



EUROSÜSTEEM

# LABOUR MARKET REVIEW

1/2016

*The labour market review by experts from Eesti Pank covers developments in the supply, demand and prices of labour in Estonia. The central bank observes the labour market for two reasons. Firstly, labour is an important production input, as a change in the supply or activity of labour can directly affect potential growth. Secondly, events in the labour market can have a major impact on inflation. Given the orientation of the euro area monetary policy towards price stability, and the openness of the Estonian economy, the economy can adjust to changes principally through the prices and volumes of production inputs. For this reason it is important for the labour market to be flexible and for wage rises to correspond to productivity growth, as otherwise the increase in production costs could lead to excessive inflation.*

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## KEY DEVELOPMENTS IN THE SECOND HALF OF 2015

Growth has been slow in the Estonian economy for several years now and it slowed further in 2015. Despite this, the demand for labour remained strong as employment grew and growth accelerated in the payroll of the whole economy as a share of GDP. Part of the reason for this contradiction may be that the slowdown in GDP growth was not broadly based, as certain sectors made a significant contribution to the slowdown, but do not account for a large share of employment.

In the longer term the supply of labour in the economy depends on the number of residents of working age and how actively they participate in the labour force. The number of people of working age has been declining in Estonia for a long time now, and this trend continued in 2015. This was more than offset however by increased participation in the labour force, and overall the amount of labour in the economy grew. People are encouraged to participate in the labour market by the increased chances of finding a job and by the steadily rising wage level.

Annual growth in the second half of 2015 was as fast as in the first half, but this was because of extraordinarily high employment in the third quarter. The estimate of employment may to some extent have been boosted by the delayed effect of the registration of employees. Estimates of employment based on data from companies put employment growth slower than in 2014, but most of them still show positive growth. For the year as a whole it was only full-time equivalent employment in the wage survey that fell. At the same time, demand for labour calculated from the number employed may be overestimated as there was an increase in the number of those in employment who were working part-time, and the number of hours worked in the whole economy grew more slowly than employment did.

Increased employment led to a fall in unemployment for 2015 as a whole. Unemployment in Estonia is markedly lower than in Latvia or Lithuania, and the reasons behind this are analysed in Box 3 of this report. The percentage of the long-term unemployed in total unemployment fell in the second half of the year. In the last quarter of the year both the labour force survey and the data on registered unemployment showed a rise in the number of short-term unemployed. Data on registered unemployment from Töötukassa, the unemployment insurance fund, gave a slightly less optimistic picture than the labour force survey. The number registered as unemployed increased quarterly from the second quarter to the fourth and there was also a rise in the number of those whose working relationships were ended as they were made redundant. More people entered the register because of redundancy than did so in 2014, but still substantially fewer than in 2013.

Unit labour costs continued to grow fast in yearly terms in the second half of the year. Wages grew fastest in the public sector, specifically in local government administration, but wage growth was lower in Estonian private companies. Data on wages paid out show wage growth to have been fastest in the lower part of the wage distribution, probably because of the sharp rise in the minimum wage. The quarterly growth rate of the index of labour costs gives reason to think that growth in labour costs is slowing, as it fell notably at the end of 2015.

Labour productivity fell in the second half of 2015, while yearly growth in unit labour costs was about as fast as in the first half of the year at 5.6%. This rise came from both the fall in productivity and the growth in labour costs per employee. In contrast to what was forecast, it may be noted that no adjustment in labour costs has yet taken place. Sentiment surveys show indeed that the expectations of companies for employment rose at the end of 2015 and the start of 2016 together with the share of companies complaining of labour shortages. In the longer term, rising unit labour costs mean shrinking profit margins for companies, and that in turn will make those companies more vulnerable in future to negative shocks.

## LABOUR SUPPLY AND DEMAND

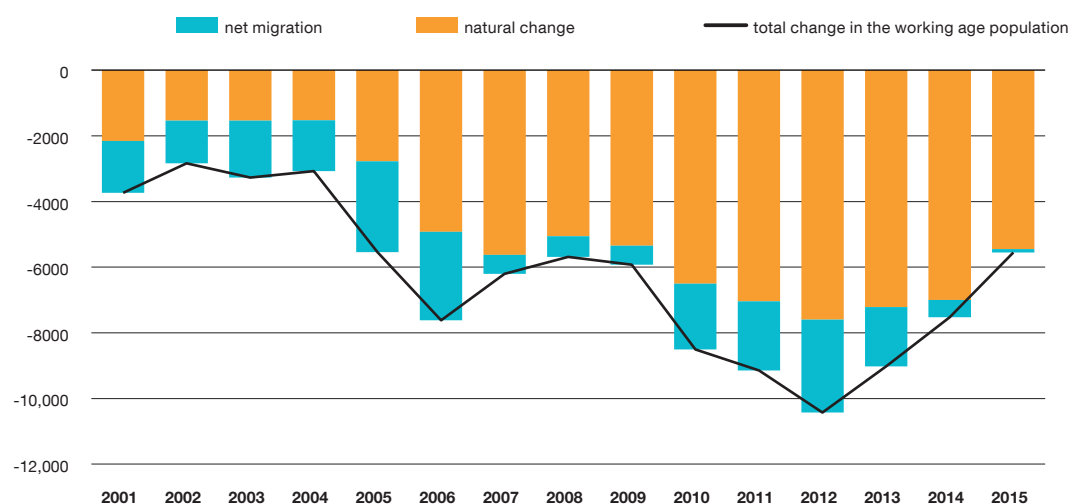
### The working age population

The preliminary estimate from Statistics Estonia shows that there were 1,311,800 permanent residents living in Estonia at the start of 2016. This was 1500, or 0.1%, fewer than a year earlier, with natural population changes accounting for 1400 and migration for 100. Statistics Estonia may adjust this preliminary estimate in May 2016 when it publishes a more precise assessment of the population together with population data divided by age groups. There is no official estimate yet of the size of the working age population, but it can be assumed that the mortality rate stayed at its average of the previous three years and that emigration exceeded immigration for the 15 to 74 age group by 100 people, reducing the working age population by 0.56% from 2015.

The migration balance has improved a lot further in recent years than population forecasts presumed. The migration balance in 2012 reduced the Estonian population by 3682 people, but by only 733 in 2014 and around 100 in 2015. The migration balance was so low because migration flows were much larger in 2015, with the preliminary estimate by Statistics Estonia finding that emigration increased by 44% in 2015 and immigration by 69%. In 2014 the migration balance improved because of a fall in emigration, but in 2015 it was because of a rapid rise in immigration. The fall in emigration and return migration are encouraged by the favourable conditions in the Estonian labour market for employees, as wages have been rising quickly and it is easier to find a job than it was. A further factor is the long-lasting recession in Finland, the main destination for emigrants, and another is that smaller birth cohorts are entering the age group most susceptible to emigration. Given these factors, it is surprising that emigration increased from 4600 people to 6600, though it must be remembered that this is a preliminary estimate.

The rate of decline in the working age population has slowed in the past three years (see Figure 1). This is due to both the improvement in the migration balance and natural demographic processes, as the mortality rate for people aged 15-74 has fallen while the larger cohorts born in the early 2000s have entered this age group and smaller birth cohorts have exited it. This is because those who turn 75 in 2016 were born in 1941 at the start of the Second World War, and during the war there was a notable drop in the birth rate.

Figure 1. Change in the working age population aged 15–74



Source: Statistics Estonia

Relatively little attention has been paid to the fall in recent decades in the mortality rate among those of working age. Life expectancy at age 15 rose by 5.8 years for men between 2000 and 2014, and by 4.6 years for women, and there was a particular fall in the number of preventable deaths of people of working age. Box 1 considers the fall in the mortality rate in more detail.

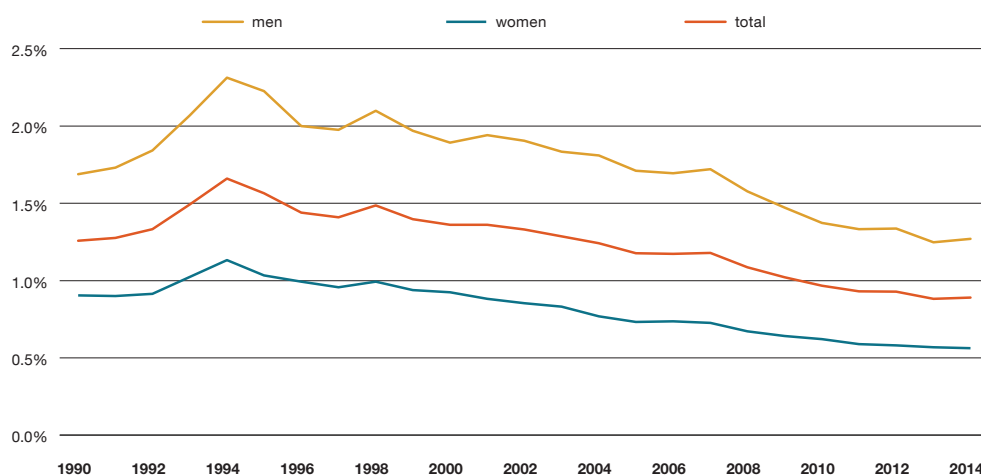
### Box 1: Loss of potential years of work because of death at working age

The life expectancy for women and men in Estonia is lower than in countries with higher income levels, and the mortality rate among those of working age is higher. The situation has improved significantly in the past decade as the life expectancy at birth for men was 5.5 years longer in 2014 at 72.3 years than it was in 2004, and the expectancy for women was 3.5 years longer at 81.5. At the same time that mortality has fallen, the expected number of years of healthy life has risen. Women aged 15-19 entering working age have seen this figure rise from 39.5 in 2004 to 43.1, and for men it has risen from 36.2 to 39 years<sup>1</sup>.

An alternative measure of the mortality rate is years of potential life lost. How many years are lost to one or other cause of death can be calculated, assuming that the deceased would otherwise have reached the average expected lifespan. This lets the number of potential working years lost to society by the mortality of those of working age be calculated, assuming that the deceased would otherwise have worked to a given age. The younger the deceased, the more their death affects the measure as its weight decreases linearly with age. The total loss for society can be expressed as a percentage of the total number of potential working years.

Life expectancy in Estonia is 9.2 years shorter for men than for women. It follows from this that the percentage of potential working years lost is thus also higher for men than for women. Figure B1.1 clearly shows the downward trend and the narrowing of the gap between the figures for men and women. In 2014 the working age population aged 15–74 lost 0.9% of its potential working years because of death.

Figure B1.1. Loss of potential years of work by sex

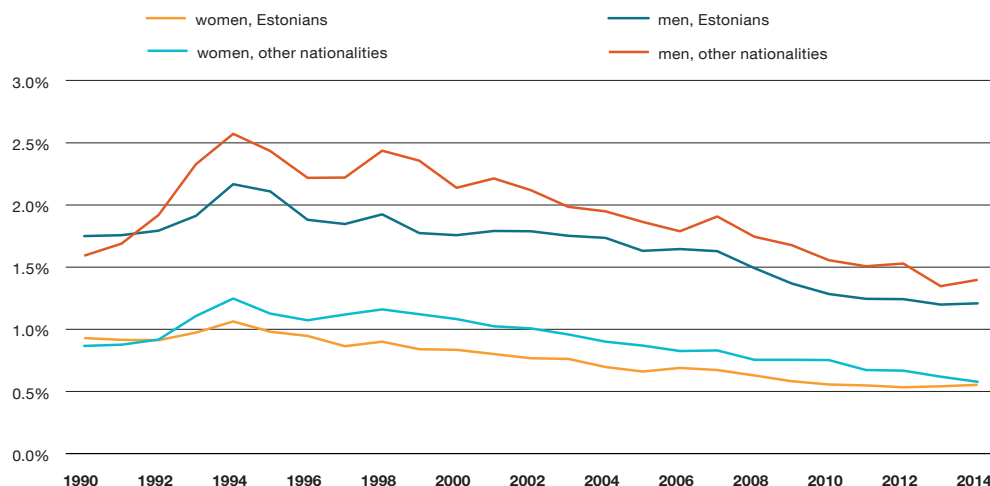


Sources: Statistics Estonia, Eesti Pank calculations

<sup>1</sup> The National Institute for Health Development. See <http://pxweb.tai.ee/esf/pxweb2008/Database/Rahvastik/06TEaastad/06TEaastad.asp>.

The loss of potential years of work can be calculated for each indicator from which data can be found on the mortality rate for each age group, so separate figures can be found by nationality, county or cause of death. The following figures show that the loss of potential years of work has decreased over time for Estonians and non-Estonians and it has almost become equal for women in the two groups.

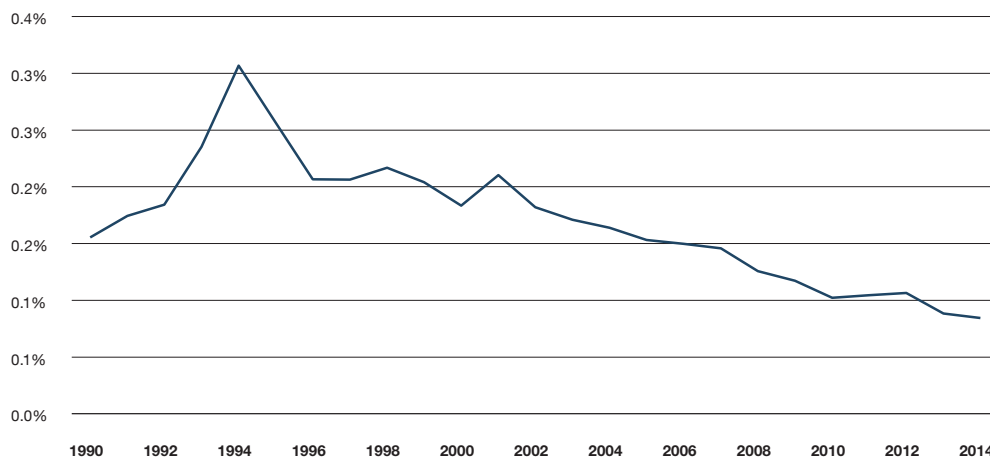
**Figure B1.2 Loss of potential years of work by sex and nationality**



Statistics Estonia, Eesti Pank calculations

The loss of potential years of work is much smaller for young people than for those of older working age, and in the past 20 years the trend has been downwards. Preventable deaths, such as those caused by accidents, poisoning or trauma, are a significant factor for young people. The following figure shows that such causes cost Estonia fewer labour resources each year.

**Figure B1.3. Loss of potential years of work because of accidents, poisoning or trauma**

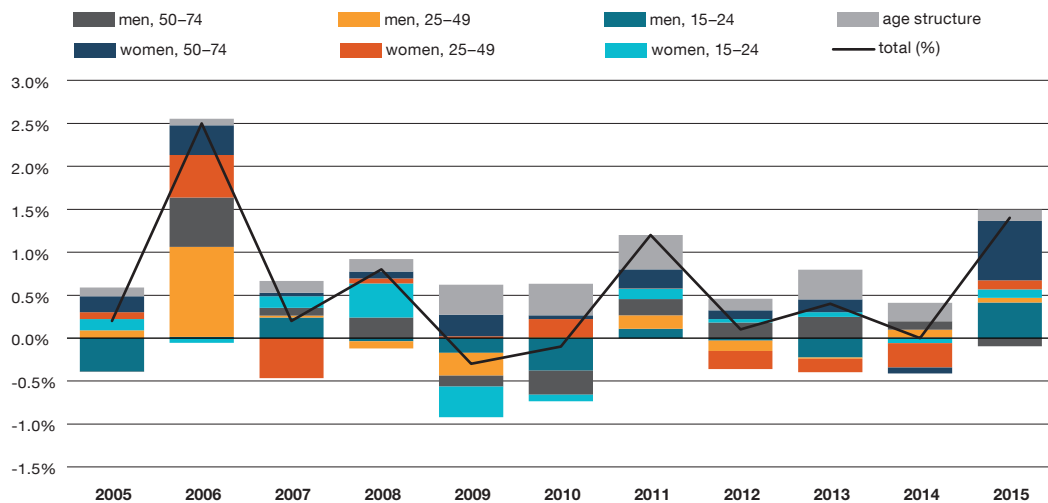


Sources: Statistics Estonia, Eesti Pank calculations

## Participation in the labour force and inactivity

The labour force participation rate<sup>2</sup> was 1.4 percentage points higher in 2015 than in 2014 at 69.4%, and in the second half of the year it hit 70.2%, its highest level since 1997. Although the working age population shrank by some 7600 people during the year, there were 11,300 more people in the labour force of the economy, which is a rise of 1.7%. The rise in the participation rate in 2015 was the second largest of the past decade behind only that of 2006 (see Figure 2). The effect of the age structure of the working age population was smaller than in previous years.

**Figure 2. Contributions to the change in participation rate by age and gender**



The rise in the participation rate may have been affected by the new requirement for companies to register all their employees starting from the second half of 2014. In theory it should make no difference in the definition of working status in the labour force survey whether someone is working officially and receiving a declared wage or not, but work in the shadow economy may still affect responses in reality. The results of the survey are anonymous, but not all of those interviewed who work in the shadow economy will necessarily believe the interviewer and may prefer to answer that they are inactive.

The biggest boost to the rise in the participation rate in 2015 came from the participation of women aged 50-74 increasing by an average for the year of 3.2 percentage points. In the second half of the year, 58% of women in this age group were active in the labour market, which is 2.7 percentage points more than a year earlier. The steadily lengthening working life may partly be explained by the rise in the retirement age. In 2016 the retirement age for women will stop its rise of half a year each calendar year and will be the same as the retirement age for men at 63. If people who have just reached retirement age were to delay their exit from the labour market by half a year, it would have notably less of an impact on the participation rate for residents aged 50-74 than was actually the case. The actual age at which people retire in Estonia has risen consistently for both women and men. Box 2 discusses the average retirement ages found using various methodologies and compares Estonia to other European countries.

<sup>2</sup> The labour participation rate is the weight of the employed and the unemployed in the working age population.



## Box 2: The average effective retirement age.

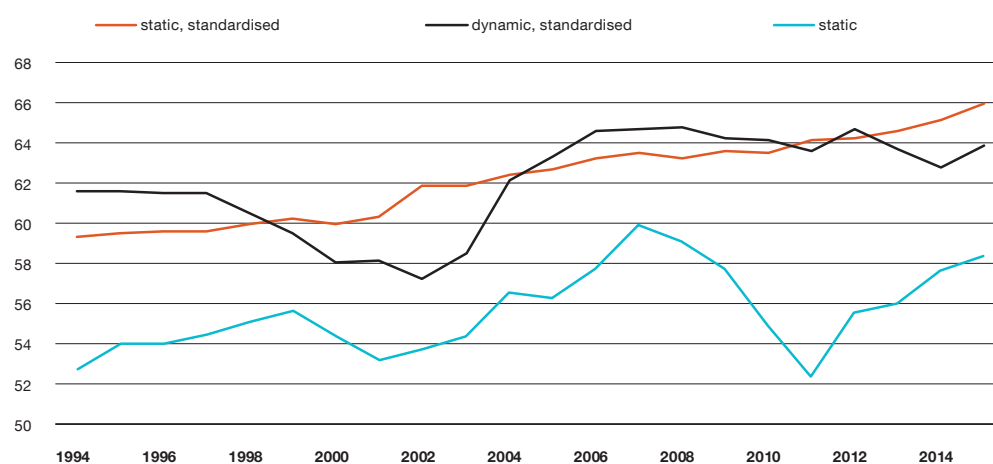
Longer life expectancy and a lower birth rate mean that the populations of most developed countries are ageing. To reduce the burden on social security systems and keep them sustainable, countries with ageing populations have an interest in encouraging their populations to participate in the labour market for as long as possible. A very important indicator in this is the expected age at which people decide to leave the labour market by retiring.

The average retirement age cannot be found by looking at the average at which people start receiving their pension, as most of those who are over retirement age but still working receive a pension too. The effective retirement age can be quite different from the retirement age defined in law as many people exit the labour market permanently for health reasons or other reasons before they reach retirement age. Equally, there are many people who work well beyond the retirement age.

The OECD calculates the effective retirement age using data from labour force surveys on the labour force participation of those aged 40-74 in five-year groups<sup>3</sup>. It is around this age that labour force participation starts to decline, initially because of health problems, then later because of retirement. A simple average effective retirement age can be found from the average age of exit from the labour force (see the static indicator in Figures B2.1 and B2.2). Unfortunately the calculation depends on the population structure, which is affected by the mortality rate and by birth cohorts being of different sizes, because one cohort was born during the war for example. The higher mortality is in the 40-74 age range, the lower the average age for exiting the labour market is.

To stop the average retirement age depending on the population structure and to make it internationally comparable, standardised indicators are used. This is done by giving all age groups equal weights. Figures B2.1 and B2.2 show that the standardised effective retirement age is notably higher than the ordinary average retirement age. It can be taken as the expected retirement age for a person who lives to at least 75.

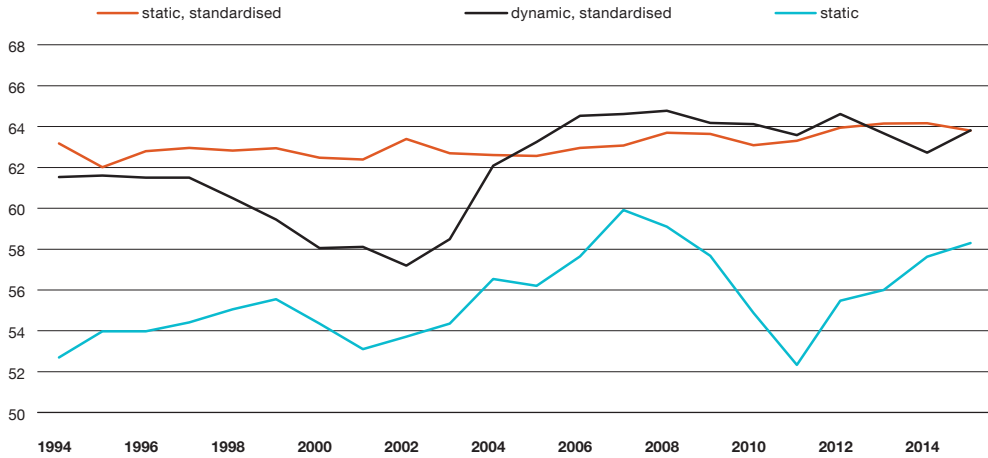
Figure B2.1. Average effective age of retirement, women



Sources: Statistics Estonia, Eesti Pank calculations

<sup>3</sup> <http://www.oecd.org/els/emp/39371923.pdf>.

**Figure B2.2. Average effective age of retirement, men**

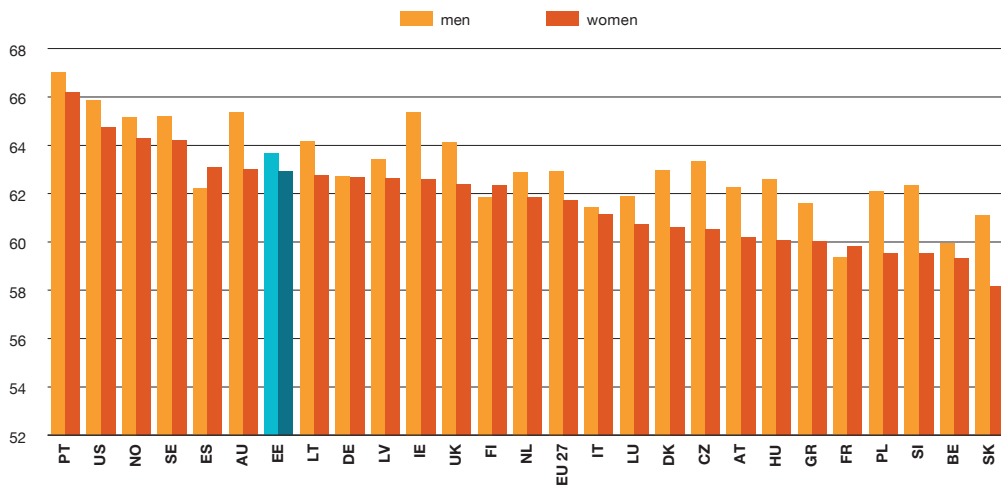


Sources: Statistics Estonia, Eesti Pank calculations

The difference between the dynamic and static indicators is mainly that the static one uses the assumption that consecutive cohorts behave in a similar way. It does this by comparing the labour force participation rates for successive five-year age groups in the same year. To avoid this assumption, the dynamic indicator can be used, which compares the behaviour of age groups with the behaviour of the five-year group that was the same age five years earlier. In reality the behaviour is affected by the economic cycle, which makes the dynamic indicator more volatile than the static one.

Figure B2.3 orders selected OECD countries by the effective retirement age for women. Women in Estonia exit the labour market relatively late in comparison to other European Union countries, and the indicator for men is above the European Union average.

**Figure B2.3. Average effective age of retirement, 2014**

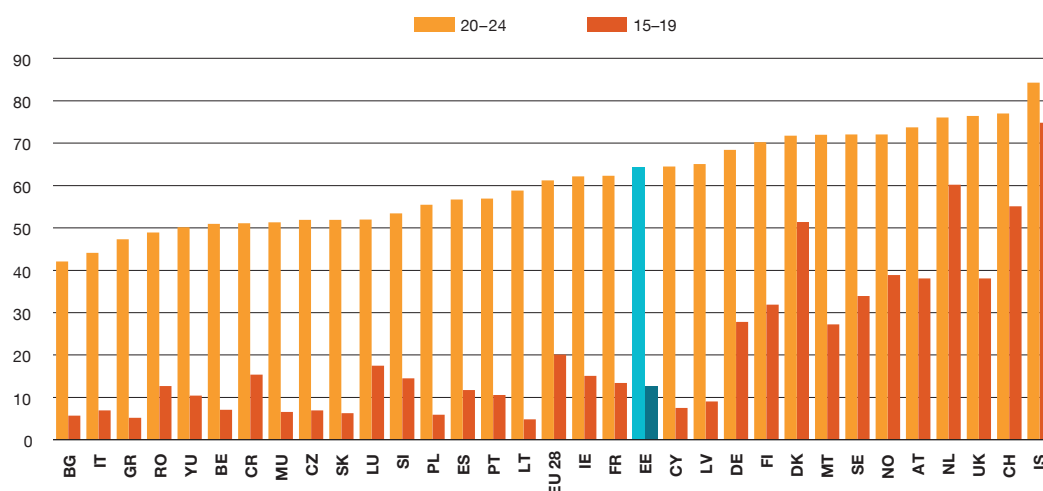


Source: OECD

The participation rate for the young aged 15 to 24 for 2015 as a whole was 2.6 percentage points higher than in 2014 despite the increase in the share in that age group of those aged 15-19, who have a very low participation rate. The participation rate mainly rose because the participation of young men was around 10 percentage points higher in the second and third quarters than in the previous year. Given that it is probable that unofficial work was particularly widespread among young men, it may be that the requirement to register employees played a part in this. A further indirect indication of this is that the increase in the participation of those young men led employment to increase in the construction sector by more than the average.

The main reason the young are inactive is studying. In 2015, 51% of the younger age group were inactive in the labour market because they were studying. There are significant differences within the age group, as the participation rate for those aged 15-19, who are mostly in school, is below 10%, while for those aged 20-24 it is around half. The participation rate for the young in Estonia is low in comparison to the rates in other European Union countries (see Figure 3), but this is because elsewhere the work experience part of secondary level education is counted as working. A large share of young people in Austria for example study on courses that include one day of work experience each week<sup>4</sup>, though this sort of experience or work while studying could instead be classed as part of the education system rather than as work in the open labour market. In contrast, it is more common in Estonia than in other European Union countries for students in higher education to have a full-time job alongside their studies.

**Figure 3. Labour force participation among the young**



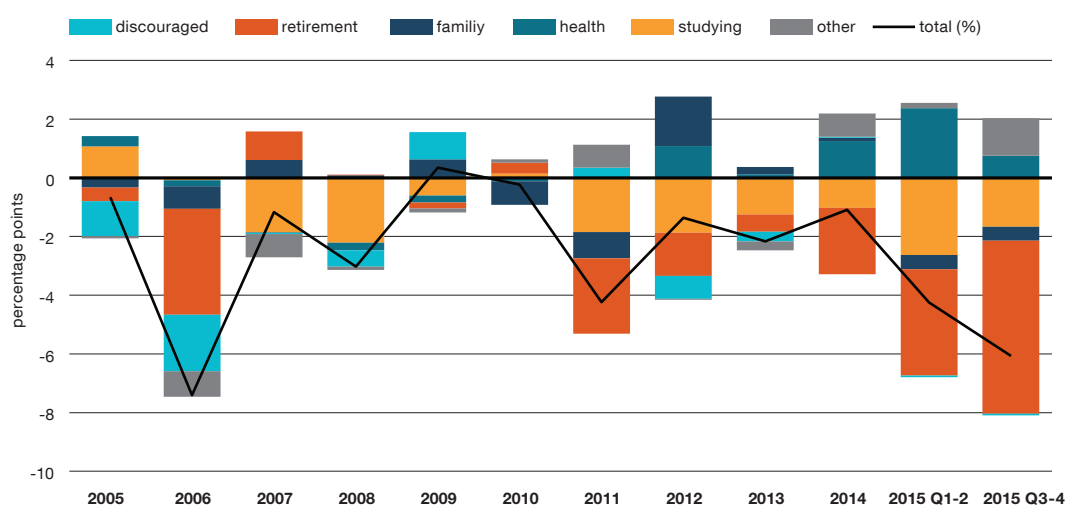
Source: Eurostat

The participation rate for people in their prime working years of 25-49 was 88.1% in the second half of 2015, which was 0.7 percentage point higher than a year earlier. The participation rate for men was 93.8%, which was 11.6 percentage points higher than that for women. Participation by men was 0.3 percentage point higher than a year earlier, while the rate for women was 1.2 percentage points higher. The participation rate for people in Estonia in their middle working years is above the European Union average for both men and women, though still several percentage points behind the countries with the highest rates. The difference is particularly large for women at 7-8 percentage points, which is affected by the relatively long time that women in Estonia can take out of the labour market after the birth of a child.

<sup>4</sup> Eurostat: statistics explained. Participation of young people in education and the labour market, see <http://ec.europa.eu/eurostat/statistics-explained/>.

The main reason for the drop in the number who were inactive was that fewer people were out of the labour market because they reached retirement age (see Figure 4). There were 12.5% fewer people inactive because of retirement in the second half of 2015 than a year earlier. As expected, the rise in the retirement age has been accompanied by an increase among older women in the numbers who are not in the labour market for health reasons. This does not of course mean that the health of the population has deteriorated, as the number of years of healthy life rises together with rising life expectancy. The number of people inactive for health reasons rises partly because the population is ageing, and partly because not everyone is able to work until the higher retirement age.

**Figure 4. Change in the number of non-participants**



Sources: Statistics Estonia, Eesti Pank calculations

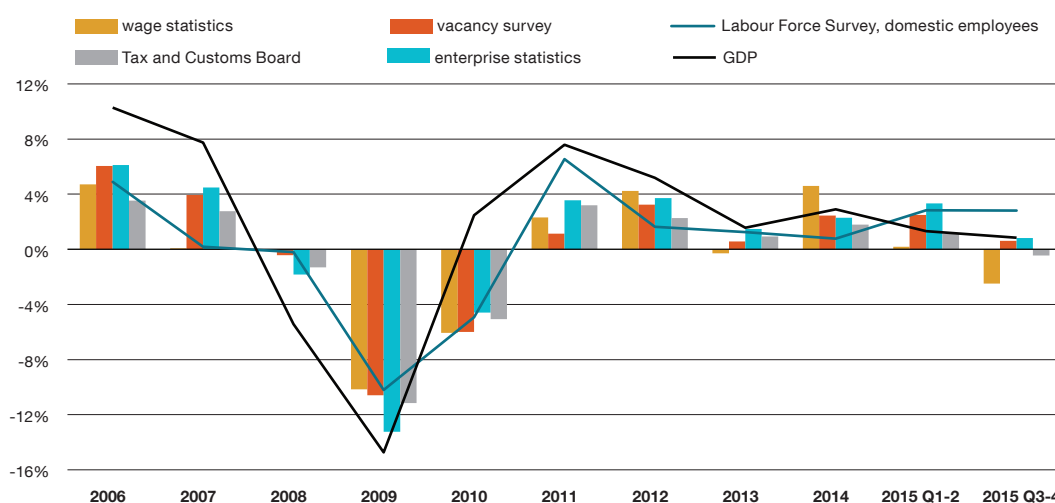
The labour force participation rate rose in 2015 for Estonians by 1.6 percentage points, and for non-Estonians by 1 percentage point. The participation rate for Estonians was 70.5%, which was still higher than the rate of 67.1% for non-Estonians. Increased Estonian labour market participation has come from women, and the difference in the participation rates was particularly high at 11 percentage points for women aged 50-74.

## Employment

Labour force survey data show employment growth accelerating for 2015 as a whole in relation to 2014. Employment increased by 2.8% in the second half of 2015 in resident production units, which are companies and institutions operating in Estonia (see Figure 5). Unlike in previous years, total employment, which is employment of Estonian residents, increased faster than employment in resident production units, as the number of Estonian residents working abroad rose by 1.4% in the second half of 2015, having fallen continuously since the second half of 2013. Yearly employment growth accelerated in the second half of the year because of exceptionally fast growth in the third quarter, though this was followed by a slowing in the fourth quarter.

Accelerating employment growth does not fit together with weak GDP growth in the economy, or with declining profits in the business sector. Other data sources showed rather that growth was slowing or even falling in the second half of 2015 (see Figure 5), so it might be assumed that estimates based on the Estonian labour force survey have belatedly been inflated by employees moving out of the shadow economy and into declared employment because of the requirement

**Figure 5. Growth rate of the number of employees and GDP growth**



Sources: Statistics Estonia, Tax and Customs Board

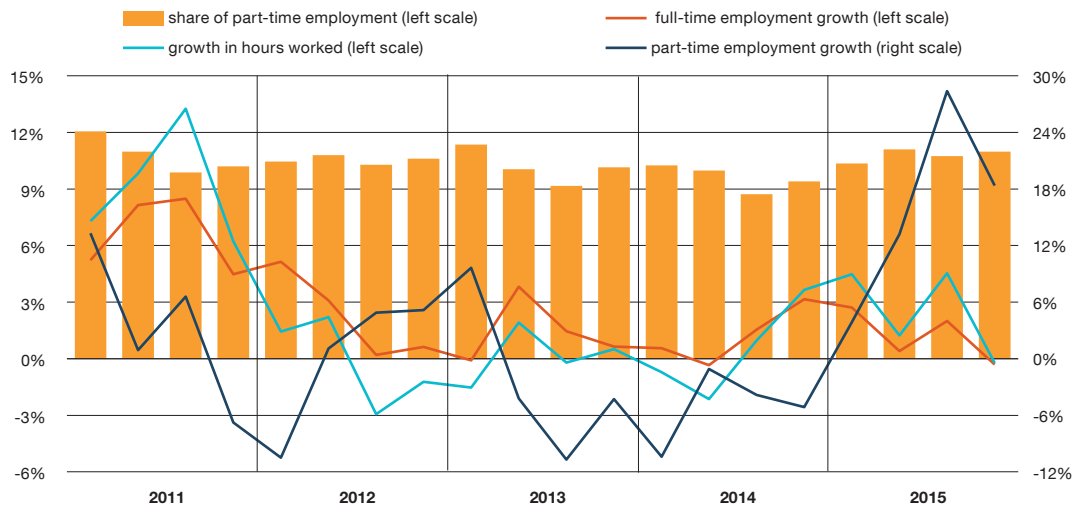
to register. The impact of the registration of employees on the results of the labour force survey should be less than the impact on employment estimates based on enterprise data. Of course not all respondents will reveal the details of their unofficial working relationships even in an anonymous survey, and in that case a reduction of the shadow economy will also increase the estimates of employment based on the labour force survey. The impact of the registration was probably particularly pronounced at a time when there is a lot of seasonal work, which is the second and third quarters of the year.

The employment rate, which is the employed as a share of the working age population, rose for the 15–74 age group from 63% in 2014 to 65.2% in 2015, adding around 2 percentage points for both men and women. The employment rate for those aged 20–64, which is targeted in the European Commission's growth strategy for 2020, climbed to 76.2% in Estonia in 2015, passing the target of 75% as it did so.

Around 11% of all those in employment work part time at their main place of employment, and part-time employment is particularly common among the young and the old. The number of employees in part-time work rose sharply in 2015 (see Figure 6), particularly in the second half of the year. At the same time full-time equivalent employment rose by an average of 1.2% for the year, and only 0.9% in the second half of the year. Growth in part-time employment also meant that the number of hours worked in the economy increased by less than employment did.

Information on numbers of employees comes not only from the labour force survey but also from the enterprise statistics that draw on corporate quarterly accounts, the wage survey, the vacancy survey, and data from the Tax and Customs Board on wage recipients. These surveys cover various parts of employment and have different definitions of numbers of employees. As they are based on data from companies and institutions, they do not cover employees in the shadow economy or the self-employed, but only waged employees. The wage survey gives the number of full-time equivalent employees and the data from the Tax and Customs Board do not cover employees who did not receive a wage in the current period for example because they were on holiday. The number of employees given by the vacancy survey is an approximation taken from the number of filled positions. The enterprise statistics do not cover the public sector, the financial sector or the self-employed.

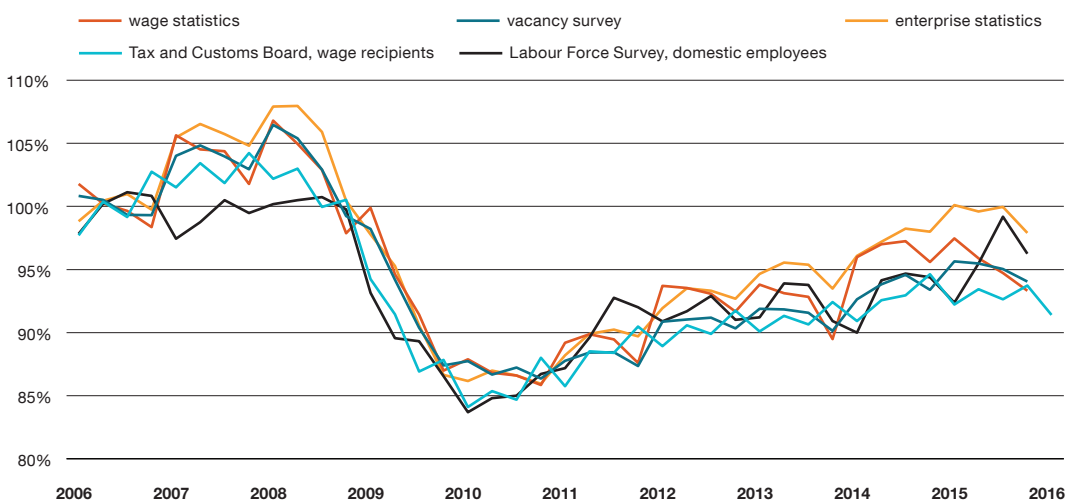
**Figure 6. Growth in full-time and part-time employment**



Source: Statistics Estonia

Figure 7 shows the employment index from different sources, taking 100% as the average for 2005. During the boom in 2007–2008, full-time equivalent employment increased because the number of hours worked per employee rose and employment increased faster in the business sector than in the economy as a whole. The sharpest correction in employment after the crisis was seen in the Estonian labour force survey and the difference between the data from the Tax and Customs Board and the labour force survey widened. By the end of 2015 the number of waged employees working in Estonia had increased by 11% over five years, but the average number receiving wages according to the Tax and Customs Board had risen by only 6.5%. A single explanation for this is hard to find, but differences may come from changes in how people take their holidays for example, or in the shadow economy. Alternative data sources are used below to analyse the developments in employment in

**Figure 7. Employment from different data sources, 2006=100%**

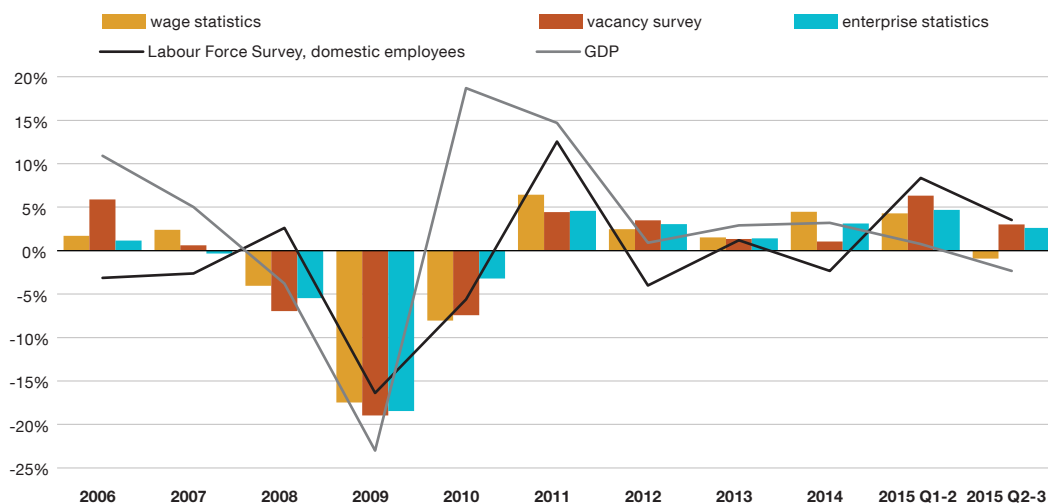


Sources: Statistics Estonia, Tax and Customs Board

the largest sectors, and are compared to the figures from the labour force survey, which are often quite volatile.

In manufacturing employment growth increased in 2015 according to all the surveys (see Figure 8). The labour force survey found that the number of employees rose 5.9% over the year to reach around 118,000 people in 2015. Employment increased even though the real value added of the sector fell in 2015. A factor in this is probably that the fall in value added was not broad based but mainly affected branches of industry connected to the oil shale sector and the production of computers, electronics and optical and electrical equipment. Around 11% of employment in manufacturing was in these three industries according to the enterprise statistics, and the number employed there fell by 1.5%. Redundancies at VKG and other redundancies in Ida-Virumaa, which were announced in autumn 2015, did not affect the employment figures for 2015, and they will be reflected in the employment statistics from the middle of 2016.

**Figure 8. Growth in employment in manufacturing from different data sources and value added growth**

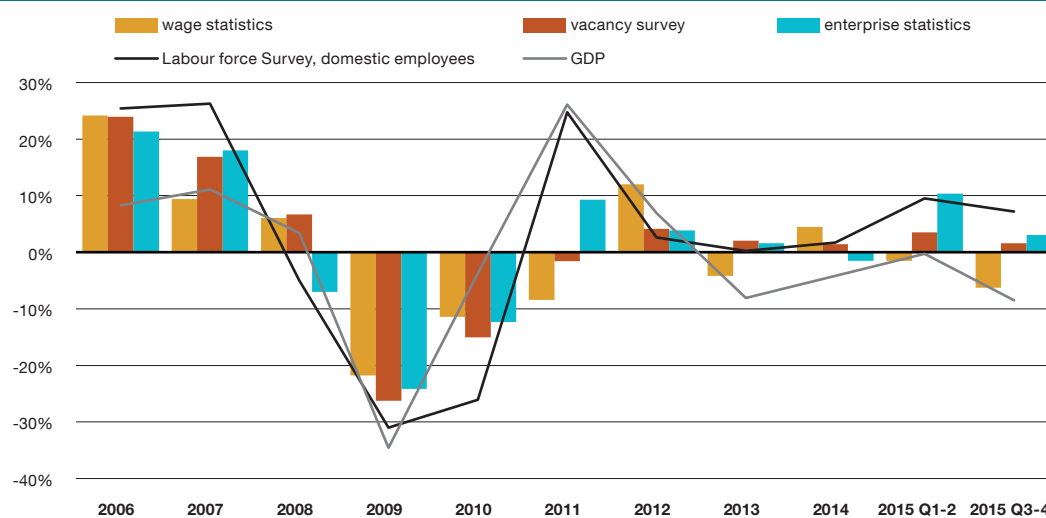


Source: Statistics Estonia

An average of 51,900 people were working in construction in Estonia in 2015 and another 10,000 permanent residents of Estonia were working in construction in foreign countries. Employment in construction was 8.1% higher than in 2014 and strong growth in employment was shown by most surveys (see Figure 9). Real value added declined in construction in 2015, like it did in manufacturing, which indicates that the estimate of increased employment was probably caused in reality by the registration of employees and other tax policy measures that reduced the relative size of the shadow economy. Development in the construction sector is mainly being restrained by low levels of investments in plant and facilities, which is not balanced out by increased construction of buildings. More active declaration of wages and more efficient monitoring mean however that there has been a major increase in the tax burden for companies that were previously at least partly in the shadow economy. This increased cost may be difficult for companies to pass on into service prices, and tax measures may overall affect the competitiveness of such companies and push them out of the market.

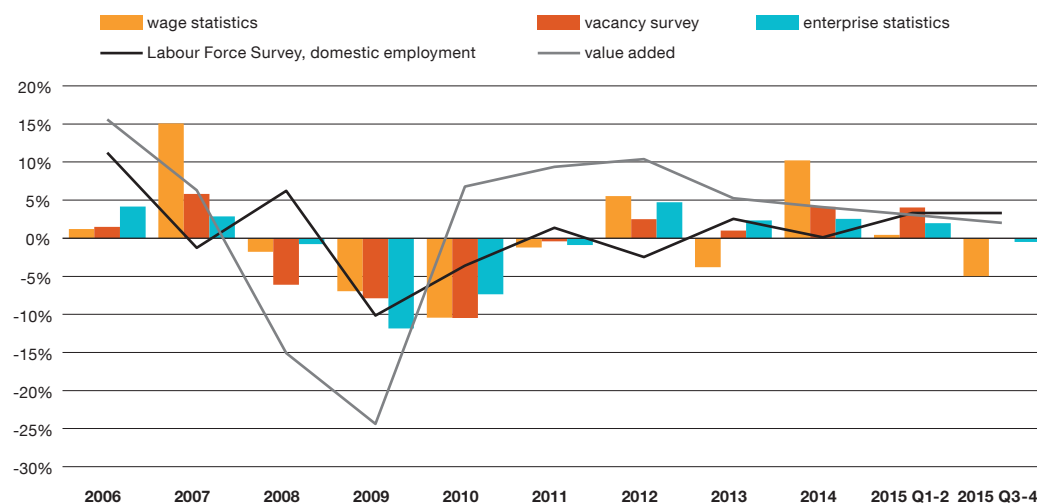
The labour force survey shows employment growth in retail and wholesale increasing to 3% in 2015 (see Figure 10). Although all other surveys showed employment already starting to increase in 2014, the labour force survey might have been affected in this in 2015 by the delayed effect of the requirement to register. Equally, real value added in the trade sector has increased steadily

**Figure 9. Growth in employment in construction from different sources and GDP growth**



Source: Statistics Estonia

**Figure 10. Growth in employment in retail and wholesale from different sources and increase in value added**



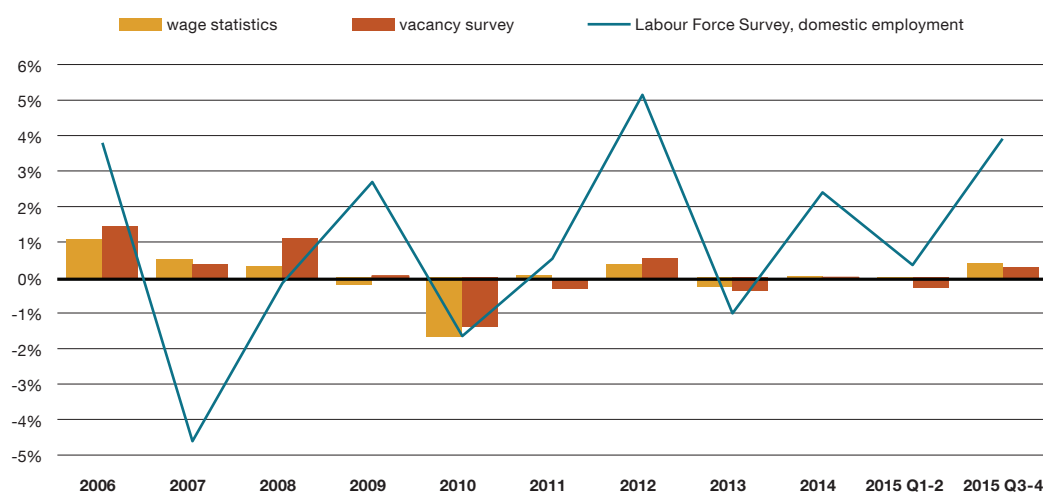
Source: Statistics Estonia

thanks to increasing disposable income and strong confidence for households, which makes it plausible that operations have been expanded and additional labour employed.

Public sector employment in Figure 11 covers people working in public administration and social insurance, healthcare, and education. Around 142,000 people worked in these areas in 2015, accounting for 23% of total employment. The wage survey and the labour mobility survey show that employment has remained at about the same level in the public sector since 2010. It may be assumed for 2014 and 2015 that although full-time equivalent employment and the number of jobs were stable, the number of part-time employees did in fact increase, which would affect the estimate from the labour force survey.



**Figure 11. Growth rate of the number of employees in public administration, healthcare and education from different sources**



Source: Statistics Estonia, Tax and Customs Board

The database of the Ministry of Education and Science gives a general picture of employment in education, where it is apparent that the number of jobs in pre-school institutions, general schools and vocational schools increased by 0.7-0.8% a year in 2012–2015. In higher education in contrast, the number of official positions for teachers decreased, which is to be expected given the decline in the number of students. In the years ahead, public sector employment will probably be affected primarily by the joining together of local government administrations as part of the reform of administration, and the effect of this on institutions providing public services, like schools. The government's decision to reduce the number of general government employees by 750 will start to be enacted in 2016.

## Unemployment

Increased employment led to a fall in unemployment for 2015 as a whole to 6.2% from 7.4% in 2014. Unemployment was particularly low in the middle of the year at 5.8% in the third quarter, but it rose in the fourth quarter to 6.4%, which was the highest level of the year, seasonally adjusted (see Figure 12). The number of unemployed in the second half of 2015 was 14.5% fewer than a year earlier, standing at 29% fewer in the third quarter but 2.8% more in the fourth than a year before. On average in the half year there were 40,000 people unemployed.

Unemployment had earlier fallen for both the short-term and the long-term unemployed, but in the second half of 2015 it was only the number of long-term unemployed that fell while the number of short-term unemployed was at the same level as in the previous year. In the fourth quarter there were 23% more short-term unemployed people than in the previous year but a quarter fewer long-term unemployed. In the final quarter of the year the share of the unemployed who were long-term unemployed fell to 31%, which was 10 percentage points fewer than a year earlier. Data from Töötukassa also show a rise in short-term unemployment in the second half of 2015, while at the same time the number of long-term unemployed was still falling in yearly terms, though at a slower rate (see Figure 13). The decline in the number of residents who have been without work for over a year is partly explained by the decline in 2013-2014 in the number losing their jobs.

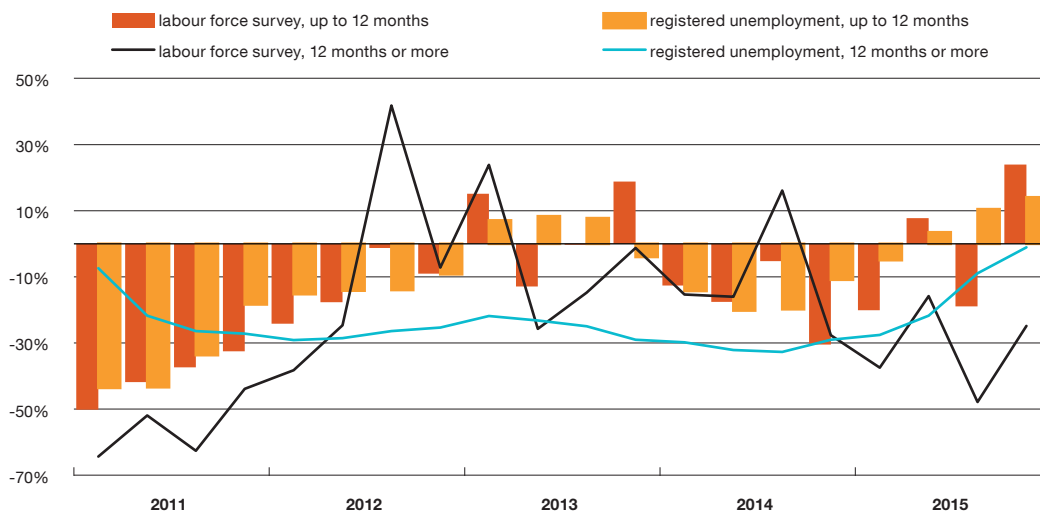
There were 3.4% more unemployed registered in the Töötukassa data in the second half of 2015 than a year before and 6.8% more in the fourth quarter than a year earlier. The rise in the number

**Figure 12. Unemployment**



Sources: Statistics Estonia, Töötukassa, Eesti Pank

**Figure 13. Yearly change in the number unemployed by duration**

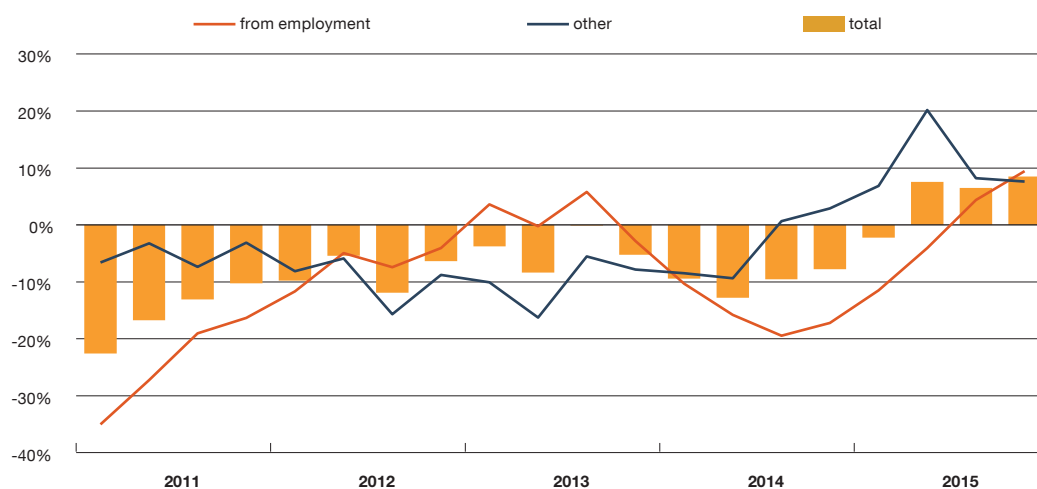


Sources: Statistics Estonia, Töötukassa, Eesti Pank

registered as unemployed slowed at the start of 2016. One reason why registered unemployment was rising was that more people registered as unemployed for the first time than did so a year previously (see Figure 14). The number of newly registered unemployed who had not recently ended an employment relationship started rising from the middle of 2014. From the middle of 2015 there was also a rise over the year in the number of those who had registered as unemployed after an employment relationship had ended.

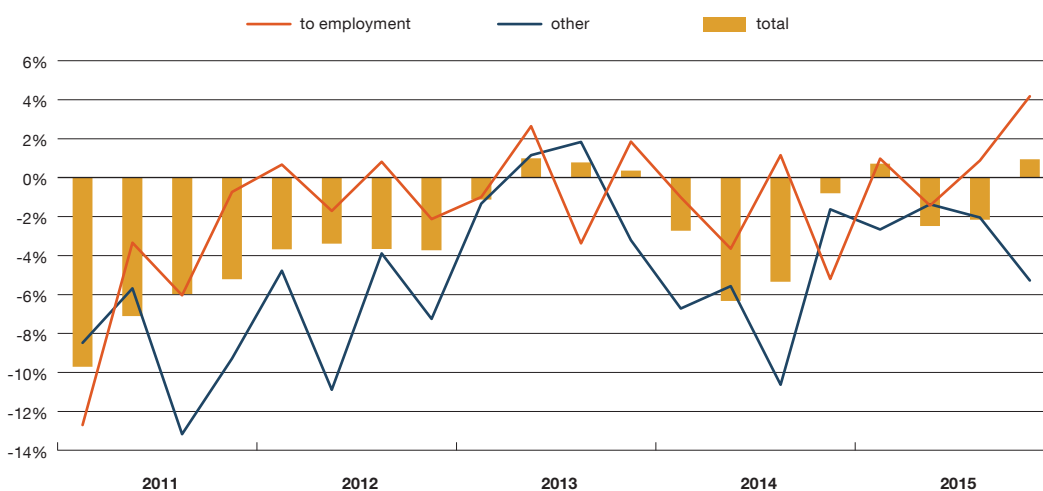
There was a decline in exits from unemployment in the second half of 2015 as a whole (see Figure 15). At the same time the number exiting registered unemployment because they had managed to find a job started to rise again. The number of people removed from the register for other reasons has been falling for two years after a short-lived increase in 2013. This number includes those who move into

**Figure 14. Inflow into registered unemployment, year on year**



Sources: Töötukassa, Eesti Pank

**Figure 15. Outflow from registered unemployment, year on year**

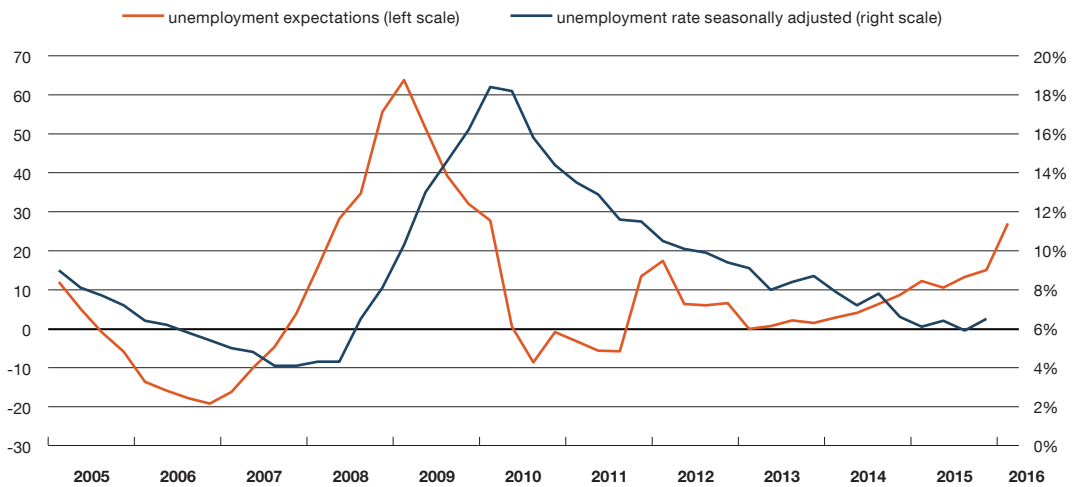


Sources: Töötukassa, Eesti Pank

retirement and those who are removed from the register because they themselves choose to be or because they fail to meet the conditions for registration. The unemployed being motivated to stay registered and receive support in their search for work rather than exiting the labour market is in itself a good sign.

The expectations of households for unemployment have become steadily more pessimistic in recent years. The share of households expecting that unemployment will increase in the next year increased sharply in February 2016 against those who expect the unemployment rate to fall (see Figure 16). Expectations were probably affected by the large-scale redundancies that are on the way and that were the focus of public attention. In 2007, before the crisis, the balance of expectations for unemployment

**Figure 16. Households' unemployment expectations and actual unemployment**

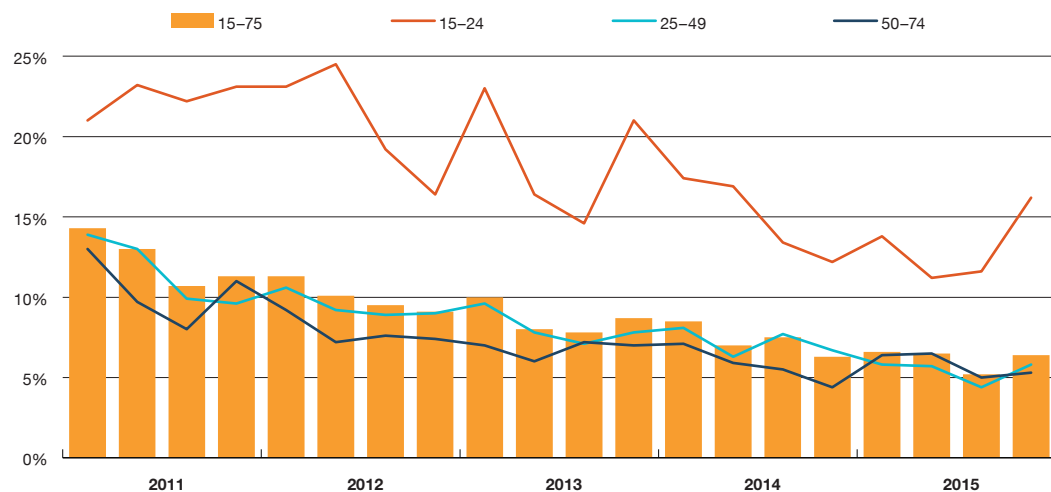


Sources: Statistics Estonia, Estonian Institute of Economic Research

was a good predictor of unemployment, but the increase in uncertainty before the 2012 European sovereign debt crisis was not followed by a rise in unemployment.

The unemployment rate for people aged 15-24 fell by around 2 percentage points in the first half of the year to 13.1%. This indicator was volatile during the year and it rose by several percentage points in the fourth quarter (see Figure 17). This may partly be because youth unemployment is sensitive to changes in economic conditions, and also because of the volatility found in statistics based on small samples. Those young people who are not in education, employment or training (NEET) are considered a risk group because a low level of education and a lack of work experience make it markedly more difficult to find a first job. In Estonia, 12.5% of the 15-29 age group fell into this category, which was lower than the 13.8% recorded a year earlier.

**Figure 17. Unemployment by age group**

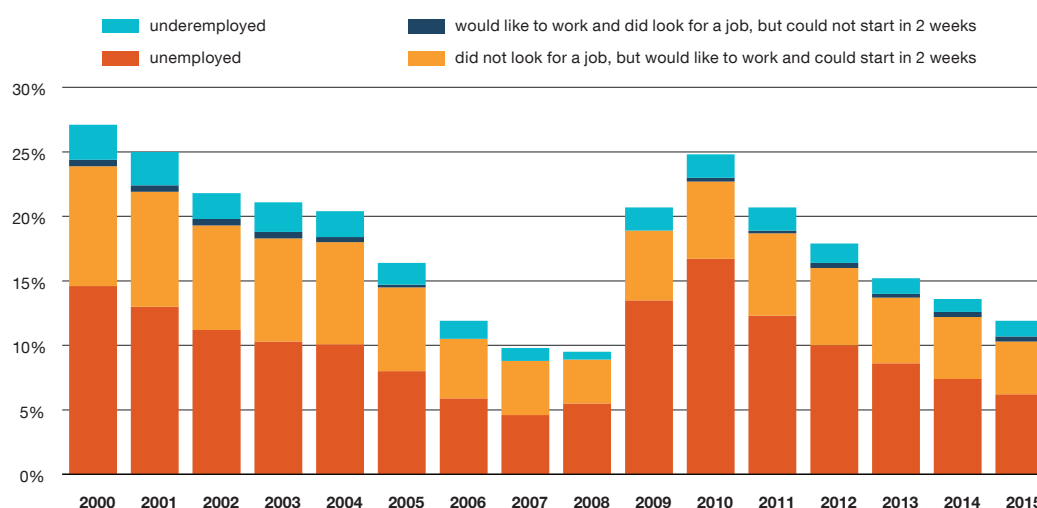


Source: Statistics Estonia

The unemployment rate among those in the 25–49 age group was 1.8 percentage points lower in 2015 than a year earlier at 5.4%. Unemployment for men in that group was 5.2%, which was 0.5 percentage point higher than the rate for women. The rate for older employees aged 50–74 remained at 5.7%, about the same as a year earlier.

Available labour resources cover not only the unemployed, but also those who meet some but not all of the criteria for registered unemployment, which require them to be actively looking for a job, not to have a job, and to be ready to start work. Such people, except those who are underemployed, are classified as inactive and they are particularly numerous among the older age groups. It can be seen from Figure 18 that there are almost as many people in this category as there are unemployed people, and a large share of them are people who would like to work and could do so, but are not actively seeking a job. This is a target group that would benefit from support in starting to look for a job such as advice and consultation services.

**Figure 18. Additional unemployment indicators, % of the labour force**



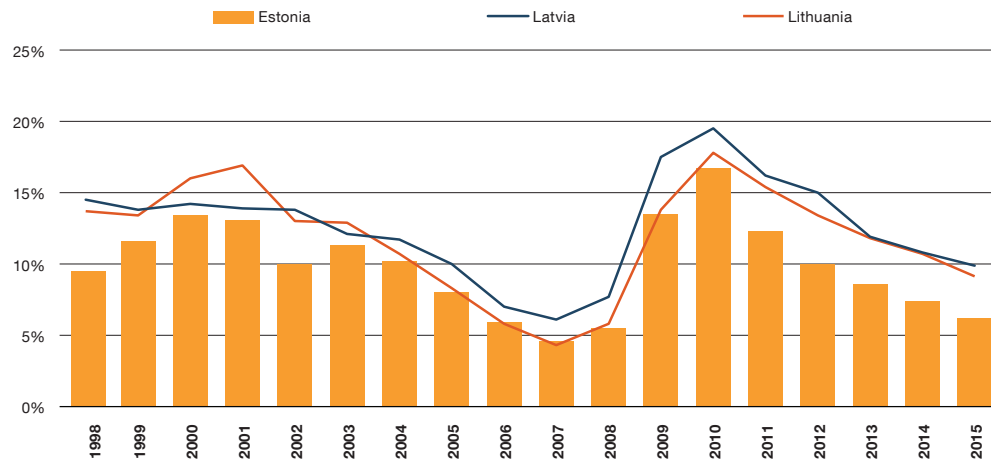
Source: Statistics Estonia

The unemployment rate for non-Estonians fell in 2015 from 10.3% to 8%, and the rate for Estonians fell from 6% to 5.3%. This meant the rate for Estonians was once again notably below the rate for non-Estonians, but the difference between them narrowed. The unemployment rate in Ida-Virumaa fell at the same time by 2.7 percentage points to 11%, which is more than the average fall in other Estonian regions. Unfortunately it is probable that in the future the redundancies in the chemical and oil shale industries will start to affect the unemployment rate in Ida-Virumaa. Registered unemployment in the region started to rise at the end of 2015.

### Box 3: Why is unemployment lower in Estonia than in Latvia or Lithuania?

Although Estonia, Latvia and Lithuania are small and open economies that are close to each other and share a similar history, it still seems that there are significant differences in how their labour markets operate. Unemployment has been some percentage points lower in Estonia than in Latvia since the 1990s and it has also been lower than in Lithuania since the economic crisis. After the crisis the difference in unemployment increased so that the gap with Latvia was 3.5 percentage points in 2015 and that with Lithuania was 3 percentage points. This box looks into the background to these differences.

Figure B3.1. Unemployment in the Baltic states



Source: Statistics Estonia, Eurostat

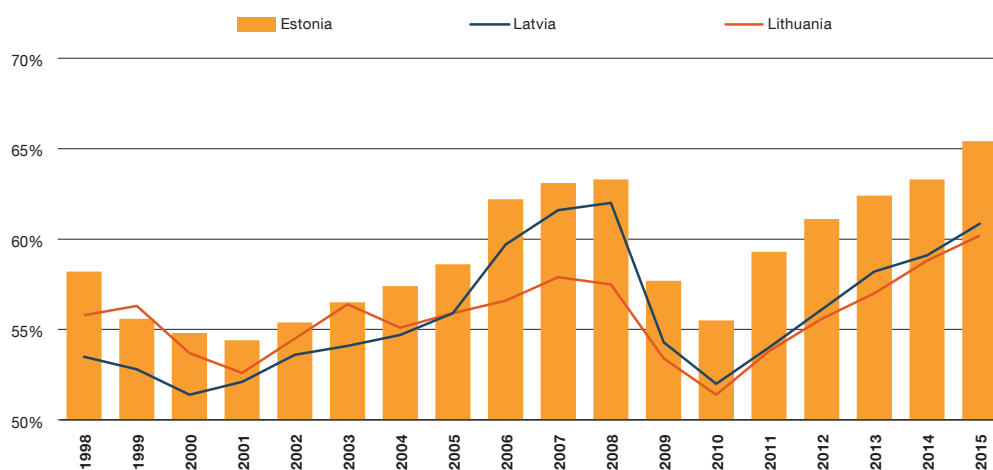
The differences in unemployment in the Baltic states are not due to one particular age group. They are larger among young people, but unemployment in Estonia was still lower in all age groups across the board than in the other two Baltic states in 2015. Nor is the difference due to the age structure of the population as unemployment would be even higher in Latvia and Lithuania if they had the same age structure as Estonia. It is true that the unemployment rate in rural districts in Latvia and Lithuania is higher than that in the large towns, while that is not the case in Estonia. There is a particularly wide gap between town and country in Lithuania, where the unemployment rate in Vilnius was 7% in 2014 while in rural areas it was 14%.

In some countries the unemployment rate can be held artificially high by a generous social security system that encourages inactive people who do not really want to find a job to declare themselves unemployed so as to receive the benefits. This would lead not only to a high unemployment rate however, but also to a remarkably high labour force participation rate. It turns out though that the participation rate is actually higher in Estonia than in Latvia and Lithuania, not the other way round. This in turn means that if the same percentage of the working age population in Latvia and Lithuania as in Estonia were to be in the labour force given the current number of people in employment, the difference in the unemployment rates would actually be larger. The participation rate in Estonia is higher primarily because older people participate in the labour force much more, while the participation rate for 25-35-year-olds is lower in Estonia than in Latvia and Lithuania. As was described in Box 2, the standardised expected retirement age in Estonia is about a year higher than in the other two countries. This may partly be explained by health, as 40-year-olds in Estonia have a life expectancy that is two or three years longer than in Latvia or Lithuania.

If the higher unemployment rate does not come from higher participation, the reasons may lie in the demand for labour. In 2015, 65.4% of the population aged 15-74 was in employment in Estonia, 60.9% was in Latvia, and 60.2% was in Lithuania. The gap to the Latvian employment rate widened during the crisis as the Latvian rate fell by more than the Estonian one did. The gap to Lithuania had already increased during the boom years when the growth in employment in Lithuania was overshadowed by the figures for Estonia and Latvia. During the

recovery from the crisis in 2010-2015 the employment rate in Estonia rose by one percentage point more than the rates in the other countries, rising 9.9 percentage points while the Latvian rate rose by 8.9 percentage points and the Lithuanian rate by 8.8 points.

**Figure B3.2. Employment rate in the Baltic states**



Source: Statistics Estonia, Eurostat

It turns out that 1.8 percentage points of the total rate of employment in Estonia were provided by pendulum migrants commuting to other countries to work. Such commuting provided 0.6 percentage points of the rate in Latvia, but the statistics for Lithuania do not show it. The largest differences in the structure of domestic employment were in employment in manufacturing, where 4% more of the working age population in Estonia were employed than in Latvia, and 3% more than in Lithuania; agriculture, where 2.3% fewer were employed in Estonia than in Latvia and 3% fewer than in Lithuania; and the public sector, where there were 2.7% more in Estonia than in Latvia, and 0.9% more than in Lithuania. More specifically, more people were employed in Estonia in electronics and in oil shale.

Demand for labour may be affected by labour market institutions, which are measured by the employment protection index. Estonia is the only Baltic state where employment protection was loosened significantly, which happened with the Employment Contracts Act in 2009. Employment protection is lower in Estonia than in Latvia or Lithuania for open ended jobs as well according to the OECD index<sup>5</sup>. In cases of redundancy, an Estonian employer has to pay one month of salary as compensation and the maximum compulsory notice period is 90 days. The maximum amount payable as compensation for redundancy in Lithuania is six months of salary for an employee who has held a position for 20 years, and the longest compulsory notice period is four months<sup>6</sup>. Employees with 20 years of employment in Latvia get four months of salary as redundancy compensation<sup>7</sup>. The law on employment protection in Latvia and Lithuania is quite rigid, but in reality the labour market is quite flexible<sup>8</sup>. Official rules can play an important role in the decisions of foreign investors though.

<sup>5</sup> The OECD calculates the employment protection legislation index (EPL) for advanced economies, which covers three sub-indexes for protection for employees made redundant, special requirements for large-scale redundancies and rules for employees with temporary contracts.

<sup>6</sup> [http://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS\\_158913/lang-en/index.htm](http://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158913/lang-en/index.htm)

<sup>7</sup> <http://www.oecd.org/els/emp/Latvia.pdf>

<sup>8</sup> <https://www.makroekonomika.lv/employment-protection-latvia-rigid-de-jure-flexible-de-facto>; <http://ftp.iza.org/dp1147.pdf>

International institutions like the European Commission and the IMF and the central banks of the Baltic states<sup>9</sup> have found in their analyses that unemployment in all three Baltic states is mainly structural in nature. This means that the skills, qualifications and location of the unemployed do not in many cases match the demands of the labour market. This is indicated by the large differences in unemployment rates at different levels of education. The unemployment rate among graduates is low in all three Baltic states, at 3.9% in Estonia, 4.9% in Latvia and 3.7% in Lithuania. The unemployment rate for people with secondary education is 1.8 times higher in Estonia, 2.2 times higher in Latvia, and 3.2 times higher in Lithuania. The larger share of employment in agriculture in Latvia and Lithuania than in Estonia, and its continuing decline, may play an important role, as this probably raises structural unemployment in rural areas, especially if regional mobility is not high.

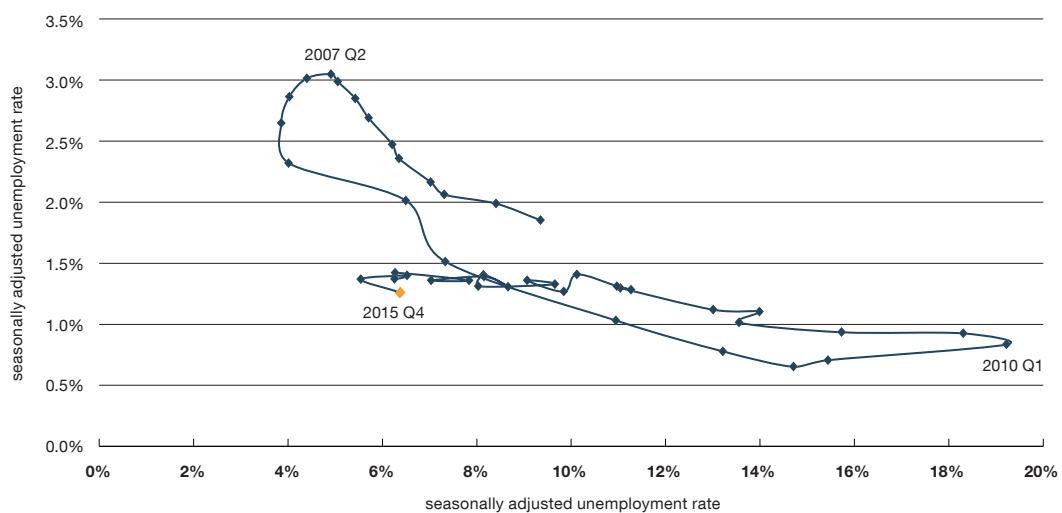
Finally, emigration may increase structural unemployment to some extent if it is mainly young people with modern education who emigrate, though they would have found employment at home. In the past decade a significantly larger share of around 14% of the working age population have left Latvia and Lithuania than the 3% who have left Estonia.

<sup>9</sup> [https://www.bank.lv/images/stories/pielikumi/publikacijas/dp\\_2\\_2015\\_en.pdf](https://www.bank.lv/images/stories/pielikumi/publikacijas/dp_2_2015_en.pdf)

## Vacancies

The number of unfilled jobs fell in the second half of 2015 by 2.1% according to the survey of vacant positions and labour mobility. The decline appeared in the final quarter of the year, when there were 8.5% or 6615 fewer vacant positions than a year earlier. The fall in the number of vacancies in the fourth quarter was quite broadly based and the vacancy rate was 1.42% in the second half of 2015, which is 0.04 percentage point lower than a year earlier. In the fourth quarter the vacancy rate<sup>10</sup> was down on the previous year by 0.1 percentage point. The seasonally adjusted vacancy rate excluding the public sector was down for the second consecutive quarter. Although the change was only small and may be a matter of chance, a falling vacancy rate means that there is less hiring activity, which together with rising unemployment can reduce employment. This is illustrated by the Beveridge curve, which represents the relation between vacancies and unemployment, and which reversed its direction in 2015 (see Figure 19).

Figure 19. The Beveridge curve



Sources: Statistics Estonia, Eesti Pank calculations

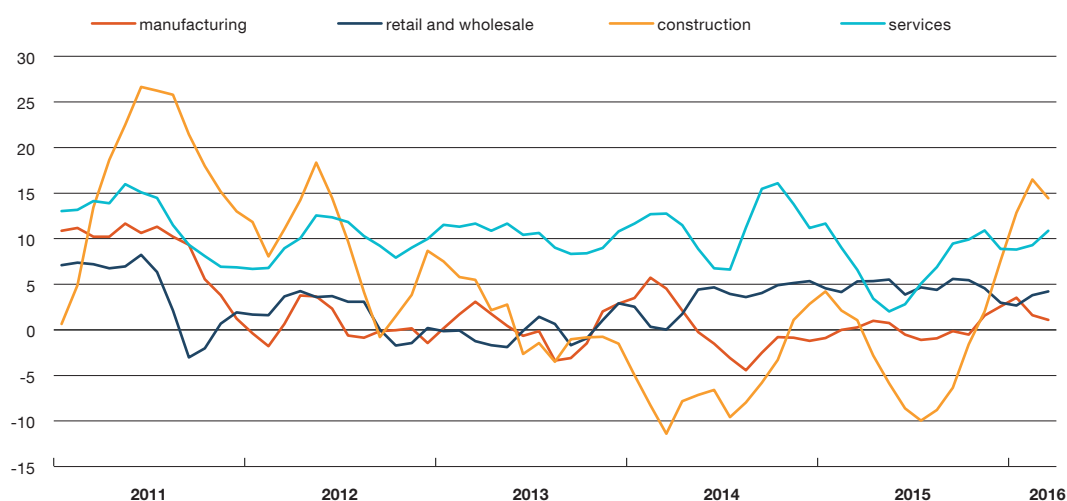
<sup>10</sup> The vacancy rate is the number of vacancies as a ratio to the total number of filled and unfilled jobs.



The number of vacancies fell in manufacturing, where there were 1210 vacancies and the average for the second half year was down 18%, construction, and transport and storage. The number of vacancies increased meanwhile in the public sector, finance and insurance, information and communications, and catering. The highest vacancy rates in the second half of 2015 were in the financial sector and in information and communications, but those sectors have not returned to their pre-crisis levels either.

The plans of companies to hire are indirectly shown by the employment expectations index in the survey by the Estonian Institute of Economic Research. This shows the relative shares of companies expecting employment to increase and those expecting it to fall. Although the indicator is quite volatile, it shows the fall in vacancies being offset by a more optimistic view of employment in the second half of 2015 and the start of 2016 among construction companies (see Figure 20). The share of companies in retail and services expecting employment to rise has exceeded the share expecting it to fall since 2014, and a small upward trend is perceptible in manufacturing.

**Figure 20. Employment expectations (seasonally adjusted, three-month moving average)**



Sources: European Commission, Eesti Pank calculations

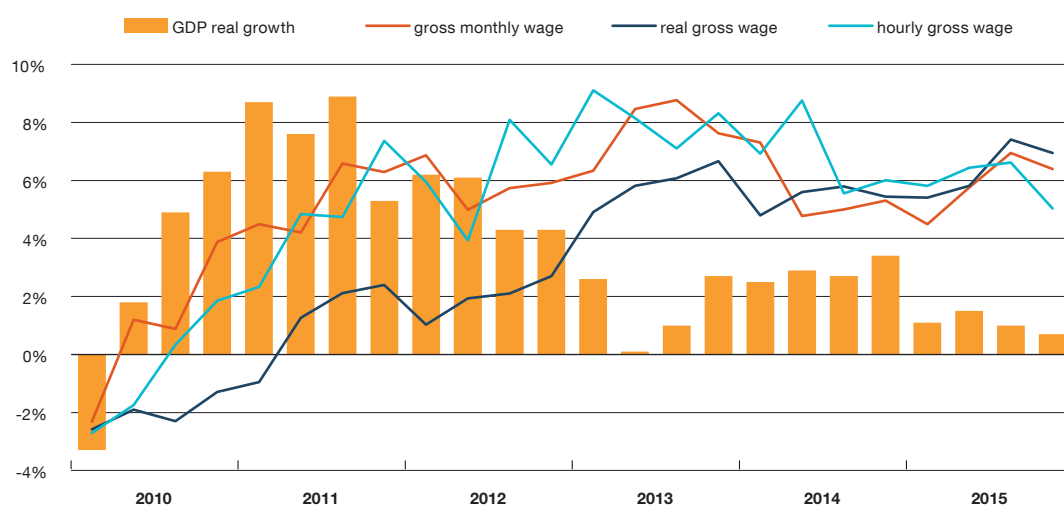
## WAGES AND LABOUR COSTS

### Average wages

Average gross monthly wages rose by 6.7% in the second half of 2015 to 1105 euros, climbing by 6.9% in the third quarter and 6.4% in the fourth (see Figure 21). Wage growth was faster in the second half of the year than in the first half. The acceleration happened because of fast growth in the third quarter, which was followed by a slowing in the fourth quarter. The growth in average gross hourly wages slowed in contrast from 6.1% in the first half of the year to 5.8% in the second half, and stood at 5% in the fourth quarter. The slower growth in hourly wages could be a consequence of faster growth in holiday pay and irregular bonuses, or of increased hours of work per employee, perhaps because of overtime. The wage survey shows the number of hours worked per employee starting to rise in the second half of 2015 having fallen in yearly terms since 2012.

Falling consumer prices meant that real wages rose faster in the second half of 2015 than nominal wages did. The cut in income tax by 1 percentage point, the rise in the tax-free threshold from

**Figure 21. Wage growth and GDP growth**



Source: Statistics Estonia

144 euros a month to 154, and the cut in the unemployment insurance rate from 2% to 1.6% together meant the rate of increase in the average net monthly wage was about 1.4 percentage points faster than the increase in the average gross monthly wage in 2015. The tax cuts soften the opinion of households about slowing wage rises and can help employers in halting the growth in labour costs.

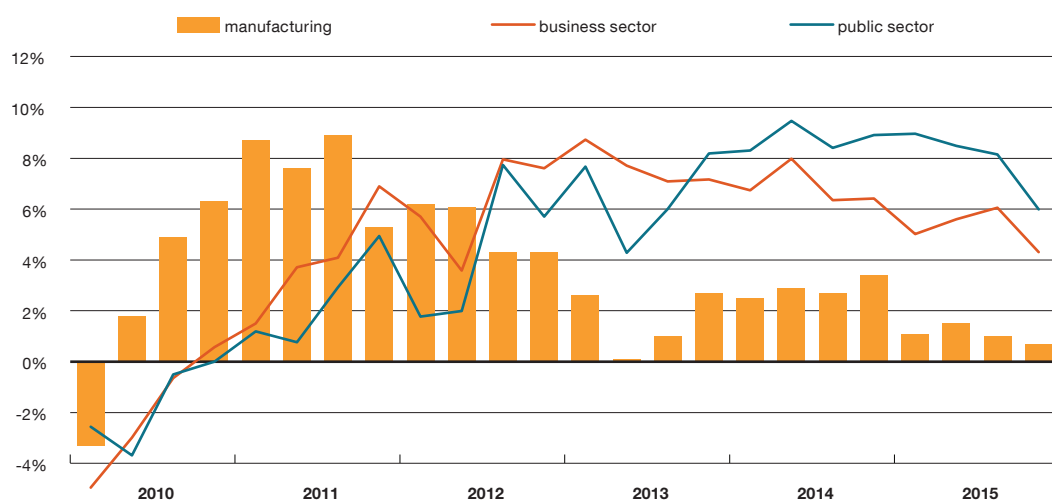
Together with the figures for the average wage, Statistics Estonia also publishes indexes of labour costs that measure the rise in labour costs for each hour actually worked. Unlike the average gross hourly wage, total labour costs cover both paid and unpaid working time and social taxes. This indicator shows labour costs rising less rapidly in the second half of 2015 and the rate of rise dropping quite sharply in the fourth quarter in both the public and the business sectors (see Figure 22). Given the weakness of the economic environment, it is not a surprise that wage growth in the private sector slowed, and the public sector is also trying to control the growth in labour costs.

The effect of the employment register on the growth in average wages was probably negative immediately after the requirement to register employees was introduced, because many of the newly added employees were earning well below the average wage. When the structure of employees stabilises however, the effect may be the opposite, because the wages of those earning little will rise rapidly because of the substantial rise in the minimum wage. Yearly growth in the average wage in accommodation and catering slowed to 2.4% in the second half of 2014 for example, while full-time equivalent employment increased by 16.5%. In the second half of 2015 the full-time equivalent number of employees fell by 6.4%, probably because of the adjustment effect, while the average wage in the sector rose at the same time by 15.8%.

The employer type where the fastest yearly growth in average gross monthly wages was seen in the second half of 2015 was local government administration, where wages were up 8.3%. Local government includes a lot of jobs in education, where the average wage was up 8.3% in the second half of the year. Although it is not apparent that the yearly growth in monthly wages in local government administration has started to slow, a slowdown is visible in average hourly wages. This is probably a consequence of a rise in the number of hours worked (see Figure 23).

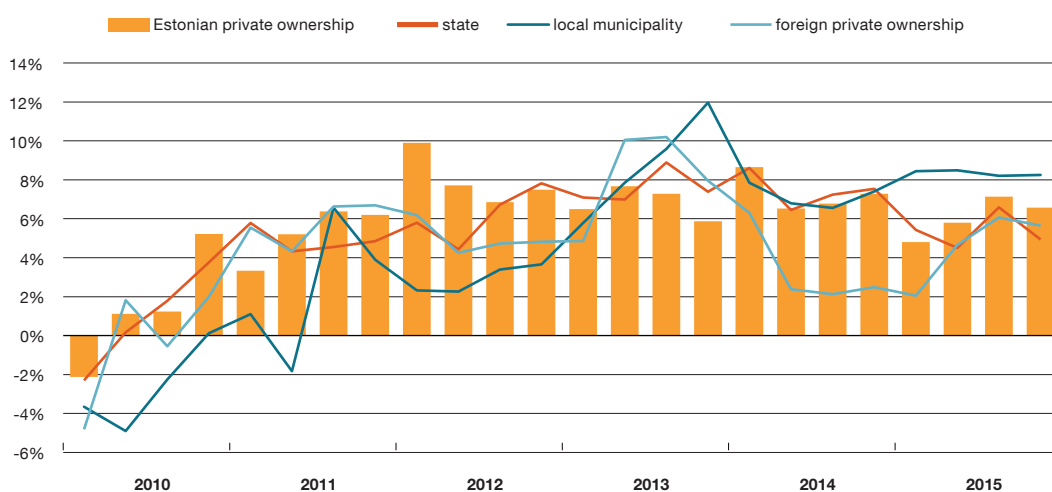
The average gross monthly wage in the private sector rose faster than the average in the second half of 2015 in accommodation and catering, information and communications, and real estate activities.

**Figure 22. Employment expectations (seasonally adjusted, three-month moving average)**



Source: Statistics Estonia

**Figure 23. Wage growth by type of ownership**



Source: Statistics Estonia

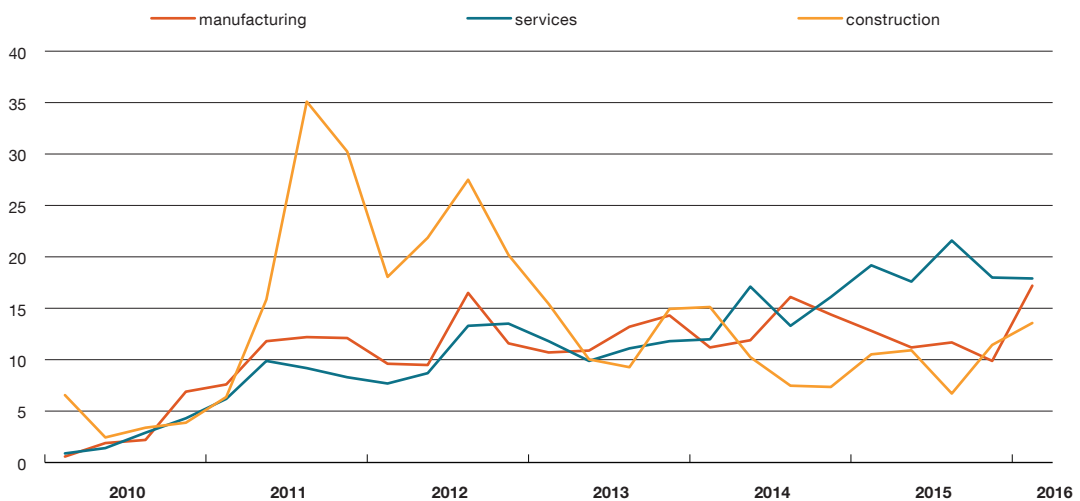
Information and communication also stood out for a rise in the number of vacancies, which together with rapid wage growth indicates that labour shortages remain. The average monthly wage in manufacturing rose by 5.7% in the second half of the year, which is a little slower than the rate for the whole of the economy. The seasonally adjusted rate of wage growth in manufacturing slowed. Growth in the index of labour costs, the average monthly wage and the average hourly wage was slower in the last quarter of the year.

Wage pressure will be kept high in the economy by a tight labour market that favours employees, as unemployment is still low despite its slight rise, and the employment rate is at its highest since

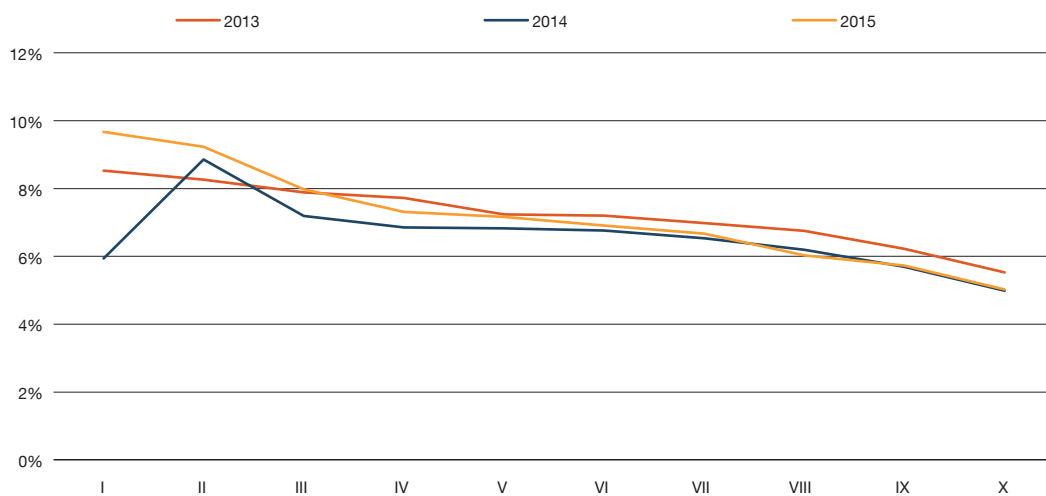
Estonia regained independence. The survey of economic confidence by the Estonian Institute of Economic Research finds an increase in recent years in the share of companies in services that consider labour resources to be a factor limiting production. In early 2016 there was a rise in the share of industrial and construction companies finding this too (see Figure 24). In addition, the rise of around 10% in the minimum wage and collective wage settlements in areas like healthcare also boosted wage growth in 2015.

Statistics from the Tax and Customs Board on the distribution of wages paid out show that wages in the lowest part of the wage distribution rose fastest in 2015, as they did in the previous year (see Figure 25). Faster growth in the lowest wages is built on rises of around 10% each year in the minimum wage in 2014–2015, which will be continued in 2016. This is reflected in the median wage

**Figure 24. Labour shortage currently limiting production (% of firms, seasonally adjusted)**



**Figure 25. Average declared wage growth by deciles**

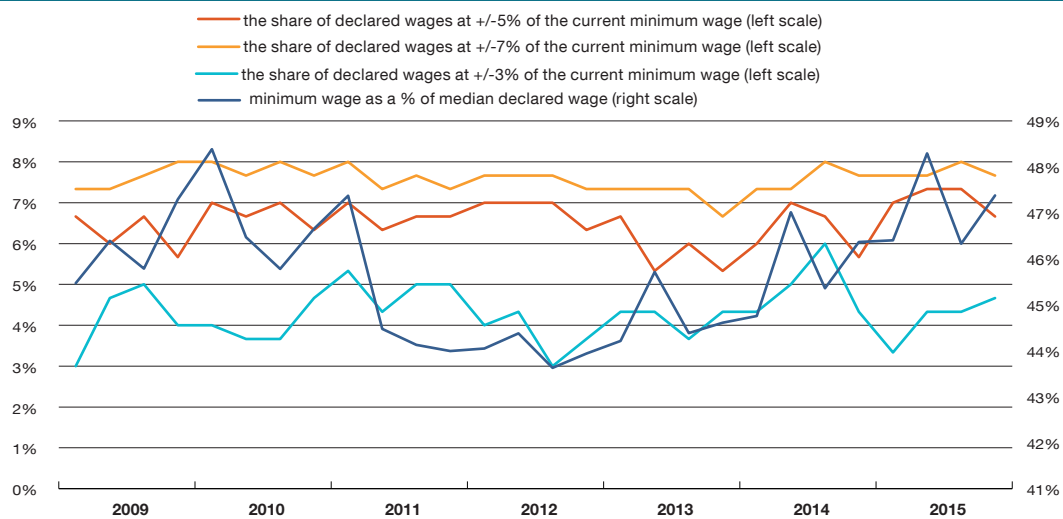


Sources: Tax and Customs Board, Eesti Pank calculations

paid out growing faster than the average. The 12-month average of the median stood at 80% of the mean wage paid out in 2015, 79.5% in 2014 and 73.5% in 2005.

As the minimum wage has risen faster than the mean and median wages have, the relative size of the minimum wage has increased significantly. In 2012 it was below 44% of the median wage declared to the Tax and Customs Board, but in 2015 it had risen above 47%. The share of the population earning the minimum wage has increased slightly at the same time, which is approximated in Figure 26 by the share of wages paid out going to the segment close to the minimum wage. Unfortunately the data from the Tax and Customs Board do not allow part-time employees to be differentiated from full-time ones, or for random variation in working time to be identified. This makes it impossible to know the exact share of waged employees who are earning the minimum wage.

**Figure 26. The prevalence of minimum wages and the ratio of minimum to median wage payments**



Sources: Tax and Customs Board, Eesti Pank calculations

## Reservation wage of the unemployed

The reservation wage is the minimum amount for which an unemployed person is prepared to accept a job offer. In 2015 the average reservation wage of the unemployed rose more slowly than the average gross monthly wage of those already in work. The share of men demanding a wage of at least 600 euros rose from 62.1% in 2014 to 63% in 2015, and the share of women rose from 32% to 39.6%. In total, 51.3% of the unemployed were looking for a wage of over 600 euros, and statistics from the Tax and Customs Board on wages paid out show that 65% of all wages paid in 2015 were over 600 euros.

## Labour productivity and unit labour costs

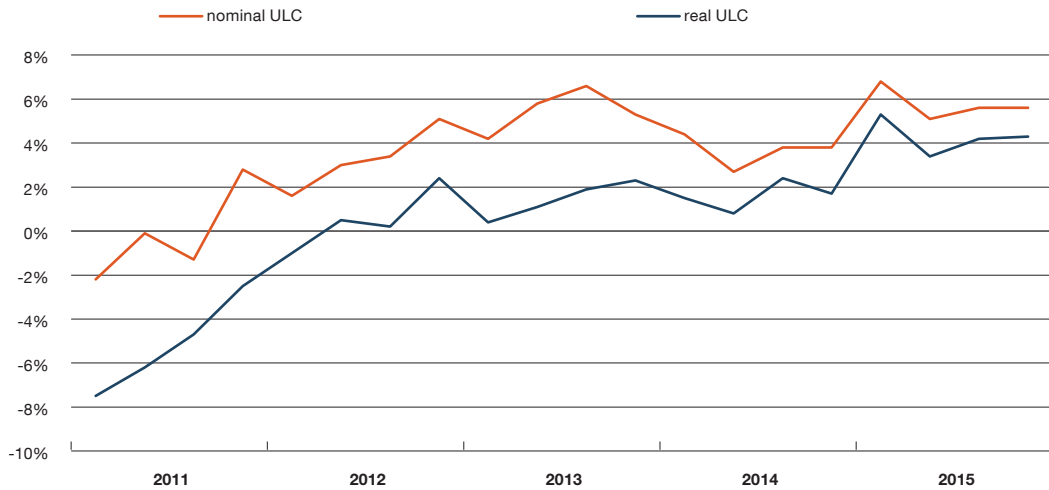
Slower GDP growth and high levels of employment pushed labour productivity down in 2015, and it fell per person employed by 1.9% and per hour worked by 1.3%. Productivity per hour worked fell by less than productivity per person employed because the number of hours worked in the economy increased more slowly than employment did according to the labour force survey. As employment growth may be partly due to the effect of the registration of employees, this may also mean that productivity is somewhat underestimated.

Labour costs increased as a share of GDP from 51.7% in the second half of 2014 to 52.8% in the second half of 2015. Growth in the share of labour costs is measured by real growth in unit labour costs, which also takes account of changes in the share of waged employees in all employment,

and which accelerated from 1.7% in 2014 to 4.3% for 2015 as a whole, though the growth rate in the second half of the year was a little lower than that in the first half. The additional growth in labour costs was covered by the profit margin of companies, and the decline in corporate profits deepened in the first half of 2015 from a yearly 5.3% to 8% (see Figure 27).

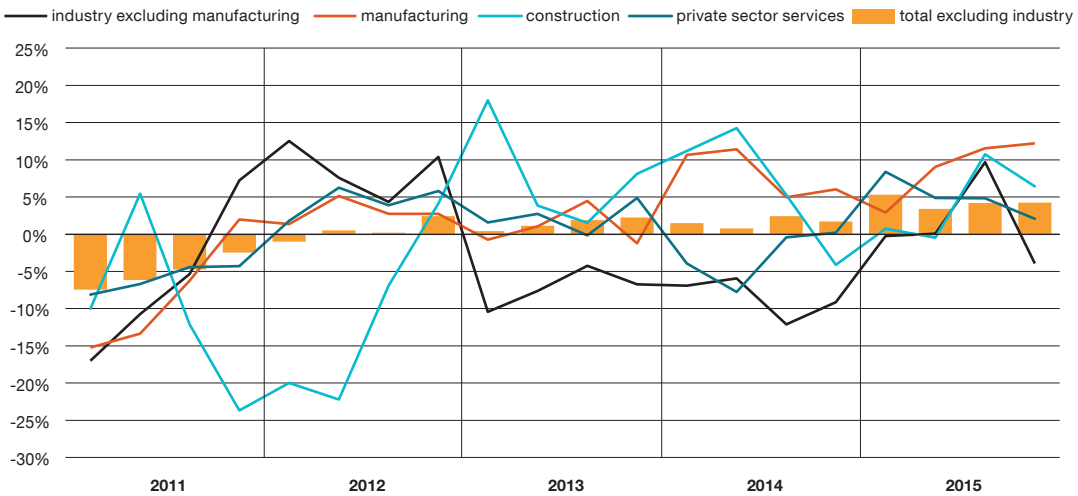
The share of labour income increased in 2015 as in the previous year in most sectors. Exceptions were information and communications, where there was a large jump in the share of labour income a year earlier, and also agriculture, professional and technical activities, and administration and support activities. Growth in real unit labour costs in manufacturing, which is Estonia's main exporting sector, increased to 11.9% in the second half of 2015, with the decline over the year in value added contributing to that (see Figure 28).

**Figure 27. Unit labour cost growth**



Source: Statistics Estonia

**Figure 28. Real unit labour cost growth**



Source: Statistics Estonia