



EUROSÜSTEEM

ESTONIAN LABOUR MARKET REVIEW

October 2017

LABOUR MARKET REVIEW

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 FIRST HALF OF 2017

There was a significant change in direction in the labour market in the first half of 2017, as labour productivity increased faster than real labour costs for the first time for several years. At the same time profits started to increase in the business sector having fallen for some years, which could have reduced the attractiveness of Estonia as a base for production. The increase in growth in labour productivity was helped by a recovery in external demand, which allowed companies to reverse their labour hoarding and increase the workload of the employees they already had. Higher inflation in foreign markets allowed exporters and companies competing with imports to raise the prices of their own products and so recover some of the profitability they had lost in previous years. Labour productivity grew faster in most sectors. The acceleration in growth was particularly notable in the recovering oil shale sector, and also in construction, where the number of orders was up sharply.

At the same time that growth in labour productivity was speeding up, the growth in labour costs in nominal terms, which had slowed down in the second quarter of 2017, also picked up but to a lesser extent. This was driven by industries in the oil shale sector and in construction as production volumes increased sharply. The increase in wage growth was also notable in public administration, probably in connection with Estonia's presidency of the Council of the European Union. Forward-looking indicators, such as company expectations for employment and the share of companies who consider labour to be the main factor restricting output, suggest that demand for labour will rise further. This would then increase the likelihood of growth in wages accelerating even further. Wage pressures may be eased by the change to the income tax law in 2018, which will raise the net wage of employees earning below the median wage particularly sharply.

Faster growth in the economy was backed to a large extent by the improvement in labour productivity, and also by increased employment. The number in employment increased in most parts of both the industrial sector and the service sector, as did the number of hours worked per employee. The number of vacancies increased together with the number of positions filled according to statistics from the unemployment insurance fund Töötukassa and the labour mobility and vacancies surveys by Statistics Estonia. The vacancy survey also shows employment relations being terminated more frequently at the initiative of the employee, which indicates that the cause is more often a change of job.

The rapid rise in wages in recent years and the large supply of job offers, together with reforms to social insurance such as a rise in the pension age and the Work Ability Reform, have increased the labour force participation rate among residents of Estonia. In the first half of 2017, 71% of people of working age were either in work or were actively looking for work. Participation increased in earlier years primarily among the older age groups, but now it has risen more among the younger age groups, who are working at the same time as studying more than previously. The unemployment rate was the same as a year earlier, but there was probably an increase in the share of the unemployed for whom it is hard to find a job either for health reasons or because they have been out of the labour market for too long. This means that the unemployment rate may overstate the reserves of available labour with the skills and training required by the labour market.

Overall the current data show an increase in demand for labour as the demand for the output of companies has increased. Although labour force participation will probably increase further in the future, it cannot do so much because participation is already high compared to historical averages, and in international comparison. Most notably, the older people of working age in Estonia are currently more engaged in the labour force than is the case in many other European countries. As demand for labour will increase faster than the supply of labour, upwards pressure on wages will increase. There is a danger in this that labour costs will again rise faster than profits in future, and the recovery in profitability that was seen in the first half of the year will prove only temporary.

THE COST OF LABOUR AND PRODUCTIVITY

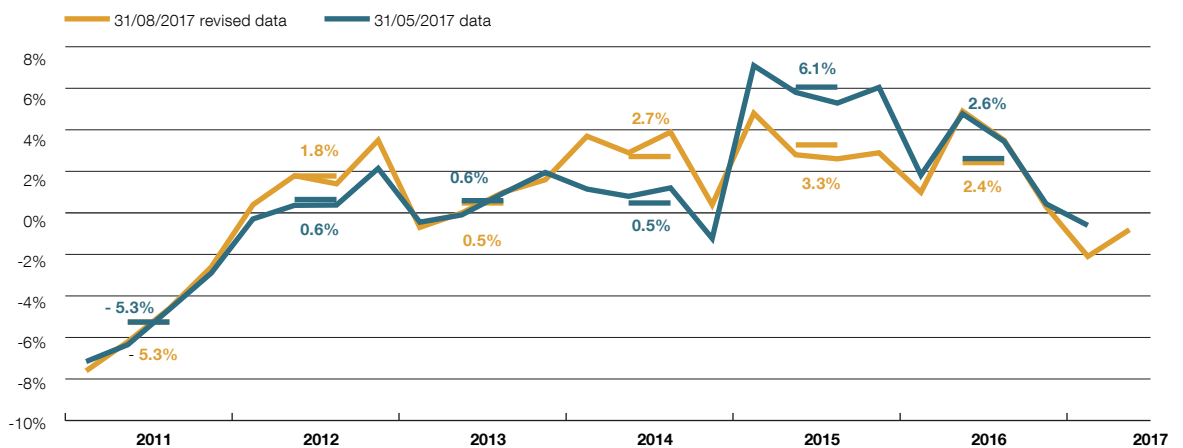
Unit labour costs

The gap between labour productivity and wages narrowed in the first half of 2017 as the growth in productivity became faster and exceeded that in real wages for the first time in several years. This was a significant change, because in 2013-2016 the labour share of GDP increased for the whole economy from 46% to 50%. Despite the weakness in foreign demand, companies did not cut the numbers of employees, probably in expectation of a recovery in demand and in the knowledge that the shrinking labour force would make it harder to find new employees once orders started to increase again. As wages rose rapidly, so corporate profits declined. At the start of 2017 unit labour costs fell for more than two consecutive quarters for the first time since 2011, while corporate profit increased. This eased the pressure on the competitiveness of companies that had been caused by two years of rapidly rising labour costs at a time when labour productivity was stalled.

The labour costs per unit of value added created in current prices is measured with real unit labour costs, which is about equal to the share of the payroll in GDP or the labour share. Revised data from Statistics Estonia show that real unit labour costs rose steadily from 2014-2016 by an average of 2.8% a year, while nominal unit labour costs rose by 4.3%. In the revision, Statistics Estonia corrected the payroll upwards in the economy, doing so the most for 2014 by around 3.4%. The GDP of recent years has also been corrected upwards, but by less than the payroll. The earlier assessment showed the rise in unit labour costs accelerating sharply in 2015 (see Figure 1), but this was not reflected in the revised assessment.

Real unit labour costs were down 2.1% in the first quarter of 2017, and down 0.8% in the second quarter. The fall in the first quarter was larger than previously estimated and had two causes, the acceleration in economic growth that started in the middle of 2016, and the slight slowing of growth in the payroll. Unit labour costs were down further in the

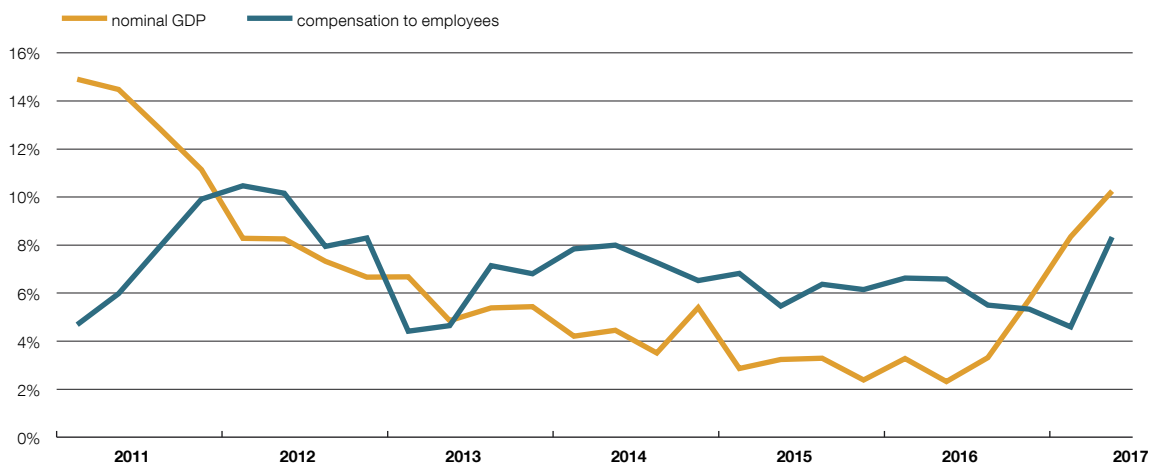
Figure 1. Real unit labour cost growth



Source: Statistics Estonia

second quarter of 2017 because although compensation to employees grew markedly faster at 8.3%, from 4.6% in the first quarter, the growth rate was still less than that of GDP in current prices (see Figure 2). An explanation for the developments in the first quarter of the year could be that the labour market usually reacts more slowly to the change in economic activity, as signing, ending and changing employment contracts, and negotiating wages take time.

Figure 2. Compensation to employees and nominal GDP growth



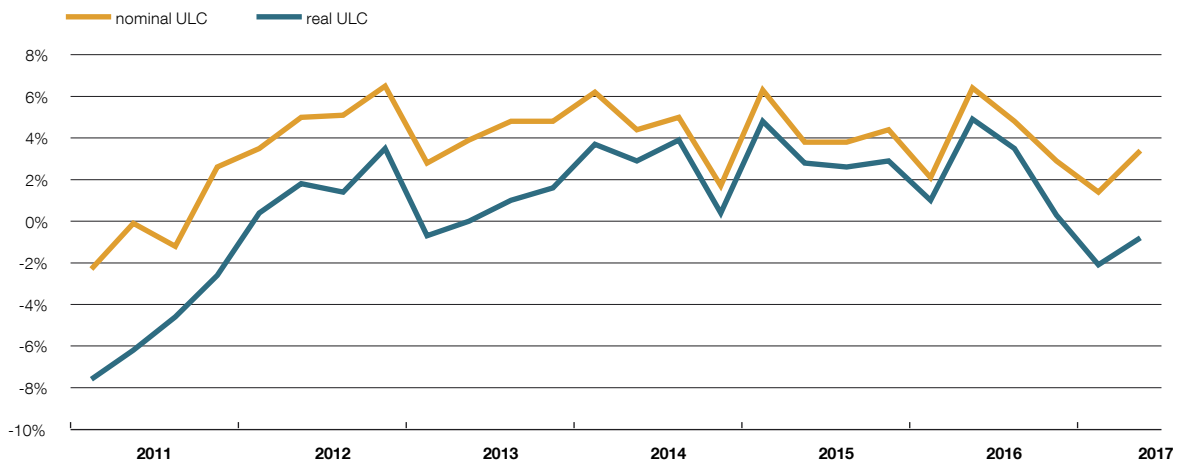
Source: Statistics Estonia

The payroll of the economy can also be approximated using data from the Tax and Customs Board for total wages paid out and by the average gross monthly wage multiplied by the total number of waged employees. Although the growth rate of these two proxies did not accelerate in the second quarter as much as compensation to employees in the GDP statistics, the half-year averages of all three estimates indicate a slight acceleration from the second half of 2016 from 5-5.7% to 6.2-7.1%.

The rise in nominal unit labour costs, which measure the increase in labour costs for one unit of real value added created, slowed by less than the rise in real unit labour costs did. This was because prices of goods and services produced in Estonia rose a long way, aided by higher inflation in the external environment (see Figure 3). Faster growth in nominal unit labour costs than in foreign partners could harm the ability of exporters to compete on price in foreign markets.

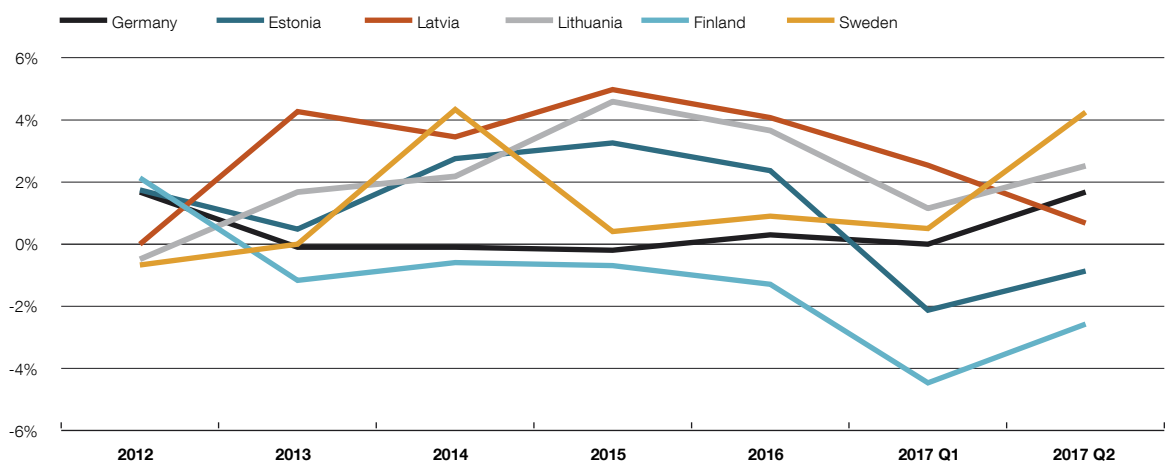
The value added in the economy can be divided between labour income and capital income, so the change in the payroll as a share of the economy also shows that profit changed as a share of GDP. If the share of capital income falls further in Estonia than in other similar countries where production is located, it could threaten the attractiveness of the country and the probability of companies moving production to it. Similar development in real unit labour costs to that in Estonia has been particularly notable in recent years in Latvia and Lithuania, with a speedy increase in 2014 to 2015 and a deceleration in 2016 (see Figure 4). Estonia was however the only Baltic country where real unit labour costs decreased in the first half of 2017.

Figure 3. Unit labour cost growth



Source: Statistics Estonia

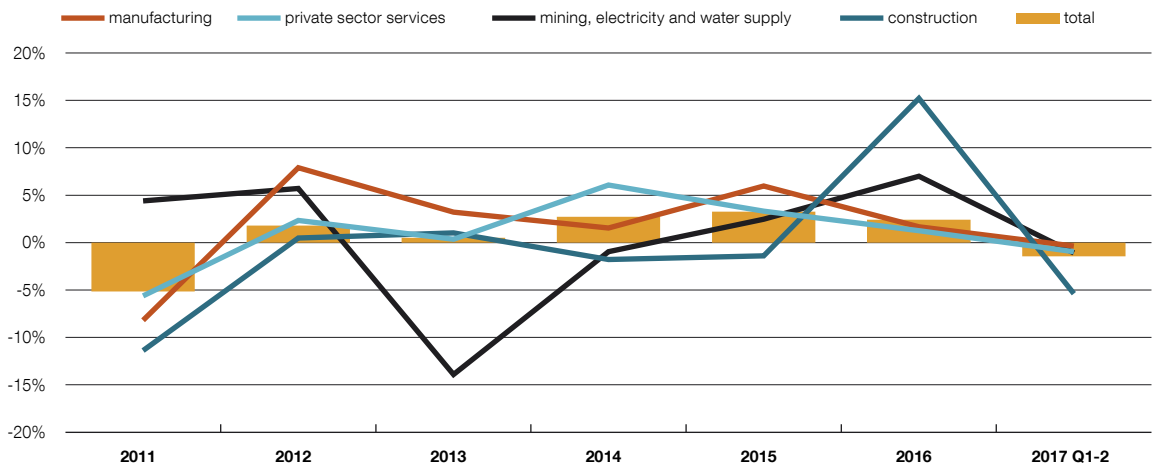
Figure 4. Real unit labour cost growth



Source: Eurostat

Growth in real unit labour costs was slower in most sectors in the first half of 2017. The revised data showed a significant change in construction, where increased output volumes and prices stopped the increase in labour costs as a share of value added that was seen in 2016 (see Figure 5). Growth in real unit labour costs in manufacturing, which is the main exporting sector, decelerated in 2016 and the first quarter of 2017, but picked up again in the second quarter of 2017. The rise slowed because value added increased while labour costs grew more slowly. Despite the strong figures for output volumes and exports the value added in manufacturing grew by less in the second quarter of 2017 than in the first quarter, while the growth in labour costs increased.

Figure 5. Real unit labour cost growth by sector

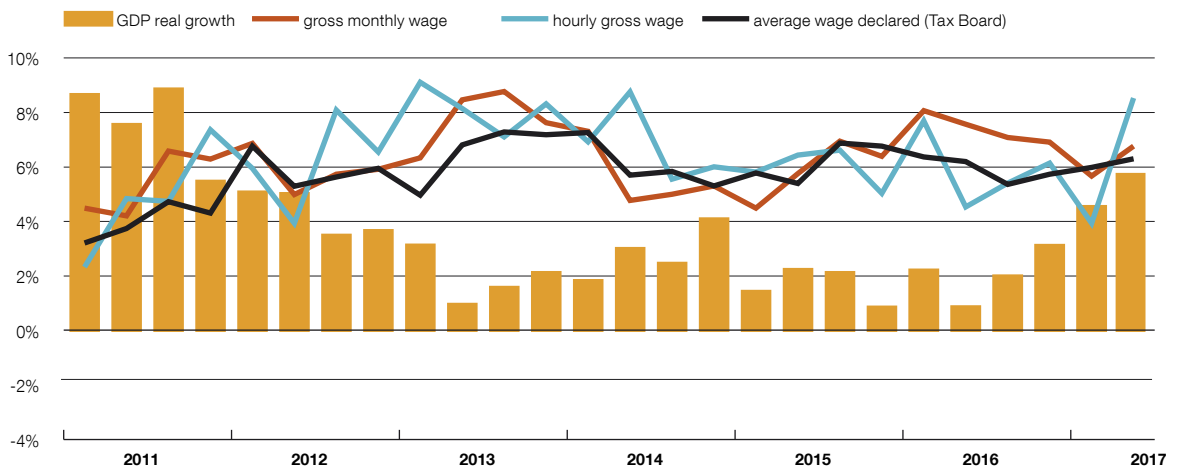


Sources: Statistics Estonia, Eesti Pank calculations

Average wages

Yearly growth in the gross monthly wage fell from 7% in the second half of 2016 to 6.2% in the first half of 2017. Wage growth slowed to 5.7% in the first quarter of the year but then it picked up again to 6.8% in the second quarter and the average gross monthly wage reached 1242 euros. Data from the Tax and Customs Board however show that the growth in the average wage declared and also in the average hourly wage accelerated in the first half of the year (see Figure 6). The hourly wage may have been boosted in the second quarter by calendar effects as there were fewer working days than a year earlier, meaning that the imputed hourly wage increased for fixed monthly wages. The average wage

Figure 6. Average wage growth

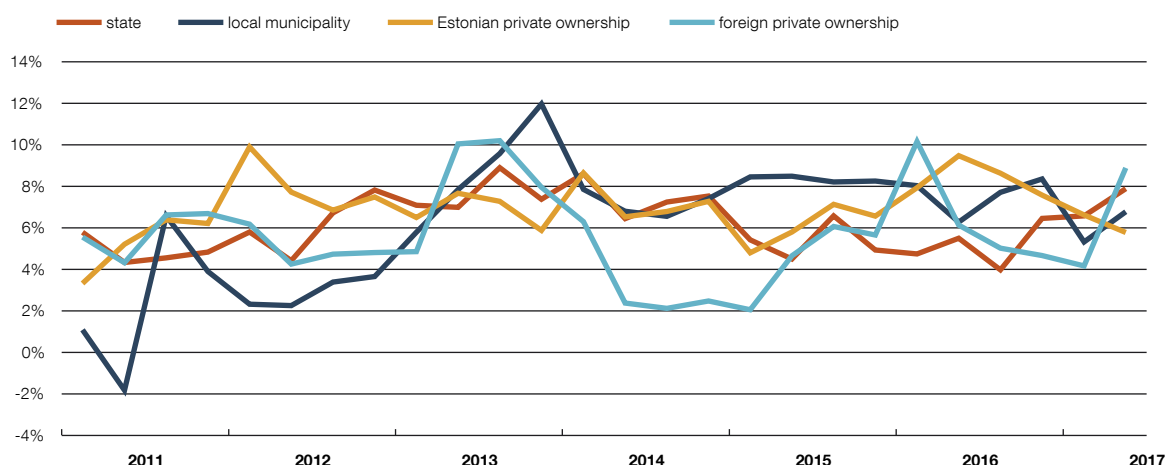


Sources: Statistics Estonia, Tax and Customs Board, Eesti Pank calculations

declared is different from the average gross monthly wage meanwhile, mainly because it is not adjusted for full-time equivalent employment. A recovery in economic activity and inflation at a time when there is a shortage of available labour suggests that faster growth in wages can be expected. Despite increasing in the second quarter, the rise in wages in the first half of 2017 was more in line with the growth in productivity than was the case in earlier years.

Among employers of different ownership types, the growth in wages in the first half of 2017 was slower than before at Estonian-owned private companies, where it had been faster than in previous years in 2016. There was an exceptional jump in wages in the second quarter of 2017 in foreign-owned companies, to which extraordinary bonuses probably contributed (see Figure 7).

Figure 7. Wage growth by type of ownership



Source: Statistics Estonia

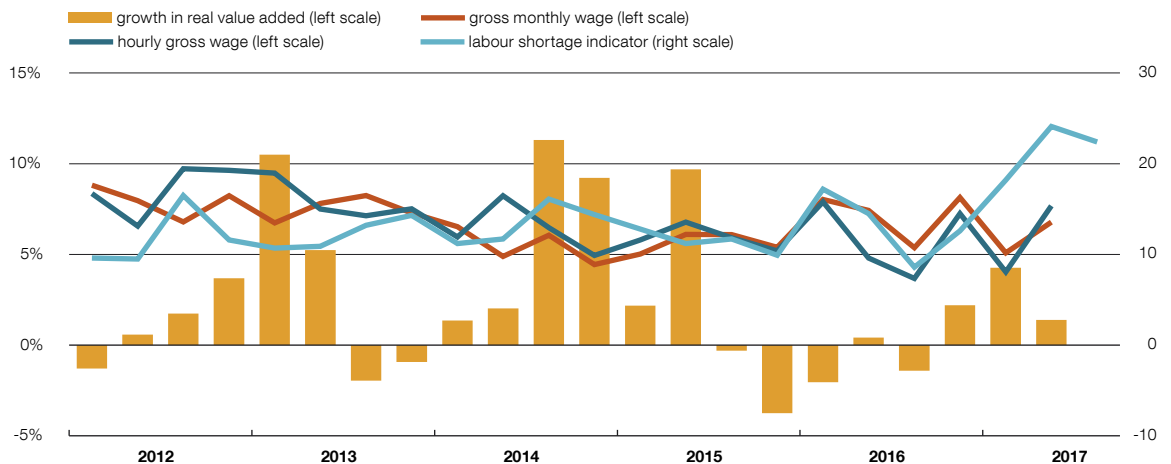
In the public sector in the first half of 2017 wage growth in local government administration slowed further (see Figure 7). This was mainly because wages rose less quickly in healthcare and education. Wages in healthcare were at the same level in the first quarter of the year as in the previous year as the new wage agreements applied only from 1 April, which is quite unusual. The rise in wages in healthcare was affected from the second quarter by the collective agreement for doctors that raised the lowest rate for hourly pay by 5.3%, which was notably smaller than the rises in the previous two years of around 10%. It is probable that wages in education will rise a little faster though, because on top of the government decision to raise the wages of teachers faster than the average wage rises in the economy, local governments will receive support from the state budget for the academic year 2017/2018 to raise the pay of nursery school teachers to at least the base rate of pay for school teachers.

Wages grew faster in the public sector probably in connection with Estonia's presidency of the Council of the European Union. The government strategy was to hire only a few new employees for the presidency, which most probably means that a lot of civil servants took

on extra responsibilities and worked overtime. In this case it is likely that the faster rise in wages will prove temporary.

Wages grew notably faster in the secondary, industrial, sector in the first half of 2017 because of the mining and energy sector. Wages had been held back in industry in the previous year because of the economic difficulties faced by the oil shale sector that resulted from low energy prices. The turnaround that started in the second half of 2016 was reflected in a strong recovery in wage growth in the first quarters of 2017. Growth in both real labour productivity and sales prices for industrial output increased in manufacturing too, as foreign demand recovered (see Figure 8). Wages rose in manufacturing in the first half of 2017 by 5.9% in total, which was slower than in the previous year and than the average for the economy as a whole. Labour demand pressures have increased in manufacturing though since the second half of 2016 in both vacancies and in employer expectations for employment. This suggests that wage growth in the sector may accelerate somewhat further.

Figure 8. Wage growth and GDP growth in manufacturing

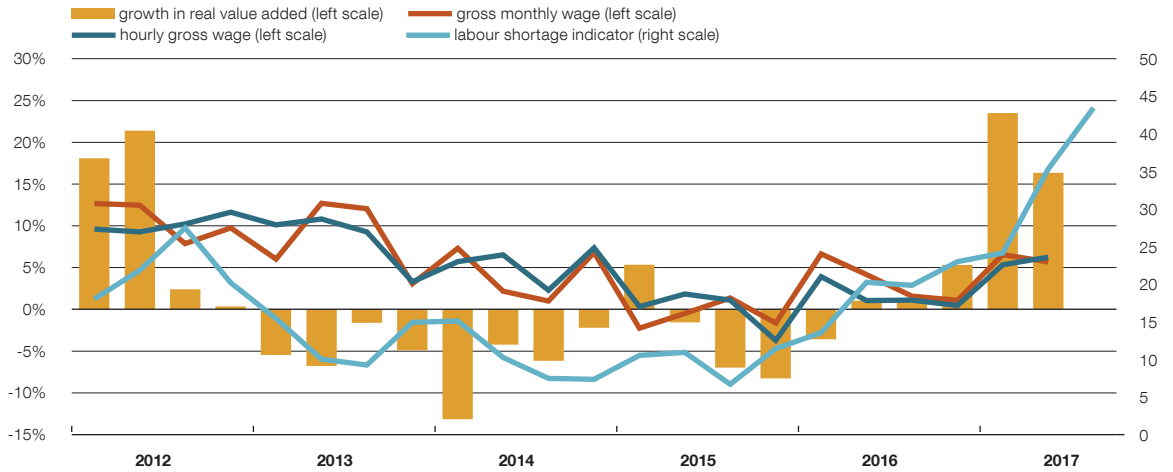


Sources: Statistics Estonia, Tax and Customs Board, Estonian Institute of Economic Research, Eesti Pank calculations

The average wage in construction, which is also in the secondary sector, rose faster in the first half of 2017 than in the previous half year at 6.1%, up from 1.3%. The growth in value added in the construction sector also sped up sharply at the same time, as projects funded by structural funds were started. The indicators for labour demand in construction are rising like those in manufacturing. The share of companies in construction that gave labour shortages as a factor hindering output increased sharply (see Figure 9), and the number of vacancies and positions filled increased. Given the strength of demand it is probable that wages will start to rise faster in construction as well. The shortage of labour in the sector may be increased by the recovery of the construction sector in Finland, but it may also be eased by labour from abroad. Unfortunately there are no more accurate data available on how much foreign labour is used in the construction sector.

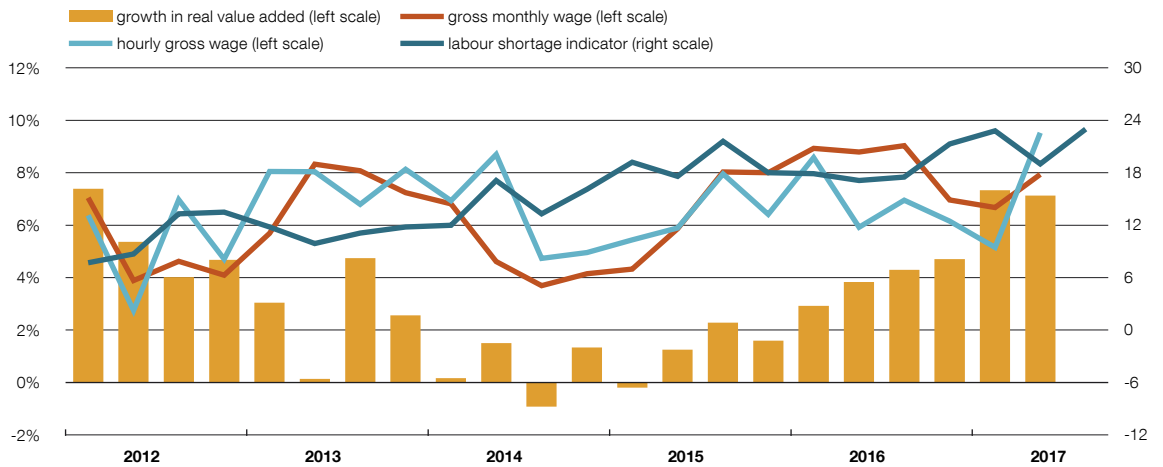
The average wage in services in the private sector rose by 7.3% in the first half of 2017, which is around one percentage point less than in 2016 (see Figure 10). Wages in the

Figure 9. Wage growth and GDP growth in construction



Sources: Statistics Estonia, Tax and Customs Board, Estonian Institute of Economic Research, Eesti Pank calculations

Figure 10. Wage growth and GDP growth in private sector services



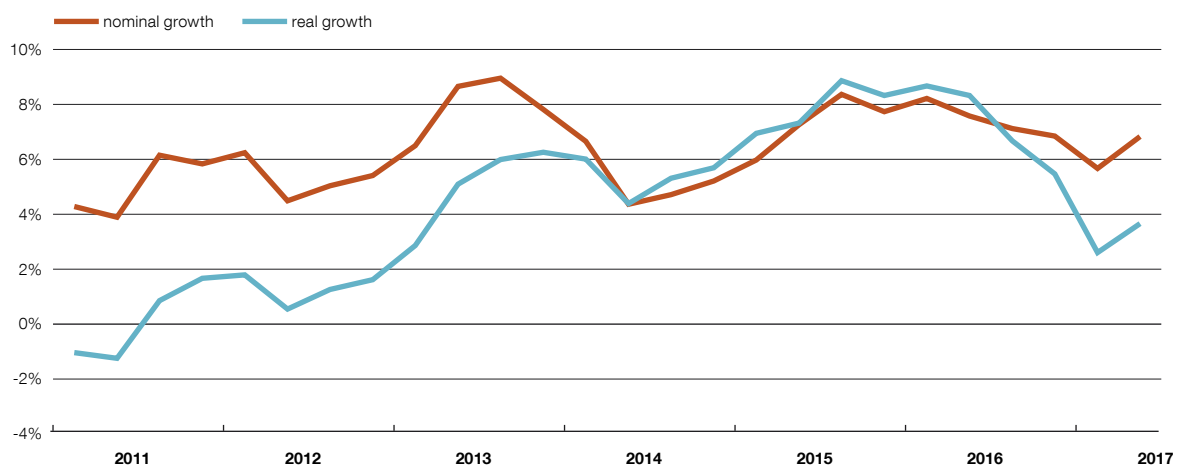
Sources: Statistics Estonia, Tax and Customs Board, Estonian Institute of Economic Research, Eesti Pank calculations

service sector still grew faster than those in the industrial sector though. Although the share of companies in the service sector citing labour shortages as a factor hindering output did not increase as fast at the start of 2017 as it did in industry or construction, it has still steadily increased in recent years and has reached the level it was at when the economy was booming. Among the larger service industries in the private sector, retail saw wages rise by a rapid 8.4% in the first half of 2017, and the wage survey found there were some 87,000 full-time equivalent jobs in retail. Wages have been rising rapidly for a long time in information and communications and did so by 9.7%, and the number of full-time equivalent employees in the sector has increased since the financial crisis by around 45% to 20,500.

Faster rises in consumer prices slowed the growth in real wages from the 5-7% of recent years to an average of 3.1% in the first half of 2017, which means that the amount of products

and services that the average wage is able to buy grew more slowly than previously (see Figure 11). It is probable that in future higher inflation, especially higher food prices, will affect the wage demands of employees. Wages in Estonia are rarely automatically indexed to consumer prices, but in a survey conducted in 2007 about half of employers indicated that they take account of inflation when changing wages¹.

Figure 11. Average nominal and real growth in net monthly wages



Sources: Statistics Estonia, Eesti Pank calculations

The rise in net wages will be boosted in 2018 by the income tax reform, which raises the income tax-free minimum threshold to 500 euros for those earning up to 1200 euros. How much employees benefit from the tax cut and how much employers are able to hold on to from the rise in gross wage depends on the strength of the position of the employer and employee in wage negotiations. As demand for labour is strong and there is a shortage of labour in the economy, it is probable that both net wages and gross wages will continue to rise rapidly. The change in the tax rate means that the net wage will increase by about 14% with a gross wage of 500 euros².

Wage distribution

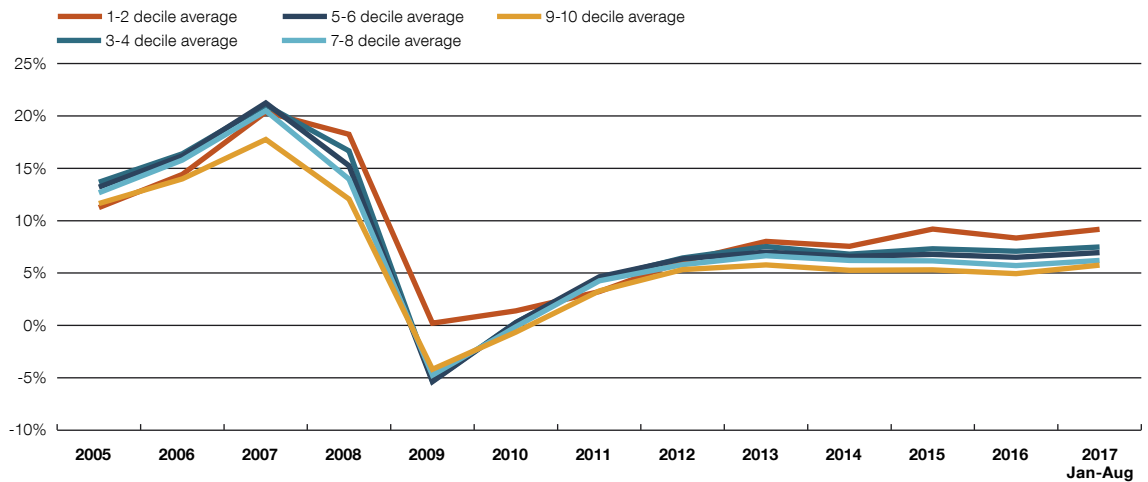
The statistics from the Tax and Customs Board on the distribution of wages paid out show the declared wage has been increasing faster for some years in the lower part of the wage distribution, and this was also the case in the first eight months of 2017. Ordering declared wages from lowest to highest shows that the growth rate of the average of the bottom fifth was 9%, while the rise in the top fifth was 6%, though this excludes the very highest 1%, where there were very large one-off payments (see Figure 12).

The rapid rise in the lowest wages means that the wage distribution has become more equal. Box 1 covers the consequences of more equal wage distribution in more detail. It shows that wages have risen fastest in jobs requiring the fewest qualifications. Looking at wage growth across jobs, it is evident that wage growth is not dependent on the size of the wage.

¹ See *Survey Evidence on Wage and Price Setting in Estonia* (2011), Eesti Pank, p 64.

² The rise in the tax-free minimum income threshold is covered in more detail in the Eesti Pank June forecast 2017.

Figure 12. Average change in declared wages by decile



Sources: Tax and Customs Board, Eesti Pank calculations

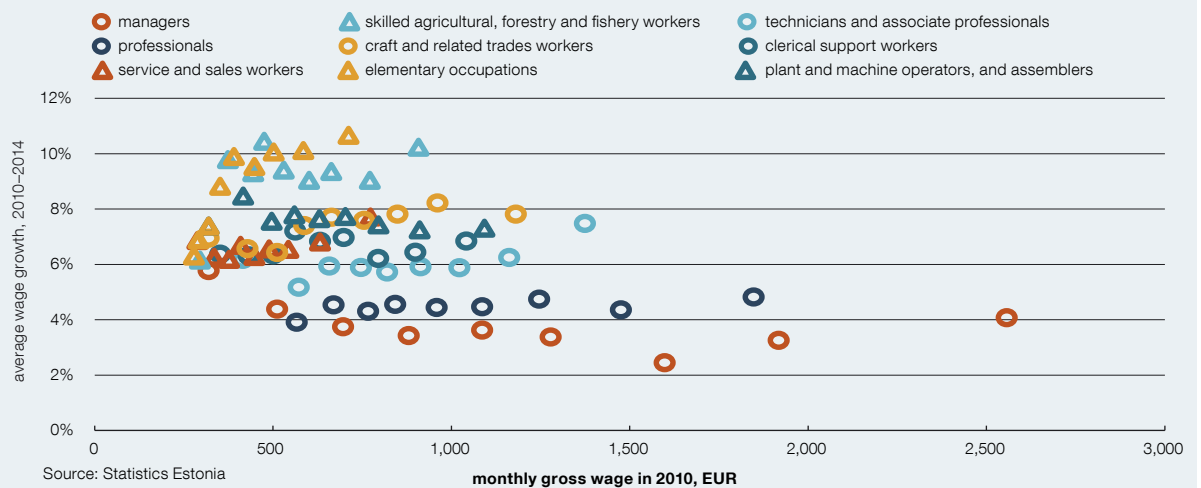
Box 1. The decline in the skills premium shown in the wage survey

Kaspar Oja

At a time when growing inequality is being discussed more and more in advanced economies, the opposite trend is apparent in the changes in wages in Estonia, as low wages have risen faster than the average and the wage distribution has become more equal. Figure B1.1 shows wage growth by jobs and deciles of wage earners. A general link can be seen that the higher the wage was in 2010, the more slowly it rose over the next four years.

The equalisation of the wage distribution may be due to a reduction in the skills premium. Occupations that demand the best professional skills pay wages above the average, and the higher the median wage for the occupation the slower the wage has risen in that occupation. The wages of skilled workers with professional skills are on average higher than those of unskilled workers, but they have risen more slowly. There are large differences not only between different occupations but also between the wages of different workers in the same occupation (see Figure B1.1). The negative relation between the size of

Figure B1.1 Average wage growth 2010-2014 by deciles and occupation



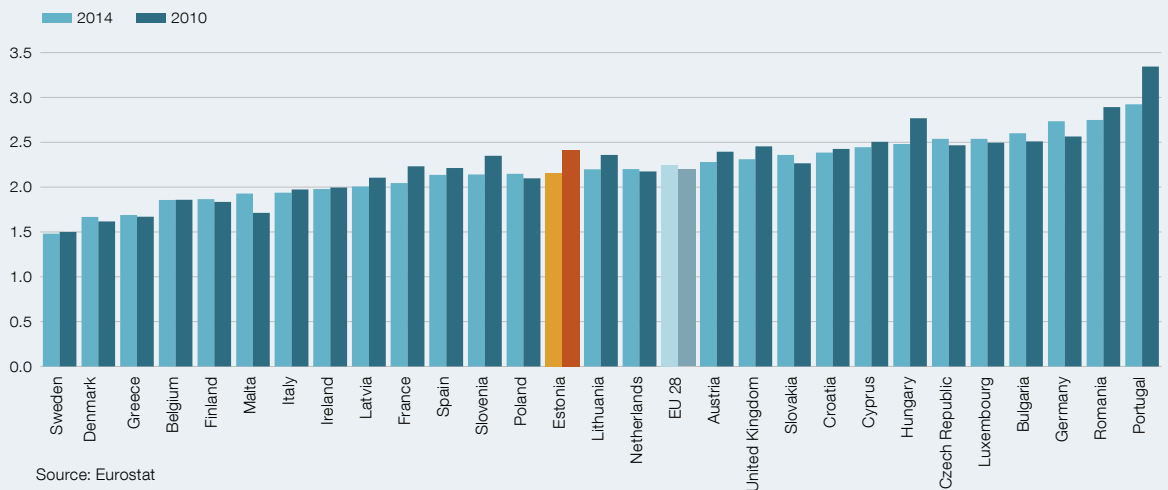
Source: Statistics Estonia

the wage and the growth in it does not apply if wages are analysed within occupations. In fact the wages in the higher deciles for particular occupations have risen even faster than those in the lower deciles for the same occupations. For example the top-earning tenth of technical and mid-level specialists have seen their wages rise faster than the tenth earning the least.

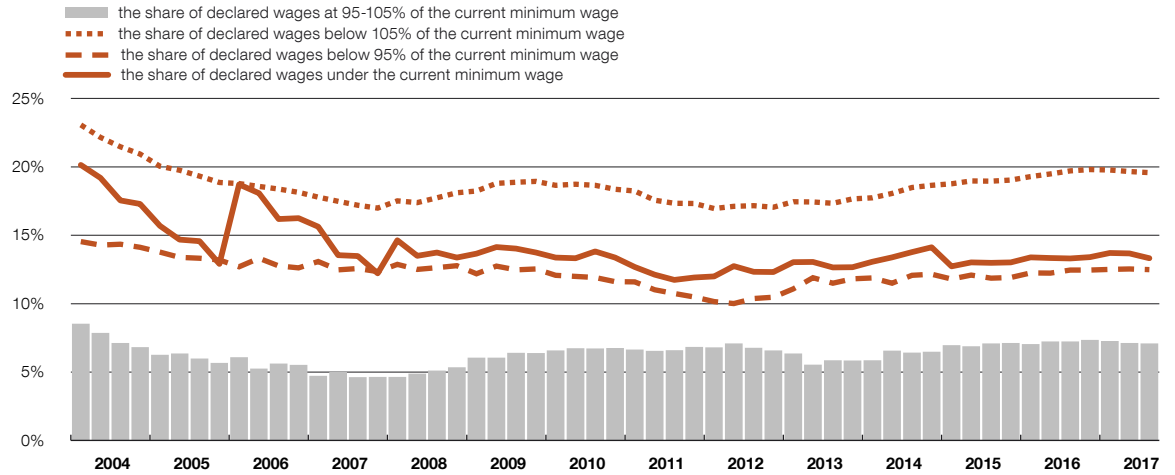
The drawback of a reduction in the skills premium is that it is not worth those entering the labour market trying as hard to earn a good wage. This could mean, say, that higher education may in future not seem as attractive as it does now, and so people will fail to realise their true potential in their careers. The positive side is that rapid wage rises in jobs that need few qualifications can reduce poverty and the associated problems.

Looking across the countries of the European Union, the difference in wages between top specialists and unskilled workers is about the same in Estonia as the average for the European Union. Figure B1.2 shows that while the wage gap in Estonia has narrowed, the average in the European Union has actually widened. The gap in the Nordic countries is smaller than that in Estonia, while that in Germany for example is notably larger.

Figure B1.2 The wage level of professionals divided by the wage of elementary occupations



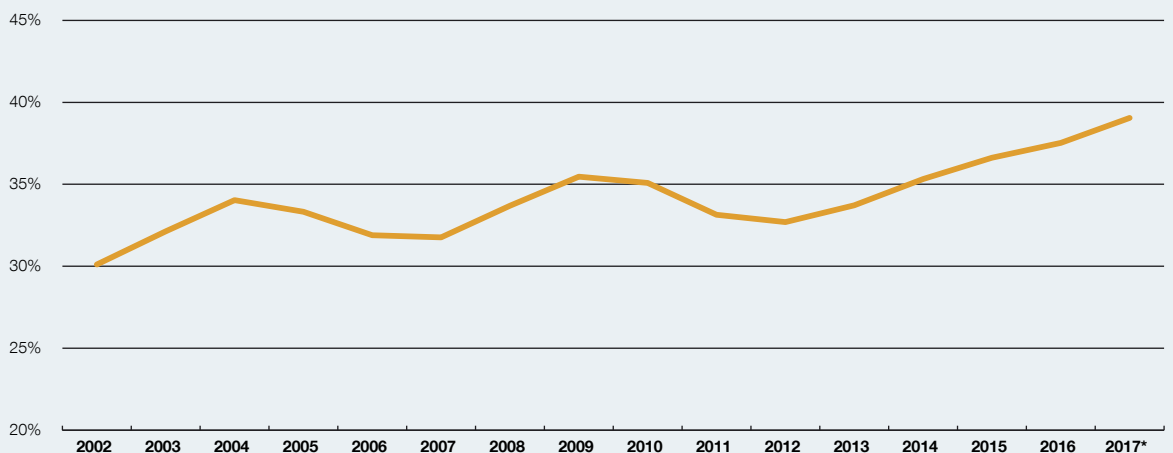
A major part in the rise in low wages has been played by the rise in the minimum wage of around 10% a year in 2014-2017. The minimum wage reached 470 euros in 2017, equivalent to 39.2% of the average wage in the first half of the year. No detailed data on what share of waged employees earn the minimum wage are collected. The data from the Tax and Customs Board do show however that around 14% of all wages paid out in 2017 were below the minimum wage (see Figure 13). It is unfortunately not possible to distinguish wages received for part-time work in those data, but the share of wages paid out that were around the same as the minimum wage was close to 7%, which is about the same as in 2016. The rate of the minimum wage for the years ahead was still being negotiated at the time of writing. The first proposal by trade unions is for the minimum wage to be raised for next year to 535 euros. Employers argue however that the minimum wage should not be raised at all, because the income tax reform will raise the net wages of those on the minimum wage by around 14%. It is not unusual for there to be a large difference between proposals in negotiations for the minimum wage (see Box 2).

Figure 13. Share of wages paid out below the minimum wage, seasonally adjusted

Sources: Tax and Customs Board, Eesti Pank calculations

Box 2: Minimum wage negotiations in Estonia

The level of the national minimum wage is agreed in negotiations between the Confederation of Estonian Trade Unions (EAKL) and the Estonian Employers' Confederation (ETKL), and is enacted in a government decree. The Employment Contracts Act forbids the payment of wages below the minimum wage to full-time employees. In 2013–2017 the minimum wage was raised by an average of 10% a year. As the average wage has risen more slowly, the minimum wage has increased as a ratio to the average wage (see Figure B2.1). The higher the minimum wage as a ratio to the average wage, the larger the role it plays in setting the wages for the economy in general. This box discusses earlier negotiations over the minimum wage and the results of them³.

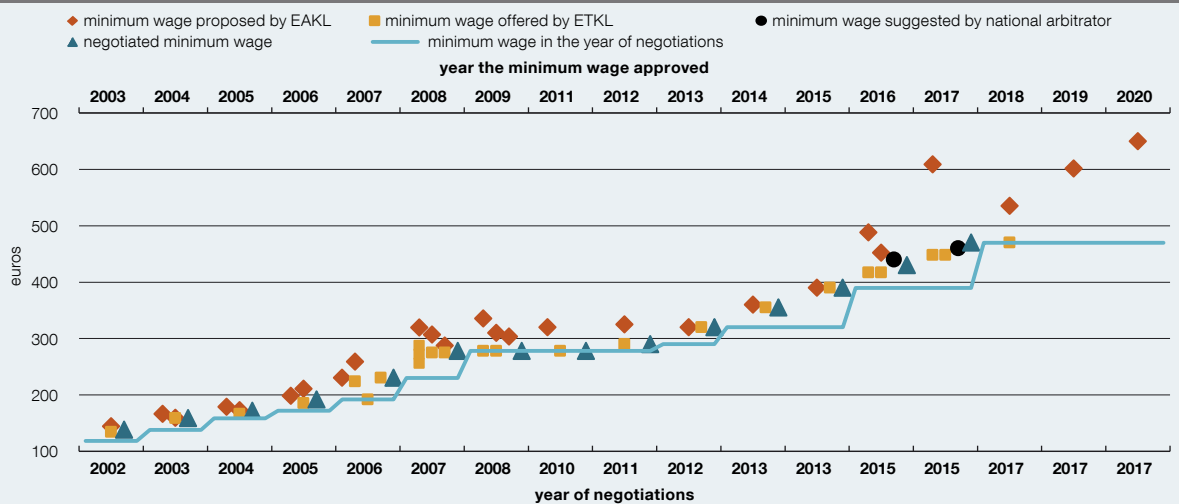
Figure B2.1 The minimum wage relative to the average wageSources: Statistics Estonia, Eesti Pank calculations
* Eesti Pank forecast for the average wage

³ The source for all the discussions of rises in the minimum wage in earlier and current negotiations about it is the proposals by the EAKL and the ETKL that have been reported in the media.

There is a national minimum wage in 22 of the 28 member states of the European Union and data from the OECD show the minimum wage in 2016 was around 40% of the average monthly wage in those countries⁴. This ratio varied widely between countries, from 31% in Spain to 49% in France. The current minimum wage in Estonia that can be paid to a full-time employee is 470 euros. This is the second highest in Central and Eastern Europe behind that of Slovenia, and is around 39% of the average gross monthly wage in the whole economy.

The negotiations open with a proposal from the trade unions to raise the minimum wage next year, and employers respond with their own proposal. Intensive discussions mainly take place in the autumn, when the statistics on the average wage in the second quarter of the current year are published by Statistics Estonia, and the Ministry of Finance has released its economic forecast. Proposals from many of the parties appear in the press during the course of the negotiations (see Figure B2.2). Particular attention was focused on the negotiations in 2006-2008 when the average wage was rising rapidly.

Figure B2.2 Minimum wage negotiations



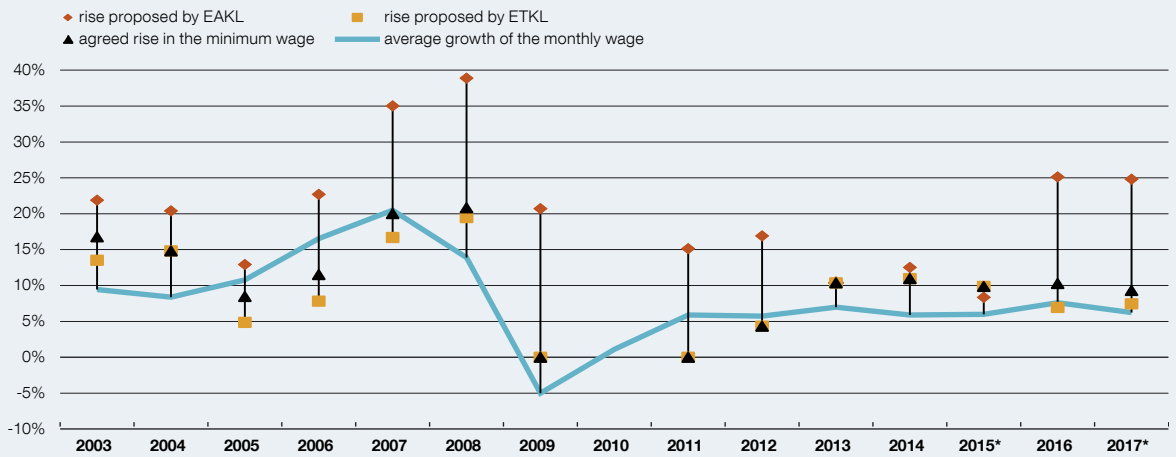
Sources: EAKL and ETKL offers reported in the media

Until 2008, an agreement signed in 2001 between the ETKL and the EAKL played an important part in the negotiations for the minimum wage, as it called for the minimum wage to be raised to 41% of the average monthly wage by 2008, this being the average level in the European Union. Starting from this agreed goal, the minimum wage was raised in 2002-2003 faster than the average monthly wage rose (see Figure B2.3). The ratio of the minimum wage to the average wage fell in 2005-2006 however, because it was not foreseen during the negotiations that the average wage would start to rise rapidly as the economy grew. When the growth in the economy peaked in 2006 and 2007, the trade unions wanted to raise the minimum wage by around 40% to lift the ratio of the minimum wage to the average wage, as it had fallen in the intervening years. The agreed rise of 20% turned out to be faster than the rise in the average wage in 2008, as wage growth was brought down by the recession in the economy. It was clear in the negotiations at the end of 2008 that the economy was turning downwards and although the trade unions were looking for a rise in the minimum wage, it remained almost unchanged in 2009, 2010 and 2011.

Since 2013 the trade unions and the employers have agreed the minimum wage for the following two years. In 2013 the EAKL and the ETKL were essentially in agreement about the minimum wage for 2014 and 2015, but the negotiations in 2015 needed help from a state arbitrator (see Figure B2.2), because there was such a wide difference between the rises proposed by the two parties. The trade unions proposed that the minimum wage should be raised by 25% in both years, but the employers considered that the minimum wage should increase at about the same rate as the average wage. The state arbitrator proposed that the minimum wage should be raised in 2016 to reach 41% of the average wage, and when the minimum wage was approved in

⁴ Data on Bulgaria, Croatia and Malta are not included in the database.

Figure B2.3 Growth in minimum and average wages



Sources: ajakirjandus, Eesti Panga arvutused.
* Minimum wage negotiations two years earlier

2017 account was taken of the increase in the net incomes of the low paid resulting from the tax rebate for the low paid that was introduced in 2017.

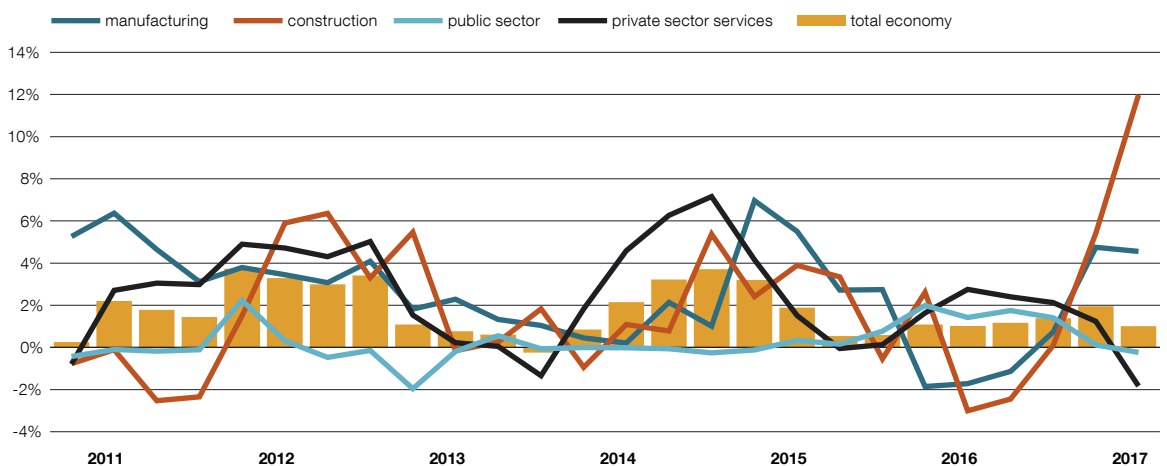
The trade unions and the employers take different positions in making proposals during the negotiations. The agreed minimum wage is generally lower than the first proposal of the trade unions, while the lower bound of the initial proposal of the employers is the current minimum wage. The negotiating strength of the trade unions and the employers is shown by where the agreed rate lies between the minimum offer and the maximum demand. The negotiating power of the trade unions has been quite strong in recent years because of changes in economic growth and unemployment in those years. Low unemployment, strong demand for labour and faster GDP growth this year may make it a little easier than in previous years for the trade unions to argue that the minimum wage should rise faster than the average wage in the years ahead. It may still be that the rise in the net income of the low paid will turn out to be a key argument in the negotiations for the minimum wage in 2018. The income tax law will change in 2018 and the tax free minimum threshold will rise to 500 euros a month, boosting the net income of the low paid. For this reason the employers have proposed that the minimum wage should remain unchanged in 2018 (see Figure B2.2).

DEMAND AND SUPPLY FOR LABOUR

Employment

Despite the rapid growth in the economy, demand for labour increased in the first half of the year at about the same rate as it did last year. One indicator of demand for labour is the total number of filled and unfilled positions. The Statistics Estonia survey of vacant positions and labour mobility shows the total number of positions was 1.5%, or 8260 jobs, higher in the first half of this year (see Figure 14). The changes in demand for labour were quite different in different sectors according to this data source. There was a large increase in demand for labour in manufacturing and construction, with the total number of jobs in the first half of the year up 4.7% on a year earlier in manufacturing and up 8.7% in construction. At the same time demand for labour in services, which is mostly in the private sector, stopped growing in the first half of the year.

Figure 14. Yearly change in positions occupied and job vacancies

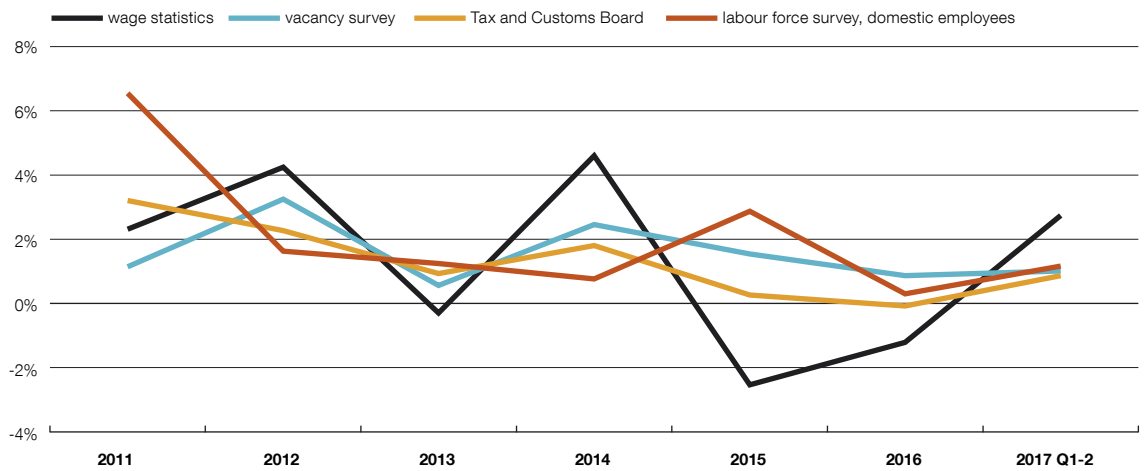


Sources: Statistics Estonia, Eesti Pank calculations

As demand for labour grew in the first half of the year so did the number in employment, as a large number of the new jobs were filled by employees. The labour force survey showed an increase of 1.2%, or 7250 employees, in the first half of 2017 in the number employed in companies and institutions in Estonia. Total employment, or the employment of residents of Estonia, increased by slightly less over the year, rising by 6650 people or 1%, as the number of Estonian residents working for companies abroad was lower than a year previously.

The labour force survey is a sample survey and the figure it gives for employment in each quarter is based on a sample of around 4500, so the confidence bounds for the employment growth rates in it are quite wide. For this reason it is important to look at other data sources giving information on numbers of employees too. Like the labour force survey, the registry data from the Tax and Customs Board for the numbers receiving declared wages and the survey on labour mobility show the number of jobs filled to have risen by about 1% (see Figure 15).

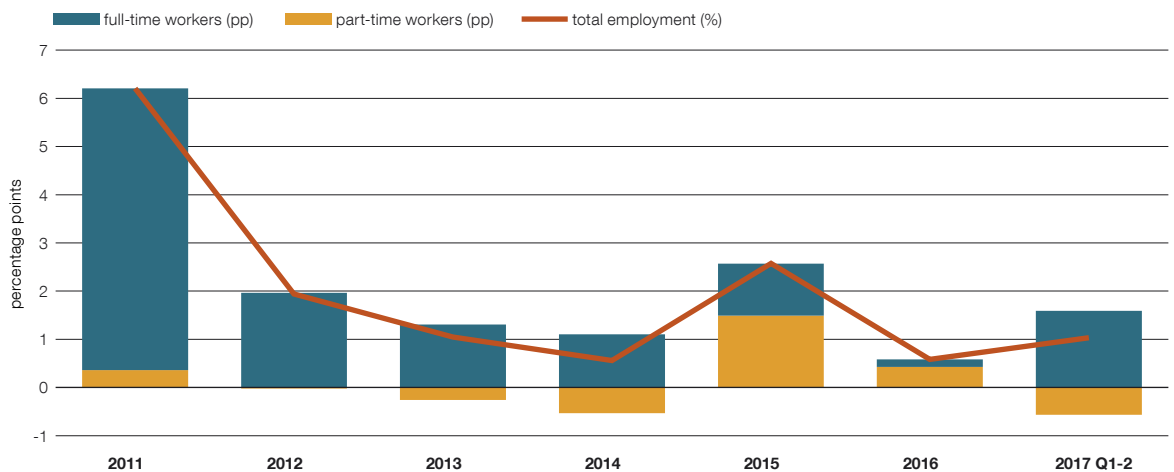
Figure 15. Growth rate of the number of employees from different data sources



Sources: Statistics Estonia, Tax and Customs Board

The wage survey gives the number of employees as full-time equivalent and showed that employment had risen a little faster. This is in line with the data from the labour force survey on full-time and part-time working, which show an increase in the number of full-time employees and a fall in the number of residents working part-time (see Figure 16). The growth in full-time employment is confirmed by data in the labour force survey on hours worked. The number of hours worked in companies based in Estonia rose faster in the first half of the year than the number of people in employment did.

Figure 16. Growth rate of the number of employees working full-time or part-time

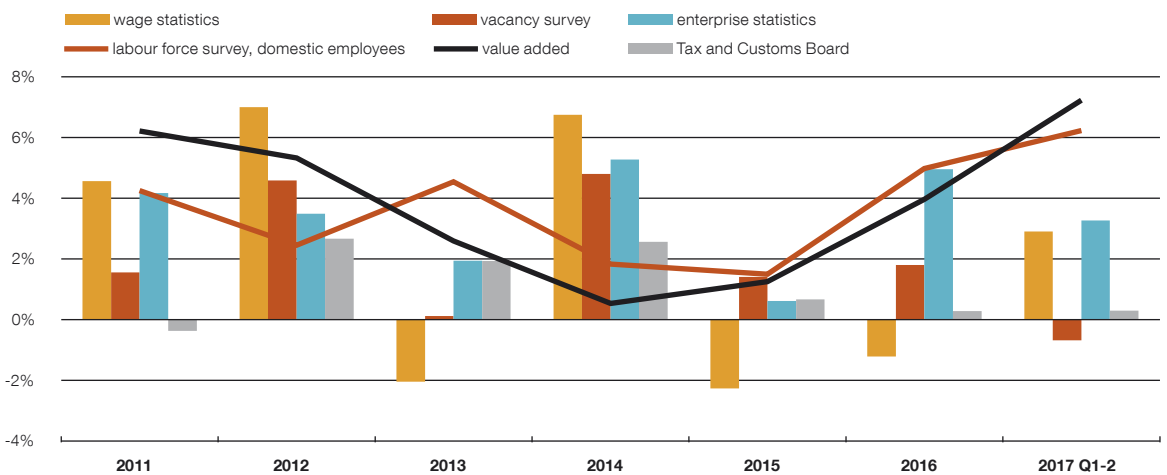


Sources: Statistics Estonia, Eesti Pank calculations

Although the labour mobility survey shows demand for labour as the total number of filled and vacant jobs to have fallen slightly in the service sector in the first half of 2017, other data sources show that employment continued to increase. The labour force survey indicates that the growth in total employment was affected most by the increase in employment in services,

where some 302,000 people were in employment in the first half of 2017. The majority of these worked in trade, transport and storage, accommodation and catering, and information and communications. Employment in services was put at 6.2% up over the year in the first half of 2017, or 17,700 employees more (see Figure 17), and the main driver of the growth was increased employment in trade.

Figure 17. Growth in employment in private sector services from different sources and increase in value added



Sources: Statistics Estonia, Tax and Customs Board

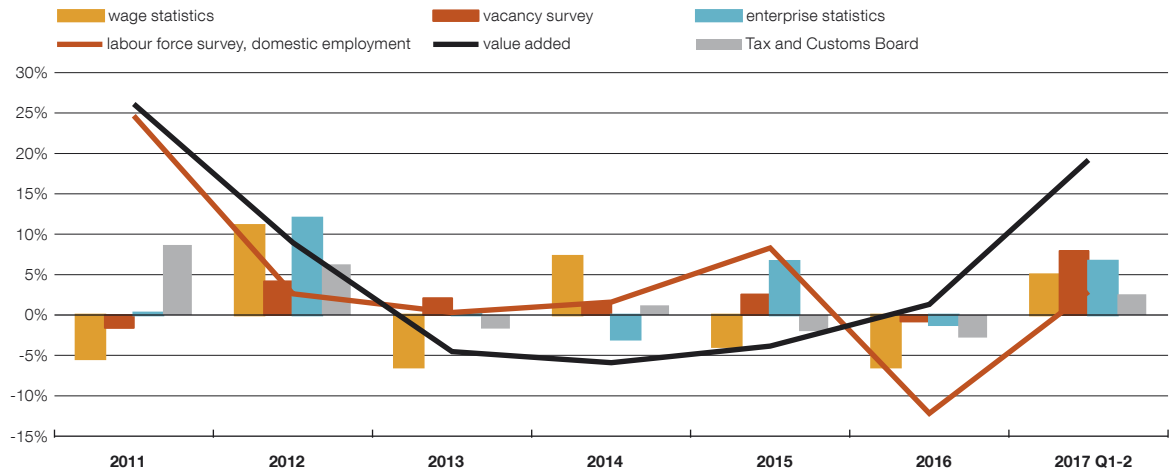
Faster growth in employment in the service sector is also indicated by enterprise statistics and the wage survey, which use full-time equivalent employment for the number of employees. However, the Tax and Customs Board data, which provide the only source that contains just registry data, found no notable change from a year earlier in the number of recipients of declared wages in the first half of the year. In total, three of the five surveys show that employment has grown strongly in the service sector.

The labour force survey shows the number employed in the secondary sector increasing by around 1% in the first half of 2017, like total employment. The largest part of the increase in employment in the secondary sector came from the rise in the number working in construction. There were an average of 44,500 people working in construction in the first half of 2017, which is about 1250, or 2.9%, more than a year earlier (see Figure 18). The rise in the numbers employed in construction is also shown by other sources of data. The growth in employment in construction has been boosted by larger investments in construction of plant and facilities, which has been supported by a rise in general government investment.

Some 118,100 employees were working in manufacturing, the largest part of the secondary sector, in the first half of 2017, accounting for almost one fifth of all employment. All the data sources show the number employed in manufacturing increased in the first half of the year, but the change was small (see Figure 19).

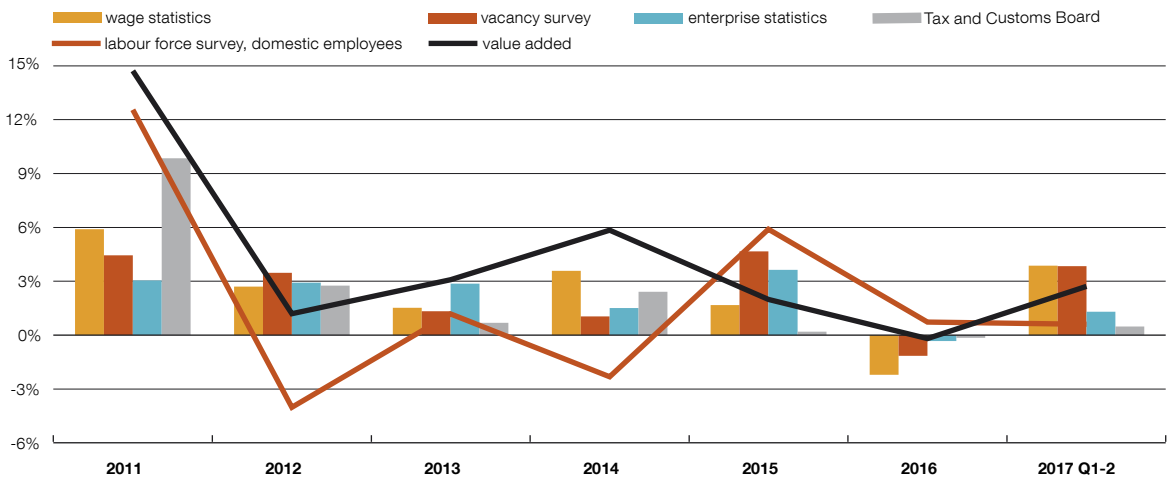
As the number of people in employment increased in the first half of 2017 and the number of people of working age, which is 15-74, fell, the share of the working age population who were in employment, or the employment rate, rose by one percentage point in the first half

Figure 18. Growth in employment in construction from different sources and value added growth



Sources: Statistics Estonia, Tax and Customs Board

Figure 19. Growth in employment in manufacturing from different data sources and value added growth



Sources: Statistics Estonia, Tax and Customs Board

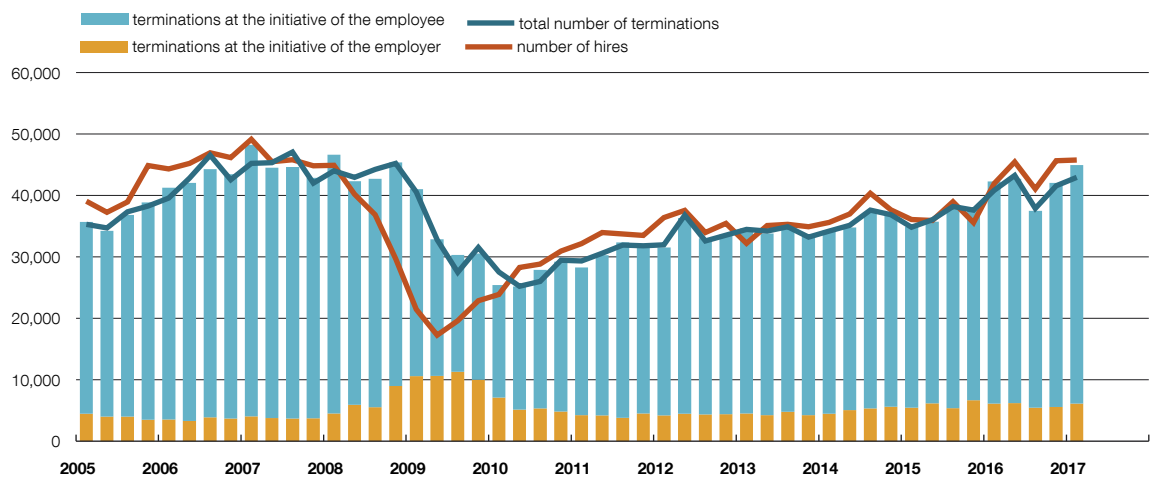
of 2017 to 66.6%. The number employed rose most in northern Estonia, particularly Tallinn, and the employment rate in northern Estonia rose to 73.6%. A year previously it had been 70.6%. Although the labour force survey found that the number in employment in north-east Estonia, where the employment rate is lowest at 51.3%, fell a further 12.8% or 8000 people over the year, data on registered employment and from the vacancy survey show that the labour market has also improved in north-east Estonia.

Vacancies

Though the number employed rose in the first half of 2017, employers would have liked to have increased the number of employees even further. There were 30% more vacancies in the first half of 2017 than a year earlier, with a total of 11,600 vacancies according to the

survey of vacant positions and labour mobility. The vacancy rate, which is the number of vacancies as a ratio to the total number of filled and unfilled jobs, averaged 2.1% in the first half of 2017, meaning that a suitable employee could not be found for two jobs in every hundred. New employees are being sought to fill newly created jobs or to replace employees who have left. The same survey already showed a rise in the number of employees leaving their job at their own initiative and in the number of employees hired in 2016 (see Figure 20). This indirectly indicates that job changing has become more frequent, which is typical at a time when there is little available labour in the market.

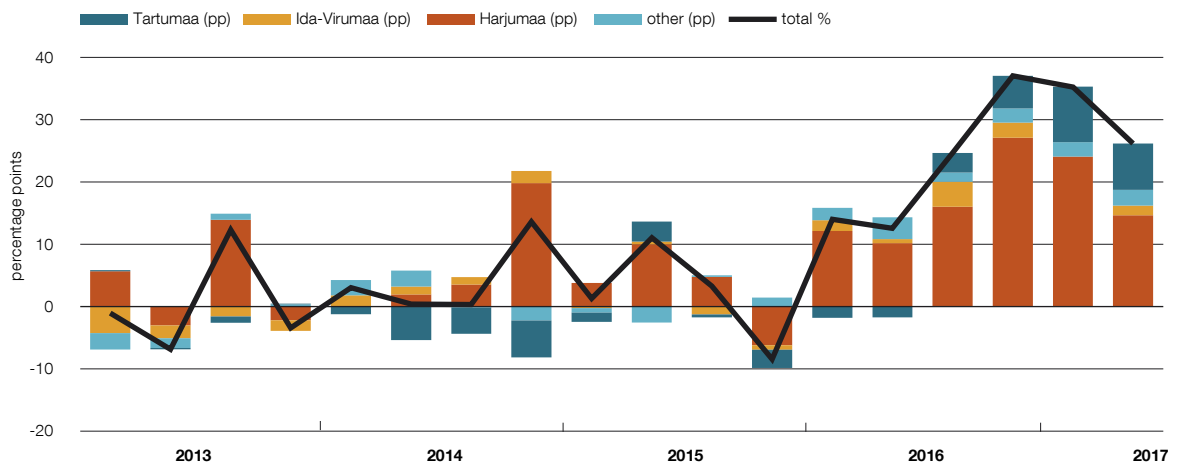
Figures 20. Labour mobility, seasonally adjusted



Sources: Statistics Estonia, Eesti Pank calculations

A little more than three quarters of the vacancies are in companies in the private sector, and this figure is higher than a year previously. The region that saw the largest rise in the vacancy rate was Harjumaa, but the number of vacancies started to rise sharply from a year earlier elsewhere in Estonia too (see Figure 21).

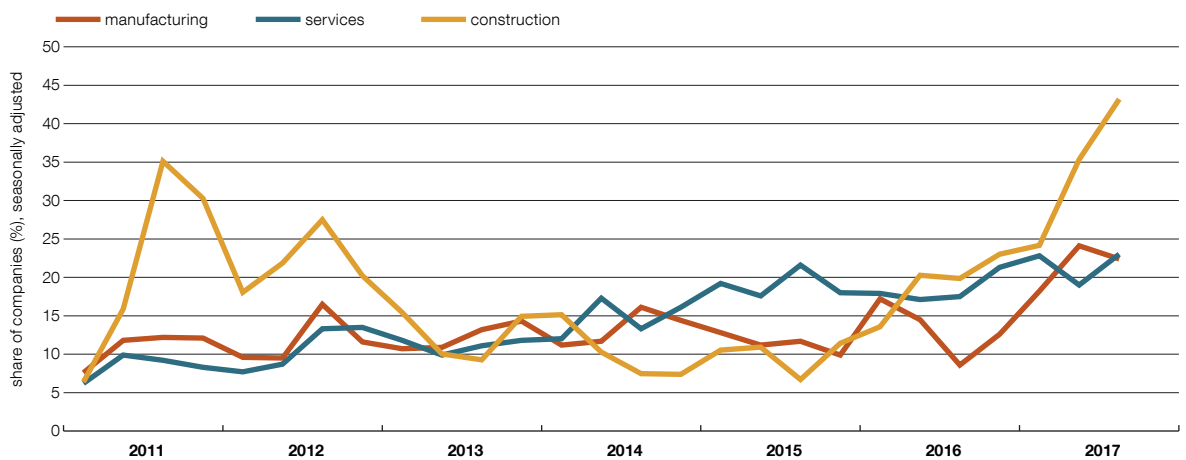
Figure 21. Yearly change in the number of vacancies and contributions of some counties



Sources: Statistics Estonia, Eesti Pank calculations

The most vacancies, some 900, were added in manufacturing. This sector now has the most vacancies with around 2300, which is two thirds more than a year earlier. The increase in labour shortages in manufacturing is also indicated by the corporate sentiment survey of the Estonian Institute of Economic Research, as labour shortages were cited as a factor restricting production substantially more than a year earlier (see Figure 22).

Figure 22. Labour shortages as the main factor hindering output



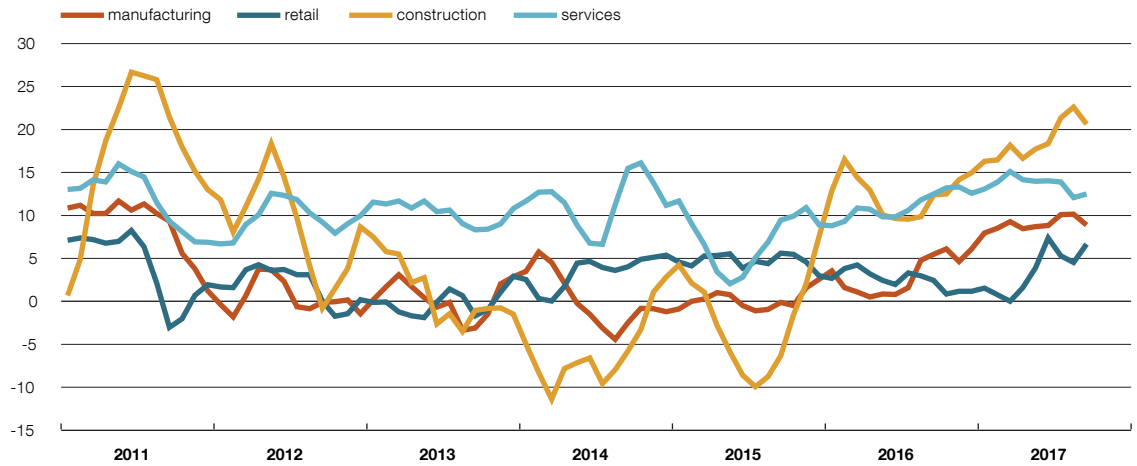
Source: European Commission

The sharpest rise in the number of vacancies was in construction however, where there were almost twice as many as a year ago at around 570. In the corporate survey by the Estonian Institute of Economic Research in the first half of the year, an average of 30% of construction companies considered labour shortages to be the main factor restricting output.

It is not compulsory in Estonia to inform Töötukassa of job offers, but at the end of each month in the first half of 2017 Töötukassa had an average of 6056 jobs on offer, or 52% of the number of vacancies. The number of jobs on offer at Töötukassa was around 1000 more than at the same time a year earlier. The data on vacancies from Töötukassa also show that manufacturing was looking for the most employees, especially in the production of metal products and wood processing.

The employment expectations indexes in the survey by the Estonian Institute of Economic Research can help in assessing the future plans of companies to hire, which show future developments in demand for labour. The expectations of employers for employment looking forwards became more optimistic in the first half of 2017 especially in manufacturing and construction (see Figure 23). The share of companies expecting an improvement in employment increased significantly in the third quarter in trade and construction.

Figure 23. Employment expectations, three-month moving average



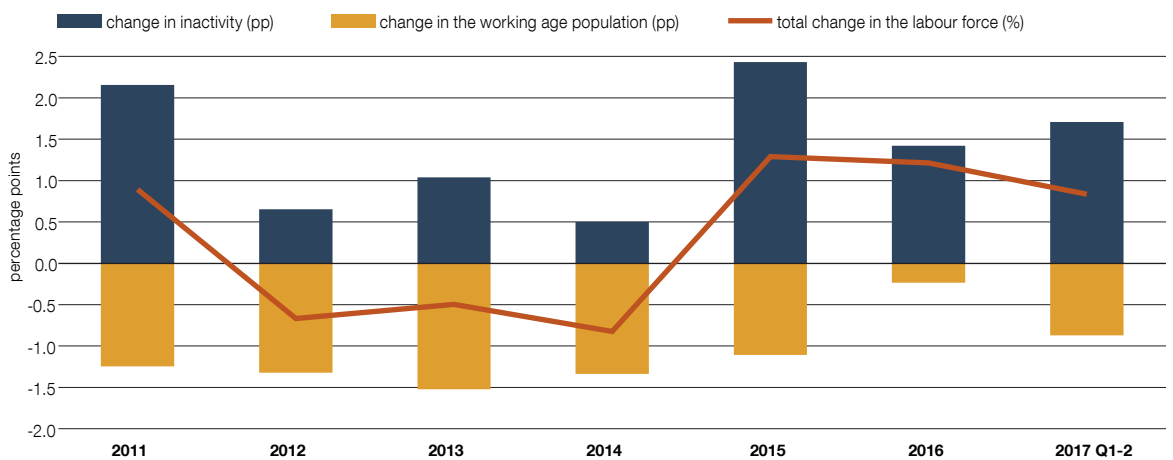
Source: European Commission

* Index shows the net share of companies expecting employment to increase or decrease

Labour force participation and the working age population

As demand for labour increased in the first half of 2017, so too did the supply of labour. The labour force, which is residents aged 15–74 who are either working or looking for work, was up by 0.8%, or 5750 people, in the first half of 2017 from a year earlier according to the labour force survey (see Figure 24). Although there were about 6000 fewer people in the working age population than a year earlier, the labour force in Estonia increased because the labour force participation rate was high.

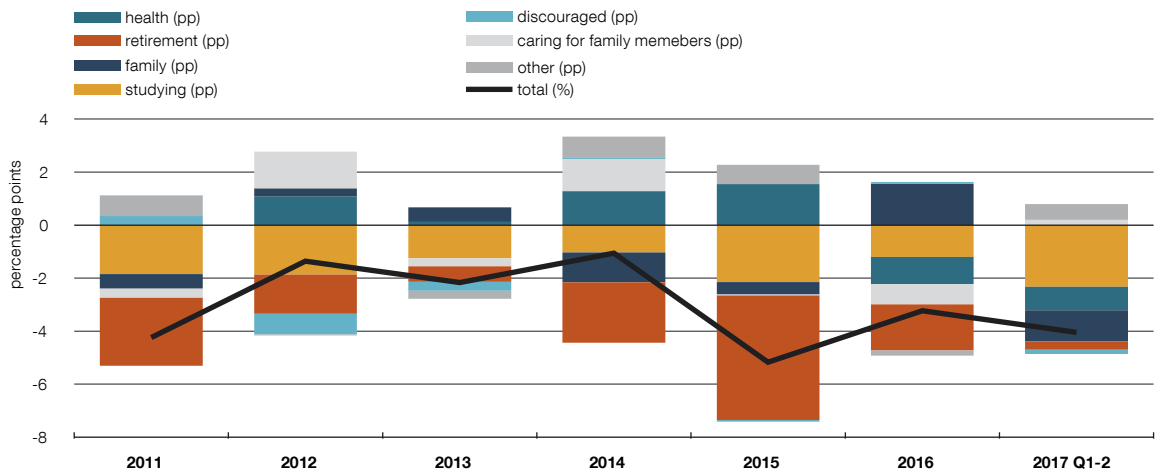
Figure 24. Yearly change in the labour force



Sources: Statistics Estonia, Eesti Pank calculations

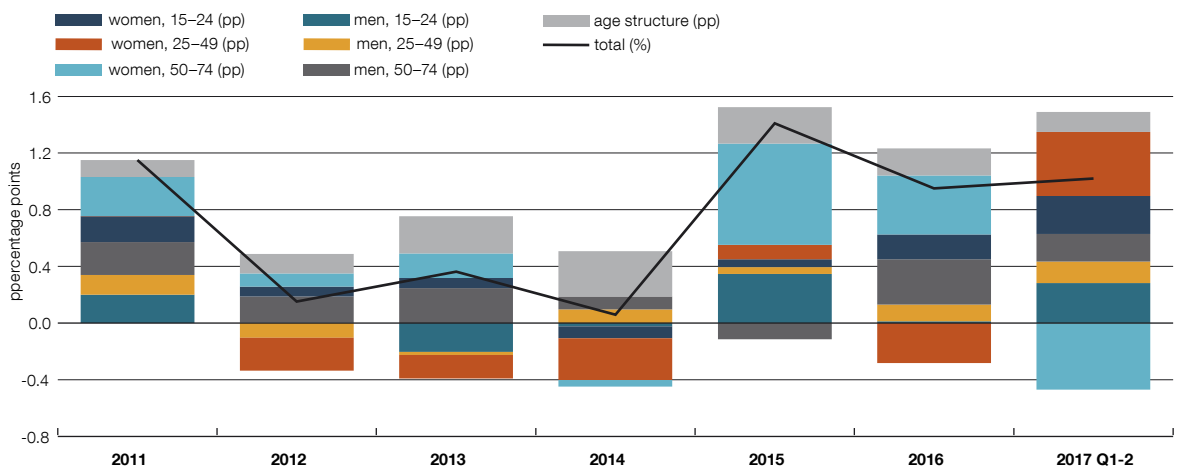
There were 11,900 fewer people inactive in the labour market in the first half of 2017 than a year before, or 4%, and the labour force participation rate averaged 71%. The labour force survey found that the main cause of the reduction in the number of inactive residents was that fewer people were out of the labour market because of studying (see Figure 25). The participation for those aged 15-24 has risen (see Figure 26) while the number of residents inactive because of health problems has fallen since 2016. Following the Work Ability Reform, some 29,000 people had had their ability to work assessed under the new rules by the end of the second quarter of 2017, and around half of them were working while being assessed. The Work Ability Reform increases labour force participation mainly because people who are partially capable of working, who would previously have been out of the labour market, have to be actively looking for a job in order to receive their work

Figure 25. Yearly change in the number of non-participants



Sources: Statistics Estonia, Eesti Pank calculations

Figure 26. Contributions to the yearly change in participation rate by age and gender

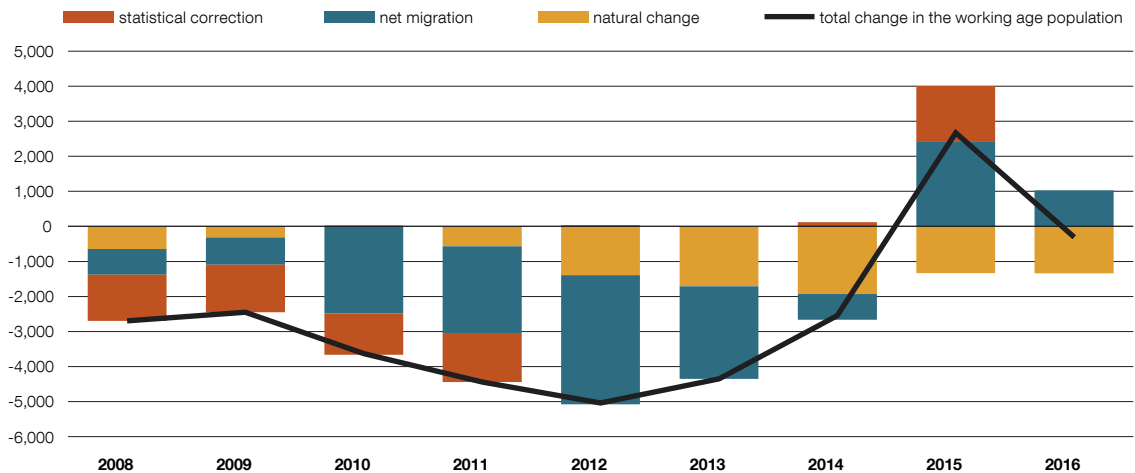


Sources: Statistics Estonia, Eesti Pank calculations

incapacity benefit. Providing a proxy estimate of the impact of the reform, a total of 7000 people who were not working at the time they were assessed had been classed as partially capable of work by June 2017. The Work Ability Reform is covered in more detail in a box in Estonian Economy and Monetary Policy 3/2017. The labour force participation rate should be lifted further in future by the Work Ability Reform, and also by the rise in the retirement rate, and so the labour force should increase.

The labour supply is affected not only by the participation rate of residents, but also by the number of people of working age, which is affected by changes in the population. Data from Statistics Estonia showed that the population of Estonia shrank by around 300 people in 2016 (see Figure 27). For the second consecutive year more people came to live in Estonia than left the country, so the positive migration balance is not able to offset the negative natural rate of population change. On top of the decline in the total population, the number of people aged 15-74, or residents of working age, also fell in 2016 because of the age structure of the population. More people aged 75 exited the working age population and fewer people aged 15 entered it than in 2015. However the decline was slowed by the fall in the mortality rate among the working age population aged 15-74.

Figure 27. Population change



Source: Statistics Estonia

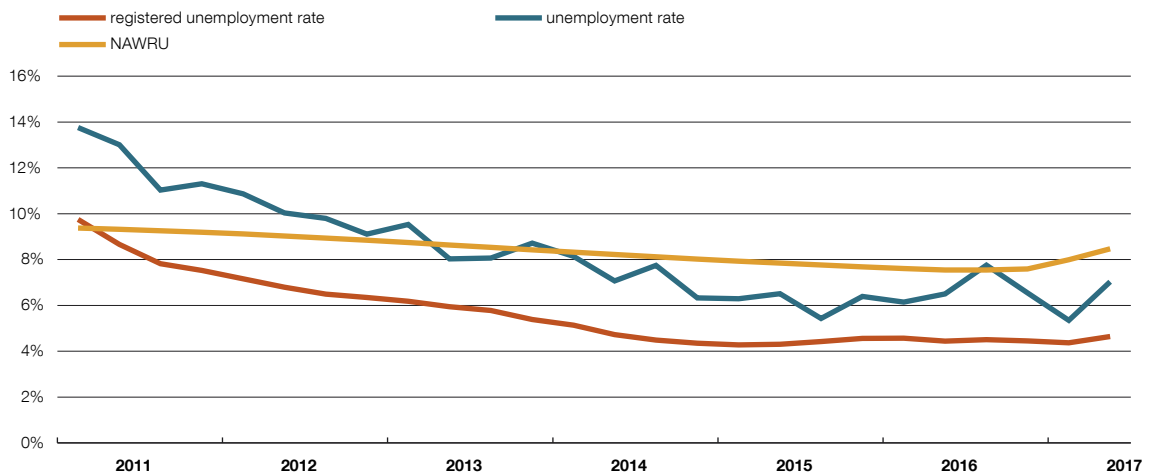
The life expectancy of a woman at the moment of birth was 81 years and 9 months in 2016 and that for a man was 73 years and 2 months. Life expectancy continued its long-term rise and was extended by one month for men and by about half a month for women. As life expectancy rose in 2016 so the number of healthy life years also rose quite sharply for the first time in some years, with women gaining 2 years and 7 months at 58 years and 8 months, and men gaining 1 year and 8 months at 54 years and 2 months. This indicator is based on data from Estonian social surveys, where respondents are asked to assess whether their health hinders their everyday activities. The assessment of expected healthy years of life defines good health as there being no limits on everyday activity. The indicator was only higher than in 2016 in 2009.

Unemployment

As the number in employment rose from 2016 to the first half of 2017 by more than the number of residents active in the labour market did, the number of people unemployed was a little lower than at the same time a year earlier. An average of 43,700 people were unemployed in the first half of the year and the unemployment rate, which is the ratio of the unemployed to the total number of people in employment or looking for work, fell according to the labour force survey from 6.5% in the first half of 2016 to 6.3% in the first half of 2017. Unemployment fell most in the first quarter of the year. The unemployment rate fell because unemployment was down among women and men aged 50-74. The labour force participation rate for older people has risen in the past couple of years and the fall in the unemployment rate for this age group shows that older people are quite capable of finding suitable employment for themselves. As the labour force participation rate of those aged 15-24 rose, so did the number unemployed in this age group.

The non-accelerating wage rate of unemployment (NAWRU) is the estimated level of unemployment where there is no additional wage pressure in the economy and wage rises do not accelerate. It is high if a lot of the unemployed are structurally unemployed, meaning they do not compete for the employment positions available in the economy because they do not have the skills required or they are not, for example, prepared to change their place of residence for a job. The NAWRU has been falling for several years, but Eesti Pank finds that it stopped falling in 2016 and started to rise again at the beginning of 2017. This is because the Work Ability Reform brought into the labour market people who had been out of it for a long time, whose skills and education do not necessarily immediately match the needs of the labour market (see Figure 28).

Figure 28. Unemployment



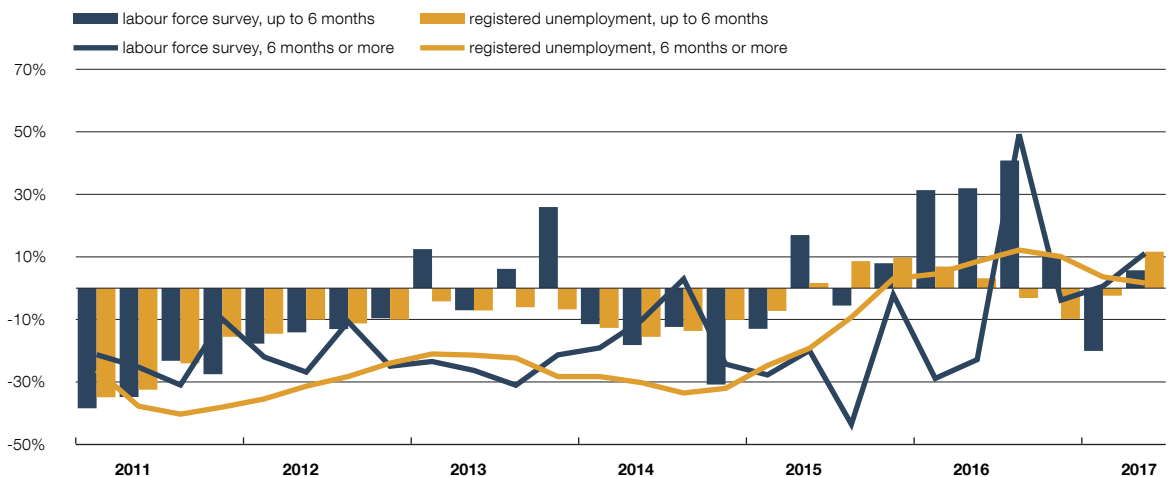
Sources: Statistics Estonia, Töötukassa, Eesti Pank

Although data from the labour force survey show a fall in the number unemployed in the first half of the year, there were an average of 30,900 registered unemployed at Töötukassa each month in the first half of the year, which is about 440 more than a year

earlier. The number registered as unemployed was increased by the Work Ability Reform which requires most of those who are partially capable of work to participate actively in the labour market to receive their work incapacity benefit. This boosted the addition of new unemployed, and each month in the first half of the year an average of 500 more new unemployed were added than a year earlier. The addition of new unemployed was faster particularly in the second quarter and the registration of new unemployed increased most in southern Estonia in Põlvamaa, Valgamaa and Võrumaa

Data from Töötukassa show the increase in the number of newly registered unemployed also led to an increase in the number of people who were short-term unemployed and out of work for less than six months (see Figure 29). The labour force survey shows there were also more short-term unemployed in the second quarter than a year ago, but for the half year as a whole the number of short-term unemployed was still lower than it was last year. Those entering the labour market because of the Work Ability Reform should also increase the estimate of short-term unemployment in the labour force survey in future.

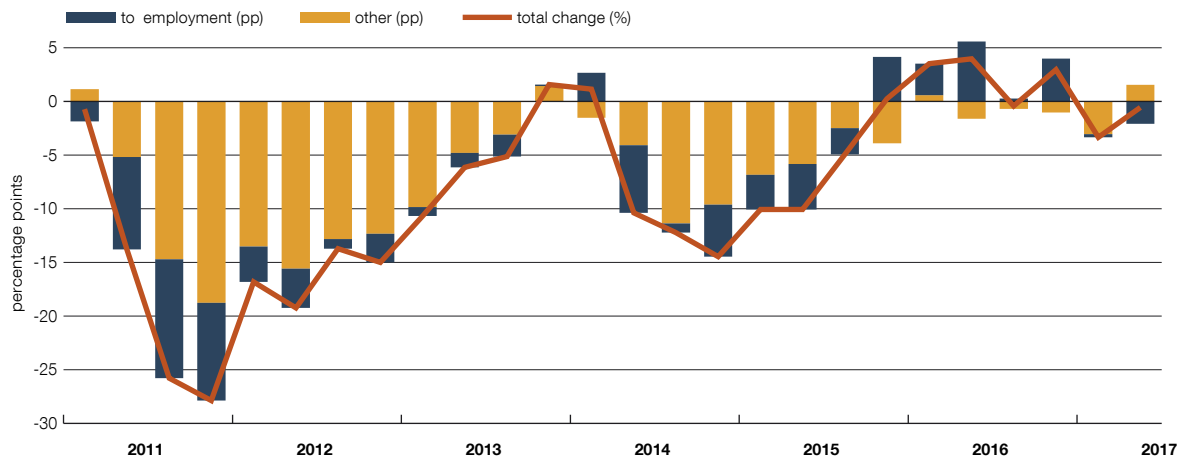
Figure 29. Yearly change in the number unemployed by duration



The largest number of registered unemployed were in Harjumaa, where the monthly average was 10,400 people. The county where the registered unemployed made up the largest share of the labour force in the first half of the year was Ida-Virumaa, where an average of 10.7% of the labour force was registered as unemployed. The number of registered unemployed has been lower in Ida-Virumaa in the past three quarters than a year previously, while the number of jobs on offer there has also increased. The Ida-Virumaa department of Töötukassa had an average of 1160 job offers at the end of each month in the first half of the year, which is two thirds more than a year earlier.

There were 34,900 people who exited registered unemployment in the first half of 2017, or some 660 fewer than a year previously (see Figure 30). Fewer people exited registered unemployment mainly because fewer residents found themselves a job than at the same time in the previous year.

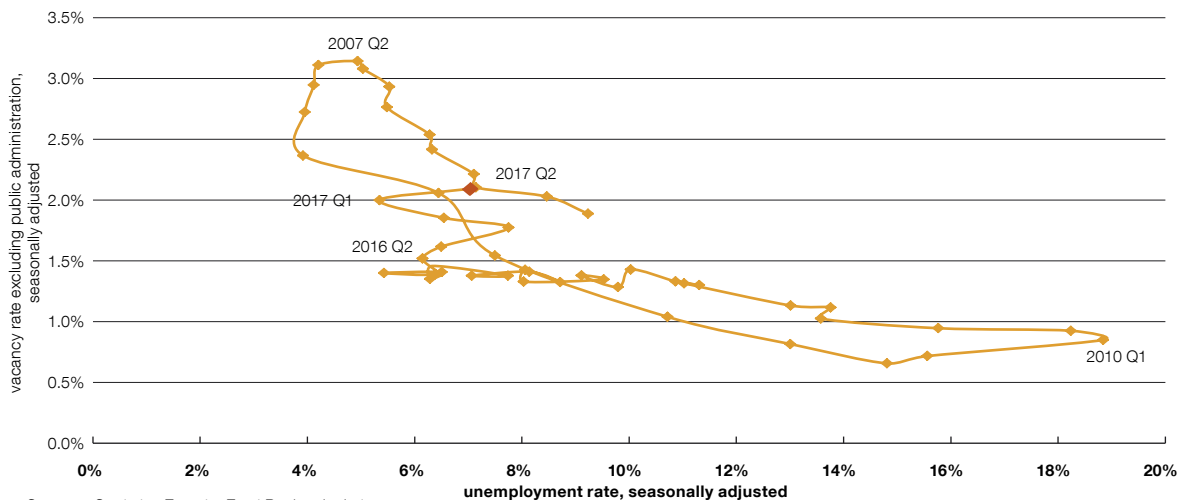
Figure 30. Yearly outflow from registered unemployment



Sources: Töötukassa, Eesti Pank

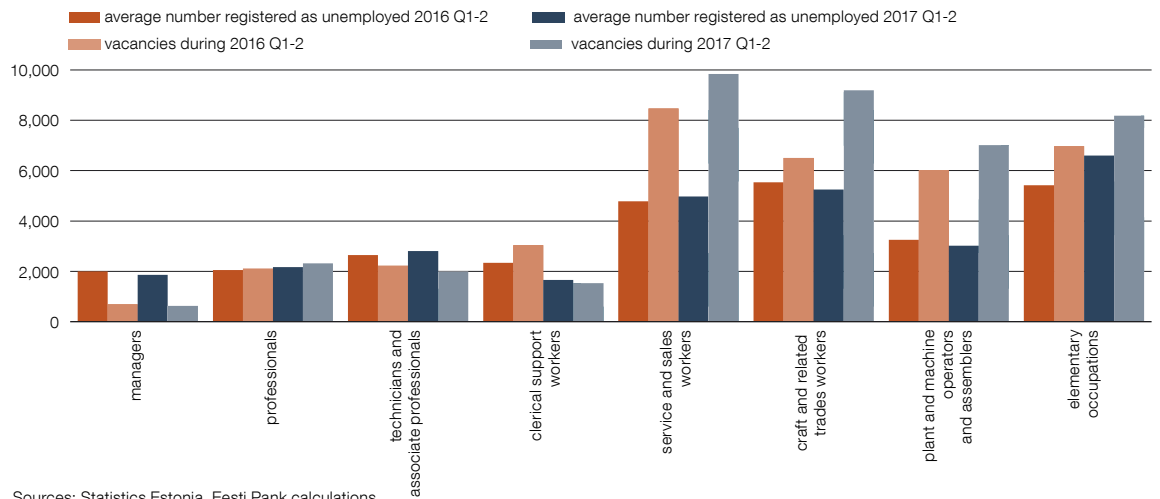
The Beveridge curve illustrates the relationship between available labour and vacant jobs (see Figure 31). The relationship between vacancies and unemployment is usually inversely proportional, so that when the unemployment rate is high, vacant positions are scarce, and when unemployment is low, there are a lot of vacancies. The unemployment rate was about the same as in the first half of 2016, but there were more vacancies than at that time. This means that the match between people looking for work and vacancies is slightly worse than it was a year earlier. The job offers in Töötukassa indicate that demand has increased most for skilled and manual workers and for machinery and equipment operators. There are however fewer registered unemployed who last worked in one of those areas than there were a year previously (see Figure 32).

Figure 31. The Beveridge curve



Sources: Statistics Estonia, Eesti Pank calculations

Figure 32. Vacancies and registered unemployed by last employment



Sources: Statistics Estonia, Eesti Pank calculations