leading to a sharp drop in the share of students in the thematic area of social sciences, where the majority are paid study places. Along with the improvement of the economic situation, demand for social and business sciences has resumed growth in recent years – more than 60% of the total increase in the number of students enrolled in higher education institutions in 2019 were the students enrolled in social sciences, business and law (by 1124 more were enrolled in 2019 compared to 2018).

At the same time, since 2008, the share of students enrolled in the “Education” thematic group has decreased significantly and continued to decline in the previous 2 years. On the other hand, although the share of students enrolled in the thematic areas of engineering, manufacturing and construction increased after 2008, it has generally fallen in 2019, with the percentage of students enrolled approaching the level of 2008. On the other hand, in recent years there has been an increase in the share of both students and graduates in the thematic areas of life sciences, mathematics and computing, health and welfare education.

Figure 2.19

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

number of enrolled students, % *number of students, who obtained a degree or a qualification, %*



Source: CSB

The fact that the number of students enrolled in the academic disciplines of life sciences, mathematics and computing and health and welfare gradually increases should be evaluated positively. **Meanwhile, a moderate 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.

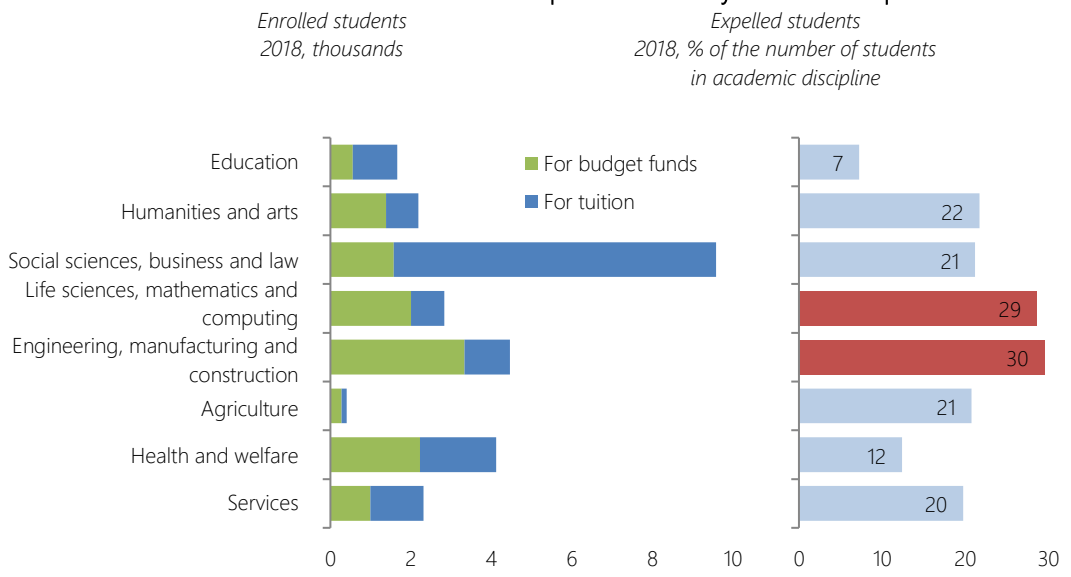
The comparatively small increase in the share of graduates in life sciences, mathematics and computing, and the drop in engineering, manufacturing and construction disciplines can be explained by the relatively high level of drop-outs during the studies.

One of medium-term objectives of the education policy is to restructure state aid for higher education study directions so that the proportion of budget places in life sciences and engineering (group of life sciences, mathematics, and computing, as well as group of engineering, manufacturing and construction) reaches 55% of the total number of budget places by 2020 (see Guidelines on Development of Education for 2014–2020[1]). At the same time, the share of students enrolled in respective programmes for budget funds in 2018 accounted for only 43% of the total number of students enrolled in budget places. Taking into account that it is necessary to continue to implement measures for attracting secondary school graduates to the study directions of importance for the state, as well as to reallocate the target funding for increasing the total number of state budget funded study places in STEM areas. At the same time, it is important to reduce student drop-outs in STEM directions, which is still considerably higher than in other directions.

[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 2.20

Number of enrolled students and the share of expelled students by academic disciplines



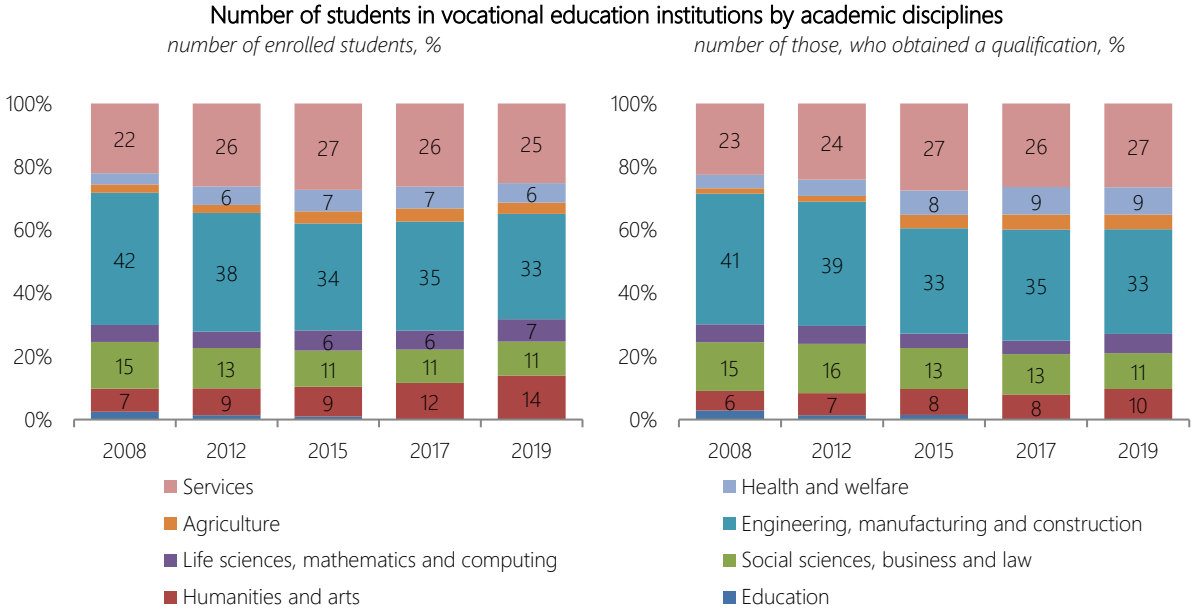
Source: CSB

It should be noted that state support and accessibility of budget places still play an important role in the choice of young people in favour of studies in STEM areas. The share of students enrolled for budget funds in life sciences, math and computing accounted for about 70% of all students enrolled in the respective programmes in 2018. Similarly, the high share of students enrolled in state-funded study places is observed in engineering, manufacturing and construction education disciplines with about 3/4 of all students 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 2018, about 45% of the total number of students started their studies for state budget funds.

Figure 2.21

Number of students in vocational education institutions by academic disciplines



Source: CSB

In recent years, the structure of students enrolled to vocational secondary education institutions by academic disciplines has stabilised. Young people most often choose engineering, manufacturing and construction

disciplines (33% of the total number of students in 2019). This group is the largest in number, however, its share has been declining since 2008. At the same time, the number of students enrolled in the services and humanities and arts academic disciplines in this period has increased. An increase is observed in the life sciences, mathematics and computing education disciplines.

Adult education

One of the objectives of the education policy is increasing the involvement of adults in education activities. In 2019, 7.4% of the population aged 25-64 years were involved in lifelong learning. It should be noted that in this indicator Latvia significantly lags behind neighbouring Estonia and other highly developed EU Member States, where the level of participation of citizens in lifelong learning exceeds 20%. The target for 2020 aiming to increase the proportion of people in adult education aged 25-64 to 15% will not be achieved.

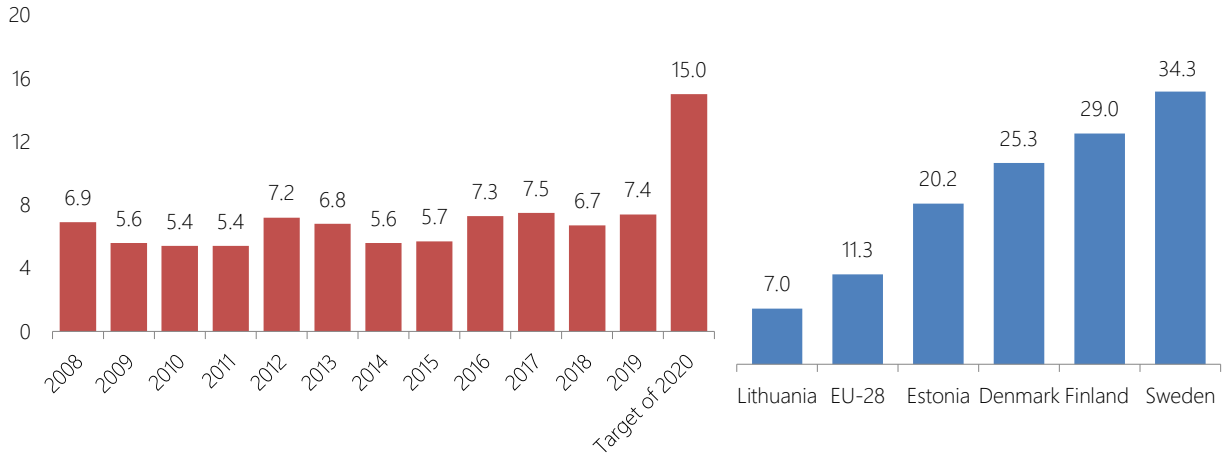
This has a number of reasons and fundamental problems faced by all the three parties involved in the adult education process. Society as a whole still has low interest in adult education. Courses and programmes are generally expected to increase individual competences and adult education is not considered as a career growth opportunity. One of the reasons certainly is potentially low remuneration in a number of occupations and sectors, which does not encourage to get involved in longer training courses. A disincentive from the point of view of society is weak regional mobility and the possibility of combining learning with work. There are also 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 does not pay off, 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, but 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 the low-skilled workers, 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

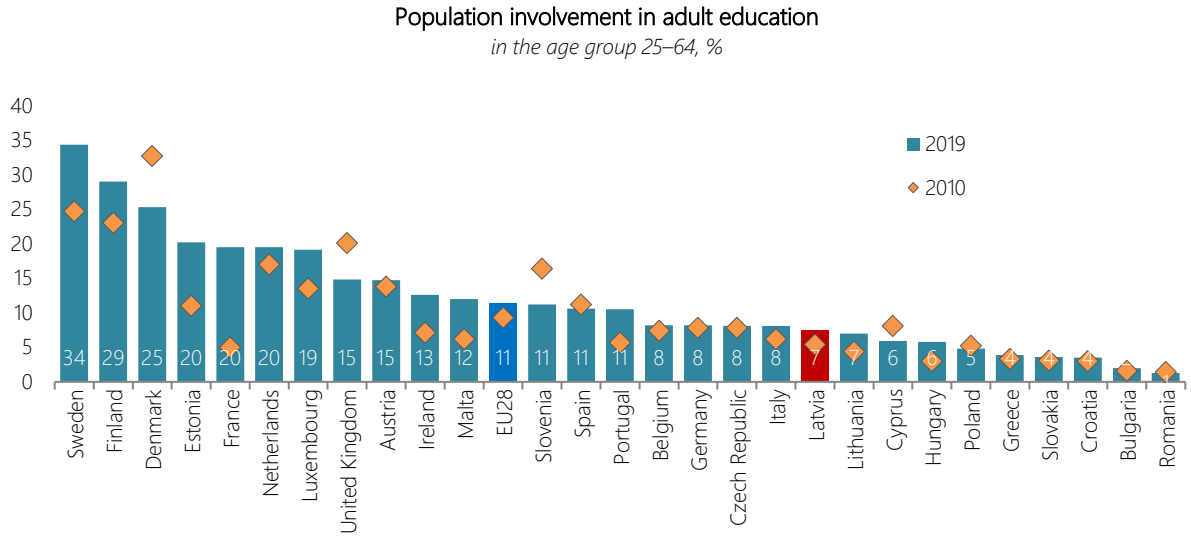


Source: CSB, *Eurostat*

People with higher education choose to participate in adult education activities more actively. 12.8% of people with higher education were involved in adult education activities in 2019. The population with basic education has the lowest involvement, only 3.4% of this population group involved in lifelong learning. The involvement

indicators among women are considerably higher than among men. The share of involvement of women was 9.3%, which exceeded the share of involvement of men by 3.9 percentage points.

Figure 2.23



Source: *Eurostat*

It should be noted that Latvia still lags significantly behind many other European countries in terms of population involvement in adult education. Latvia has about 4 percentage points lower involvement of the population in adult education than the EU average. Meanwhile, Estonia lags behind by nearly 13 percentage points – in Estonia in 2019, 1/5 of all people aged 25-64 were involved in adult education. It should be noted that the involvement of people in adult education in Latvia has not changed significantly over the last 10 years.

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, long-term forecasts are prepared. The labour market forecasts are based on the scenarios of economic development and demography developed by the MoE; these scenarios are based on the medium and long-term development goals of Latvia, as set in the strategic planning documents: Sustainable Development Strategy of Latvia until 2030, National Development Plan 2014–2020 (NDP2020) and 2021–2027 (NDP2027), as well as National Reform Programme of Latvia for the Implementation of the EUROPE 2020 Strategy.

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.

At the same time, it should be noted that forecasts are one of the stages in the labour force 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. The labour market forecasting technology and the DOM model have been significantly improved over time. 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" labour market forecasting model assumptions on education corresponding to occupation standards (occupation-education compliance assumptions) have been updated in 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"*[3]. New occupation-education compliance assumptions have been integrated in the model and labour market forecasts starting from 2020.

For the modelling of labour market, the system dynamic approach is employed. The forecasting methodology is based on partial balance principles, where labour market demand stimuli are determined and arise from the set

[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

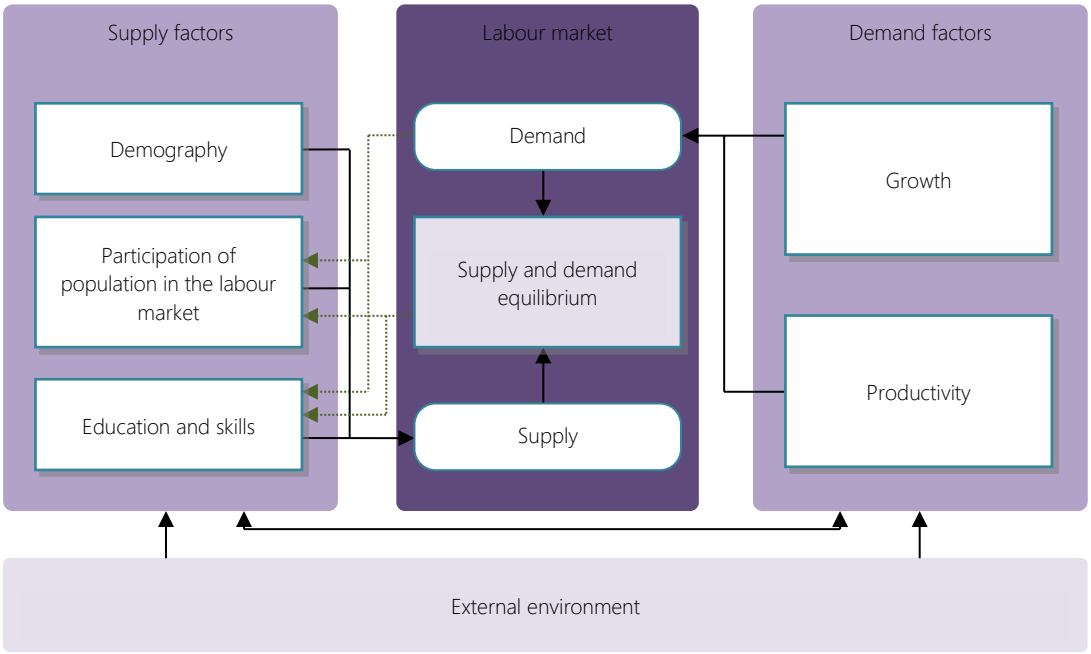
[3] Research "Possibilities of establishment of the system of anticipating changes in the labour market and linking of medium and long-term market forecasts with the action policy": https://em.gov.lv/files/attachments/DarbaTirgus_Gala%20zinojums.pdf

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 chose 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 supply of labour force with the qualification (education) necessary for the relevant occupation.

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

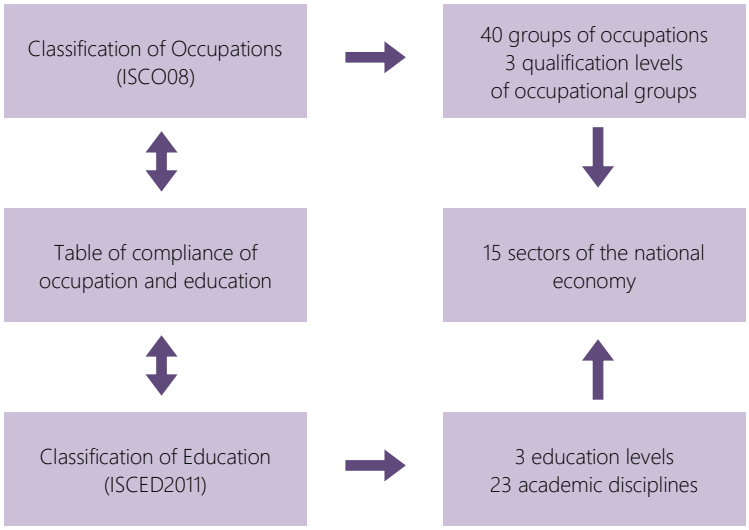
Aggregation of the forecasts

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 (ISCO08). Forecasts of labour force demand and supply are prepared for 40 sub-major groups of the classification of occupations and summarised in three occupation skill levels.

Figure 3.2

Labour market forecasts 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 higher), by 23 academic disciplines at each education level.

The labour market forecasts by occupations and education are synchronised by using the occupation-education compliance matrix, developed by the MoE in cooperation with the MoES and the MoW 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 compliance 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.

Information and data sources used in forecasting

In the development of labour market forecasts, mainly the data, included in the national statistics programme and regularly summarised by the CSB, have been used. The Labour Force Survey (LFS) is the most important source of information. The main forecast assumptions about the structure of demand and supply of labour force are based on the LFS.

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 2019 and at the beginning of 2020, 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 Europop2018, developed by the Statistical Office of the European Communities (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.

Education statistical data is used for the modelling of the education system structure and the entering of labour force in the labour market. 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).

3.2. ECONOMIC GROWTH ASSUMPTIONS AND DEMOGRAPHIC PROJECTIONS

3.2.1. TARGET SCENARIO OF ECONOMIC GROWTH

The Ministry of Economics has prepared a target scenario of economic growth and a macroeconomic forecast that matches it. The target scenario has been drafted according to settings of the Latvian structural policy defined in policy documents – Sustainable Development Strategy of Latvia until 2030[1], draft National Development Plan of Latvia for 2021-2027[2]. The impact of the Covid-19 pandemic was also taken into account and the processes defining the development of the national economy were analysed[3].

Table 3.1

Target scenario framework
annual average changes, %

	2013-2019	2020-2021	2022-2027	2028-2040
Number of inhabitants	-0.9	-0.6	-0.5	-0.2
GDP at current prices	4.8	0.2	7.2	4.6
GDP at reference prices	2.8	-0.9	4.6	2.8

Source: CSB data from 2013 to 2019, MoE forecasts starting from 2020

Impact of Covid-19 on the national economy

The economic recession in 2020 is not related to problems in financial markets or economic imbalances. The cause is a virus, the restriction of which is the main challenge and should be achieved as soon as possible. Therefore, various preventive measures have been initiated by the government, such as social/physical distancing in public places, prohibition of assembly, cancellation or postponement of any events, etc. The sooner the spread of the virus is stopped and the restrictions are lifted, the sooner the economy begins to recover.

The slowdown of the global economy and the effects of the spread of the virus have different channels – declining demand in export outlet markets, delays in supply chains of raw materials, effects on domestic services sectors,

[1] https://www.pkc.gov.lv/sites/default/files/inline-files/Latvija_2030_6.pdf
[2] https://www.pkc.gov.lv/lv/attistibas-planosana-latvija/nacionalais-attistibas-plans/nap2027
[3] 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.

restrictions on international transport, reducing flows of travellers, and impacts on companies as a result of quarantine or self-isolation.

The unclarity about the effect of Covid-19 on economic development is extreme, because it is unclear how long and how extensively the virus will continue to spread in Europe and in the world. At the beginning of March 2020, various international organisations forecast the V type scenario as the baseline scenario, i.e. a pronounced but temporary downturn followed by a rapid recovery. A U type scenario looks more likely at the moment, which would mean a more prolonged phase of decline, at least half a year, but even more prolonged downturn caused by Covid-19 is not excluded.

The way back to growth depends on a variety of circumstances – to what extent the recovery in demand will linger or recover at all, how long the economy will be in recession, and the structural changes in the economy caused by the shock. In Latvia, the negative effects of Covid-19 are very apparent in tourism, in the restaurant and catering sector, in air transport. As infection grows and various restrictions are introduced, their negative effects are also seen in entertainment, education and other services. It is clear that not all sectors are able to adapt equally to the new conditions, and not all sectors will be able to recover equally rapidly as the situation stabilises.

The baseline scenario provides that the economy will return to growth in 2021, following the decline caused by Covid-19 in 2020, because the global pandemic will gradually end and government measures will be efficient for economic recovery.

In the medium term, Latvian companies will also be able to adapt relatively successfully to the changes caused by the Covid-19 crisis, for example in relation to the expected change in consumer behaviour.

Changes caused by Covid-19

Digitisation and online economy. Covid-19 will accelerate the process of digital transformation around the world. Countries/companies that have not previously implemented digital solutions will suffer the most, but they can significantly increase productivity by introducing digital solutions after the Covid-19 crisis. Online trade will grow and develop. Many consumers will become accustomed to online trade solutions and may no longer want to return to the shops after the Covid-19 crisis.

New job forms/relationships and remote work. Most of company employees will shift to remote work, but there are also many companies, which will not be able to ensure it, because some of the industries cannot be completely digitally transformed yet. Remote work will contribute to a reduction in demand (and price) for offices, transport services.

Economy of "fear" – change in consumer behaviour. The world economy is more heavily influenced by people who fear Covid-19 than by those who have contracted the virus. Consequently, the behaviour of consumers and decision-makers has already changed and will change even more. As a result of these fears, overall demand and supply in the global economy are changing. Fear reduced demand for individual services (people stopped going to shopping centres, cinemas, etc.). At the same time, however, demand for online services has grown rapidly. Online trading will mitigate the impact of the Covid-19 crisis on demand, but not to the full extent. The Covid-19 crisis has a negative impact on trading of luxury goods.

Localisation – shorter chains. Even before the Covid-19 crisis, the operation of global value chains was confronted with a variety of challenges related to rapid technological developments, such as in a factory of one US company in New York robots replaced the employees who worked at the factory in Shanghai. This contributes to the transition to shorter value chains and localisation. As a result, localisation can boost investment.

Medium- and long-term macroeconomic framework

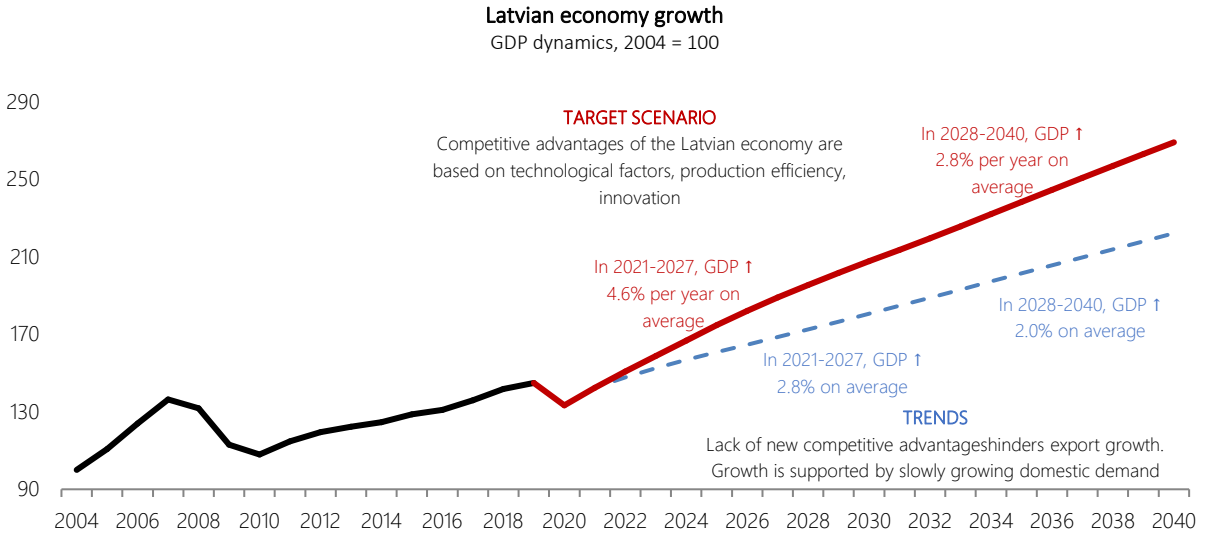
Although the restrictions caused by Covid-19 have a negative impact on the economy today, the challenges to economic development in the medium term, which have already been identified in the policy planning documents, like the need to increase exports and productivity of Latvian goods and services, remain unchanged. The initiatives launched earlier by the European Commission, such as the Green Deal and digitisation, also remain.

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, i.e. structural transformation of the national economy.

In the medium term (until 2027) the target scenario envisaged GDP growth by about 4.6% per year, but 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 (until 2040) annual economic growth rates will become slower and will be within 2.8%.

Figure 3.3

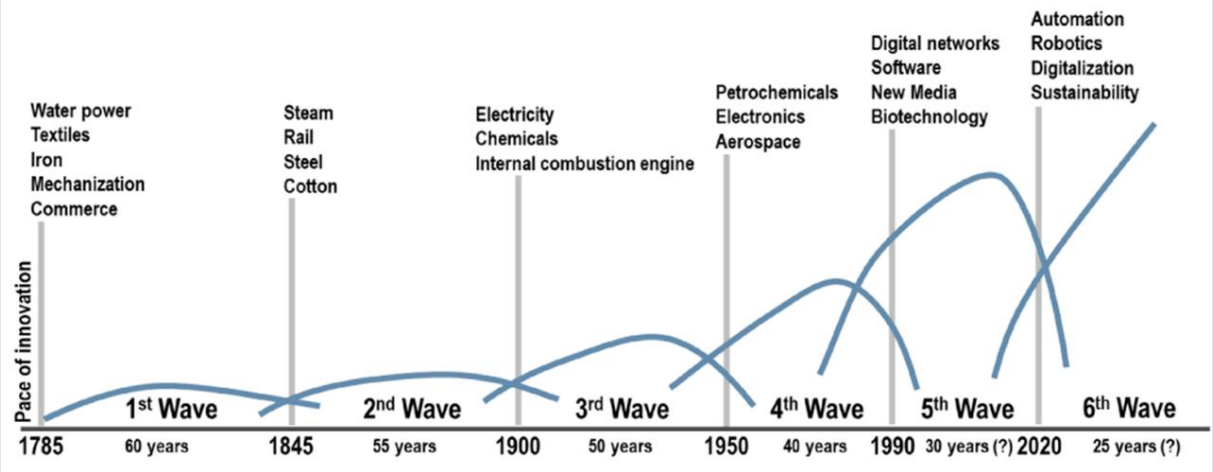


Source: CSB data until 2019, MoE forecasts starting from 2020

Global changes reinforce the role of state aid in strengthening production potential. Rapid and comprehensive changes are taking place in the global market. The globalisation of technological novelties and innovation is accelerating, the geopolitical and economic situation is changing rapidly, historically established multilateral (international) agreements are increasingly being cancelled or temporarily suspended, and national economic intervention efforts are stepping up, including hidden and open protectionist efforts, social and opinion polarisation of society are growing. At the same time, the digitisation of processes and new technologies, as well as the impact of global climate change and other anthropogenic environmental challenges play an increasing role in life aspects of society. As a result of these processes, not only world trade and investment flows change, but also the production process and structure transform, which at the same time increases the threat and opens up new opportunities for the sustainable development of the Latvian economy.

Global long-term trends

The modern world is on the verge of a new era of technology experiencing the transformation process. The country's readiness to overcome various future challenges, particularly in the area of competitiveness, is important. 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.



It is highlighted in the study of the Global Economic Forum *Readiness for the Future of Production Report 2018* that readiness for future challenges is underpinned by the existing production base, its structure, as well as technology and innovation, human capital, participation in global trade, quality of the institutional system, etc.

The technological revolution changes production and the rules of the game in almost all sectors of the economy. Understanding these processes and the ability to adapt quickly to new conditions becomes an essential condition for survival. This mainly applies to digitisation and the rapid development of the collaborative economy. The impact of innovation and digitisation is becoming stronger changing the competitive environment and the labour market and business models. Promotion of the future and competitiveness of industry in the long term depends to a large extent on the ability to identify and assess global development directions in a timely manner.

Industrial development strategies change. Rapid business expansion strategies (M&A processes) with a clear goal of conquering new markets and, if possible, monopolising these markets dominate in the global economy. Industrial policy strategies in many countries around the world are experiencing a renaissance where targeted state aid has an important role. Therefore, the aim of strengthening industrial development and competitiveness cannot be achieved by relying solely on market forces.

Society 5.0. The concept was developed by the Japanese government in cooperation with the leaders of large enterprises. Compared to the Industry 4.0 concept developed in Germany, Society 5.0 includes not only economic but also social aspects. It is more comprehensive and complete and represents a cross-sectoral horizontal approach based on digitisation and large-scale data processing. People will use binding/appropriate services based on large-scale data analysis. Artificial intelligence and the "Internet of Things" will develop. The transition to Society 5.0 will take place gradually, not as a revolution. These technologies can be deployed on the basis of the old technologies that are already in place.

Development trends of sectors

The target scenario envisages to keep more rapid growth rates in manufacturing than in the national economy on average 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 such as chemistry, pharmacy, electronics, etc. Relatively rapid growth rates are also forecast in the largest manufacturing sector – woodworking. The development of sectors with bigger focus on the domestic market (for example, food industry, printing) will be mainly affected by the dynamics in domestic demand. Manufacture of other non-metallic mineral products will be closely related to trends in construction.

Table 3.2

Development trends of sectors

annual average changes, %

	2013-2019	2020-2021	2022-2027	2028-2040
Agriculture, forestry and fishery	3.7	0.6	3.4	1.8
Manufacturing	1.9	-0.8	5.7	3.1
Other industry	-0.1	-2.1	2.8	3.4
Construction	3.2	-1.4	5.4	2.1
Trade	3.8	1.5	4.5	2.5
Transportation and storage	1.0	-5.8	3.9	2.5
Accommodation and food service activities	6.0	-15.5	5.8	2.3
Information and communication	4.6	3.4	6.1	3.5
Financial and insurance activities	-1.5	-1.0	3.7	3.4
Real estate activities	1.7	0.6	3.5	2.5
Business services	2.4	-4.2	6.8	3.3
Public administration	2.3	0.8	3.1	2.6
Education	2.4	1.5	3.2	2.6
Human health and social work activities	5.9	3.6	4.2	3.3
Arts, entertainment and recreation	3.4	-10.9	7.7	2.8
GDP	**2.8**	**-0.9**	**4.6**	**2.8**

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

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.

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.

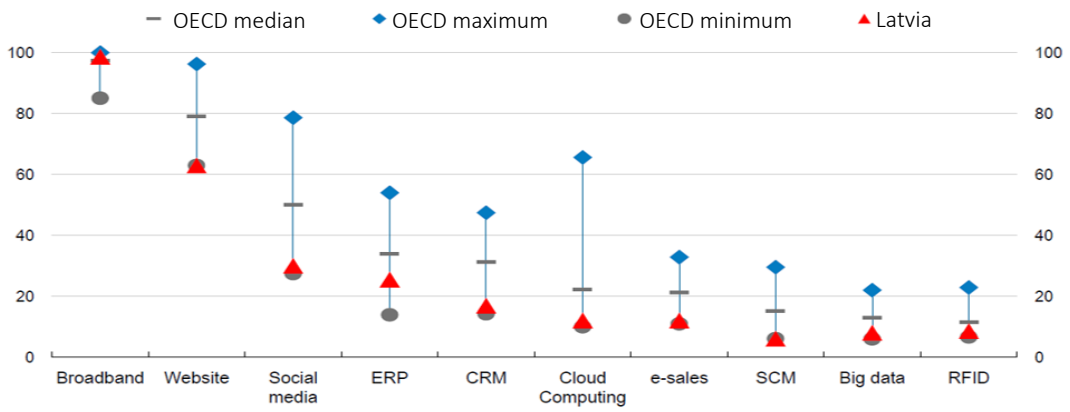
Growth in transportation and storage will be largely fostered by the development of air transport and road transport sectors. At the same time, the dynamics in the transit sector will be slower, underpinned by the need to search for new types of cargo and delivery paths to replace persistently shrinking volumes of petroleum products and hard coal from Russia.

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 national economy. Public services sectors (public administration and defence, education, health and social work activities) are closely related to demographic trends. In public services sectors the fastest growth in the long term is expected in human health and social work activities due to ageing populations.

Although modern digital technologies (broadband, big data, data centres, cloud services, artificial intelligence, etc.) create unprecedented opportunities for improvement of existing processes, procedures, development of new products and services, as well as process analysis and optimization, in most cases Latvian companies are still lagging behind in the introduction of different digital technologies compared to OECD countries (see Figure below).

Companies using special digital technologies

2018 or last available year, % of companies



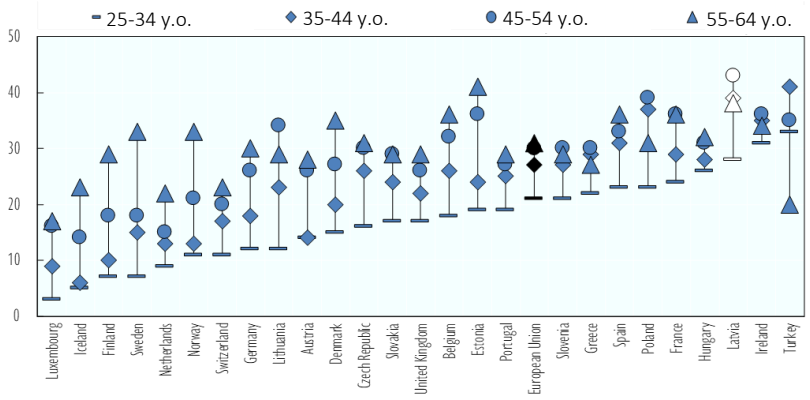
Source: OECD

The figure summarises data about the companies using digital technologies. The data cover 26 OECD countries and correspond to the proportion of companies with ten or more employees with broadband connection (fixed or mobile); which have a website; which use social media; which use Enterprise Resource Planning (ERP); which use Customer Relationship Management (CRM) software; which purchase cloud dating services; which receive orders in computer networks; which share information electronically with suppliers and customers (SCM); which use analysis of large databases; and which use radio frequency identification technology (RFID).

The conclusion of the survey conducted by the Latvian Association of Information and Communication Technology in 2019 on the impact of digitisation was that Latvian companies are not yet ready for digital transformation, and only half of the representatives of associations surveyed admit that most companies have introduced some basic IT solutions, but that the use of the most advanced IT technologies is still being considered. The survey concludes that the most advanced and well-known technological solutions which managers of associations consider usable in their sectors is data visualisation, cloud data and care for data security, but the Internet of things, drone and robotization solutions are currently of little use for them, while big data and blockchain are the most unclear concepts.

Latvian society is also not ready for digital transformation.

Latvian society is generally not ready for the digital breakthrough of the economy. Latvia has one of the highest percentages of people in different age groups with low levels of general digital skills (see figure below). This creates not only a lack of digital skills in the labour market, but also generally hampers the wider uptake of digital technologies in companies, as well as the development of the local digital product market.



The target scenario until 2040 does not envisage any considerable structural changes in sectors of the national economy compared to the current situation. It will remain close to the existing one. Although export is the main growth driver, it does not mean that the share of export sectors will particularly grow. The main reason for this is that the business model has significantly changed in the last years. Any sector requires services of other sectors on a large scale (for example, the company itself cannot directly perform IT services, logistics and transport, other business services, even accounting services and so on). Therefore, growth in any sector creates a relevant increase in other sectors especially in business services. The share of business services sectors might increase by 2040. An increase is also expected in the share of IT and industrial sectors in the national economy. At the same time, the share of agriculture, transportation, financial services and public services sectors might slightly reduce.

3.2.2. DEMOGRAPHIC FORECASTS

According to MoE's demographic forecasts, in the medium and long-term, the population of Latvia will continue decreasing, moreover, the number of working age population will fall more rapidly than the total population. The main reason for the decreasing number of the population in both medium and long-term will be ageing, as a result of which the gap between the birth and death rates will continue to extend. At the same time, international population migration flows in Latvia might level out in the next 2-3 years, but in the long term the number of immigrants may exceed the number of emigrants.

The population will continue to shrink and society ageing trends will become more pronounced

The population has been declining in Latvia for a long time, moreover, the reduction in population in the last 10 years has been observed among working age population. In the period from 2010 to 2020 the Latvian population reduced by 10% or 211.6 thousand, while the decline in the population aged 15 to 64 reaches 223.7 thousand (15% reduction). Meanwhile, an increase by more than 12 thousand is observed in the age groups younger than 15 years and above 64 years, which was mainly determined by the increase in the population aged above 64 years (61% of the increase). During this time, the average age of the population has increased by about 2 years from around 40.7 at the beginning of 2010 to 42.8 at the beginning of 2020. Thus, overall, these trends point to a marked change in population ageing patterns and ageing of labour force, which can affect the availability of labour force on the labour market in the future even more.

While there may be some improvements in international migration of the population in the coming years, which could help to ease demographic tensions and offset the imbalances in the age structure of the population, it should be noted that the gap between birth and mortality rates, at least in the medium term by 2027, will continue to widen, which will have a significant impact on population dynamics. The population in Latvia is expected to continue to decrease in the period until 2040, while the reduction rates in relative and absolute terms will reduce. Overall, the total population of Latvia may reduce to 1.79 thousand in 2040, which is by approximately 7% or 133.8 thousand less than at the beginning of 2019. At the same time, the average age of the population in the relevant period might increase to 45.8 years – by 3.3 years on average.

Table 3.3

Main indicators of natural population movement

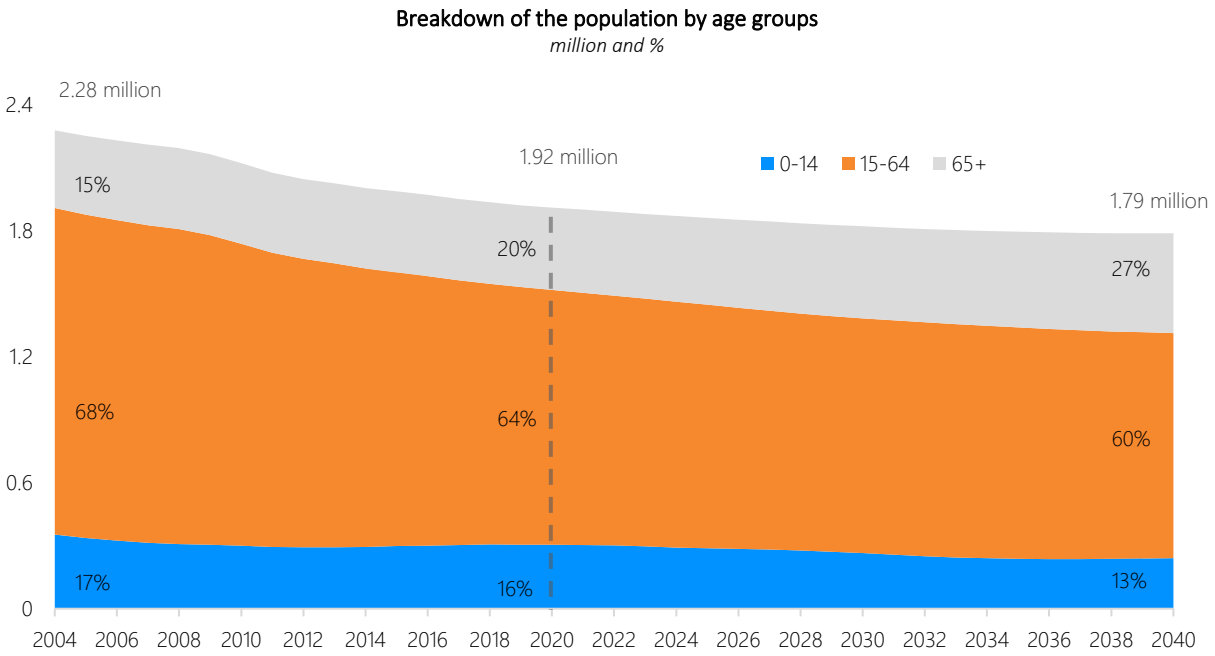
thousands

	2019	2027	2040
Population at the beginning of the year	1920.0	1842.8	1786.2
Changes in the population compared to 2019	–	-77.2	-133.8
incl. migration impact	–	0.9	57.4
incl. natural growth impact	–	-78.1	-191.2

Source: CSB data until 2019, MoE forecasts for 2027 and 2040

In general, it is estimated that material changes in the age structure of the population will take place until 2040 in favour of higher age cohorts. It is expected that until 2040 the number of the population in the age group 15–64 will reduce by 154.6 thousand or approximately by 13%, and at the same time the number of the population aged above 64 will increase by almost 85.4 thousand or by about 22%. Overall, these trends will determine the reduction of the share of the population aged 15–64 from 64% in 2019 to 60% in 2040.

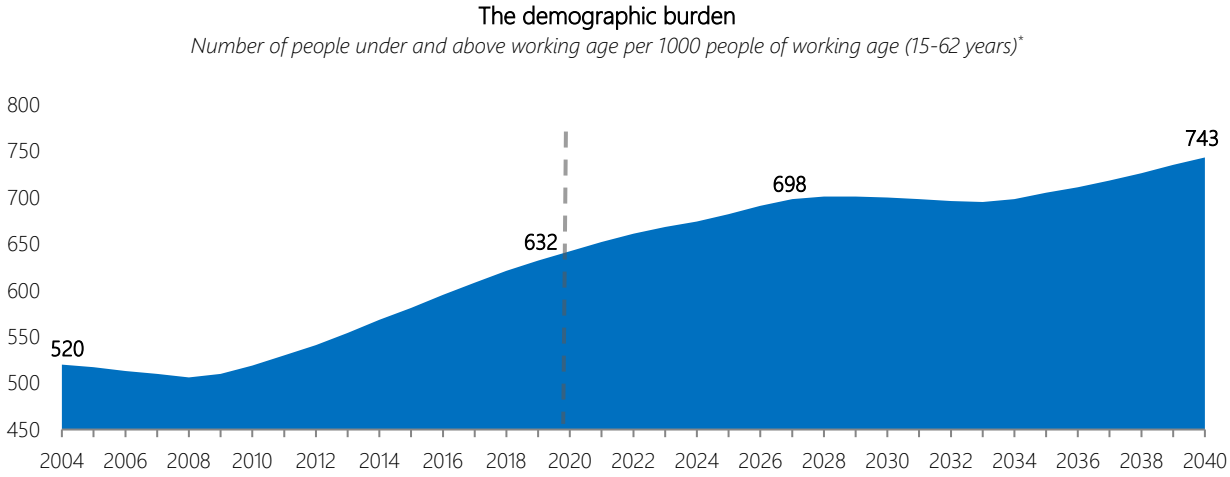
Figure 3.4



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

Along with the ageing of the society, the indicators of demographic burden will continue to rise in the future. By 2040, in comparison to 2019, the level of demographic burden is expected to rise by almost 18%. It means that we will have 743 inhabitants out of working age per 1000 inhabitants of working age in 2040, moreover 68% of them will be aged above 62.

Figure 3.5



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

It should be noted that negative demographic trends have considerable impact on the labour market. The unemployment rate has been dropping in Latvia for a long time influenced by negative demographic trends – in 2019 about 99% of the unemployment drop was 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.

The gap between newborns and deceased will increase in the medium-term, improvements are expected after 2027

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

Overall, base trends of birth indicators are expected to remain positive in the medium and long term – the total fertility rate might increase by 17.5% by 2040 compared to 2019 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 1/5 or 81.5 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.

Table 3.4

Main indicators of natural population movement

	Fact*	Forecast	
	2019	2027	2040
Number of newborns per 1000 inhabitants (general birth rate)	9.7	8.5	9.7
Death rate per 1000 inhabitants (general death rate)	14.4	14.0	13.4
Natural growth per 1000 inhabitants	-4.7	-5.5	-3.7
Total fertility rate	1.596	1.617	1.875
Average life expectancy at birth (years)	75.4	77.5	80.6

Source: * MoE assessment based on CSB data for 2019, MoE forecasts for 2027 and 2040

For a normal replacement of generations, the total fertility rate no less than 2 is needed. Last time, the total fertility rate in Latvia exceeded this level more than 30 years ago – at the end of the 1980s.

Along with improvements in population welfare and wider access to health services, overall population mortality rates will decrease in both the medium and long term. Relative mortality rates of the population are expected to fall in almost all age groups by 2040, which will also affect the death rate per 1000 inhabitants. The average life expectancy at birth will also rise from the current 75.4 years to 80.6 years until 2040.

In view of the above, the gap between the number of newborns and the number of deceased could continue to widen until 2027, while the negative natural growth of the population could start to gradually decrease starting from 2028.

International migration activity of the population will reduce in the medium term, migration flows may level out over the next 2–3 years

International migration of the population has left a significant impact on the current demographic situation in Latvia. Over the past 20 years the population in Latvia reduced by 282.6 thousand due to negative net migration, which is about 57% of the total population reduction in the respective period.

Along with the improvement in the economic situation, there have been significant improvements in migration trends since 2016 – net migration has decreased 6 times of around -12.2 thousand in 2016 to around 2 thousand in 2019. It should be noted that stable economic growth and more qualitative and well-paid jobs on the labour market is a considerable precondition for the change in migration flows. To keep the population from leaving to seek for better employment possibilities in other places, as well as create a foundation for contemplations on returning in those, who left earlier, the average wage in Latvia should be at least at the level of minimum wage in main target countries of Latvian migrants.

Table 3.5

Main indicators of international migration of the population

	2019-2027	2028-2040
Emigration, thsd	76.7	154.3
Immigration, thsd	79.7	215.2
Net migration, thsd	**3.0**	**60.8**

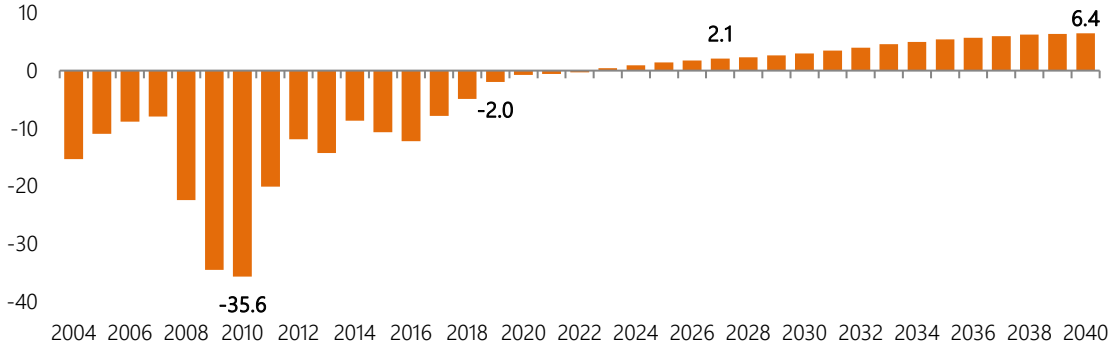
Source: MoE forecasts

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.

Figure 3.6

Net international migration of the population

thousands



Source: CSB data until 2018, MoE forecasts starting from 2019

Along with the reduction of economic migration incentives, it is expected that the gap between emigrant and immigrant populations is likely to decrease significantly in the coming years and a positive net migration is expected from 2023 onwards. At the same time, the migration scenario provides that, under the influence of the Covid-19 pandemic, the international migration activity of the population over the next 3 years will remain significantly lower than it was before the restrictions imposed by the pandemic. It also provides that the general spread of the pandemic in Latvia will remain more limited than in the main target countries of Latvian emigrants, thereby reducing the incentives for emigration of the population. Meanwhile, Latvia's successful approach to limiting the pandemic could allow it to return to economic growth relatively quickly, as well as improve Latvia's image in the eyes of potential immigrants, which would provide a basis for increasing immigration flows, including by encouraging the return of the nationals who earlier emigrated from the country.

Overall, by 2040, Latvia's labour market will continue to be closer to the labour markets of the EU's most developed countries, 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 the development of a balanced labour market, therefore the migration policy should be sound providing 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. It is important to continue reducing the obstacles for return migration of Latvian nationals, as well as to ensure such labour force immigration policy, which would provide support to sectors with a considerable investment in the economy.

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.

Figure 3.7

Changes in GDP, productivity and labour demand

2027 vs. 2019, annual average, %

Source: MoE forecasts

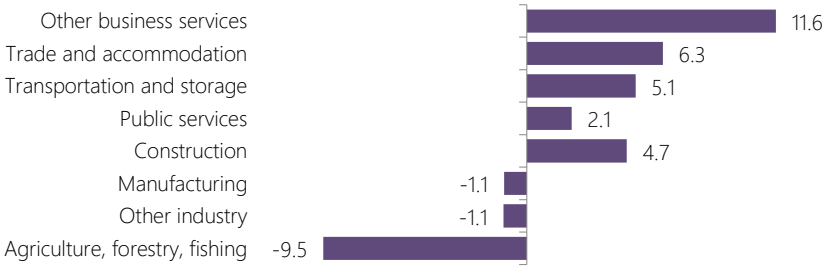
In the near future, the situation in the labour market will be affected by the negative effects of the coronavirus Covid-19 pandemic on economic development. The impact on the labour market depends to a large extent on the length of restrictions related to the spread of Covid-19. The longer the restrictions are kept, the higher the risk of job losses and rising unemployment. The impact on the labour market is on average slower. The reduction in the number of the employed is expected to reach 7.5% or 69 thousand, but the unemployment rate might grow to 11% in 2020. The impact will be observed almost in all sectors of the national economy, and a reduction in the economic activity of the population is expected (mainly among youths and pension/pre-pension age population). 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, it is expected that the demand for labour force across the national economy in 2027 will be 0.5% lower than in 2019. Consequently, in 2040, in comparison to 2019, labour demand will reduce by 1.6%, which is explained by the decline in the number of the employed from 2031 to 2040. Job opportunities will form only 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.

Skill demand projections in Europe*

The situation in the EU labour market will to a large extent be affected by the economic downturn due to the spread of Covid-19. The demand for labour force is expected to grow very slowly. It will to a large extent be affected by the growing economic instability in the short term and demographic trends in the long term. Ageing of the population will have a negative impact on economic growth and employers will face increasingly more tension in filling empty vacancies. The impact of technologies and digitisation will be sensed even more and therefore shift to service- and knowledge-driven economy will continue, therefore the service sectors will be the ones providing for the largest increase in the employment until 2030 while employment in traditional manufacturing sectors will decline.

Changes in the employed in the EU by sectors

2030 vs. 2019, %



Source: *Cedefop, Skills forecasts*

According to *Cedefop* projections, the number of the employed will grow by about 5% in 2030 compared to 2019. It is expected that by 2030 about half of the employed will work in the services sector. Until 2030, **the sharpest increase in the labour demand in the EU expected in sectors of business services**, where the number of the employed will grow in real estate activities and in the area of professional, scientific and technical services. A small increase is also expected in the field of public services, where the number of the employed will grow most rapidly in human health and social work activities, and will slightly reduce in public administration. An increase in the labour demand is projected also in trade and accommodation, transport and storage, as well as construction. It is expected that in 2030 construction will employ 6% of EU labour force. The demand for skills will change in construction as well largely influenced by energy efficient and "green" construction, which uses new materials and designs[1].

The most considerable decline in the number of the employed is expected in the agricultural sector. 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. Although a decline in the number of the employed in manufacturing is expected, but the demand will still grow in the sectors related to progressive industry, 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**[2]. The European Commission has deemed the specialisation in high technology and knowledge-intensive sectors as one of the key advantages of the EU's competitiveness in the global markets. These changes will also provide that specific skills and knowledge will become more demanded.

New job opportunities will form mainly because of replacement demand, where 9 of each 10 vacancies will form, because the existing labour force retires or leaves the labour market. New job opportunities will mainly open in occupational groups of different technicians and associate professionals (in engineering, IT, health, and other sectors). Technicians and associate professionals, and professionals will be the most demanded occupational groups in the medium term. There will be a comparatively high demand for services and sales workers as well. Although the orientation to services-driven economy will continue, the demand for science, technology, engineering and mathematics (STEM) skills will not decline and these skills will be also required in services sectors, for example, many persons with ICT skills are employed in the financial sector. Technological progress and ICT technologies have not only created new, typically high-skilled jobs (web applications designers, software developers, market research data analytics); they are also expanding possibilities for individuals to undertake more interesting and productive tasks, leaving the more routine activities to the robots[3].

** 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. The demand for digital skills will increase – it is expected that by 2027 85% of all jobs in EU will require at least basic digital skills. However, Latvia is one of the countries with the highest proportion of the employed (more than 1/5), who have indicated that their job does not require ICT skills. Although employment trends will be largely affected by automation and robotization, the latest research still evidences that the number of jobs subject to the risk of automation is much lower than it was thought initially and only less than 5% of current jobs can be fully automated, however in 60% of occupations at least 1/3 of duties can be automated.

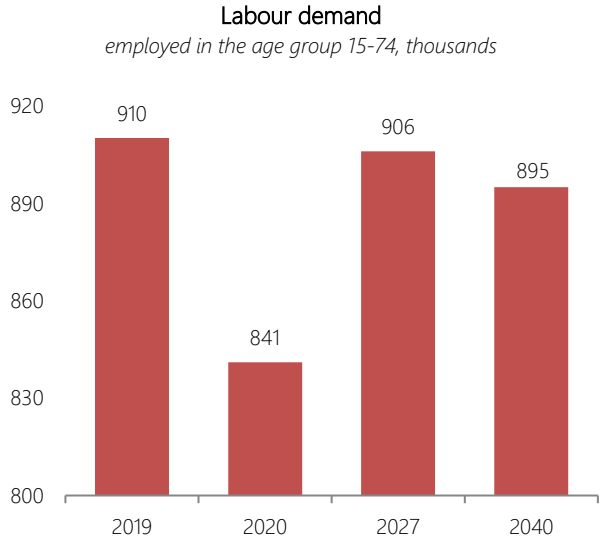
[1] Cedefop (2016), European sectoral trends in the next decade.
[2] European Parliament (2015), Labour market shortages in the European Union. Study for the EMPL Committee
[3] Cedefop (2018), Insight into skill shortages and skill mismatch. Learning from Cedefop's European skills and jobs survey.

However, it should be taken into account that unlike in the past, today typical innovation cycles are much faster and automation/robotization enters into many high qualification occupations.[1]

Labour demand will increase by 2027 only in three sectors – business services, construction, trade and manufacturing. In the long term, there will be an increase in business services, manufacturing and other industry, while construction will remain at the level of 2019.

Manufacturing is one of the most rapidly growing sectors. Whilst the volume of production will rapidly increase, the demand for labour force will also increase. However, in order 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 3.8



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

The number of the employed in agriculture and forestry will reduce, similarly to EU average. The share of the employed working in this sector in 2027 will be 7% of the total employed (also about 4% in the EU). In 2019, agriculture and forestry accounted for 4.3% 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.

In the future, the demand for labour force will also 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.

[1] *Cedefop (2018), Insights into skill shortages and skill mismatch Learning from Cedefop's European skills and jobs survey. Cedefop Reference series 106.*

Table 3.6

Changes in the labour demand by sectors

thousands

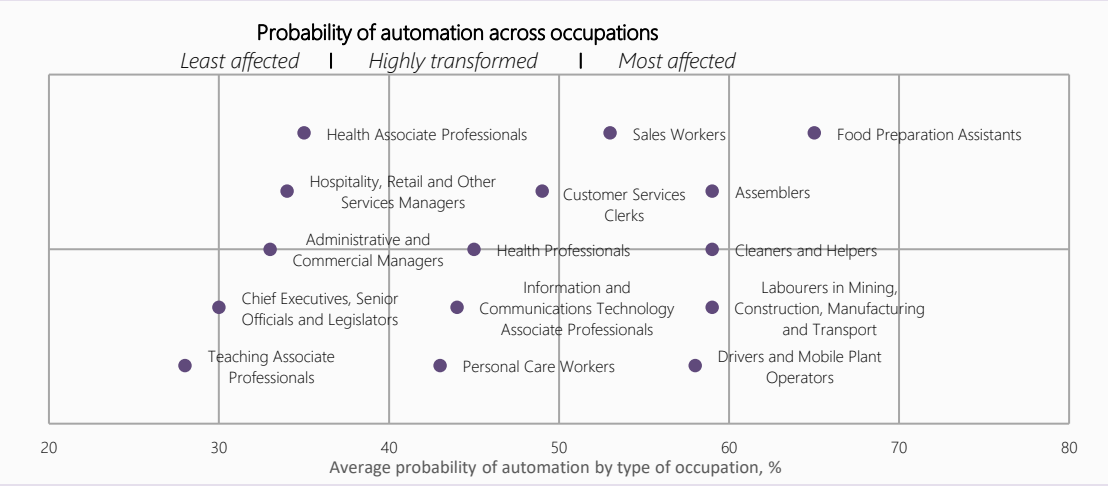
	2018	2019	2027	2040	Difference 2027-2019	Difference 2040-2019
Agriculture, forestry, fishing	63	67	65	59	-1	-8
Manufacturing	117	115	119	119	3	4
Other industry	23	19	18	22	-1	3
Construction	75	81	89	81	7	0
Trade and accommodation	172	170	159	143	-11	-26
Transportation and storage	81	75	69	71	-5	-4
Other business services	179	178	188	200	10	22
Public services	199	205	199	200	-6	-5
Total	**909**	**910**	**906**	**895**	**-4**	**-15**

Source: CSB data until 2019, MoE forecasts starting for 2027 and 2040

Impact of automation and digitisation 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*

Box continued

***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.*

The sharpest increase in the number of the employed is expected in business services. In 2027, the demand for labour force will exceed the level of 2019 by 5% and will account for 1/5 of all the employed across the national economy, while in the long term the demand will grow by 12% thus constituting 22% of the total number of the employed across the national 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 be determined by the increase in the demand for labour force in manufacturing and services, and especially in business services. In the long term the sharpest increase in demand is expected in services and in manufacturing, as well as in trade and construction.

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

Table 3.7

Changes in the labour demand by occupational groups

%

	Changes compared to 2019		Structure	
	2027	2040	2027	2040
High qualification occupations, including:	7.6	21.3	45.6	52.0
Managers	7.8	18.4	10.5	11.7
Professionals	7.8	23.3	19.2	22.2
Technicians and Associate Professionals	7.3	20.7	15.9	18.1
Medium qualification occupations, including:	-4.1	-12.2	43.3	40.1
General Office Clerks	-9.8	-25.2	4.6	3.9
Services Workers	-6.4	-14.7	14.0	12.9
Skilled Agricultural Workers	-3.4	-14.6	3.2	2.9
Skilled Workers	1.4	-5.1	12.5	11.8
Plant and Machine Operators	-4.5	-9.3	8.9	8.6
Low qualification occupations	-14.5	-39.5	11.1	7.9
Total	**-0.5**	**-1.6**	**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 2019, thousands

	Agriculture	Manufacturing	Other industry	Construction	Trade	Transport	Other business services	Public services	Total
	2027								
High qualification occupations, including:	1.8	5.5	0.6	4.5	3.9	0.8	12.5	-0.4	29.1
Managers	0.6	1.1	0.0	1.3	1.1	0.1	1.7	0.9	6.9
Professionals	0.7	2.0	0.4	1.1	1.1	0.3	7.7	-0.8	12.6
Technicians and Associate Professionals	0.5	2.3	0.2	2.1	1.7	0.5	3.0	-0.6	9.7
Medium qualification occupations, including:	-1.4	0.4	-0.9	3.9	-11.2	-4.8	-0.1	-2.4	-16.6
General Office Clerks	-0.1	0.0	-0.1	0.0	-1.1	-1.2	-1.3	-0.8	-4.5
Services Workers	0.0	0.0	0.0	0.0	-8.7	-0.2	1.4	-1.1	-8.6
Skilled Agricultural Workers	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.1
Skilled Workers	-0.1	0.2	-0.3	3.6	-1.1	-0.6	-0.1	-0.2	1.4
Plant and Machine Operators	-0.2	0.1	-0.5	0.3	-0.3	-2.8	0.0	-0.3	-3.8
Low qualification occupations	-1.8	-2.4	-1.0	-1.1	-3.2	-1.2	-2.8	-3.6	-17.0
Total	**-1.4**	**3.4**	**-1.3**	**7.3**	**-10.5**	**-5.1**	**9.6**	**-6.4**	**-4.5**
	2040								
High qualification occupations, including:	3.6	13.2	4.2	6.3	7.7	4.8	33.4	8.0	81.1
Managers	1.2	2.6	0.4	1.0	2.1	1.0	4.6	3.5	16.4
Professionals	1.4	5.0	2.0	1.9	2.2	1.5	19.5	3.8	37.3
Technicians and Associate Professionals	1.0	5.6	1.8	3.4	3.4	2.3	9.3	0.7	27.5
Medium qualification occupations, including:	-6.1	-1.9	-0.1	-1.0	-26.4	-6.3	-3.1	-4.5	-49.5
General Office Clerks	-0.2	-0.2	0.0	-0.2	-2.6	-2.1	-4.4	-1.8	-11.6
Services Workers	-0.1	-0.1	0.0	-0.1	-20.0	0.0	1.9	-1.5	-19.7
Skilled Agricultural Workers	-4.3	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-4.5
Skilled Workers	-0.3	-1.2	0.0	0.2	-2.9	-0.9	-0.4	-0.3	-5.9
Plant and Machine Operators	-1.3	-0.4	-0.1	-0.9	-0.9	-3.3	-0.1	-0.7	-7.8
Low qualification occupations	-5.0	-7.4	-1.6	-5.4	-7.8	-2.3	-8.2	-8.6	-46.2
Total	**-7.6**	**3.9**	**2.5**	**-0.1**	**-26.4**	**-3.8**	**22.0**	**-5.1**	**-14.6**

Source: MoE forecasts

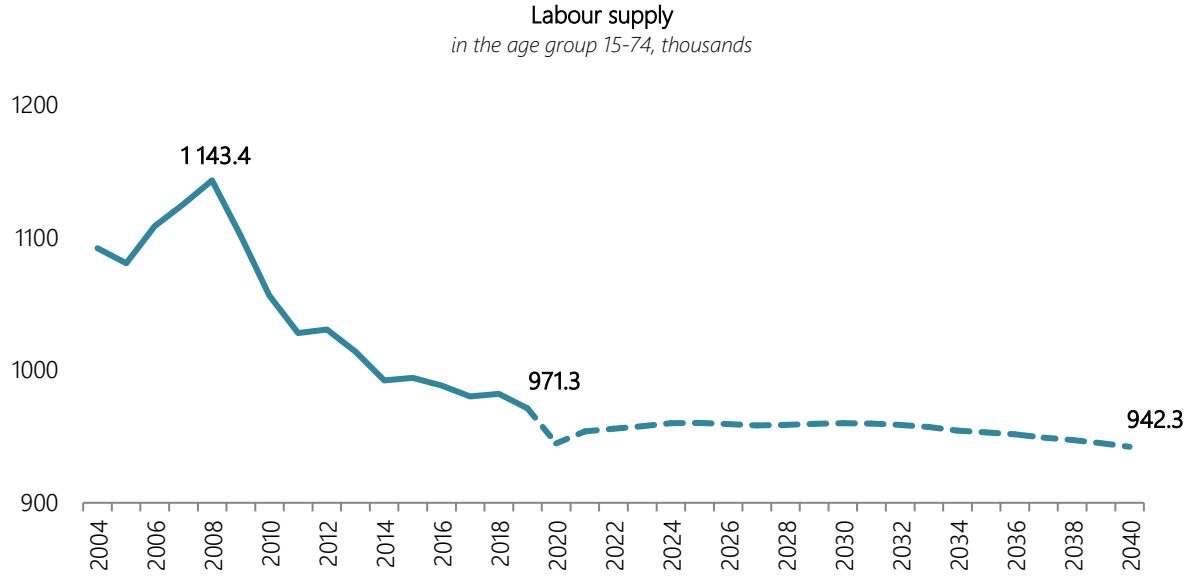
3.3.2. LABOUR SUPPLY PROJECTIONS

Based on economic growth and demographic scenarios, the MoE has developed labour force (economically active population) supply projections until 2040. It is expected that labour supply will continue decreasing in the medium and long term – by 2027 the number of economically active population will decrease by almost 13 thousand, but by 2040 – by approximately 29 thousand compared to 2019.

This reduction will be largely determined by negative demographic trends – a decline in working age population. The negative impact of base demographic trends on labour supply will be reduced by the increase in economic activity of the population.

Along with the labour demand falling under the influence of the Covid-19 restrictions and the reduction in economic activity, labour supply in general in 2020 is also likely to reduce more rapidly than in the previous years. Along with demographic trends, this will be determined by the decline in rate of participation (economic activity) of the population in the labour market, in particular in retirement and pre-retirement age groups. Overall, the reduction in population participation rates could reach 1.5 percentage points in 2020, while labour supply could fall by around 26.5 thousand compared to 2019.

Figure 3.9



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

Both the rate of participation of the population in the labour market and total labour supply might resume growth starting from 2021. At the same time, economic activity of the population could return to the level of 2019 levels not earlier than in 2022, but overall labour supply is likely to remain below the level of 2019 levels until 2040.

Overall, over the period from 2021 to 2027, labour supply will remain stable with a slight growth trend until 2026. 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

	2019	2027	2040
Total	**69.4**	**71.4**	**74.0**
15-24	36.3	40.4	49.1
25-34	87.7	92.3	94.3
35-44	90.0	94.9	97.2
45-54	87.3	92.1	94.1
55-64	72.1	77.3	80.7
65-74	20.7	24.1	25.9

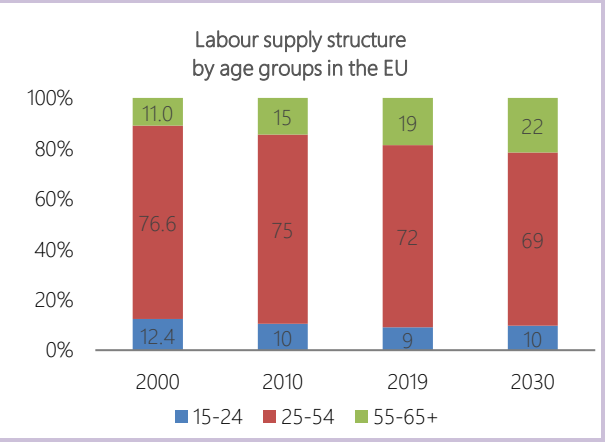
Source: CSB data until 2019, MoE forecasts for 2027 and 2040

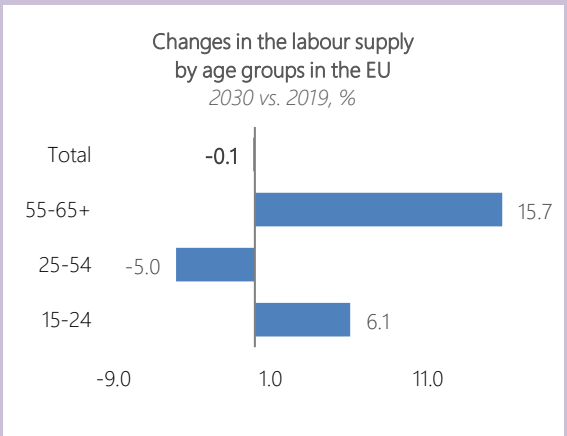
At the same time, in the period after 2030, the compensatory effects of increase of economic activity of the population on labour supply are likely to fade and demographic processes will prevail, so a downward trend in labour supply is expected over the period as a whole.

By 2040, the economic activity rate could generally rise by almost 5 percentage points compared to 2019 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, as well as among the population aged 65–69.

Labour force ageing trends will be observed across the entire EU

Ageing of labour force will increase tension also in the EU labour market. As the lifespan of the population increased, the share of elderly people in the labour market will grow. According to *Cedefop* projections, 1/5 of EU's labour force are expected to be over 55 by 2030 and labour supply will grow by 16% in 2030 compared to 2019. This can lead to a certain lack of skills in the labour market, which will also be largely linked to the ageing of skills and the mismatch with existing labour market requirements. Employers may have difficulty filling existing and new vacancies.





Source: *Cedefop*

Before 2027 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 35-44 affected by demographic changes and increase in economic activity.

Table 3.10

Changes in the economically active population by age groups

thousands

	Economically active population			Changes compared to 2019		Impact of changes in participation rate		Impact of changes in demography	
	2019	2027	2040	2027	2040	2027	2040	2027	2040
Total	**971.3**	**958.4**	**942.3**	**-13.0**	**-29.1**	**62.1**	**93.2**	**-75.1**	**-122.3**
15-24	62.2	76.0	87.9	13.8	25.7	8.1	16.7	5.7	9.0
25-34	223.0	164.4	190.3	-58.5	-32.7	8.1	13.2	-66.6	-45.9
35-44	227.0	251.1	174.2	24.1	-52.8	13.0	12.9	11.1	-65.6
45-54	225.3	223.8	239.2	-1.5	13.9	11.8	17.7	-13.3	-3.8
55-64	193.4	188.8	194.2	-4.6	0.8	13.3	20.4	-17.9	-19.6
65-74	40.5	54.2	56.5	13.7	16.1	7.8	12.5	5.9	3.6

Source: CSB data until 2019, MoE forecasts for 2027 and 2040

Taking into account that economic activity of the population is already close to its potential, further increase in economic activity is limited, therefore the impact of demographic trends on labour supply will still be felt after 2027.

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. Similarly, **labour supply with basic and lower education will increase in the medium term.** It should be noted that at present almost every tenth Latvian inhabitant aged 20-64 has a level of education not higher than basic education. About half of them (51% or 52 thousand) are aged 20 to 39, which makes more than 11% of all the inhabitants of this age. The differences in proportions of the population with basic and lower education level among age groups are mainly explained by a comparatively high number of young people, who did not continue studies after basic education in the second half of 1990s. Drop-out rates in the next education stages also have serious effect on the population flow. Therefore, taking into account the differences in economic activity rates of lower and higher age cohorts, increasingly more of them will enter the labour market in the years to come.

In the coming years, the same changes will determine a gradual restructuring of the labour force from secondary to higher qualification group. The share of labour supply with higher education is expected to increase by 8 percentage points by 2040, while the share of the population with vocational secondary and general secondary education will reduce by almost 11 percentage points. Thus, by 2040 labour supply with higher education might exceed 45% of total labour supply.

Table 3.11

Labour supply by academic disciplines

	thousands			structure, %			changes in thousands compared to 2017	
	2019	2027	2040	2019	2027	2040	2027	2040
Higher education, including:	365.7	382.8	430.9	37.7	39.9	45.7	17.0	65.2
Education	50.3	46.5	39.2	5.2	4.9	4.2	-3.7	-11.1
Humanities and arts	20.0	22.5	28.4	2.1	2.3	3.0	2.5	8.4
Social sciences, business and law	152.2	167.3	199.2	15.7	17.5	21.1	15.2	47.0
Life sciences, mathematics and computing	24.5	23.7	24.8	2.5	2.5	2.6	-0.8	0.3
Engineering, manufacturing and construction	60.0	55.9	55.6	6.2	5.8	5.9	-4.1	-4.5
Agriculture	7.6	7.1	7.5	0.8	0.7	0.8	-0.5	-0.1
Health and welfare	26.1	32.0	44.5	2.7	3.3	4.7	5.9	18.4
Services	18.4	22.1	28.4	1.9	2.3	3.0	3.7	9.9
Academic disciplines n.e.c.	6.7	5.7	3.5	0.7	0.6	0.4	-1.0	-3.2
Secondary education, including:	527.1	454.9	408.2	54.2	47.5	43.3	-72.1	-118.9
Vocational education and vocational secondary education:	287.7	229.6	183.2	29.6	24.0	19.4	-58.1	-104.6
Education	2.8	1.8	0.6	0.3	0.2	0.1	-1.0	-2.3
Humanities and arts	6.9	6.4	7.1	0.7	0.7	0.8	-0.6	0.1
Social sciences, business and law	31.1	23.8	19.7	3.2	2.5	2.1	-7.3	-11.4
Life sciences, mathematics and computing	4.2	4.3	6.3	0.4	0.4	0.7	0.1	2.1
Engineering, manufacturing and construction	149.6	115.6	81.8	15.4	12.1	8.7	-34.1	-67.8
Agriculture	12.7	10.3	8.0	1.3	1.1	0.9	-2.4	-4.7
Health and welfare	15.9	12.8	11.3	1.6	1.3	1.2	-3.1	-4.6
Services	58.3	50.6	46.6	6.0	5.3	4.9	-7.7	-11.7
Academic disciplines n.e.c.	6.1	4.0	1.8	0.6	0.4	0.2	-2.1	-4.3
General secondary education	239.3	225.3	225.0	24.6	23.5	23.9	-14.0	-14.3
Basic or lower education	78.6	120.7	103.2	8.1	12.6	11.0	42.1	24.6
Total	**971.3**	**958.4**	**942.3**	**100.0**	**100.0**	**100.0**	**-13.0**	**-29.1**

Source: CSB data until 2019, MoE forecasts for 2027 and 2040

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 almost 3/4 of the total labour force increase with higher education in 2040.

At the same time, a reduction in labour supply is expected in individual academic disciplines 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 academic disciplines like education, engineering, manufacturing and construction, as well as agriculture. It should be noted that in 2019 more than half of the total labour supply with corresponding education was over 45 years old – in education (62%), engineering, manufacturing and construction (56%) and agriculture (53%), therefore, most of them will leave the labour market in the next 10-20 years. At the same time, the number of students enrolled to the relevant academic disciplines has reduced in the last 2 years, except for the academic discipline of agriculture. The decline is observed both in absolute terms and in the structure of enrolled students.

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 30% 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 20% or 58 thousand by 2027 and by almost 105 thousand or 36% by 2040. A more moderate labour supply reduction is expected in general secondary education – about 14 thousand or 6% by 2027 and a slight increase after 2027 and later stabilisation at 225 thousand.

Labour supply reduction with vocational secondary education is expected almost in all academic disciplines with the exception of life sciences and computing. The most considerable reduction is expected in engineering, manufacturing and construction, which currently account for more than half (52%) of total labour supply with vocational education. It should be noted that about 60% of economically active population with education in this academic discipline is aged above 45 years, therefore, almost 90 thousand of labour force with relevant qualification will leave the labour market in the next 20 year at a rate of 4500 specialists per year on average. At the same time, the relevant academic discipline 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.

This trend confirms that the number of students in vocational education is still insufficient to reduce the negative effect of ageing labour force 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 considerably. It should be noted that adult education measures play a significant role in increasing the flow of students in vocational education providing the population aged 25 years or more with more opportunity to upskill, restore their skills and reskill.

3.3.3. MATCHING OF THE LABOUR DEMAND TO THE LABOUR SUPPLY

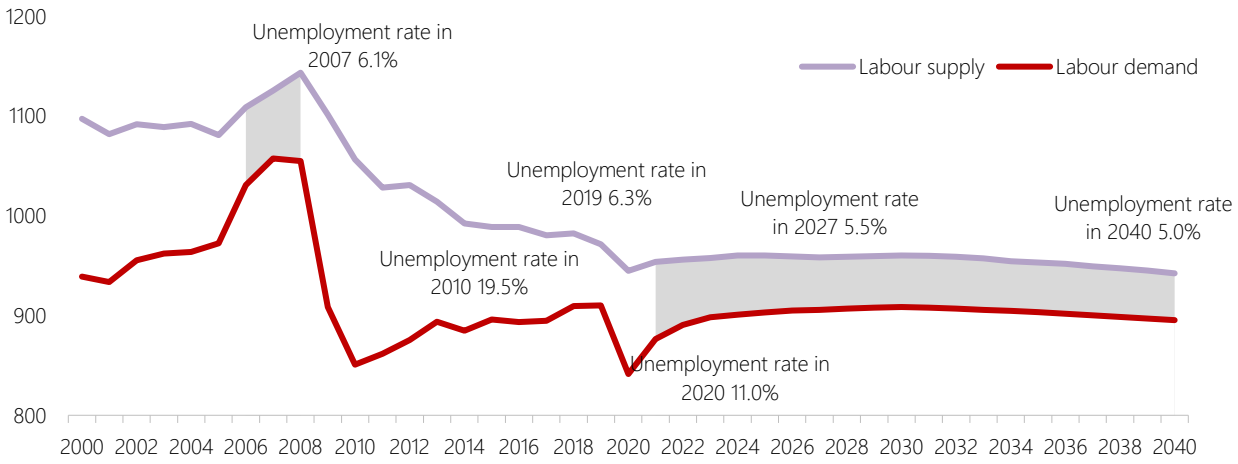
In the medium term, the situation in the labour market will become even more complicated, which, on the one hand, will be determined by growing labour demand (in terms of new jobs and replacement demand), which is necessary to maintain economic growth, and, on the other hand, falling labour supply under the influence of demographic trends. Thus, insufficiency of labour force in different sectors of national economy will become even more distinct in the next years. Also, the shortage of labour force will be intensified by the mismatch between requested and proposed skills in the labour market, as well as regional imbalances in the labour market.

Overall, by 2027 free labour force reserves will reduce to 53 thousand (of current 61 thousand), but by 2040 this difference might reduce to 47 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.

Figure 3.10

Matching of labour demand to labour supply

thousands and %



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

Since economic growth in the following years will mainly be based on productivity increase, a minor overall labour demand drop is expected by 2027 – the number of the employed might decrease by 0.5% or 4.5 thousand compared to 2019. At the same time, labour demand might reduce more rapidly 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 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).

Unemployment in 2020 is expected to increase due to the pandemic caused by Covid-19 and then reduce little by little in the next years approaching its natural rate. By 2027, unemployment might slide to the level of 5.5%, while the number of job seekers to 53 thousand. After 2027 unemployment indicators will stabilise at 5-6%, 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

	2019	2027	2040
Population in private households, at the beginning of the year, thousands	1399.5	1342.8	1272.6
Number of the employed population, thousands	910.0	905.6	895.4
changes in the employed population, thousands compared to 2019	–	-4.5	-14.6
changes in the employed population, % compared to 2019	–	-0.5	-1.6
Economically active population, thousands	971.3	958.4	942.3
Number of job seekers, thousands	61.3	52.8	46.8
Employment rate, the employed to the total population	65.0	67.4	70.4
Participation rate, economically active population to the total population	69.4	71.4	74.0
Unemployment rate, percentage of the unemployed (job seekers) in economically active population	6.3	5.5	5.0

Source: CSB data until 2019, MoE forecasts for 2027 and 2040

Correspondence by academic disciplines

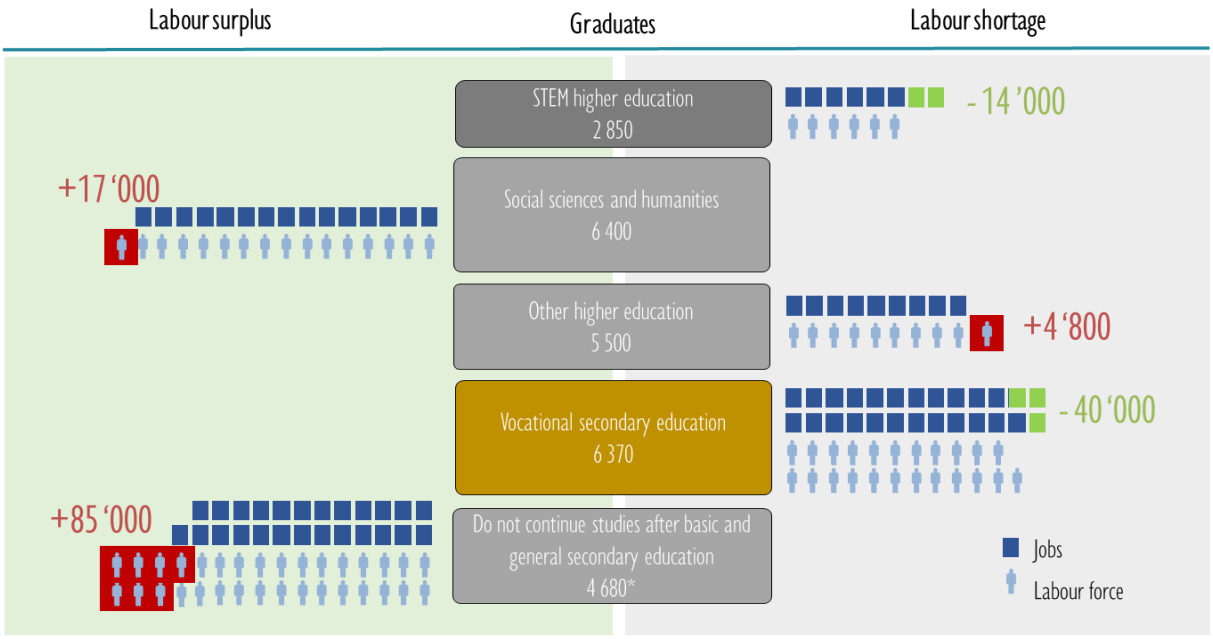
By 2040 labour demand will continue shifting towards the demand for specialists with higher education. Similar trends will be observed in supply as well. At the same time, the ratio of labour demand and supply will not be equal in all segments of education.

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 2027 the gap between labour demand and supply with vocational education might increase to 37 thousand specialists. Therefore, part of medium qualification jobs might need to attracted 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 3.11

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

difference between supply and demand in 2027, number of graduates in 2019



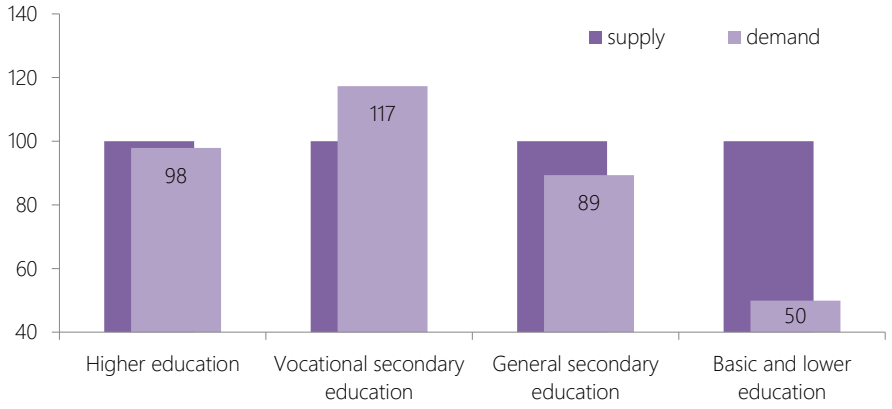
Source: CSB data for 2019, MoE forecasts for 2027

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 exceed 79 thousands by 2027 (19 thousand with general secondary education and 60 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 2027 half of these people might have problems in finding relevant job and get included in the labour market.

Figure 3.12

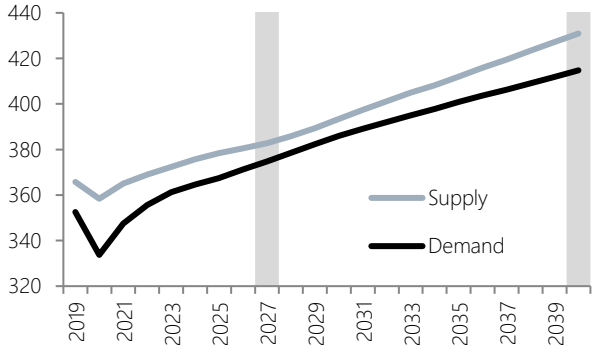
Sufficiency of labour force by education levels

supply vs. demand in 2027, % supply vs. demand



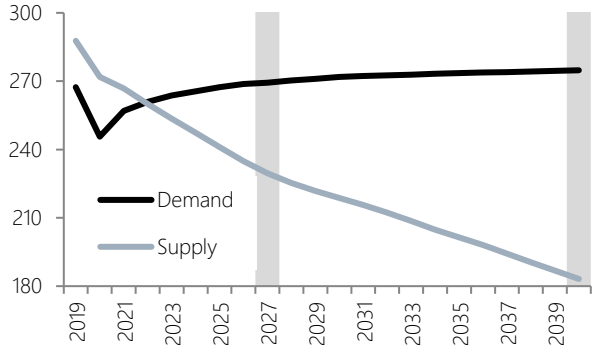
Higher education

thsd



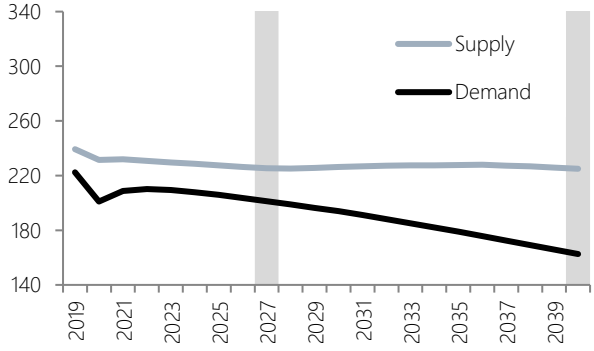
Vocational secondary education

thsd



General secondary education

thsd



Basic education

thsd

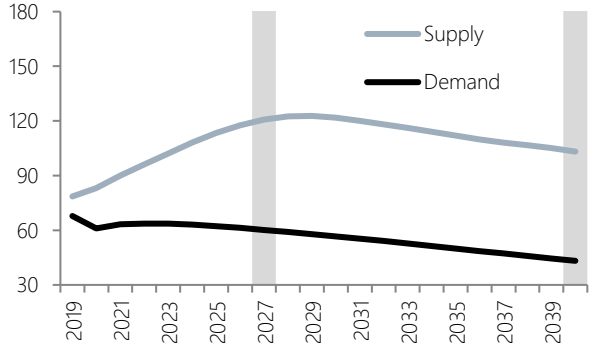
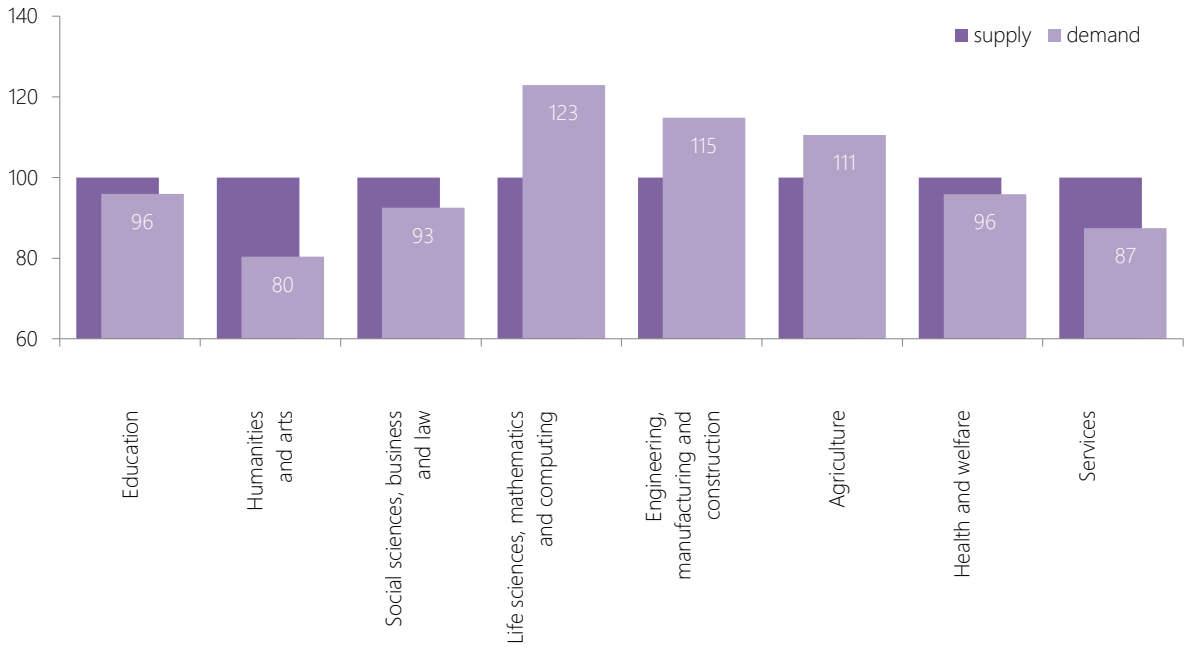


Figure 3.13

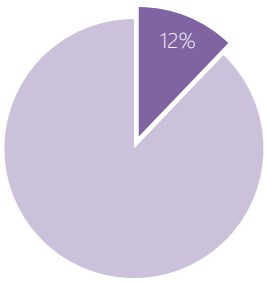
Forecasts of the labour supply and demand with higher education by academic disciplines

%, demand vs. supply in 2027

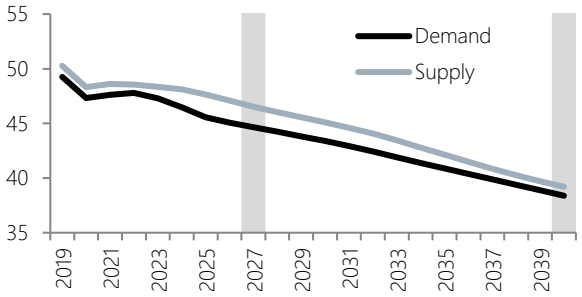


Education

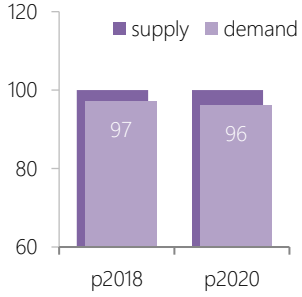
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

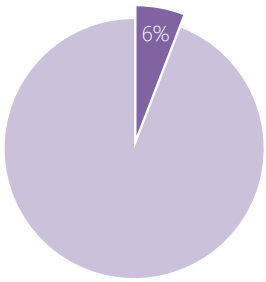


Mismatch
demand vs. supply,
%, in 2027

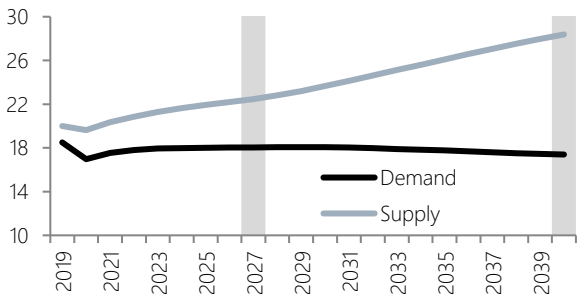


Humanities and arts

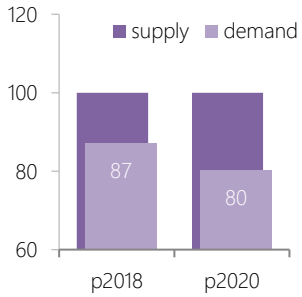
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

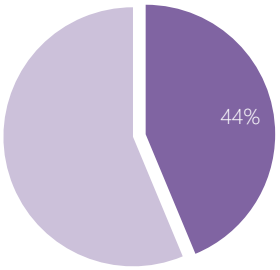


Mismatch
demand vs. supply,
%, in 2027

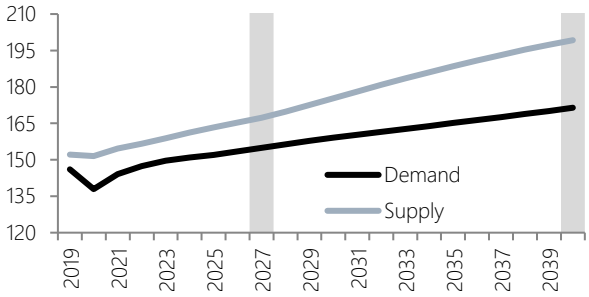


Social sciences, business and law

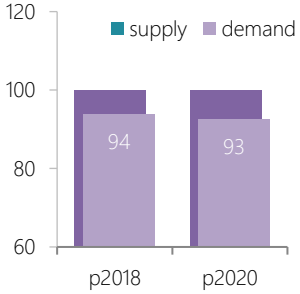
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

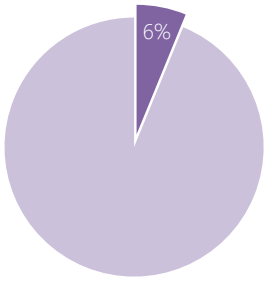


Mismatch
demand vs. supply,
%, in 2027

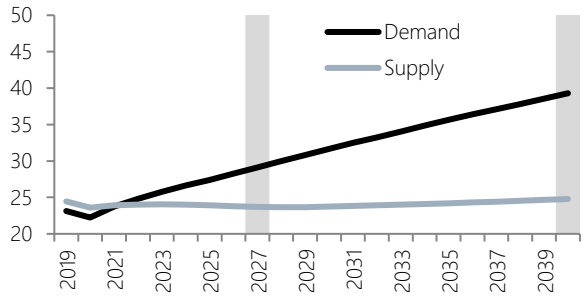


Life sciences, mathematics and computing

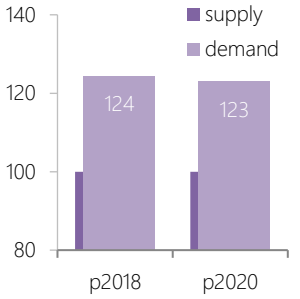
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

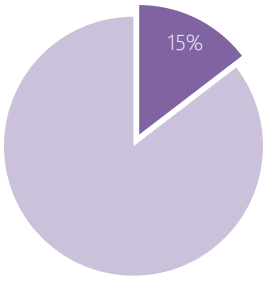


Mismatch
demand vs. supply,
%, in 2027

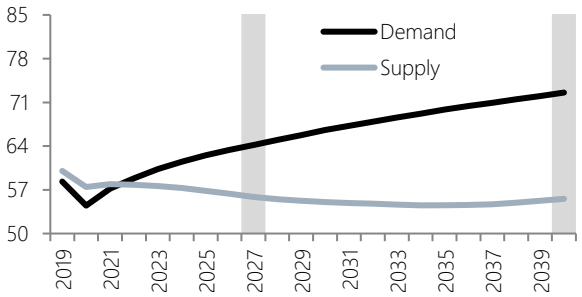


Engineering, manufacturing and construction

Supply structure
%, in 2027



Dynamics of the supply and demand
thousands



Mismatch
demand vs. supply,
%, in 2027

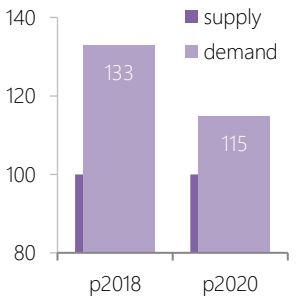


Figure 3.13 cont.

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 2027, the shortage of specialists with relevant qualification might reach 14 thousands, mainly in areas like architecture and building, computing, physical sciences and engineering.

Despite the fact that less specialists with STEM education than the labour market will need in the following years are prepared, the situation has still clearly improved compared to MoE labour market forecasts of 2018, when shortage of almost 21 thousand specialists with STEM education was envisaged by 2027. It should be noted that the share of STEM graduates among all the graduates in the period from 2008 to 2019 has increased from 13% to 20%, which has also generally increased the supply of young specialists in the labour market.

In education, labour demand and supply in the forecasts for 2018 was close to a balance. Reviewed forecasts evidence that the situation has not significantly improved in this group and reproduction of labour force is insufficient and shortage of labour force may form up until 2027. In the academic discipline of agriculture the number of graduates 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 has generally become more balanced in health and social care education, where labour demand and supply will generally be close to a balance in the medium and long term. It should be noted that the number of graduates in health and social care education has increased by more than 1/3 over the last 10 years and has quintupled since 2000.

In relative terms, the largest surplus of labour force with higher education is projected in humanities and services academic disciplines. It should be noted that the number of students enrolled in these education programmes has grown by more than 6% since 2017.

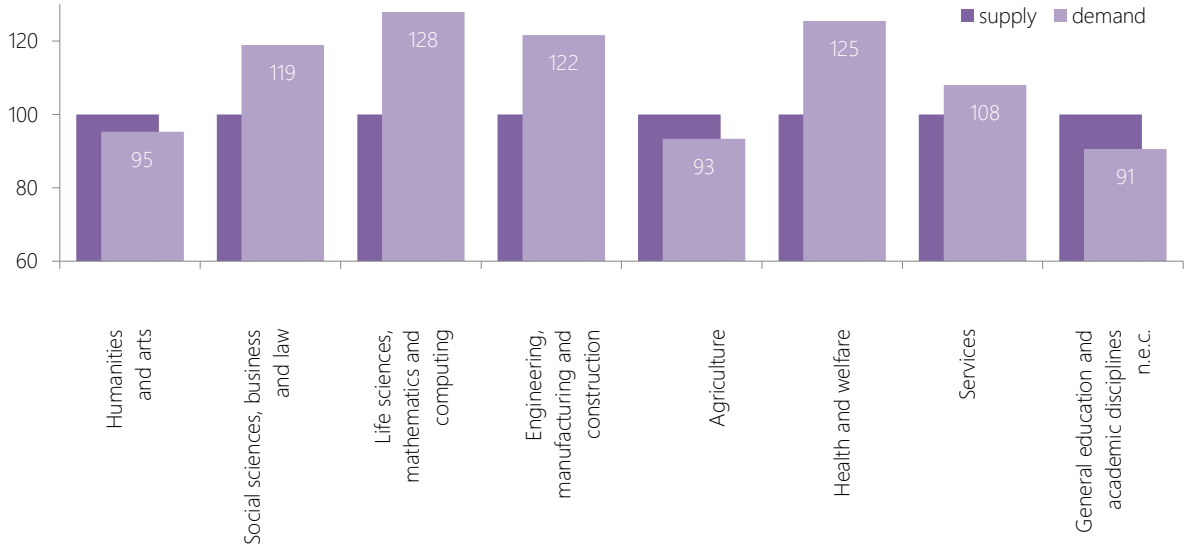
In absolute terms, the biggest surplus is still expected in labour force with education in social sciences and business, and the surplus has generally increased – by approximately 3 thousand specialists in 2027 compared to the forecast of 2018. It should be noted that enrolment in social and commercial education programmes has been among the highest in the last 2 years, accounting for more than half of the total number of students enrolled in higher education institutions. 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 academic discipline “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 2019 more than about 62% of the total labour supply with higher education in academic discipline “Education” was over 45 years old, therefore, most of them will leave the labour market in the next 10-20 years.

Figure 3.14

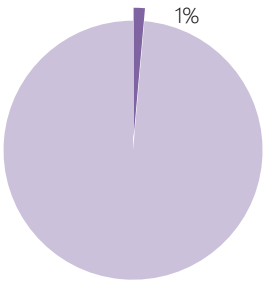
Forecasts of the labour supply and demand with secondary education by academic disciplines

%, demand vs. supply in 2027

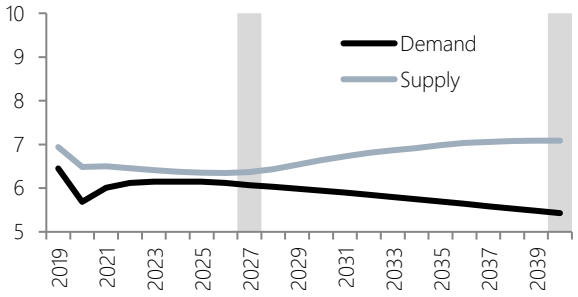


Humanities and arts

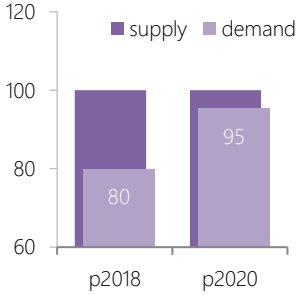
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

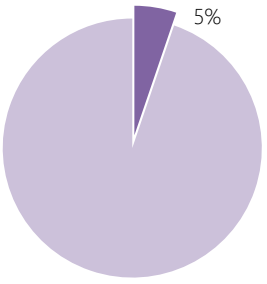


Mismatch
demand vs. supply,
%, in 2027

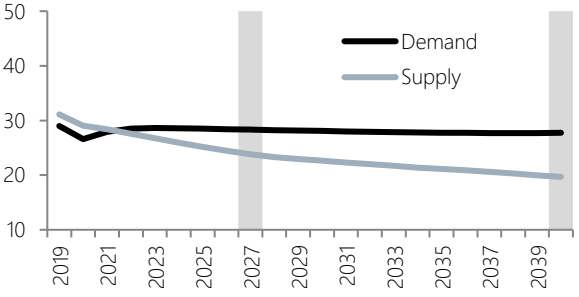


Social sciences, business and law

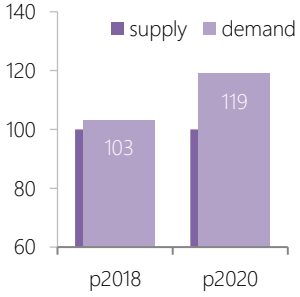
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

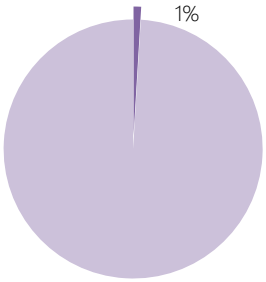


Mismatch
demand vs. supply,
%, in 2027

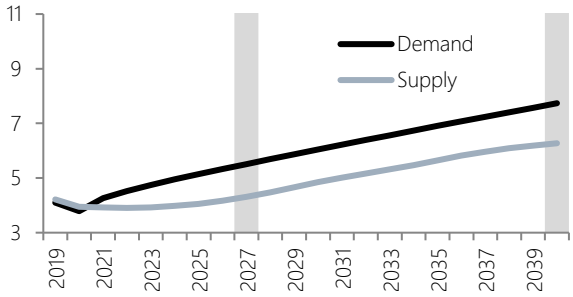


Life sciences, mathematics and computing

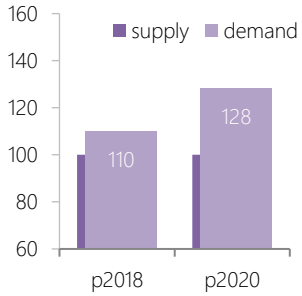
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

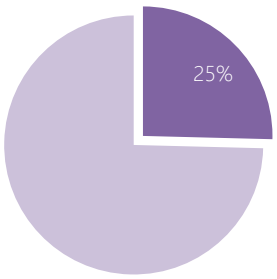


Mismatch
demand vs. supply,
%, in 2027

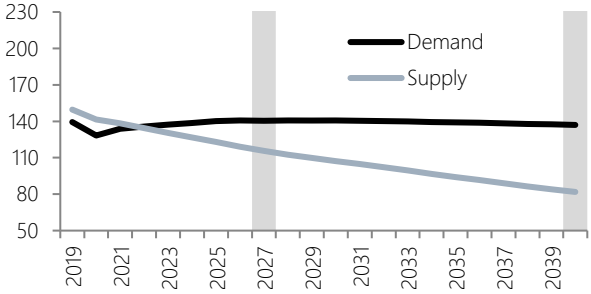


Engineering, manufacturing and construction

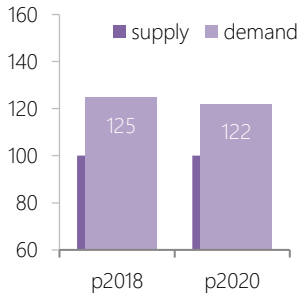
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

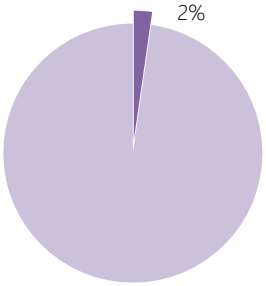


Mismatch
demand vs. supply,
%, in 2027

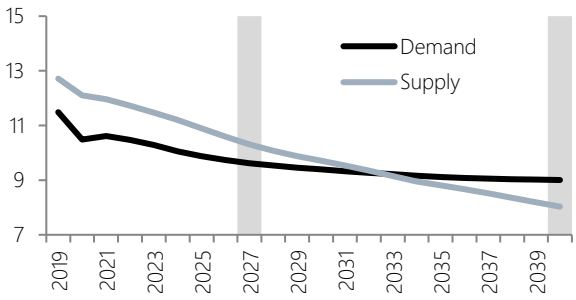


Agriculture

Supply structure
%, in 2027



Dynamics of the supply and demand
thousands



Mismatch
demand vs. supply,
%, in 2027

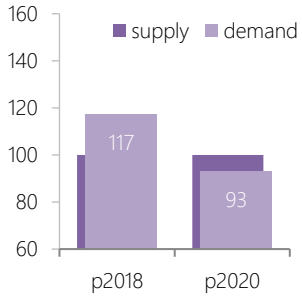
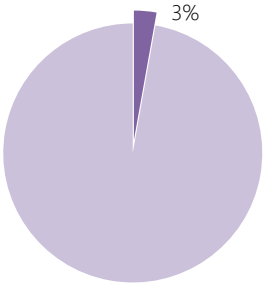


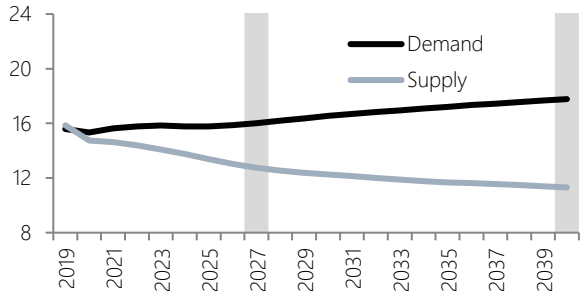
Figure 3.14 cont.

Health and welfare

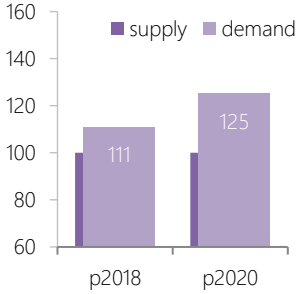
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

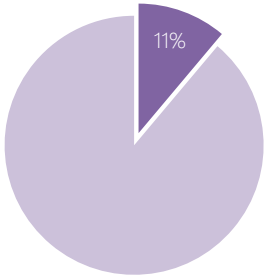


Mismatch
demand vs. supply,
%, in 2027

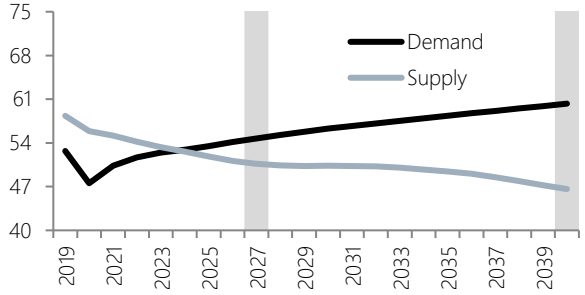


Services

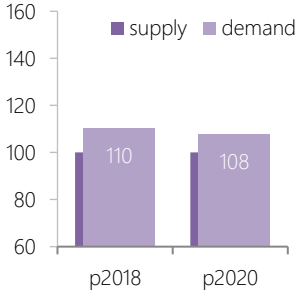
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands

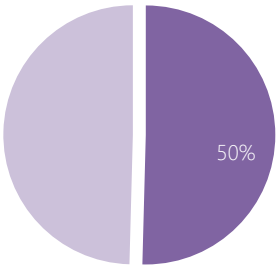


Mismatch
demand vs. supply,
%, in 2027

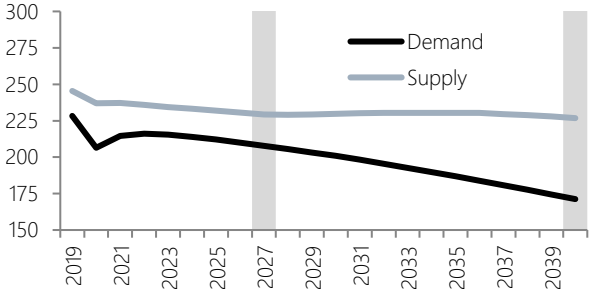


General education and academic disciplines n.e.c.

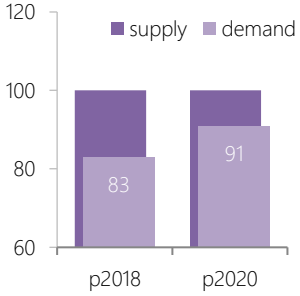
Supply structure
%, in 2027



Dynamics of the supply and demand
thousands



Mismatch
demand vs. supply,
%, in 2027



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

Insufficient labour supply **with vocational education** is expected almost in all academic disciplines. The biggest shortage is expected in engineering, manufacturing and construction – mainly in areas like machine building, mechanics and metal working, food and textiles production technologies and products manufacturing, as well as woodworking technologies and products manufacturing. By 2027 shortage of medium qualification professionals in engineering, manufacturing and construction might increase to about 25 thousand professionals. In relative

terms, shortage of specialists with education in engineering and manufacturing has reduced compared to the labour market forecasts of 2018, however, 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 9 and 8 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. Similarly to engineering, the share of graduates in these academic disciplines in the previous years reduced as well. 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 academic disciplines

If the current structure of labour force preparation is retained

	2027			2040		
	demand thousands	supply thousands	matching %	demand thousands	supply thousands	matching %
Higher education, including:	374.8	382.8	98	414.8	430.9	96
Education	44.6	46.5	96	38.4	39.2	98
Humanities and arts	18.0	22.5	80	17.4	28.4	61
Social sciences, business and law	154.9	167.3	93	171.4	199.2	86
Life sciences, mathematics and computing	29.1	23.7	123	39.3	24.8	159
Engineering, manufacturing and construction	64.2	55.9	115	72.6	55.6	131
Agriculture	7.8	7.1	111	8.0	7.5	107
Health and welfare	30.7	32.0	96	40.9	44.5	92
Services	19.3	22.1	87	21.5	28.4	76
Academic disciplines n.e.c.	6.1	5.7	108	5.3	3.5	152
Secondary education, including:	470.6	454.9	103	437.4	408.2	107
Vocational secondary education, including:	262.9	225.6	117	266.2	181.4	150
Education	2.1	1.8	117	1.2	0.6	211
Humanities and arts	6.1	6.4	95	5.4	7.1	77
Social sciences, business and law	28.3	23.8	119	27.7	19.7	141
Life sciences, mathematics and computing	5.5	4.3	128	7.7	6.3	123
Engineering, manufacturing and construction	140.6	115.6	122	137.0	81.8	167
Agriculture	9.6	10.3	93	9.0	8.0	112
Health and welfare	16.0	12.8	125	17.8	11.3	157
Services	54.7	50.6	108	60.3	46.6	129
General secondary education	207.7	229.4	91	171.2	226.8	76
Basic and lower education	60.2	120.7	50	43.2	103.2	42
Total	**905.5**	**958.4**	**94**	**895.4**	**942.3**	**95**

Source: MoE forecasts

At the same time, if forecasts of 2018 estimated shortage of labour force in agriculture, then the latest forecasts evidence that this discipline may have a surplus of labour force by 2032, while the difference between demand and supply will gradually reduce and shortage of labour force due to ageing is expected after 2033. 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

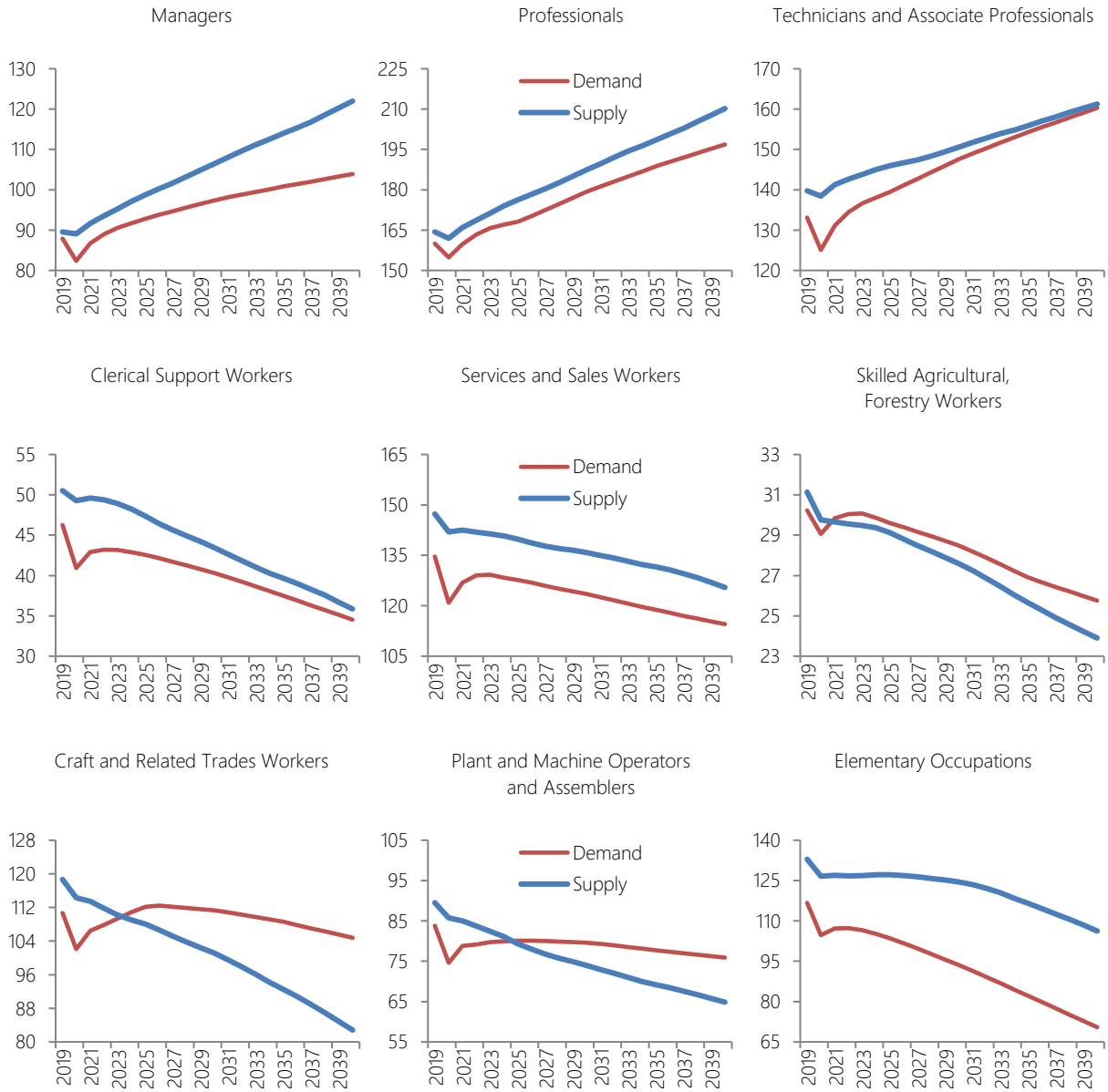
In the medium and long term, there will be shortage of labour force among medium qualification employees in occupations like food processing and woodworking workers, building workers, drivers and mobile plant operators, stationary plant and machine operators, electrical and electronic trades workers. 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 3.15

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, life science technicians and related associate professionals, architects, planners, surveyors and designers, as well as ship and aircraft controllers and technicians), among health professionals (medical doctors and paramedical practitioners, nursing and midwifery associate professionals, paramedical practitioners), as well as among managers of different levels (ICT, construction, manufacturing, transport services, hospitality and catering services, as well as trade).

Mismatches between skill demand and supply in Europe*

Mismatches between skill demand and supply in the EU keep growing. This is confirmed by unemployment, recruitment difficulties, skills ageing and failure to use own potential. *Cedefop* survey[1] has revealed that 29% of EU adults are subject to some qualification mismatches – they are either overqualified or underqualified for the labour market.

The labour force is becoming more and more educated and its potential is not used – the risk of overqualification. Therefore it will be important to create new knowledge-intensive jobs to fully realize the high level skills, because highly qualified and trained labour force is considered to be one of the most important factors ensuring the competitiveness of Europe. Labour supply with high and medium qualification will exceed the demand, and a surplus will be formed. This will increase imbalance even more.

Part of labour force has lower skills than necessary in the labour market. Labour force with low qualification will drop most rapidly. Labour force with medium qualification will remain almost unchanged and in the medium term will account for most (almost 50%) of the labour force. Although imbalances will form in the low qualification category, it should still be taken into account that 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. According to the *Cedefop* survey, the share of the employed, who had lower skills than needed, when they started to work, is about 22% in the EU. The Baltic countries have the biggest mismatch here.

The skills supply will be directly affected by demographic changes. Ageing of labour force also has a growing impact on labour force. The life expectancy of the population in the EU is growing and is mainly determined by the improvement of the living standard and the development of medicine. In the medium term, the supply of labour force aged above 55 will reach 1/5 of total labour supply. Taking into account low birth rate, significant changes in the structure of the society, which will affect economy, social security, the health care system, the labour market and many other areas, are already expected.

The involvement of career consultants is important to reduce the mismatch between skills supply and demand and stimulate young people to choose the right career. The development and popularisation of work-based learning policy also plays a big role.

* 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.

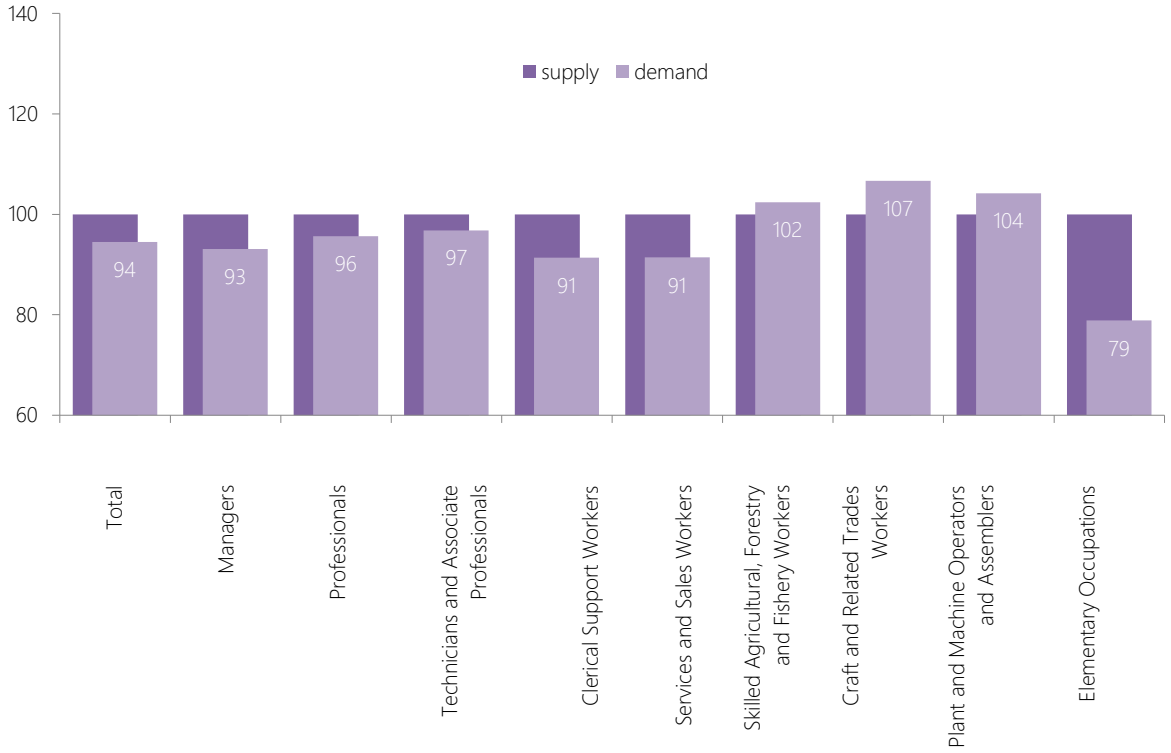
If the current structure and volume of labour force is retained, in the long term disproportions in the aforementioned medium qualification occupations (plant and machine operators, as well as craft and related trades workers) will deepen and the supply in craft and related trades workers occupations 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.

[1] *Cedefop's European skill and job survey (2014)*

Figure 3.16

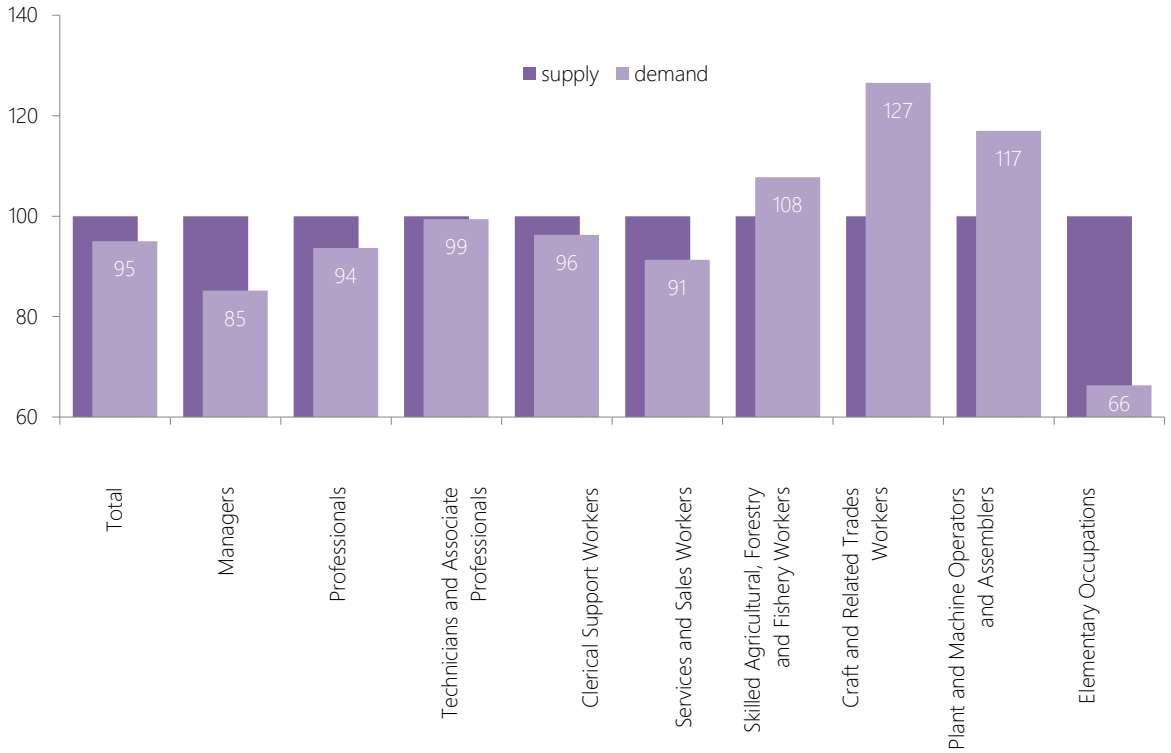
Ratio of the labour demand to labour supply by occupational groups

2027, demand vs. supply, %



Ratio of the labour demand to labour supply by occupational groups

2040, demand vs. supply, %



Source: MoE forecasts

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. The employment rate of the population as well as the participation of the population in the labour market have reached historic highs. The active labour market policy measures (ALMP) implemented in the previous years have fostered the increase of economic activity of the population, which has generally reduced the impact of negative demographic trends on labour supply and sufficiency of labour force. Similarly, long-term trends generally show a more balanced structure of education supply, which gradually reflected also in the labour market. At the same time, despite improvements in education supply, many structural problems remain relevant – imbalances between STEM and social sciences and humanities, 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, etc. 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.

In order 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, the Employment Board composed of three ministers (ministers of economics, education and science and welfare) was established in 2016. 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). The Board has put forward as its urgent task the creation of an effective, sustainable and comprehensive adult education system, which would be able to quickly adapt to labour market needs, thus reducing imbalances in the labour market within a relatively short time.

4.1. DIRECTIONS FOR IMPROVEMENT OF THE EDUCATION SUPPLY

Latest measures in basic and general education

Introduction of competence-based curriculum. The gradual transition to improved curriculum and the change in teaching approach with a view to developing the knowledge, skills and attitudes needed for life in the 21st century started in academic year 2019/2020 at the stage of pre-primary education. Forms 1, 4, 7 and 10 will start learning the improved curriculum on 1 September 2020, forms 2, 5, 8 and 11 – on 1 September 2021, and forms 3, 6, 9 and 12 – on 1 September 2022. State examinations for graduates of forms 9 and 12 according to the new curriculum will be organised in academic year 2022/2023. At the same time, in academic year 2017/2018 approbation of the curriculum of the new competence-based approach started in 100 general education institutions at the stage of basic and general education.

Sample programmes for basic education study subjects, including STEM subjects, were designed and published and publishing of sample programmes of study subjects for secondary education continued. In order to strengthen knowledge of pupils in exact sciences and promote interest in technologies and engineering sciences, in the field of technology studies, pupils will learn the skills to create products, design solutions and software for different target audiences and their needs, organise the resources needed to develop the solution and plan the implementation of the solution. In the field of technology, teachers are offered professional improvement training to prepare for the implementation of the new curriculum. Diagnostic tests in the field of science and mathematics have been created. In 2020, the development of state examinations will start in line with the improved curriculum, including in physics, chemistry and biology.

Adjustment of the network of general education institutions. In order to provide each pupil with a quality education regardless of his or her place of residence, work is ongoing on the arrangement of the network of general education institutions. In May 2019, CM studied the initial offer for the arrangement of the network of general education institutions proposing to determine the minimum number of pupils in accordance with the territorial division of Latvia, taking into account the population of the specific territory, as well as taking into account the administrative territorial reform planned in 2021. The offer is based on the territorial breakdown of

Latvia into 4 blocks of regions with different minimum pupil count criteria for each of them. In January 2020, CM will review the evaluation of the network of general secondary education institutions with updated minimum pupil count criteria intended for general secondary education level. In 2020, a specific offer for the arrangement of the network of general secondary education institution will be prepared. It is intended to determine a minimum number of pupils at the stage of secondary education, which would take effect from 1 September 2021.

Modernisation of infrastructure of general education institutions. By attracting ERDF funds and considerable municipality co-funding to general education institutions, it is planned to create a modern, ergonomic learning environment meeting sanitary requirements supplemented with necessary information and communication technology equipment and solutions. Projects are implemented in municipalities of national and regional development centres, individual municipalities of the Pierīga Region, as well as in the Viļaka Municipality. The construction of new buildings of education institutions is intended in the municipalities, where the number of pupils increases and the existing infrastructure is insufficient. It is expected that at least 100 general education establishments will be fully modernized by 2023, and 20-25% of students will have access to a fully modernized general education learning environment. By May 2020, 39 education institutions have been modernised.

Measures to reduce the number of early school leavers among children and youths. Using support from EU funds, there are intentions to create a sustainable and effective prevention system, which would involve the local government, the school, teachers and parents to identify in a timely manner the children and youths at risk of school leaving and provide them with customised support. By the end of 2019, 118 cooperation agreements have been concluded, involving 523 education institutions (including 33 state vocational education institutions), and support has been provided to more than 20 thousand pupils. Mainly advisory support and consultations for learning education content was provided.

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 2016. Educational institutions involved in the project shall ensure the work of an teacher-career adviser and career support measures for students. In school year 2019/2020, 76 municipalities and their associations and 17 VECC were involved in the project, 369 teachers-career advisers were employed and career guidance was received by 150.4 thousand learners in 407 general and vocational education institutions. In school year 2020/2021, career education will be included in the improved curriculum. In addition, activities are intended to educate parents in career guidance matters.

Latest measures in vocational secondary education

The vocational education content reform continues[1] with support of EU funds ensuring (1) a transition from subject-based vocational education curriculum to result-based learning, as well as introducing (2) a modular approach in implementation of vocational education programmes.

The ESF-supported project *Establishment of Sectoral Qualifications System and Enhancement of Efficiency and Quality of Vocational Education* has been implemented since the end of 2016 aiming to develop vocational education curriculum in line with the changing labour market requirements and ensure compliance of vocational education with European Qualifications Framework. The project improves the sectoral qualification system and aims to prepare descriptions, to develop and improve 202 professional standards and professional qualification requirements, develop and introduce 185 modular vocational education programmes and develop content of professional qualification exams for 206 professional qualifications, as well as develop relevant teaching aids and methodological materials.

15 sectoral qualification structures have been developed, as well as 162 professional standards and professional qualification requirements planned within the project have been drafted and coordinated at PINTSA[2] by May 2020.

[1] In November 2015, the first stage of the reform ended, which focused on the development of cooperation mechanisms and drafting of methodologies, as well as study of the needs of economic sectors. At this stage, comprehensive studies of 14 sectors of the national economy are conducted, 12 sectoral expert councils have been created, 61 professional standards and 19 qualification requirements (80 in total) have been drafted or improved, 56 modular vocational education programmes and content of professional qualification exams for 32 professional qualifications have been developed.

[2] Tripartite Sub-council for Co-operation in Vocational Education and Employment (part of the institutional system of the National Tripartite Cooperation Council).

Work on the development of vocational qualification exam content for 79 professional qualifications continues. Work on the development of vocational qualification exam content for 53 professional qualifications has completed. The development of modular vocational education programmes continues – 106 have been completed and 55 are in active development.

The approbation and implementation of the developed modular vocational education programmes continues. 28 vocational education institutions have involved in the implementation of modular vocational education programmes. Modular programmes in logistics, construction, IT, tourism and hospitality, beauty, electrical engineering, mechanical engineering and similar sectors were in demand among the students the most.

Eliminating the contradiction between teaching general subjects in the general secondary or vocational secondary education, as well as putting an emphasis on teaching exact sciences in vocational education programmes, in 2016 a technical general subject direction was implemented in vocational education programmes with technically-oriented attainable results.

A legal framework for mandatory and standardised monitoring of graduates is expected to be introduced in vocational education by the end of 2020 (the *Vocational Education Law* was amended). In 2019, the experiences of other countries were studied and work for identification of the data needed to monitor future progress of graduates started.

Since the end of 2016, over 8 500 persons in vocational education have involved in the ESF project *Efficient management of vocational education establishments and raising the staff competence*. Principals, deputies, other representatives of administration and the convent of vocational education institutions have professional improvement in different courses. Teachers, internship and WB learning supervisors have received support for professional improvement of general and professional skills. 202 professional qualification examination and accreditation experts have been prepared. 606 participants participated in traineeship measures in Latvia and EU Member States, 74 teachers from 33 vocational education institutions mastered the study programme for teachers-mentors.

The introduction of work-based learning (hereinafter WB learning) has been one of priorities, which involved qualitative reforms in the system of vocational education. A proper legal framework and the operation of institutional mechanisms for coordination and implementation of WB learning has been provided, as well as the Guidelines for Organization and Implementation of WB Learning have been prepared, which include the core principles and methodical support for organisation and implementation of learning. In order to ensure the quality of WB learning, trainings for WB learning and internship supervisors from schools and companies were organised.

The ESF project *Increasing the Number of Qualified Students in Vocational Education Institutions after their Participation in Work-Based Learning and Teaching Practice in an Enterprise*, which was started in 2017 (implemented by the Employers' Confederation of Latvia (ECL)) and aims to promote the implementation of WB learning, continues. Within this project, support is expected to be provided for engaging 3 150 students in WB learning and 11 025 students in apprenticeship in an enterprise. By the end of 2019, 2 103 students were involved in WB learning in 469 enterprises.

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 2010 to 21 in 2019, but the number secondary vocational education institutions under MoC reduced from 14 institutions in 2014 to 10 institutions. In order to further modernise the infrastructure of vocational education institutions and 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.

Modernisation of infrastructure of 24 vocational education institutions continues with ERDF support, which is intended for purchasing of equipment and devices, modernisation of 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. Overall, it is planned to provide support to 25 vocational education institutions, in particular VECC, by 2023.

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 and the Agricultural Organization Cooperation Council (AOCC) 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.

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 18 February 2020, CM supported the MoES's conceptual report, which provides for complex structural solutions for international competitiveness of the sector of higher education and science focusing on governance, financing and human resources. On 12 May 2020, CM supported respective amendments to the *Law on Higher Education Institutions* providing a new typology of institutions of higher education for the purposes of stimulating the establishment of strong, research-based, high-quality education system, promoting consolidation and research sharing solutions, incl. also providing for a procedure approved by CM for monitoring of fulfilment of criteria. The amendments also provide for the involvement of external experts in governance of higher education institutions – the introduction of a council determining the competence of the council and the procedures for the selection and appointment of council members in higher education institutions established by the state, as well as changing the norms which affect the procedures for the selection and evaluation of candidates for the position of a rector and the procedures for the appointment and removal of a rector. It is expected that CM will determine the procedures for selecting and nominating candidates for the position of members of the council of higher education institutions established by the state, and higher education institutions established by the state will develop and, after coordination with MoES and sectoral ministries, submit to MoES for approval by CM the internal governance model of the higher education institution. MoES will separately evaluate the role of colleges and their place in the education system in cooperation with sectoral ministries, the Latvian Association of Colleges, organisations of employers and other social and cooperation partners.

Introduction of a new model of doctoral studies. In June 2020, MoES intends to submit for review to CM a conceptual report, which intends to introduce research-based, competitive and innovation-oriented doctoral studies by 2026. The new model of doctoral studies will provide that mastering of a doctoral programme, the development of a doctoral thesis, as well as doctoral student's theoretical research and artistic creation paper and the implementation of the process resulting in obtaining a doctoral degree, are a single process. The solution contained in the conceptual report sets out new principles for the financing of doctoral programmes, which will strengthen closer links between doctoral programmes and research, a new process of obtaining a doctoral degree, as well as other preconditions for the implementation of doctoral study programmes, including research capacity of higher education institutions, establishment of doctoral schools, compliance of doctoral study programmes with Salzburg recommendations.

The licensing and accreditation of new doctoral study programmes will be separate from the evaluation of other study programmes. Licensing will be carried out as part of a doctoral school already starting from 2022, while doctoral study programmes will be evaluated from 2026 by accrediting the doctoral school and taking into account the results of the international evaluation of the activities of the scientific institutions planned in 2025 for the higher education institution and the scientific institution – its cooperation partner in the implementation of the doctoral study programme. This will ensure that the research environment of the doctoral study programme and, in the case of the professional doctoral study programme, its artistic creation environment are properly evaluated.

The new funding model foresees that during doctoral studies doctoral students will take up the position of unelected research staff and receive a doctoral salary of 12 thousand EUR per year (including taxes and social guarantees) in a higher education institution or in a cooperation partner's scientific institution, where the development of their doctoral thesis or their doctoral theoretical research in arts and artistic creation paper will be carried out, thereby contributing to obtaining a doctoral degree at an optimal time (three to four years) and at the same time reducing drop-outs of doctoral students. During the transitional period of the introduction of the new model of doctoral studies (until the end of 2023), ESF support aims to cover doctoral student's costs, as well

as research and mobility costs. The granting of state budget funding to higher education institutions for the implementation of doctoral study programmes will take into account the number of holders of a doctoral degree and doctoral students of the higher education institution, as well as the research or artistic creation performance of the higher education institution. The introduction of the new funding model for doctoral studies will at least initially be implemented within the limits of the allocated state budget.

The quality of doctoral theses, as well as doctoral student's theoretical research in arts and artistic creation paper will come from the quality of doctoral studies, which will be significantly increased at all stages of its implementation: mastering of the doctoral study programme, the development of a research and obtaining a doctoral degree. Assessment of doctoral theses, as well as doctoral student's theoretical research in arts and artistic creation paper will further be ensured by a doctoral council for each paper. In professional doctoral study programmes in arts, the doctoral student's theoretical research in arts and artistic creation paper will be assessed and the doctoral degree in arts will be awarded by a commission established by the higher education institution (for each field of artistic activity).

Doctoral study programmes for all higher education institutions will have to be organised in a centralised way – in doctoral schools. Doctoral schools will administer the process of granting a doctoral degree, allocation of funding and courses for the acquisition of widely used skills for a number of doctoral study programmes, at the same time not limiting cooperation opportunities with other doctoral schools. The higher education institution will be able to set up one or more doctoral schools, but not more than one doctoral school in each group of fields of sciences. Admission to doctoral studies will not be synchronised with the beginning of the academic year.

Strengthening the competence and motivation of academic staff to ensure high quality higher education. In 2020, MoES, in cooperation with the World Bank, will launch the development of a new academic career model in Latvia as part of the European Commission's Structural Reform Support Programme. The results of the study will make proposals on the criteria for evaluating the competences of candidates for academic positions and academic staff, the necessary changes in regulatory enactments, and will reflect the indicative costs of changing the current system of employment conditions, including those relating to workloads, salaries of those employed in academic positions and the introduction of tenure positions.

The new model is also 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).

Adjustment of the system of financing of higher education. In 2015, the introduction of a new model of financing of higher education was launched to promote progress of higher education and science towards excellence. Performance indicators in line with policy objectives on the renewal of academic staff and research-based higher education, as well as indicators on cooperation with merchants and raised international project funding have been introduced. In 2019, performance funding of 6.5 million EUR in total was granted to 13 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. In turn, teacher performance funding of 156 thousand EUR was granted to the higher education institutions implementing pedagogical study programmes, in 2019, based on the data of the State Education Information System on jobs of graduates of 2018. The purpose is to stimulate higher education institutions to carefully evaluate motivation of potential students and their fitness for work in higher education institutions.

While the total number of students is decreasing, the share of students in state-funded study positions is increasing. In 2019, 41% of the state-funded study positions were provided in STEM programmes, as well as 22% of all the state-funded study positions were in master and doctoral studies that are important for the preparation of both new teaching staff and scientists.

Starting from 2019, *monitoring of graduates in higher education* has started, obtaining data on employment and income trends of graduates one year after graduation from an education institution. Employment of graduates is one of the indicators reflecting the integration of graduates into the labour market under specific economic conditions (for more information on monitoring of graduates in higher education see Chapter 2.3).

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.

The transition to a conceptually 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 the introduction of a new one-year WB study programme for obtaining a teacher's qualification. 10 million EUR in total have been diverted to the development of teacher education. The new WB study programme for the preparation of teachers is scheduled to be implemented from summer 2020 and will be open to applicants with already acquired higher education.

By the end of 2021, an analytical tool will be developed to forecast the demand and supply of teachers and to model employment in general and vocational education, 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, to plan support activities at local government and national level. It is also planned to develop an instrument for evaluating the professional competences of teachers.

Improvement of the quality assurance system of higher education and establishment of a national institution for quality assurance. In June 2018, the European Association for Quality Assurance in Higher Education (ENQA) granted the Academic Information Centre (AIC) the status of a fully-fledged ENQA member, as well as welcomed AIC at the European Quality Assurance Register for Higher Education (EQAR) in December 2018. The Latvian higher education quality assurance system is functioning according to Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG[1]). As a result, confidence in Latvian higher education and obtained diplomas will increase.

A new comprehensive stage of accreditation of study directions started in 2019. An e-platform to ensure the process of accreditation and licencing has been created. Higher education institutions will further submit all the documents and necessary information for quality assessment in the e-environment. Within the framework of new accreditation conditions it is necessary to ensure the involvement of employers in the quality assessment of higher education – in the process of licencing and accreditation.

In June 2020, MoES, in cooperation with the Academic Information Centre, the Estonian Ministry of Education and Research and the Estonian Quality Agency for Higher and Vocational Education, will start introduction of cyclic institutional accreditation of higher education institutions within the scope of the EC's *Erasmus+* K3 Structural Reform Support Programme expecting to develop and submit to MC by October 2022 a conceptual report and proposals for the regulatory framework.

Modernisation of the material and technical base. A territorially concentrated infrastructure for studies and scientific work is developed with support from EU funds to provide a modern study and research environment for the implementation of STEM, including medicine and creative industries, study programmes (total financing 44.7 million EUR, incl. ERDF funding of 38 million EUR). At the same time, support from EU funds is provided for the 1st level vocational higher education for the improvement of STEM learning environment – total financing 14.1 million EUR, incl. ERDF funding of 12 million EUR. The implementation of 6 projects closed, while the implementation of 18 other projects still continues. All the projects are planned to the completed by December 2022.

[1] *European Standards and Guidelines for Quality Assurance.*

Internationalization of higher education. In academic year 2019/2020, more than 10.1 thousand foreign students, who have obtained previous education outside Latvia (mobile students) are studying in higher education institutions of Latvia constituting 13% of the total number of students. The number of mobile students has almost doubled since academic year 2014/2015. These mobile students most frequently obtained their previous education in India, Uzbekistan and Germany.

During the academic year of 2019/2020, there were 531 foreign teaching staff in the Latvian higher education institutions, constituting 11% of the total number of academic staff. In order to promote the attraction of foreign teaching staff and internationalization of higher education, in 2019 14 higher education institutions started the implementation of ESF co-financed projects on the development of study programmes in EU languages and joint doctoral study programmes. It is planned to implement the projects by 2023. Joint study programmes are implemented in Latvian higher education institutions in cooperation with foreign higher education institutions (including higher education institutions in Lithuania, Estonia, Belarus, Spain, Austria, Netherlands, Denmark and Germany) in the areas of international business and export management, management of technologies and innovations, innovative engineering of roads and bridges, strategic border management, European education management, social work and social rehabilitation, nature recreation, etc.

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. This is implemented by methodically educating and involving students in developing innovative solutions to address practical societal or sectoral challenges, by using knowledge in practice and by learning while doing, and by adapting measures to different levels of student preparedness and experience, in particular by supporting interdisciplinary cooperation and team work. The new study approach aims to strengthen the implementation of research and practical experience based higher education, cooperation of students and teaching staff with the industry, and to develop the basic and transversal competences of students. 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. 4 projects are currently being implemented, the implementation of the projects started in 2019 and will last until 2022.

In order to contribute to the mitigation of the effects of the crisis caused by Covid-19, higher education institutions joined together to develop a single platform, where student teams can offer solutions to the crisis challenges set by the industry or organisations.

Latest measures in adult education

7.4% of the Latvian population aged 25 to 64 years were involved in education in 2019, which is a 2 times lower indicator than the set target – to reach 15% by 2020. Overall, participation of adults in the education process has not significantly changed in the last 10 years and remains slightly below the EU average (see section 2.4).

Raising awareness in the society of importance of adult education. In accordance with the EUROSTAT *Adult Education Survey* (2016) data, the most common reason for low involvement in education is low motivation of adults – about 35% of respondents indicated that they do not want to participate in adult education. The most serious obstacles for participation in adult education are financial difficulties and inability to combine studies with work of respondents or family life. In view of the low participation of the population in adult education, a number of integrated communication campaigns are planned in 2020 to promote vocational and adult education with a view to promoting public awareness and motivation to participate in educational activities.

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* is carried out within the framework of EU funds evaluation support and will be completed in 2020.

Implementation of a uniform governance model for the adult education system. The implementation of the *Adult Education Management Model Implementation Plan for 2016-2020* continues and aims to promote and ensure coordination between the partners involved in adult education, as well as to prevent the fragmentation and establish an effective adult education system. An inter-sectoral consultative institution – *Adult Education Management Council*, has been established and is functioning to carry out coordination of the plan and monitor

the implementation. It consists of representatives from ministries involved in adult education and other organizations, as well as representatives from social and cooperation partners.

In 2019, work on the development of action lines for the next programming period started in cooperation with stakeholders, incl. social and cooperation partners. There are intentions to pay more attention to the quality of adult education, building understanding at state level of the need for adult education, segmenting of the target group, targeted support measures, as well as possibilities of public-private partnership in the development of adult education will be evaluated.

In order to improve the quality of non-formal education amendments to the *Education Law* for the introduction of quality criteria for non-formal education are being prepared. In order to improve equal access for all, it is planned to set up skills funds, initially instead of a pilot project in individual sectors. Amendments to the *Vocational Education Law* have been prepared for the development of a more flexible adult education offer, ensuring the assessment and recognition of parts of professional qualifications for education and work needs, as well as flexible opportunities for continuing vocational education.

The cooperation project with OECD co-financed by the *Erasmus+* programme, which aims to develop the Latvian National Skills Strategy – Guidelines for 2021-2027, which started in 2018, continues. At the end of 2019, the first phase – Diagnostics – was completed in which, on the basis of international comparative data, identification of opinions of more than 500 representatives of stakeholders and good practices of OECD countries and Latvia, the governance, financing and compliance of the Latvian skills system with the labour market was evaluated. The OECD *Diagnostic Report* with recommendations for improving the adult education and vocational education system was published in 2019. Work in cooperation with the OECD on the *development of the Education and Skills Development Guidelines for 2021*-2027 is continuing in 2020 in the Action phase of the project, taking into account the insights obtained at the Diagnostic Phase and OECD recommendation[1].

In accordance with provisions of the *Education Law*, which will enter into force at the end of 2022, the state should support adult education by financing adult non-formal education programmes, as well as supporting employers in additional training of their employees. In 2020-2022, work on the development of regulatory framework for state support measures for employers for education of their employees is planned, including it is planned to set criteria for receiving such support. At the same time, it is planned to draft a procedure for the state to finance adult non-formal education programmes, continuing education programmes and professional competence improvement, as well as criteria for receiving respective funding. Supporting improvement of professional qualifications of employees. Within the framework of ESF project *Improving the Professional Competence of Employed*, employed persons aged above 25 upon their request receive support for improvement of their professional qualifications and competences, including provision of career consultant's services. Support is primarily provided to employed persons from social risk groups, including persons employed in low qualification works, who are subject to the unemployment risk the most. Education programmes are implemented with 10% co-financing. Participation of the employees who have been granted the status of a low-income or poor person, as well as persons with disabilities is free of charge. In addition, additional support personnel is provided to disabled persons. For adults with the status of a low-income or poor person support for regional mobility is provided. Four rounds of studies have been organised so far. A total of 26 thousand persons have started the training, of which 3.3 thousand persons started learning professional further education programmes, 3.5 thousand persons – professional improvement programmes, 19 thousand persons – non-formal education programmes and 192 started learning modular programmes. Almost 17 thousand employees have completed their training by March 2020. The most demanded studies are in ICT, transport and logistics, as well as food and beverage services.

In order to ensure better quality of training (including in terms of material resources, staff and training content, methods, etc.), vocational continuing programmes and professional improvement programmes are implemented as a priority in vocational education competence centres (VECC).

Measures are implemented to support learning for employees requested by the employer:

– *Support for employed learning (technology learning)*. The aim of this measure is to provide the merchants with labour force holding the relevant qualification, thus contributing to an increase in productivity and development and putting into production of new or improved products and technologies. Two project selection rounds are planned. In spring 2016, 10 projects of the first round implemented by the largest sectoral

[1] OECD report *OECD Skills Strategy Latvia: Assessment and Recommendations* https://www.izm.gov.lv/images/OECD/full-report-pdfx.pdf

associations were approved. These associations represent manufacturing subsectors, the ICT sector or accommodation and food service activities sector. The implementation of 2 projects completed in the ICT and manufacturing sector in 2019. More than 12 thousand non-unique persons employed with more than 660 merchants had been trained by March 2020. The trainings are organised on site and remotely. The period for implementation of projects of the first round is until 31 December 2022. 6 project applications for over 6.4 million EUR were received in the second round. Project applicants – associations and foundations – represent information and communication technologies, timber industry, construction and international business services centres industries. 4 thousand employees are expected to be trained through the implementation of projects of the second round, providing 260 merchants with labour force with appropriate qualifications. Agreements with beneficiaries are planned to be concluded in 1st half of 2020. The first agreement was concluded on 27 April 2020 with the ICT industry association LICTA, which will implement it jointly with the IT cluster for the purposes of increasing professional qualifications of ICT professionals;

– *Support for ICT and non-technology learning, as well as learning aimed at attracting investors (non-technology learning)*. The measure is developed with the aim to increase the productivity and work efficiency of self-employed persons, as well as micro, small, medium, and large merchants, by raising the employees' qualifications and skills in information and communication technology areas, to provide merchants with employees holding the relevant qualification, promoting introduction of non-technological innovations in merchants, as well as to provide support for learning thereby attracting investments in the country. In a limited project application selection conducted in 2016, LCCI, LICTA, and IDAL were selected to ensure a successful implementation of the programme. The trainings are organised on site and remotely. By March 2020, 6.1 thousand non-unique persons employed with more than 1 200 merchants had been trained.

Improving training measures for the unemployed. In 2019, 20 thousand persons in total were involved in skill-improvement training measures. The improvement of cooperation between SEA and employers continues to promote the improvement of skills of the unemployed and job seekers and labour force availability, incl. possibilities for employers are popularised to get involved in the selection of the unemployed to select candidates according to the profile of the vacancy to be filled, and foster acquisition of education and skills by the unemployed upon employer's direct request or on site in a company by getting involved in the activity *Training by the employer*, which is practical training of specialists by the employer co-funded by SEA. Reduction of 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, envisages the possibility to get a document certifying qualification, which is recognised by the state, by undergoing evaluation and recognition of competences (no need to learn the entire training course). Similarly, the legal framework provides for modular vocational education programmes for the unemployed, which correspond to the latest developments in vocational education in the European Union, i.e. in a remote way (alongside remote training in higher education institution study modules). Training quality aspects are important, therefore additional requirements to material and technical base, environmental availability and responsibility of education institutions for weak study results in non-formal education, etc. have already been introduced. Furthermore, in order to promote access of the unemployed to training places, along with support for access to workplaces, regional mobility support is also available (see section 4.2). At the same time, SEA is continuing to make short-term labour market forecasts, within the framework of which, on the basis of macroeconomic indicators and employer surveys, changes in demand at the level of occupational groups are projected and the supply of education for the unemployed and job seekers is planned and organised accordingly and coordinated with social partners. Along with the SEA customer profiling method and career guidance, the SEA website makes publicly available several ICT tools (labour market forecasting tools, education institution search, etc.) to make a more informed selection of an education service provide and a relevant occupation.

Planned adult education and employment support measures to reduce the consequences caused by the Covid-19 crisis

(measures supported at the Employment Board)

The purpose is to create a functional adult education system for reducing the share of poorly qualified persons, developing continuous skills, abilities and competences and changing the socio-economic paradigm. It is essential to provide the population, including those without work, with the skills and abilities that are or will be required in the labour market and to effectively provide the sectors growing after the crisis with the necessary human resources. Measures are expected to be phased in depending on the development of the situation during 2020:

- identification of the **supply of remote trainings/courses** of VECC and higher education institutions, updating of quality aspects of the education supply (quality criteria set for education institutions and non-formal education programmes, support for involvement of SEQS in assuring quality of adult education supply, etc.);
- implementation of **upskilling and reskilling of the unemployed** in accordance with the profile of the unemployed (SEA) – professional further education, improvement, learning of additional skills needed for the labour market (languages, digital skills), remote training, planned future opportunity to pay for obtaining an online certificate (both local and international), training with a salary subsidy and a job manager at the employer. 24 thousand unemployed are planned to be involved by the end of 2023;
- extension of **trainings for the employed** (SEDA)– 15 000 involved with the funding available; with addition funding 20 000 persons obtain, renew, improve their qualification; digital and other skills in accordance with the needs of the national economy, incl. in the sectors, which have suffered relatively less from the effects of Covid-19 and with a higher potential in ensuring internal and external demand comparatively also providing an opportunity to apply for training repeatedly;
- continuation of **support for employee training for entrepreneurs** (industry associations & IDAL) – making amendments to the rules of implementation of the programme. 7 800 employed have been trained. Promoting co-responsibility of companies, change in behaviour and understanding of employers: training at work, social responsibility, self-responsibility;
- **a new support instrument promoting trainings ordered by companies** (high value added industries, innovation development) has been developed. 20 000 employed have been trained. Strategic specialisation areas, science-intensive companies and products, international excellence and networking;
- development of **a mini-MBA programme for managers of companies and institutions** – practical training programme for 2 000 entrepreneurs and managers promoting transformation of companies and industries. Adaptation of courses, curriculum of international universities;
- **a public awareness campaign** to inform and motivate the population to learn throughout their whole life has been implemented;
- provision of **opportunities to learn digital skills** to society depending on the level of preliminary knowledge and needs – improvement of general digital skills of society, as well as development of professional ICT support skills (at least in 1 000 persons) to be able to switch to work in the ICT sector. Increasing the share of ICT graduates in higher education institutions. Raising the competitiveness of ICT sector. Teaching of world level ICT pedagogy and technologies to 50 teachers;
- development of **entrepreneurial skills** in society – supply of business incubators for starting new business, development of new training programmes for development/extension of existing companies;
- starting to create **supply of individual complex *training portfolios*** in adult education, which would correspond to the person's profile (existing qualification and skills; missing qualification and skills) replacing non-formal and short training courses;
- increasing the number of **study and student loans secured with the state as the guarantor**;
- implementation of **subsidised employment** to support employers in attraction of labour force and to provide temporary employment opportunities to the unemployed – indicatively 26 000 persons involved in the post-crisis recovery phase;
- provision of **support to the companies affected by the crisis** with shortened working hours (in case of partial downtime) – support provided to 40 thousand employed, who continue to work in companies, but work less and whose work is important for long-term operations of the company to enable it to continue to fully function and restore its capacity after the crisis.

In addition, it should be noted that in April 2020 amendments were made to the *Support for Unemployed Persons and Persons Seeking Employment Law* extending the period, during which the unemployed can temporarily work without losing their status as unemployed, from 60 to 120 days. During this working period, the person will not receive an unemployment benefit, but will be able to continue to receive it after the end of a limited-period employment relationship, thereby also facilitating the conclusion of fixed-term employment contracts for short-term employment (e.g. seasonal work) during the crisis period.

In line with the OECD impact assessment (comparing control and participation groups and the impact on wages and employment), the impact of the ALMP measures implemented by Latvia is relatively favourable (both positive impact and compared to the impact assessments of other EU countries). Training activities organised by SEA have a positive impact on employment. Both vocational training and non-formal training improve job-finding opportunities and have a positive impact on wage growth. In 2019, about 41% of registered unemployed and job seekers 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.

In order to promote the quality of training for the unemployed and compliance with the implementing conditions, amendments to CM Regulations Regarding the Procedures for Organising and Financing of Active Employment Measures and Preventative Measures for Unemployment Reduction and Principles for Selection of Implementers of Measures have been prepared. The amendments also include provisions to strengthen cooperation with local government social services for the successful involvement of long-term unemployed in active employment measures and compliance with job search obligations.

Promotion of involvement of state vocational education institutions in the implementation of adult education. In 2017, the Cabinet of Ministers approved proposals of the Employment Board for measures to be taken and changes to be made to the regulations, which would motivate vocational education institutions, employers and the population to get involved in higher education[1].

A methodological material Practical Guide to Work with Adults in Vocational Education Institutions was drafted in 2018. The purpose of the methodical materials is to promote the ability of vocational education institutions to create study supply for the adult target audience, including economic operators, which would ensure skills necessary for the development of companies; to promote the ability of vocational education institutions to carry out a market analysis, to prepare marketing and sales plans, incl. to draft pricelists of services, to ensure the advancement of the services on the market and to successfully sell education services; to orient vocational education institutions to modernisation of sectors and creation of sustainable supply. The methodical material is drafted by inviting experts and in cooperation with representatives of four VECC (VECC "Riga State Technical School", VECC "Riga Art and Media Technical School", VECC "Liepaja State Technical School" and Ogre Technical School). Furthermore, training seminars have been held for representatives of vocational education institutions on the performance of cost estimates, the development of price lists of paid services, the preparation of an adult education offer and the efficient use of infrastructure.

4.2. GEOGRAPHICAL MOBILITY AND SMART IMMIGRATION OF LABOUR FORCE

Support to internal mobility of labour force

Promotion of the availability of rental housing in regions. The availability of labour force in territories with higher economic activity is delayed by the availability of high-quality housing for the population with average income. Within the scope of cooperation with OECD, having evaluated foreign good practices, proposals for effective support instruments for ensuring availability of housing in Latvia will be developed in 2020.

Improvement 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) 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 or construction of housing amounting to 20% of the loan amount, which does not exceed 50 thousand EUR. Over 1 800 guarantees have been granted to young specialists by the end of 2019.

Mobility support within the scope of ALMP measures. In order to promote the involvement in measures for regional mobility support, in 2018 legal regulations were amended envisaging transportation and rent compensation also for work in Riga, as well as reducing the necessary distance from home to work or training to receive support from 20 to 15 km, thus promoting employment outside own administrative territory, where no relevant vacancies are provided. From 8 March 2020, compensation of transport expenses is granted in cases, when the distance from the declared place of residence to the place of work of the employed person does not exceed 110 km, while in other cases rent compensation can be received. In 2019, regional mobility support for getting to work was granted to 288 persons. Regional mobility support for the unemployed becomes increasingly more popular, which is used to get to the place of requalification and mastering of skills necessary for work or

[1] *Informative report On the set of measures identifies within the Employment Board and their fulfilment deadlines* (reviewed at the meeting of the Cabinet of Ministers of 21 March 2017).

subsidised work. In 2019, regional mobility support was provided to 3 787 unemployed to go to training and to 77 unemployed to get to subsidised workplaces.

Attraction of highly qualified labour force from foreign countries.

Simplified attraction of specialists missing on the labour market. In December 2019 CM supported several amendments to CM regulations, the main purpose of which was simplification of bureaucratic obstacles in employment of foreigners. The minimum period for application of a vacancy has been shortened to 10 working days (instead of 30 days), if an employer wants to invite a foreigner from a third country for employment[1]. The requirement to publish a vacancy has been cancelled in cases where a foreigner (third-country national) who is intended to be employed has been employed in Latvia for at least 2 years or has been employed by the specific employer and the employer wants to continue employing him or her in another speciality (profession), or has been employed during studies and wishes to continue employment with same employer after obtaining education. The requirement for the entrepreneur to pay the foreigner a salary of not less than the average in the country has been maintained.

Attraction of foreign students. In summer 2018, amendments to the *Immigration Law* entered into force. Inter alia, the rights of a researcher and student to employment were clarified – it is envisaged to grant a researcher unlimited access to the labour market, while students have the right to work 40 hours per week during summer holidays (no more than 20 hours per week during studies). The period of stay, during which holders of Bachelor degree can search for a job after completion of studies, was extended to 4 months, but for holders of Master/doctoral degrees – to 9 months. The employment restrictions do not apply to students from other EU Member States.

Incentives for receiving an EU Blue Card. Rules for Residence Permits have been amended providing that an EU Blue Card may be issued to third country nationals also if the person does not have higher education (document certifying higher education), but has at least five years of professional experience in the specific speciality or sector, where he or she will be employed in Latvia. This procedure applies only to those foreigners, who will be employed in the occupations included in the first or second major group of the Classification of Occupations (managers, professionals). The procedure does not apply to regulated occupations such as medical doctors, pilots, engineers, etc.

Provision of labour force in the ICT sector. A joint IT education platform called Baltic IT Society or *BITS.education* has been created. The platform will collect IT education programmes to promote the preparation in Latvia of new IT professionals, who are ready for the international market, and will create digital campaigns to attract students from foreign countries. The campaign in Ukraine started in 2020. In order 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 for Latvia to create an innovative study programme in the ICT area. The Baltic IT bachelor of excellence programme was created by the University of Latvia and the Riga Technical University (RTU) in cooperation with the University at Buffalo (United States), and it is coordinated by RTU Riga Business School. In the first, 2019, year of studies, 22 youths started to study this programme and 14 professors from Latvia learned the study programme thus creating/updating 20 subjects in computer programmes. It is planned to enrol 50 students in 2020.

[1] The general requirement before the end of 2019 was that, if the employer wishes to invite employees from third countries, the vacancy should be registered in the SEA for no less than a month. A foreigner could be attracted for a vacancy registered in the SEA for a shorter period of time – at least 10 working days – only in specialities (occupations) where a significant labour shortage is forecast (so-called *list of occupations* approved by CM on 20 February 2018).

4.3. SYSTEM OF ANTICIPATING CHANGES IN THE LABOUR MARKET

In order to foster the establishment of the system of anticipating changes in the labour market (hereinafter referred to as SACLM), in the period from 2017 to 2019 MoE implemented 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*.

Proposals within the scope of implementation of SACLM have been developed within the scope of the study. These proposals provide for joint cooperation and reallocation of functions between the parties involved in solving anticipating matters of the labour market with a view to establishing a coordinated, single-purpose cooperation system in order to systematically organise measures to anticipate and adapt to potential future labour market changes in a timely manner. For SACLM to function as a single system, the following functions should be separated:

1) strategic coordination (approval of the SACLM action lines, identification of the necessary changes to the SACLM objectives and priority issues, identification of tasks and their interrelation),
2) administrative coordination (provision of a platform for discussion for all parties involved in SACLM, provision for communication and information),
3) evaluating coordination (regular independent evaluation of SACLM performance according to specific criteria, identification of possible improvements).

The most optimal choice for the performance of strategic functions is the Employment Board composed of three ministers (ministers of economics, education and science and welfare) and its 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. This would allow for direct coordination of SACLM-related issues between the parties involved and would provide a platform where adequate labour market analysis and research would be carried out.

The study has also improved the interpretation of labour market forecasts. To make forecasts easy to perceive and use, the *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. In order to promote the interpretation of forecasts and the planning of anticipating changes at regional level, labour market forecasts and the Guidelines were also presented in regional seminars organised by SEA.

The study also included the preparation of proposals for the necessary improvements in the data used in medium and long-term forecasting. Proposals have been prepared and the possibilities for using medium- and long-term labour market forecasts have been explored in the context of the introduction of selective labour immigration mechanisms. A table for matching educational occupations for the needs of medium- and long-term job market forecasting has also been created. The possibilities for adapting the Classification of European Skills, Competences, Qualifications and Occupations (ESCO) have been explored.

Table 4.1

Measure taken in the context of introduction of SACLM

Weakness of the system	Planned / Introduced measure
Limited possibilities for disseminating labour market forecasts and lack of information channels	Work on the creation of an interactive platform for presentation of labour market forecasts
Insufficient comprehensive public discussions about the future trends and needs of the labour market	Regional seminars organised by SEA presenting labour market forecasts. Such workshops are planned in the future as well
Lack of coordination mechanisms, which ensure the inclusion of labour market forecasts in policy documents	The role of the SACLM coordinator has been delegated to the Employment Board
Problems with the interpretation of the forecasts and difficult coordination with education supply instruments	Guidelines for interpretation and use of medium- and long-term labour market forecasts have been developed

Further steps related to the development of SACLM will depend to a large extent on the availability and amount of funding.

In the long term, a Platform for Quality Forecasts (platform for experts and researchers) is expected to be created to provide more complete labour market information with a view to developing regional, skills and in-depth sectoral forecasts using qualitative research methods.

In addition, it is planned to provide a regional forum for the strengthening of spatial development planning and education development planning capacity and for the interpretation of signals at regional level.

It is also planned to launch an interactive labour market forecasts presentation platform reflecting in an interactive way short-term labour market (on the SEA and MoE website) and medium and long-term forecasts (on the MoE website). The platform will ensure the availability of labour market forecasts to a wider range of stakeholders. Until now, the medium- and long-term labour market forecasts developed by the Ministry of Economics have been available in the form of an informative report.

5. SUMMARY AND RECOMMENDATIONS

The report describes the current situation in the labour market and includes 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 Ministry of Economics has prepared a target scenario of economic growth and a macroeconomic forecast that matches it. The target scenario has been drafted according to settings of the Latvian structural policy defined in policy documents – Sustainable Development Strategy of Latvia until 2030, draft National Development Plan of Latvia for 2021-2027. The impact of the Covid-19 pandemic was also taken into account and the processes defining the development of the national economy were analysed. In the medium term (until 2027) the target scenario envisaged GDP growth by about 4.6% per year, while in the long term (until 2040) annual economic growth rates will become slower and will be within 2.8%. The fundamental precondition for growth in the medium and long term 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.

The Covid-19 crisis could be overcome by the transformation of the economy necessary in the short term, in the medium and in the long term. The target scenario provides that in the short term the economy will get the necessary state support to promote the availability of working capital and capital for businesses, thereby allowing them to cope with the effects of the crisis and return to growth more quickly. The scenario also provides that in the medium term Latvian companies are able to adapt relatively successfully to the changes caused by the Covid-19 crisis, for example, in relation to the expected change in consumer behaviour, as well as in the medium and long term strengthen investment in research development and innovation, generally contributing to growth in the share of high-technology and medium-high technology industries in the economy structure, as well as accelerating the digital transformation of the economy. The main economic growth driver in the medium and long term still remains the increase in income from exports and the extension of export possibilities, and also the ability to get included into international product chains with higher added value products. 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 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, i.e. structural transformation of the national economy.

II. MEDIUM- AND LONG-TERM LABOUR MARKET TRENDS

In recent years, Latvia's labour market has rapidly approached its potential with labour shortages and low productivity having a negative impact on Latvia's global competitiveness. The employment and participation of the population in the labour market over the past 2 years has reached historical highs since Latvia regained its independence – the level of employment of the population in the age group 15-74 reached 65% in 2019, while the economic activity of the population approached 70% (69.6% in 2018, 69.4% in 2019). The narrowing of the labour market has had a significant impact on overall labour force availability and has made structural labour market problems (regional labour market disparities, skills demand and supply mismatches) more pronounced. The unemployment rate slipped to 6.3 per cent in 2019, while the number of vacancies registered by SEA increased more than 7 times at the end of 2019 compared to the corresponding period of 2016. Overall labour shortages have contributed to both increases in wages and labour costs with average gross salary growth by 7.8% per year between 2017 and 2019. Meanwhile, labour productivity growth has remained nearly three times lower during the corresponding period (2.9% per year on average), so Latvia is rapidly losing its competitive advantage in low-cost segments. In terms of labour productivity, Latvia still lags significantly behind Europe's most economically

developed countries – in 2019 productivity (GDP per employed) in the Latvian national economy reached 49.8% (almost 69% according to PPS) of the EU average.

The impact of Covid-19 on labour market activity is likely to be limited in the short term, but structural effects may persist. Like most countries in the world, 2020 for Latvia has started with the economic shock caused by Covid-19. The package of measures to limit spreading of Covid-19 has significantly limited economic activity in almost all areas of the national economy, primarily and most deeply affecting sectors such as passenger transport, booking services of travel agencies and tour operators, accommodation and food service activities, arts and various cultural areas, sports centres and other sectors directly linked to the movement and assembly of the population. According to MoE, the number of jobs in the directly affected sectors in 2019 alone represented around 60 thousand jobs, representing around 7% of the total number of jobs in the national economy. It should be noted that in many of these areas activity may remain at low levels for a long time, so that some of the jobs may be lost forever. Meanwhile, the Covid-19 crisis has affected changing public habits, creating new opportunities and needs in the labour market. The use of different ICT solutions in everyday life has increased significantly, providing both the necessary infrastructure for remote work, education, shopping, supplies of goods and other processes. Many of these processes open up a new phase of societal development and are likely to remain in the post-crisis period. The less affected sectors are also expected to recover more quickly and will be the main driver for the economy to exit downtime.

Overall, the number of the employed in 2020 might reduce by 7.5% or 69 thousand compared to 2019. At the same time, the unemployment rate could rise to 11% this year. In accordance with the growth target scenario, the labour market could return to growth in the second half of the year and the number of the employed could rise by 4.2% in 2021, while unemployment could fall to 8.1%. Overall, employment and unemployment rates could return to the levels of 2019 already around 2022-2023, while the number of employees in absolute terms is not likely to return to the current level, given both demographic processes and increased labour productivity.

Unemployment could return to its previous level in the next 2-3 years. The unemployment rate is expected to return to the 6% mark in 2023, while it could fall to 5.5 per cent by 2027. Unemployment in the medium and long term will be close to the natural level (within 5-6%) and will mainly consist of frictional and structural unemployment. It should be taken into account that in the previous 2 years economic activity and employment rate of the population have reached the highest historical marks, therefore, the entry of economically inactive population in the labour market might compensate the falling of labour supply due to demographic trends only partially.

Demographic processes will continue to maintain pressure on the labour market in both the medium and long term. By 2040 the population of Latvia will decrease by almost 134 thousand to approximately 1786 thousand, moreover, the number of working age population will fall more rapidly than the total population – we expect a reduction by nearly 155 thousand or approximately 13% in the age group from 15 to 64 compared to the beginning of 2019. In the meantime, the share of elderly people will continue to increase. The population over 64 is expected to grow by more than 85 thousand or about 22%. Thus, the main cause of population decline in both the medium and long term will be ageing of the population, which will result in an increased negative impact of natural growth (the gap between newborn and deceased) on demographic processes. The decline in the working age population as a whole will negatively affect the overall labour supply, so the number of economically active population will continue to decline in both the medium and long term.

Economic growth will remain largely based on productivity growth in the coming years. Although the labour market will be dominated by the low base effect in the coming years, the number of the employed in the next 3-4 years could grow on average 4 times faster than before the Covid-19 crisis (2016-2019), but economic growth will continue to be largely determined by the increase in labour productivity, which is an essential prerequisite for keeping Latvia's global competitiveness. The increase in labour productivity over the period from 2021-2027 could be around 4% a year on average, which constitutes more than 4/5 of economic growth in the corresponding period. Against this background, the employed population could still constitute around 13 thousand in 2027 or 1.3% lower than in 2019. The fastest productivity growth is expected in sectors such as trade, financial services and insurance, manufacturing and various professional, scientific and technical services.

Changing the structure of the economy will have a major impact on low 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 9.8 percentage points in total labour demand, while the share of medium- and low qualification occupations could decrease by 4.8 percentage points and 5 percentage points, respectively. Proportionally, changes in the structure of the economy are likely to have an impact on elementary occupations. Labour demand in elementary occupations might reduce by about 2/5 or more than 46 thousand jobs by 2040.

The labour market will be increasingly affected by economy 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 qualification jobs. Medium qualification jobs are expected to drop by more than 50 thousand by 2040. 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.

The number of higher qualification jobs will continue to increase in both the medium and long term. Both changing the structure of the economy and entering of different technologies into the labour market will generally increase labour demand for higher qualification professionals. It is expected that the number of jobs might generally increase by almost 29 thousand in higher qualification occupations in 2027, compared to 2019. At the same time, the number of higher qualification jobs could grow by a total of 80 thousand by 2040, thus creating 461 thousand jobs, or more than half (52%) of the total number of jobs in the national economy. In the medium term, the largest increase in the number of jobs is expected in occupations of science and engineering associate professionals and professionals, information and communication technology associate professionals and professionals, as well as in occupations of health associate professionals and professionals. The increase in jobs in these occupations could represent more than 80% of the total increase in jobs in higher qualified occupations by 2027. 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 62 thousand by 2040. At the same time, it should be noted that nearly 30% of the higher qualification occupations currently employ employees with secondary (28%) or lower (1%) education, but these employees are likely to be gradually replaced in the coming years.

The most significant increase in new jobs is expected in the medium term in professional, scientific and technical services, construction, information and communication services, as well as in manufacturing. Overall, the above-mentioned sectors will create around 24.5 thousand new jobs by 2027, representing around 87% of all new jobs in the national 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 others “silver economy”-related services.

Main job opportunities will be created by replacement demand. In the medium term, around 170 thousand jobs can be vacated due to the ageing of the labour force and its exit from the labour market. The most significant increase in replacement labour demand is expected in medium qualification occupations, representing around 43%, or more than 74 thousand vacancies. At the same time, it should be noted that the total increase in job opportunities will be lower, because a reduction in overall labour demand is expected in many medium qualification occupations. In view of this, the number of vacancies likely to appear on the labour market in medium qualification occupations could reach around 58 thousand by 2027. Meanwhile, the demand for higher qualification occupations could create around 72 thousand vacancies, while over 100 thousand jobs in higher qualification occupations could be opened in the medium term, of which more than 45 thousand in occupations

of professionals, mainly in the fields of science and engineering professionals, in occupations of health care professionals and in occupations of teaching professionals.

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 2027, the economically active population with vocational secondary education might reduce by about 1/5 or almost 58 thousand, but shortage of labour force with relevant qualification might increase almost up to 40 thousands employees. Sectors like transport services and storage, construction, manufacturing, as well as agriculture and trade, where the share of medium qualification jobs is about 60% or more, and high share of employees of pre-retirement age will experience shortage of medium qualification labour force the most.

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 (spare labour reserves) remain 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 effective to local labour force availability can play a critical role in the growth of a balanced labour market. It is essential not only to increase the regional mobility or the ability to quickly change the place of work and residence of labour force, but also to ensure that investment and job opportunities are restructured on a regional basis.

III. MAIN LABOUR MARKET MISMATCHES

Economic growth and the active labour market policy measures implemented in the previous years have fostered the increase of economic activity of the population, which has partially compensated for the impact of negative demographic trends on labour supply. Similarly, a more open labour recruitment policy has mitigated the negative impact of migration trends on both population dynamics and labour force availability. Meanwhile, despite some improvements in education supply, the main structural challenges still exist.

In general, the supply of higher education over the last 10-15 years has become more balanced and close to the needs of the labour market, which has contributed to the increase of the higher qualification labour force both in terms of the structure of the labour force and in absolute terms, thereby providing for the formation of more higher qualification jobs in the economy, and in general contributing to 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. **At the same time, in the last 2-3 years, structural changes between STEM and social and humanities have stopped** and even increased in 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 2019 increased by 1145 students, compared to 2017, thus generally increasing the risks of surplus of labour force with the relevant qualification in the medium and long term.

The risk of insufficiency 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. Moreover, there is no significant increase in young people continuing vocational education after the basic education and secondary education stage.

There is still a large proportion of young people entering the labour market without a specific qualification and skills. In 2018, the share of young people who do not continue education after basic education generally increased by 1 percentage point or by 1/5 compared to the average indicator in 2014-2018. Similarly, nearly 1/3 of graduates of general secondary education chose not to continue studies after leaving school. In view of this, as well as drop-outs of learners at different stages of education, more than 1/3 of youth still come to the labour market with general secondary education and basic education, while the demand for such labour force will decrease sharply in the next years.

Participation of the population in adult education remained 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. Although the involvement of the population in adult education increased slightly in 2019, overall it remained at a low level – twice lower than the set target – to reach that 15% of the population aged 25 to 64 are involved in adult education measures by 2020. 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 basic education in adult education activities is still the lowest among all population groups with an increase only to 3.4% in 2019.

The impact of most of the implemented measures on the labour market is slow and their scale is insufficient. While there are some improvements in certain segments of the labour market, the major risks of labour market mismatches remain high. It should be noted that the relaxation in the labour market caused by Covid-19 will be short and many of the problems previously observed will returned in the next 2-3 years. 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 more than 40% over the past 10 years and those aged 19-22 by more than half. 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 2027 the shortage of high qualification specialists in STEM disciplines may increase to ~14 thousand. In comparison with the forecasts of 2018, the shortage has reduced by almost 1/4 (earlier ~21 thousand in 2027);
- **Surplus of higher qualified labour force with education in social sciences, business and law.** Until 2027 the surplus of labour force with higher education in social sciences, business and humanities may increase to ~17 thousand. In comparison with the forecasts of 2018, the shortage has increased by nearly 1/5 (earlier ~14 thousand in 2027);
- **Shortage of labour force with vocational secondary education**. In the medium term this may result in a shortage of labour force with secondary vocational education (~40 thousand), and this shortage will be observed almost in all education academic disciplines, especially in engineering and manufacturing. In comparison with the forecasts of 2018, the shortage has reduced by almost 10 thousand (earlier ~38 thousand in 2027);
- **Surplus of labour force with general secondary education, basic education and lower education level.** Labour surplus with general secondary education, basic education and lower education level is expected to increase in the medium term. Until 2027 the surplus of such labour force may reach ~85 thousands (~24 thousand with general secondary education, ~61 thousand with basic and lower education). In comparison with the forecasts of 2018, the projected surplus has reduced by approximately 12 thousand (earlier ~97 thousand in 2027), mainly due to the reduction in the group of general secondary education, taking into account that increasingly more youths having completed general secondary education continue studies in higher education institutions. At the same time, the projected labour surplus has increased in the basic and lower education group by ~3.5 thousand, given the increased share of young people who do not continue studies after basic education.

These **labour market imbalances may aggravate negative demographic trends and regional labour market differences**.

IV. RECOMMENDATIONS FOR REDUCTION OF LABOUR MARKET IMBALANCES

In order to mitigate the possible disproportions in the labour market 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 basic and secondary schools have poor knowledge and little interest in the exact sciences. In addition, it has to be noted that the possible solutions in the higher, secondary, vocational secondary and basic education will give visible results in long-term. Changes in the formal education have relatively little impact on the medium term problems. Therefore, effective adult training and continuing education play an important role in the improvement of the professional quality and mitigation of labour market disproportions. It is very important to increase the involvement of the population with basic education and general secondary education in adult education measures. Such population usually is economically inactive – no job, not registered as job seekers. The provision of a qualitative supply of continuing education to adults plays a crucial role for higher education institutions and also vocational education institutions and employers.

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. It is necessary to pay increasing attention to the following areas in order to reduce mismatches in the labour market that are expected in the future:

i. Reduction of the shortage of high qualification labour force with education in STEM, including ICT disciplines:

- reduction of drop-outs of students – strengthening of the quality of studies of mathematics and life sciences at stages of general education, improvement of the system for selection of students to be enrolled;
- 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, incl. ICT 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 qualifications 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;
- updating the supply of STEM, incl. ICT study programmes in line with the industry development needs, as well as introducing work-based (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;
- extension of adult education supply in higher education institutions in STEM, incl. ICT disciplines – restoration and deepening of knowledge in the obtained speciality, re-qualification opportunities for persons with higher education;
- 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:

- professional 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 learning forms 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 sectoral expert councils, 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 proportion of poorly qualified labour force:

- 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 basic 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, basic and lower education, regardless of the status of their economic activity;
- measures to improve motivation of the poorly qualified labour force 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, basic and lower education, incl. addressing the target groups, which are not registered at SEA.

iv. Horizontal measures for reduction of shortage of medium qualification labour force

a) Reduction of the negative impact of demographic trends on labour supply

- promotion of population replacement – 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 economic activity of the population – support to the population with general secondary education, basic education or lower education, who are not registered at the SEA, training of the unemployed with the employer, regional mobility support;
- smart labour force migration – simplified attraction of highly qualified labour force in the areas where shortage of local labour force and relevant skills is observed.

b) Reduction of regional differences in the labour market

- 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;
- 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.

c) Development of adult education:

- creation of a Skills fund – considering the possibility, in the form of a pilot project, of setting up a training fund for the needs of sectors, where employers make contributions and which would further serve for preparation of missing specialists;
- introducing a culture of continuous learning in society, thereby ensuring the recovery and development of skills of the population in line with the rapid development of today's labour market.

d) Development and strengthening of the system of anticipating changes in the labour market:

- to continue to introduce new elements of the system of anticipating changes in the labour market as agreed within the SACLM project, including the establishment of high-quality forecasting platforms and regional fora;
- extending information channels and their accessibility on current and future labour market trends – creation of an interactive labour market forecasts presentation platform, development of monitoring of future progress of graduates of higher and vocational education and analysis of the obtained data;
- to strengthen the analytical and research capacity of SACLM 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.

At the same time, in order to ensure a faster adaptation of labour supply to the needs of the future labour market, apart from measures for improvement of labour supply, it is vital to strengthen competitiveness of manufacturers and promote restructuring of the national economy from low to medium and high technology sectors.

Minister of Economics J.Vitenbergs

Endorsement: State Secretary E.Valantis

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Annex*

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* Detailed medium and long-term labour market forecasts

Development trends of sectors

%, growth compared to the previous year

	2014	2015	2016	2017	2018	2019
Gross domestic product	**1,9**	**3,3**	**1,8**	**3,8**	**4,3**	**2,2**
Agriculture, forestry, fishing	2,4	12,6	-10,5	5,1	2,0	12,8
Mining	-10,6	11,5	-4,4	11,2	3,7	-4,6
Manufacturing	-0,5	1,0	2,6	6,9	2,7	2,1
Food industry	0,6	-5,3	1,3	-1,9	-2,9	-0,7
Light industry	-5,9	-12,2	2,6	10,7	-0,8	-2,6
Wood processing	7,8	-2,2	2,2	8,5	4,5	0,0
Paper industry and publishing	8,9	-0,6	-2,0	7,4	-3,7	5,7
Chemical industry	-16,4	4,4	3,0	8,7	7,0	3,9
Manufacture of other non-metallic mineral products	1,6	-12,7	12,1	8,3	1,3	-2,1
Metalworking	4,8	8,6	-0,1	10,7	3,6	13,5
Manufacture of electrical and optical equipment	-9,8	65,0	0,1	14,5	12,1	11,3
Manufacture of machinery and equipment	-4,5	2,1	1,4	12,1	7,0	-1,9
Manufacture of vehicles	12,9	-4,6	12,8	6,8	7,3	-7,7
Other industries	-7,3	-0,7	3,5	5,4	-1,8	2,8
Electricity and gas supply	-14,3	22,9	17,9	-1,8	-12,7	-4,5
Construction	6,0	-2,4	-14,9	14,3	17,6	2,9
Construction of buildings	28,2	-8,2	-11,1	22,4	25,6	7,8
Civil structures	-6,8	0,4	-25,7	30,0	11,6	1,0
Trade	4,9	7,4	2,9	2,3	1,8	4,1
Retail trade	3,5	4,9	2,3	4,3	3,8	2,4
Transportation and storage	1,3	-7,8	6,2	7,5	4,6	-4,0
Transport of freight by railway	2,2	-2,4	-14,1	-8,4	12,5	-15,8
Freights transhipped in ports	5,2	-6,2	-9,3	-2,0	6,9	-5,7
Transport of freight by road	2,7	0,5	1,3	7,3	12,8	-3,8
Accommodation and food service activities	3,5	6,0	1,5	9,4	5,2	8,0
Information and communication	-2,9	1,9	5,4	8,7	12,8	2,0
Financial and insurance activities	11,5	7,2	0,4	-17,6	-2,0	-8,8
Real estate activities	1,7	1,5	0,5	-0,5	2,6	1,4
Professional, scientific and technical activities	-2,6	9,2	-2,4	4,6	1,5	7,5
Administrative and support service activities	-5,2	1,6	6,7	5,3	8,5	6,5
Public administration and defence; compulsory social security	2,3	1,5	2,7	3,5	3,2	1,9
Education	2,6	2,1	0,7	5,1	2,0	2,8
Human health and social work activities	7,0	5,8	1,0	8,5	5,1	9,5
Arts, entertainment and recreation	0,9	-4,2	5,0	6,7	4,8	5,8
Other service activities; households	-8,9	6,7	1,2	10,5	-7,8	1,3

Table 2

GDP growth rates and forecasts

%, growth compared to the previous year

	Fact				Forecast				
	2014	2015	2016	2017	2018	2019	2020	2021-2027 vidēji gadā	2028-2040 vidēji gadā
GDP	**1,9**	**3,3**	**1,8**	**3,8**	**4,3**	**2,2**	**-8,0**	**5,1**	**2,8**
Agriculture, forestry and fishing (A)	2,4	12,6	-10,5	5,1	2,0	12,8	-3,4	3,7	1,8
Manufacturing (C)	-0,5	1,0	2,6	6,9	2,7	2,1	-10,9	6,7	3,1
Other types of industry (BDE)	-10,4	17,5	10,2	-1,2	-8,0	-3,2	-4,2	2,2	3,4
Construction (F)	6,0	-2,4	-14,9	14,3	17,6	2,9	-6,6	5,7	2,1
Trade, accommodation and food service activities (GI)	4,8	7,3	2,8	3,1	2,2	4,6	-8,7	5,4	2,5
Transportation and storage (H)	1,3	-7,8	6,2	7,5	4,6	-4,0	-18,7	4,7	2,5
Other business services (JKLMNRST)	0,6	3,2	1,6	0,4	3,8	2,0	-10,1	5,9	3,0
Public services (OPQ)	3,3	2,6	1,7	5,0	3,3	3,9	1,4	3,2	2,7

Table 3

Key indicators of employment and unemployment

%, age 15-74

	Fact				Forecast				
	2014	2015	2016	2017	2018	2019	2020	2027	2040
Employment rate (the employed to the total population)	59,1	60,8	61,6	62,9	64,5	65,0	60,5	67,4	70,4
Participation level (economically active population to the total population)	66,3	67,5	68,2	68,9	69,6	69,4	67,9	71,4	74,0
Unemployment rate (share of the unemployed (job seekers) in economically active population)	10,9	9,9	9,6	8,7	7,4	6,3	11,0	5,5	5,0

Number of the employed in economic sectors and labour demand forecasts

thousands

	Fact				Forecast				
	2014	2015	2016	2017	2018	2019	2020	2027	2040
Total	**884,6**	**896,1**	**893,3**	**894,8**	**909,4**	**910,0**	**841,3**	**905,6**	**895,4**
Agriculture, forestry and fishing (A)	66,4	71,1	68,7	61,5	63,4	66,7	64,6	65,3	59,1
Manufacturing (C)	118,9	116,4	123,6	121,0	117,2	115,4	106,2	118,8	119,3
Other types of industry (BDE)	18,8	23,6	25,7	24,5	23,3	19,3	18,1	17,9	21,8
Construction (F)	73,3	71,9	66,2	63,1	74,7	81,3	76,2	88,6	81,2
Trade, accommodation and food service activities (GI)	161,6	159,3	154,8	161,1	172,0	169,7	150,5	159,1	143,2
Transportation and storage (H)	84,9	85,4	83,4	79,7	80,9	74,6	61,1	69,4	70,7
Other business services (JKLMNRST)	164,8	169,9	173,2	182,9	179,0	178,2	159,9	187,8	200,2
Public services (OPQ)	196,0	198,5	197,8	201,1	198,9	205,0	204,8	198,5	199,9

Distribution of the employed by sectors and age groups

2017, %

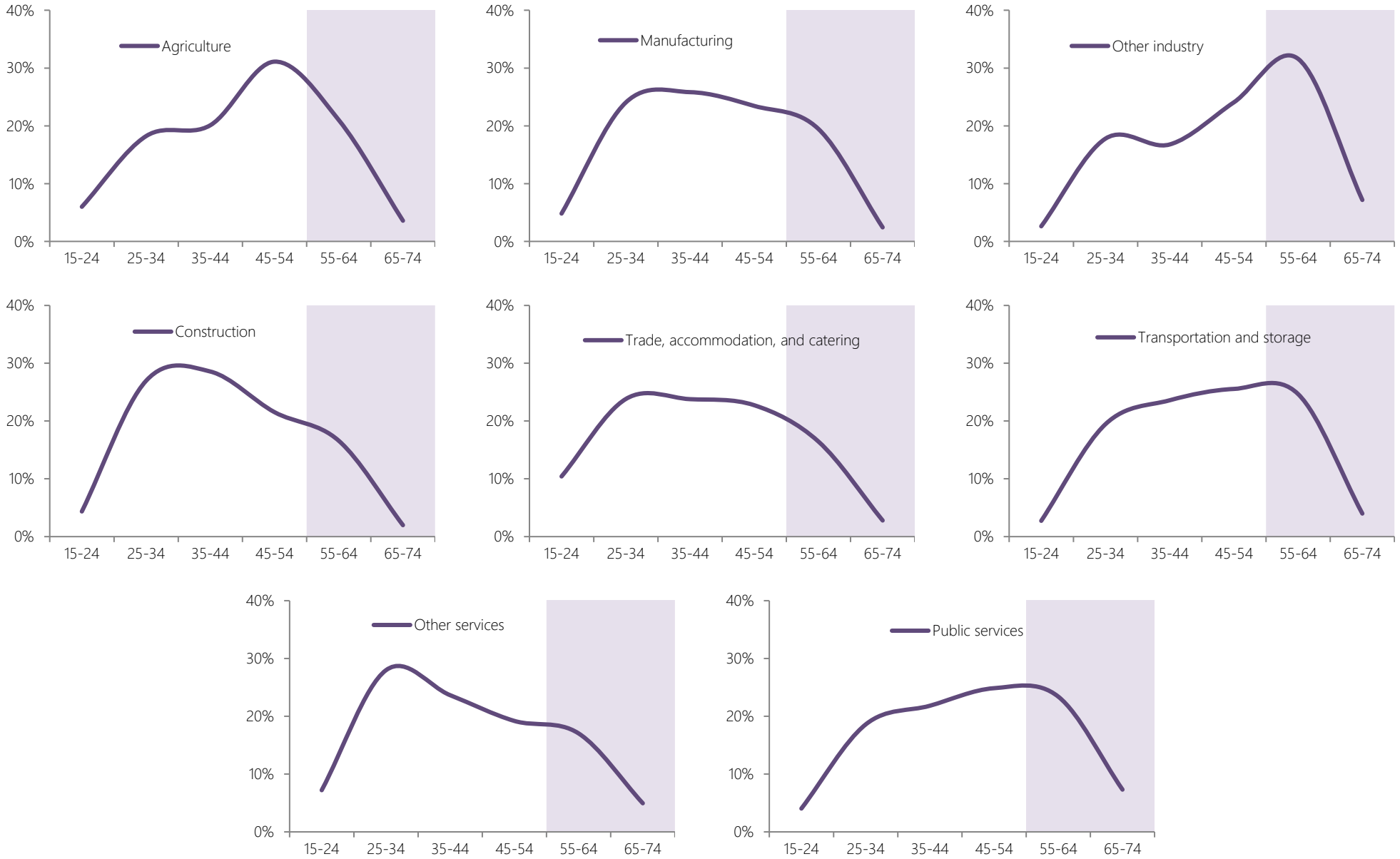

Table 5

Structure of the employed by occupational sub-major groups

2017

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	5,6
				Managing Directors and Chief Executives	94,4
		12	Administrative and Commercial Managers	Business Services and Administration Managers	88,5
				Sales, Marketing and Development Managers	11,5
		13	Production and Specialized Services Managers	Production Managers in Agriculture, Forestry and Fisheries	13,1
				Manufacturing, Mining, Construction and Distribution Managers	40,0
				Information and Communications Technology Services Managers	5,9
				Professional Services Managers	40,9
		14	Hospitality, Retail and Other Services Managers	Hotel and Restaurant Managers	16,1
				Retail and Wholesale Trade Managers	37,6
				Other Services Managers	46,3
	Professionals	21	Science and Engineering Professionals	Physical and Earth Science Professionals	15,2
				Mathematicians, Actuaries and Statisticians	1,6
				Life Science Professionals	5,3
				Engineering Professionals (excluding Electrotechnology)	40,9
				Electrotechnology Engineers	14,5
				Architects, Planners, Surveyors and Designers	22,6
		22	Health Professionals	Medical Doctors	30,6
				Nursing and Midwifery Professionals	32,8
				Traditional and Complementary Medicine Professionals	5,3
				Paramedical Practitioners	2,3
				Veterinarians	28,9
		23	Teaching Professionals	Other Health Professionals	7,4
				University and Higher Education Teachers	8,0
				Vocational Education Teachers	18,7
				Secondary Education Teachers	45,9
				Primary School and Early Childhood Teachers	19,9
		24	Business and Administration Professionals	Other Teaching Professionals	18,2
				Finance Professionals	57,7
				Administration Professionals	24,1

Table 5 cont.

High qualification occupations		25	Information and Communications Technology Professionals	Software and Applications Developers and Analysts	43,3
				Database and Network Professionals	56,7
		26	Legal, Social and Cultural Professionals	Legal Professionals	37,0
				Librarians, Archivists and Curators	7,2
				Social and Religious Professionals	21,9
				Authors, Journalists and Linguists	12,9
				Creative and Performing Artists	21,0
	Technicians and Associate Professionals	31	Science and Engineering Associate Professionals	Physical and Engineering Science Technicians	60,9
				Mining, Manufacturing and Construction Supervisors	11,7
				Process Control Technicians	6,5
				Life Science Technicians and Related Associate Professionals	8,4
				Ship and Aircraft Controllers and Technicians	12,5
		32	Health Associate Professionals	Medical and Pharmaceutical Technicians	21,5
				Nursing and Midwifery Associate Professionals	38,5
				Traditional and Complementary Medicine Associate Professionals	0,9
				Veterinary Technicians and Assistants	2,1
				Other Health Associate Professionals	37,1
		33	Business and Administration Associate Professionals	Financial and Mathematical Associate Professionals	26,2
				Sales and Purchasing Agents and Brokers	29,9
				Business Services Agents	14,8
				Administrative and Specialized Secretaries	14,4
				Government Regulatory Associate Professionals	14,6
		34	Legal, Social, Cultural and Related Associate Professionals	Legal, Social and Religious Associate Professionals	25,0
				Sports and Fitness Workers	41,5
				Artistic, Cultural and Culinary Associate Professionals	33,5
		35	Information and Communications Technicians	Information and Communications Technology Operations and User Support Technicians	66,3
				Telecommunications and Broadcasting Technicians	33,7
Medium qualification occupations	Clerical Support Workers	41	General and Keyboard Clerks	General Office Clerks	0,6
				Secretaries	37,3
				Keyboard Operators	62,1
		42	Customer Services Clerks	Tellers, Money Collectors and Related Clerks	32,1
				Client Information Workers	67,9
		43	Numerical and Material Recording Clerks	Numerical Clerks	37,7
				Material Recording and Transport Clerks	62,3
		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	5,2
				Cooks	27,0
				Waiters and Bartenders	15,8
				Hairdressers, Beauticians and Related Workers	20,2
				Building and Housekeeping Supervisors	22,3
				Other Personal Services Workers	9,5
		52	Sales Workers	Street and Market Salespersons	5,8
				Shop Salespersons	80,0
				Cashiers and Ticket Clerks	6,3
				Other Sales Workers	7,8
		53	Personal Care Workers	Child Care Workers and Teachers' Aides	45,4
				Personal Care Workers	54,6
		54	Protective Services Workers	Protective Services Workers	100,0
		61	Market-oriented Skilled Agricultural Workers	Market Gardeners and Crop Growers	63,7
				Animal Producers	35,6
				Mixed Crop and Animal Producers	0,8
		62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	Forestry and Related Workers	96,5
				Fishery Workers, Hunters and Trappers	3,5
		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	63,6
				Building Finishers and Related Trades Workers	28,5
				Painters, Building Structure Cleaners and Related Trades Workers	7,9
		72	Metal, Machinery and Related Trades Workers	Sheet and Structural Metal Workers, Moulders and Welders, and Related Workers	24,6
				Blacksmiths, Toolmakers and Related Trades Workers	25,5
				Machinery Mechanics and Repairers	49,9
		73	Handicraft and Printing Workers	Handicraft Workers	50,9
				Printing Trades Workers	49,1
		74	Electrical and Electronic Trades Workers	Electrical Equipment Installers and Repairers	87,2
				Electronics and Telecommunications Installers and Repairers	12,8
		75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	Food Processing and Related Trades Workers	28,0
				Wood Treaters, Cabinet-makers, and Related Trades Workers	38,3
				Garment and Related Trades Workers	27,6
				Other Craft and Related Workers	6,1

Table 5 cont.

Medium qualification occupations	Services and Sales Workers	81	Stationary Plant and Machine Operators	Mining and Mineral Processing Plant Operators	7,0
				Metal Processing and Finishing Plant Operators	1,6
				Chemical and Photographic Products Plant and Machine Operators	4,5
				Rubber, Plastic and Paper Products Machine Operators	7,2
				Textile, Fur and Leather Products Machine Operators	19,7
				Food and Related Products Machine Operators	11,6
				Wood Processing and Papermaking Plant Operators	16,5
				Other Stationary Plant and Machine Operators	31,9
		82	Assemblers	Assemblers	100,0
		83	Drivers and Mobile Plant Operators	Locomotive Engine Drivers and Related Workers	3,1
				Car, Van and Motorcycle Drivers	18,0
				Heavy Truck and Bus Drivers	43,1
				Mobile Plant Operators	31,9
				Ships' Deck Crews and Related Workers	4,0
Low qualification occupations	Elementary Occupations	91	Cleaners and Helpers	Domestic, Hotel and Office Cleaners and Helpers	88,1
				Vehicle, Window, Laundry and Other Hand Cleaning Workers	11,9
		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	21,3
				Manufacturing Labourers	63,2
				Transport and Storage Labourers	15,5
		94	Food Preparation Assistants	Food Preparation Assistants	100,0
		95	Street and Related Sales and Services Workers	Street and Related Services Workers	100,0
		96	Refuse Workers and Other Elementary Workers	Refuse Workers	53,8
				Other Elementary Workers	46,2

Distribution of the employed by occupations and age groups

2017, %

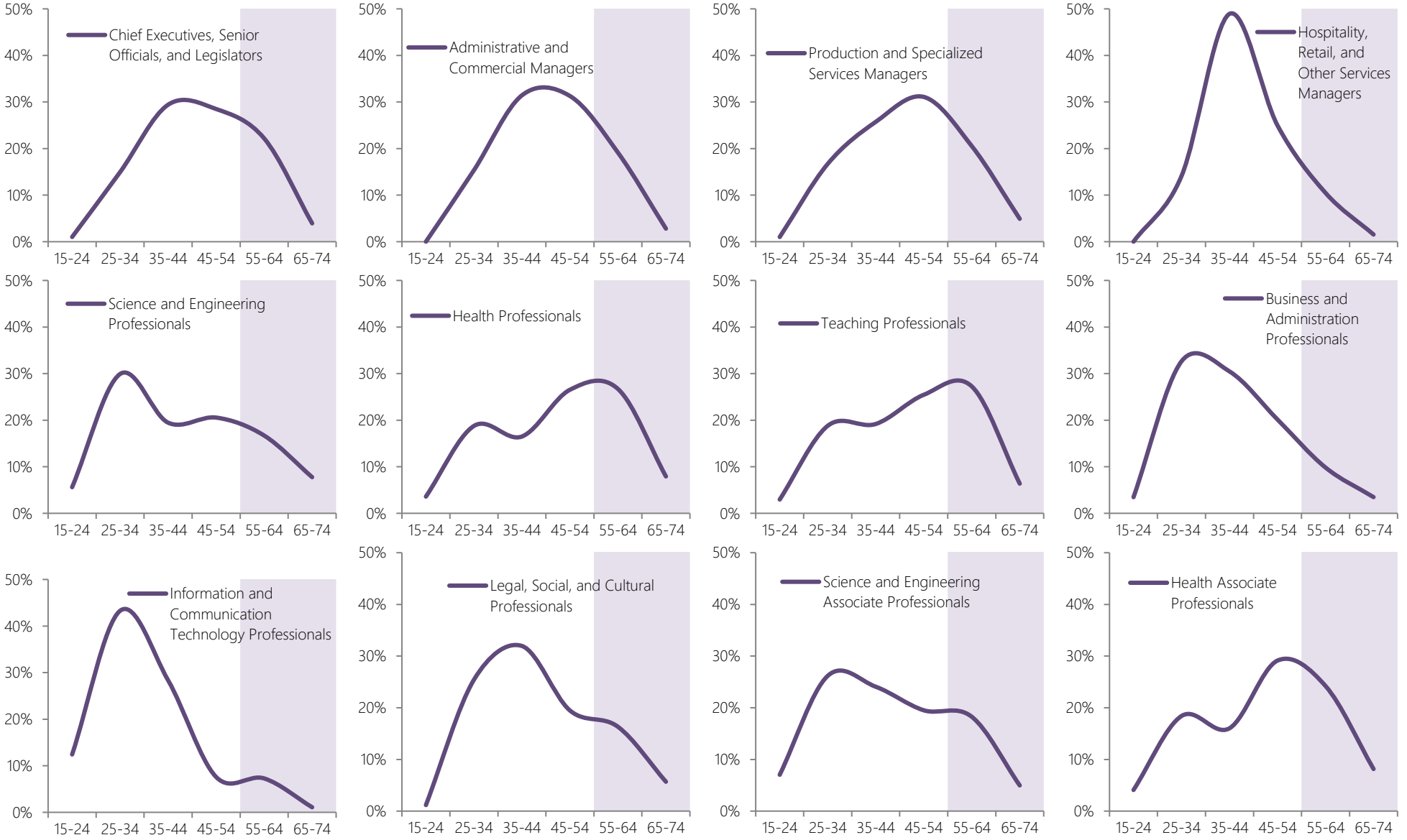

Figure 2 cont.

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.

Table 6 cont.

		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, %	
				Fact	Forecast			Fact	Forecast				
				2019	2020	2027	2040	2019	2020	2027	2040	2027	2040
			Total	**910,0**	**841,3**	**905,6**	**895,4**	**971,3**	**944,8**	**958,4**	**942,3**	**94**	**95**
High qualification occupations	Managers	11	Chief Executives, Senior Officials and Legislators	36,1	33,3	37,5	38,3	36,8	36,4	41,0	48,8	92	78
		12	Administrative and Commercial Managers	21,6	20,6	22,5	24,3	22,0	21,7	23,6	26,8	96	91
		13	Production and Specialized Services Managers	23,3	22,6	27,0	32,5	23,8	23,7	28,1	35,8	96	91
		14	Hospitality, Retail and Other Services Managers	7,6	6,5	8,5	9,8	7,7	7,9	9,9	11,9	86	83
	Professionals	21	Science and Engineering Professionals	21,1	20,4	27,7	38,3	22,1	22,0	27,8	40,3	100	95
		22	Health Professionals	17,8	18,4	22,6	31,6	17,9	17,8	22,6	32,3	101	98
		23	Teaching Professionals	44,4	43,8	40,5	36,6	45,0	43,5	43,4	42,6	93	86
		24	Business and Administration Professionals	43,0	40,6	42,5	42,6	44,4	43,9	47,9	52,2	89	82
		25	Information and Communications Technology Professionals	15,1	14,9	18,6	24,3	15,9	16,0	17,2	17,0	108	143
		26	Legal, Social and Cultural Professionals	19,9	18,1	22,0	25,4	20,3	20,0	23,1	28,0	95	90
	Technicians and Associate Professionals	31	Science and Engineering Associate Professionals	25,3	23,6	29,7	36,6	26,7	26,3	29,0	35,5	102	103
		32	Health Associate Professionals	12,3	12,2	13,4	15,4	12,6	12,5	13,6	15,6	98	99
		33	Business and Administration Associate Professionals	75,9	71,8	75,7	77,8	79,0	78,2	80,6	80,8	94	96
		34	Legal, Social, Cultural and Related Associate Professionals	14,8	12,9	15,9	17,7	16,4	16,4	17,0	17,9	94	99
		35	Information and Communications Technicians	5,8	5,7	9,2	14,4	6,2	6,2	8,5	13,2	108	109
Medium qualification occupations	Clerical Support Workers	41	General and Keyboard Clerks	5,8	5,3	5,1	3,7	6,2	6,2	5,7	4,0	90	95
		42	Customer Services Clerks	14,0	12,0	12,2	9,4	16,2	16,2	15,9	10,9	77	86
		43	Numerical and Material Recording Clerks	22,5	20,3	20,8	18,3	23,9	23,0	20,6	17,9	101	102
		44	Other Clerical Support Workers	4,3	3,7	3,8	3,5	4,6	4,3	3,8	3,5	100	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, %	
				Fact	Forecast			Fact	Prognoze				
				2019	2020	2027	2040	2019	2020	2027	2019	2020	2027
Medium qualification occupations	Services and Sales Workers	51	Personal Services Workers	42,8	35,1	44,1	47,0	45,4	44,0	43,6	46,1	101	102
		52	Sales Workers	57,1	52,6	47,2	32,5	64,8	63,1	59,9	42,8	79	76
		53	Personal Care Workers	19,7	19,7	19,9	20,6	21,0	19,7	19,1	20,3	104	102
		54	Protective Services Workers	16,0	14,5	15,8	15,5	17,2	16,4	16,4	17,6	97	88
	Skilled Agricultural, Forestry and Fishery Workers	61	Market-oriented Skilled Agricultural Workers	20,9	20,2	20,5	18,6	21,3	20,3	19,9	18,0	103	104
		62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	6,4	6,2	6,3	5,7	7,0	6,9	6,3	4,6	100	125
		63	Subsistence Farmers, Fishers, Hunters and Gatherers	3,1	2,9	2,6	1,7	3,1	2,8	2,5	1,6	103	102
	Craft and Related Trades Workers	71	Building and Related Trades Workers (excluding Electricians)	41,8	39,3	45,5	43,9	46,2	45,0	42,3	33,8	108	130
		72	Metal, Machinery and Related Trades Workers	31,2	28,6	29,7	26,9	32,9	31,5	29,0	23,5	103	115
		73	Handicraft and Printing Workers	3,1	2,8	3,1	2,9	3,3	3,2	3,0	2,4	104	121
		74	Electrical and Electronic Trades Workers	9,8	9,0	9,5	8,5	10,2	9,7	8,5	5,8	112	147
		75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	25,6	23,3	25,2	23,7	27,0	25,7	23,3	18,3	108	130
	Plant and Machine Operators and Assemblers	81	Stationary Plant and Machine Operators	16,2	14,9	15,8	15,0	17,5	16,8	15,1	12,9	105	116
		82	Assemblers	4,5	4,1	4,3	3,9	4,8	4,7	4,3	3,8	102	103
		83	Drivers and Mobile Plant Operators	63,7	56,2	60,5	57,7	67,9	64,9	58,1	48,8	104	118
Low qualification occupations	Elementary Occupations	91	Cleaners and Helpers	27,7	24,3	23,2	16,3	30,0	27,6	26,4	21,8	88	75
		92	Agricultural, Forestry and Fishery Labourers	11,5	10,8	9,9	6,9	13,9	13,6	14,0	11,0	70	63
		93	Labourers in Mining, Construction, Manufacturing and Transport	54,3	49,3	47,3	33,5	63,4	62,1	65,1	56,5	73	59
		94	Food Preparation Assistants	6,0	4,5	5,1	3,9	6,5	6,2	5,8	4,3	89	89
		95	Street and Related Sales and Services Workers	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	100	100
		96	Refuse Workers and Other Elementary Workers	18,1	16,6	14,9	10,6	20,2	18,2	16,3	13,7	92	78

Labour demand and supply distributed by education fields

thousands

	Fact	Forecast		
	2019	2020	2027	2040
Total demand, including:	**910,0**	**841,3**	**905,5**	**895,4**
Higher Education	352,5	333,7	374,8	414,8
Vocational secondary education	267,3	245,6	269,4	274,8
General secondary education	222,4	200,9	201,2	162,6
Basic education	67,8	61,0	60,2	43,2
Total supply, including:	**971,3**	**944,8**	**958,4**	**942,3**
Higher Education	365,7	358,4	382,8	430,9
Vocational secondary education	287,7	271,8	229,6	183,2
General secondary education	239,3	231,4	225,3	225,0
Basic education	78,6	83,2	120,7	103,2

HIGHER 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	
		Fact	Forecast			Fact	Forecast				
		2019	2020	2027	2040	2019	2020	2027	2040	2027	2040
	Higher education, total	**352,5**	**333,7**	**374,8**	**414,8**	**365,7**	**358,4**	**382,8**	**430,9**	**8,0**	**16,2**
14	Teacher training and education science	49,3	47,3	44,6	38,4	50,3	48,3	46,5	39,2	1,9	0.8
21	Arts	6,7	6,1	7,0	7,4	7,8	7,6	9,8	14,2	2,8	6.8
22	Humanities	11,8	10,9	11,1	10,0	12,2	12,0	12,7	14,2	1,6	4.2
31	Social and behavioural science	50,0	46,1	46,9	41,7	52,1	50,6	49,3	45,3	2,4	3.6
32	Journalism and information	3,7	3,3	3,4	2,9	3,8	3,8	4,2	5,2	0,8	2.3
34	Business and administration	62,4	59,7	71,3	87,3	65,4	66,2	79,1	106,5	7,7	19.2
38	Law	30,0	28,9	33,2	39,4	31,0	30,9	34,8	42,2	1,6	2.7
42	Life sciences	3,5	3,3	3,6	3,7	3,7	3,4	3,3	3,3	-0,3	-0.4
44	Physical sciences	5,7	5,4	7,0	9,0	5,7	5,5	5,4	5,9	-1,7	-3.1
46	Mathematics and statistics	1,7	1,7	2,0	2,8	2,2	1,9	1,7	1,9	-0,3	-0.9
48	Computing	12,2	11,9	16,4	23,8	13,0	12,8	13,3	13,7	-3,2	-10.1
52	Engineering and engineering trades	31,7	29,1	31,5	30,8	32,6	31,0	30,2	30,9	-1,4	0.1
54	Manufacturing and processing	5,5	5,0	5,3	4,6	5,9	5,8	5,5	4,6	0,2	-0.1
58	Architecture and building	21,0	20,3	27,3	37,1	21,6	20,7	20,2	20,0	-7,2	-17.1
62	Agriculture, forestry and fishery	6,9	6,4	6,9	6,5	7,0	6,6	6,3	6,2	-0,5	-0.3
64	Veterinary	0,6	0,6	0,9	1,4	0,6	0,6	0,7	1,3	-0,2	-0.2
72	Health	21,3	21,6	26,9	37,2	22,0	21,8	27,1	38,3	0,2	1.1
76	Social services	3,9	3,7	3,8	3,7	4,1	4,1	4,9	6,2	1,1	2.5
81	Personal services	6,5	5,6	6,1	5,4	6,7	6,7	7,8	8,8	1,7	3.4
84	Transport services	5,5	5,1	6,7	8,7	5,6	5,4	5,2	5,9	-1,5	-2.7
85	Environmental protection	1,4	1,2	1,2	1,0	1,4	1,4	2,0	2,7	0,8	1.8
86	Security services	4,8	4,7	5,3	6,5	4,8	4,9	7,1	10,8	1,8	4.3
	Academic disciplines n.e.c.	6,5	5,9	6,1	5,3	6,7	6,4	5,7	3,5	-0,4	-1,8

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	
		Fact	Forecast			Fakts	Fact	Forecast			
		2019	2020	2027	2040	2019	2019	2020	2027	2027	2040
	Secondary education, total	**489,7**	**446,6**	**470,6**	**437,4**	**527,1**	**503,2**	**454,9**	**408,2**	**-15,7**	**-29,2**
	Vocational education and vocational secondary education, including:	267,3	245,6	269,4	274,8	287,7	271,8	229,6	183,2	-39,8	-91,6
14	Teacher training and education science	2,7	2,4	2,1	1,2	2,8	2,7	1,8	0,6	-0,3	-0.6
21	Arts	6,1	5,3	5,8	5,2	6,6	6,2	6,2	7,0	0,5	1.8
22	Humanities	0,4	0,3	0,3	0,2	0,4	0,3	0,2	0,0	-0,2	-0.2
31	Social and behavioural science	3,5	3,0	2,7	1,5	3,7	3,3	2,2	0,8	-0,5	-0.8
32	Journalism and information	0,4	0,4	0,3	0,2	0,5	0,4	0,2	0,0	-0,1	-0.2
34	Business and administration	24,9	23,1	25,1	25,9	26,8	25,1	21,1	18,8	-4,0	-7.1
38	Law	0,2	0,2	0,2	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	0,2	-0,1	-0.1
44	Physical sciences	1,0	0,9	0,8	0,5	1,0	0,9	0,5	0,1	-0,3	-0.4
46	Mathematics and statistics	0,3	0,3	0,2	0,1	0,4	0,4	0,2	0,0	0,0	-0.1
48	Computing	2,1	2,1	3,9	6,8	2,2	2,1	3,2	6,0	-0,8	-0.8
52	Engineering and engineering trades	78,6	71,9	76,0	68,9	84,1	79,0	63,3	45,0	-12,8	-23.9
54	Manufacturing and processing	37,6	34,4	36,8	35,6	39,5	37,6	30,3	16,6	-6,5	-19.1
58	Architecture and building	23,1	22,0	27,7	32,5	26,0	24,8	22,0	20,3	-5,7	-12.3
62	Agriculture, forestry and fishery	9,1	8,3	7,7	7,6	10,0	9,5	8,2	6,2	0,5	-1.4
64	Veterinary	2,4	2,2	2,0	1,4	2,8	2,6	2,1	1,8	0,1	0.4
72	Health	15,3	14,9	15,2	15,5	15,6	14,5	12,3	9,9	-2,9	-5.6
76	Social services	0,3	0,4	0,8	2,2	0,3	0,3	0,5	1,4	-0,4	-0.8
81	Personal services	33,1	29,6	35,1	39,9	37,3	36,1	34,8	38,3	-0,3	-1.6
84	Transport services	16,4	15,1	17,0	18,5	17,8	16,7	12,9	6,1	-4,0	-12.4
85	Environmental protection	0,5	0,4	0,3	0,3	0,5	0,5	0,5	0,4	0,2	0.1
86	Security services	2,7	2,5	2,3	1,5	2,7	2,6	2,4	1,8	0,1	0.3
	Not known or unspecified	5,9	5,5	6,5	8,6	6,1	5,5	4,0	1,8	-2,4	-6.8
	General Secondary Education	222,4	200,9	201,2	162,6	239,3	231,4	225,3	225,0	24,1	62,4

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

Table 12

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. 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.

Table 12 cont.

Padome	Padomē iesaistītās organizācijas	Mērķis
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.
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	MoW, MoE, MoES, SEA, Employers' Confederation of Latvia, Free Trade Union Confederation of Latvia,	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.

and persons subject to risk of unemployment	Latvian Association of Local and Regional Government, other experts

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 J.Vitenbergs

Endorsement: Secretary of State E.Valantis

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