

# DANMARKS NATIONALBANK

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## The labour market is slowly tightening

- The Danish labour market is faced with mounting capacity pressures, but is still not showing signs of overheating. The impression, based on a broad range of indicators, is one of balanced labour market developments so far during the upswing.
- Labour market tightness, measured as the number of new job postings per unemployed person, has increased in recent years, particularly in construction, but at a slower pace than during the boom of the 2000s.
- Viewed in isolation, a change in the demographics of the working age population has reduced the labour supply since 2008. This emphasises the need for foreign labour to support the labour demand of the upswing.

### **Solid labour market recovery**

Employment has grown by 204,000 since 2013 and is now in line with the peak of the previous boom in 2008, cf. Chart 1. However, average working hours have decreased during the upswing, entailing that the total number of hours worked has not increased to the same extent as employment.

About one-third of the employment growth is accounted for by foreign labour. The influx of foreign labour has increased the labour supply in a situation with rising labour demand, contributing to balancing the upswing. One-fourth is derived from a higher participation rate among 60-year-olds and older, and another fourth is due to declining unemployment. The remaining sixth is accounted for by individuals entering the labour market, for instance after having received public transfer incomes for people not ready to enter the labour market, cf. Chart 2 (left).

The strongest employment growth has occurred in services, with employment increasing by 124,000, cf. Chart 2 (right). Relative to sector size, construction, which typically also experiences the greatest cyclical variations, has seen the highest increase.

### **Pressure is lower than in the mid-2000s**

In just four years in the mid-2000s, employment surged by more than 212,000. So far, the current upswing in the labour market has lasted for five years, and employment is expected to continue to grow over the coming years. Capacity pressures have increased in line with employment.

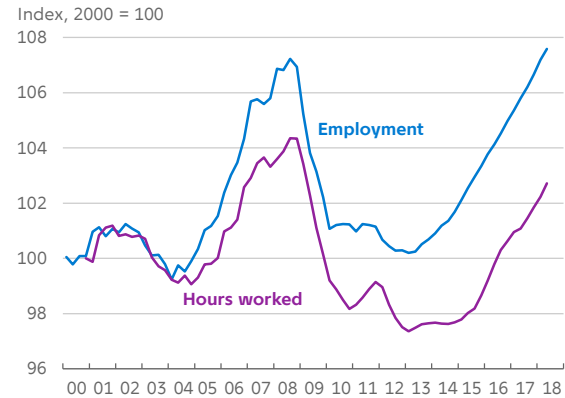
However, viewed across a broad range of indicators, labour market pressures are less intense than in the mid-2000s.

The strongest impression of capacity pressures is provided by Statistics Denmark’s sample-based indicator of reported labour shortage. The indicator has been this high only on few previous occasions, cf. Chart 3. Construction, in particular, is reporting labour shortages, and the current level was only really exceeded in the 2nd half of 2006 and in the summer of 1986. In manufacturing, the indicator was only notably higher in the 2nd quarter of 2007.

However, firms’ recruitment challenges provide the impression that labour market pressures are less intense than suggested by the labour shortage indicator. The Danish Agency for Labour Market and Recruitment conducts a semi-annual recruitment survey, asking 15,000 firms to respond to whether

**Solid progress of employment during the upswing**

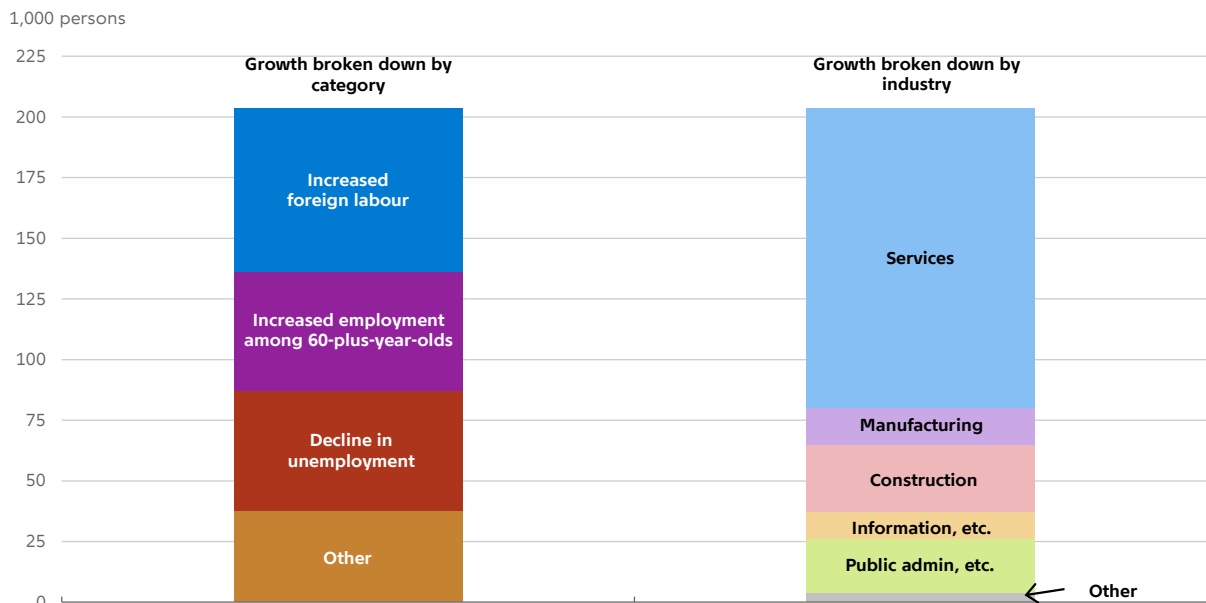
Chart 1



Note: Four-quarter moving average of total hours worked.  
Source: Statistics Denmark and own calculations.

**Employment growth is predominantly driven by increased foreign labour, increased employment among older people and a decrease in unemployment and has occurred in services**

Chart 2

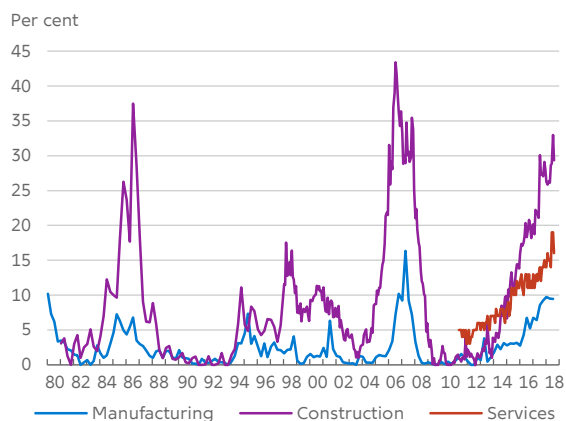


Note: Changes since the 1st quarter of 2013. To avoid overlaps between at one hand foreign labour and unemployed and at the other hand 60- and 60-plus-year-olds in employment, the change in foreign labour and unemployment applies to 16-59-year-olds. The 'Other' category in the left-hand chart comprises individuals entering the labour market, for instance from public transfer benefits. Furthermore, it works as a residual with respect to the fact that the total employment is measured in persons and includes self-employed and persons on leave, whereas the categories foreign labour (wage earners), employment among the older (wage earners) and unemployment is measured in full-time equivalents.

Source: Statistics Denmark, Jobindsats and own calculations.

**Labour shortage has increased to a high level**

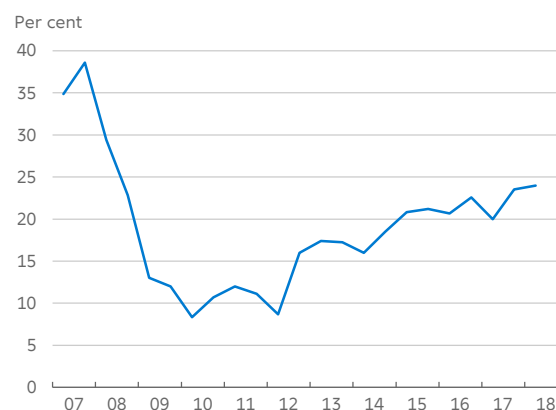
Chart 3



Note: Proportion stating labour shortage as a production constraint. Multiple production constraints can be stated in the questionnaire.  
Source: Statistics Denmark.

**The proportion of unsuccessful recruitment efforts is somewhat lower than during the overheating in the 2000s**

Chart 4



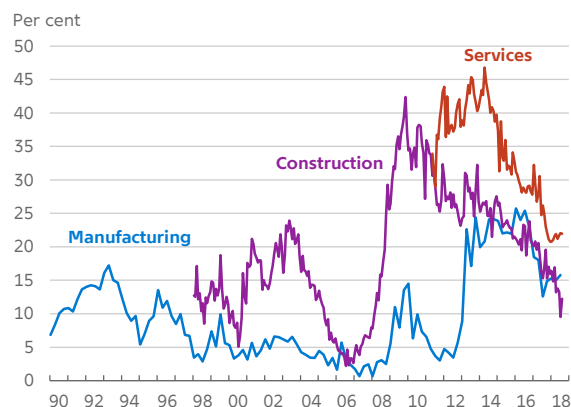
Note: Proportion of total recruitment efforts that were unsuccessful.  
Source: Danish Agency for Labour Market and Recruitment.

they have unsuccessfully attempted to recruit new employees over the past two months. The response was 'Yes' for 24 per cent of the firms attempting to recruit employees in the spring of 2018, cf. Chart 4. The proportion has been increasing during the upswing, but the situation is far from that seen in the spring of 2007, at which time the proportion was 35 per cent. This is in contrast to the reported labour shortage. Other similar surveys, for instance conducted by the Confederation of Danish Industry (DI) and the Danish Chamber of Commerce, also indicate that recruitment challenges are increasing. However, these surveys date back only a few years, so a comparison with the situation in the mid-2000s is not possible.

Other indicators also show that the situation is not quite as dire as in the mid-2000s. These include the proportion of firms reporting production constraints due to lack of demand. This proportion has been declining steadily, reflecting the improved economic situation in recent years, but it remains somewhat above the bottom level of the mid-2000s, cf. Chart 5. Among manufacturing and service firms, more firms report lack of demand as a production constraint than shortage of labour. The situation was somewhat different in the mid-2000s, at which time the figures were several times higher for labour shortage than for lack of demand.

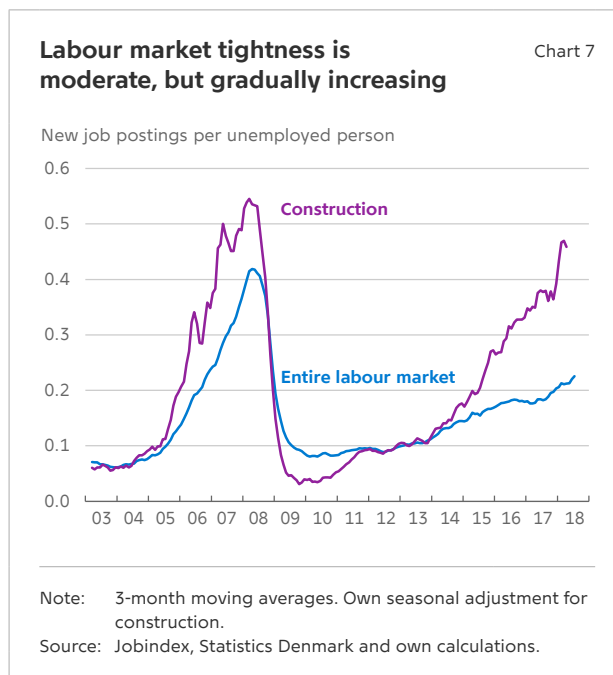
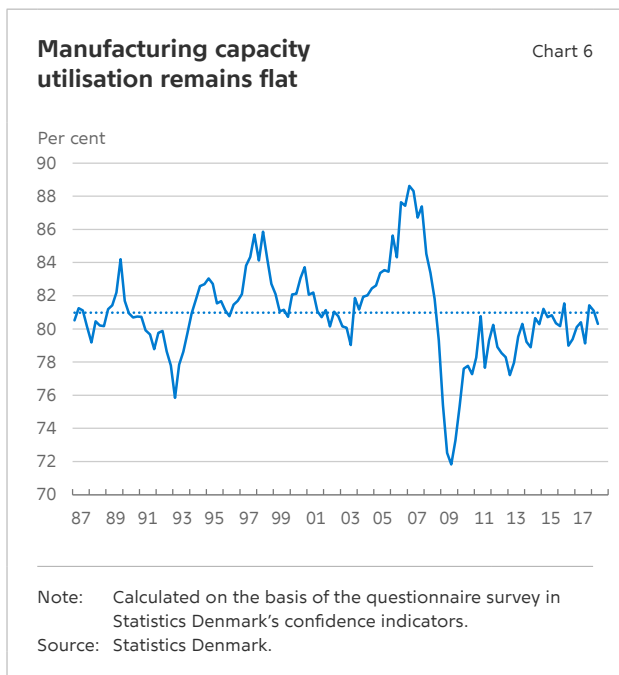
**Lack of demand is steadily decreasing**

Chart 5



Note: Proportion stating lack of demand as a production constraint. Multiple production constraints can be stated in the questionnaire.  
Source: Statistics Denmark.

Viewed in isolation, manufacturing capacity utilisation does not point to strong labour market pressures either. Over the past seven years, capacity utilisation has remained flat and roughly in line with the average level since 1987, cf. Chart 6. By way of comparison, during the period from 2004 to 2007, capacity utilisation rose fairly sharply by more than 6 percentage points from a level equivalent to the current one.



Labour market pressures must ultimately be assumed to be reflected in wages, and recently, wage growth has also picked up slightly. But increases are moderate across the main sectors, and so far developments do not suggest capacity pressures in the labour market or weak competitiveness, cf. Kristoffersen (2018). This provides scope for slightly higher wage growth over the coming years as labour market pressures intensify. On the other hand, wages tend to lag the business cycle. This means that one must be careful when using wage pressures to assess current economic pressures.

During the upswing, output growth has been fairly weak relative to employment growth, one reason being that employment has increased mainly in low-productivity professions (especially the service sectors).

The current situation with relatively slow productivity growth is different than the situation in the mid-2000s, at which time people on the edge of the labour market were employed to a greater extent than now. As a case in point, the number of cash benefit recipients who are not ready to enter the labour market (including the number of integration benefit recipients who are judged ready to enter

the labour market) has not decreased substantially during the current upswing. In the mid-2000s, this number was considerably lower than it is now. Nor is average working hours at the level of the mid-2000s. This indicates that the labour reserve is somewhat greater during the current upswing than in the period leading up to the overheating in the 2000s. Consequently, low productivity growth should not be seen as an indicator of the same capacity pressures in the labour market as in the mid-2000s.

#### The labour market is not as tight as in the mid-2000s

Labour market tightness can be measured by the number of new job postings per unemployed person.<sup>1</sup> This number provides an indication of how difficult it is for employers to hire labour, and, by extension, the tightness of the labour market from firms' perspective. If demand for labour is high, the number of job postings will also be relatively high compared with the number of people available and able to fill the position.

Overall labour market tightness is currently in line with the autumn of 2006 and somewhat below the peak of the overheating in 2008, cf. Chart 7. Since the

<sup>1</sup> That is one way of determining labour market tightness. It disregards certain elements, cf. Box 1 at the end of this section.

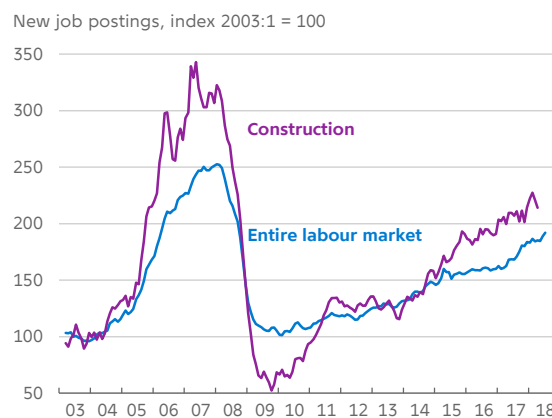
start of the upswing in 2013, labour market tightness has grown at a slower pace than in the mid-2000s, while it rose rapidly and strongly in the pre-crisis years. The more modest increases of recent years are most likely linked to the expansion of the labour force, which has, other things being equal, resulted in a lower recruitment need targeting unemployed people. This means that labour market growth has been more even.

Increased labour market tightness is the result both of a rise in the number of new job postings (the numerator), cf. Chart 8, and a decline in unemployment (the denominator). The decline in unemployment is broad-based across professional groups, cf. Chart 9. However, unemployment is still not at rock bottom as in 2008. The majority of unemployed are unemployed for only short periods of time and thus, part of the natural adjustment of labour demand rather than an actual labour reserve.

Some segments of the labour market may be experiencing pressure, while this is not the case in the overall labour market. In recent years, the number of new job postings has been growing faster across job categories in the construction sector than in the labour market in general. This sector has also seen one of the largest drops in unemployment, which is currently not far from the bottom level of the 2000s. Thus, tightness has increased more than for the overall

The number of job postings is increasing, but is below the level of the mid-2000s

Chart 8



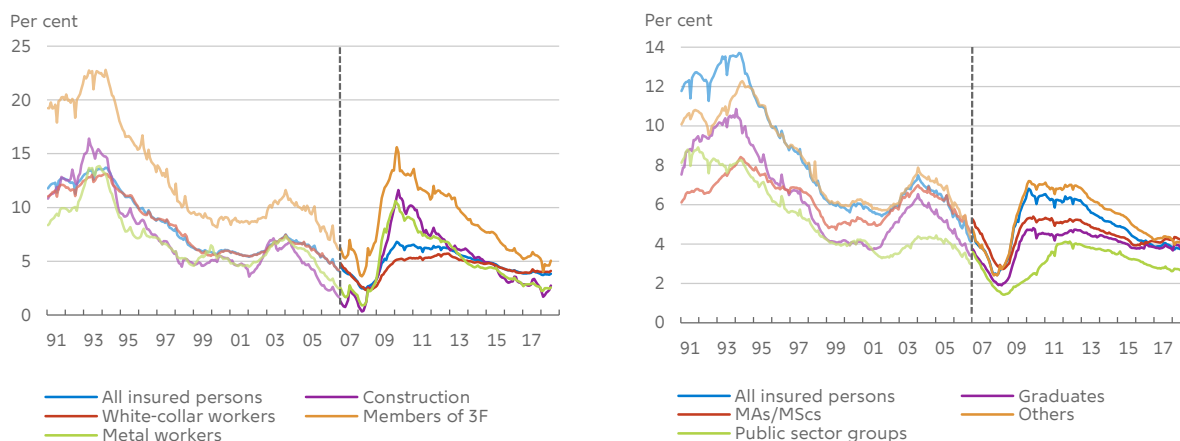
Note: 3-month moving averages. Own seasonal adjustment for construction.

Source: Jobindex and own calculations.

labour market and is approximately equal to the level seen during the overheating in the 2000s. Unemployment rates among metal workers and members of 3F (United Federation of Danish Workers) are also approaching the bottom level of the 2000s. Unemployment among other professional groups is not at rock bottom as during the overheating of 2008.

Unemployment has declined for all professional groups

Chart 9



Note: Data breaks in 1996 and 2007. Before 2007, unemployment has been calculated as net unemployment, i.e. excluding people in activation, and from 2007 onwards as gross unemployment. Before and after levels are not comparable. Own seasonal adjustment.

Source: Statistics Denmark and own calculations.

### About determination of labour market tightness

Box 1

Labour market tightness expresses the ratio of labour demand to supply. The analysis measures labour market tightness as the number of new job postings relative to the number of (gross) unemployed.

However, measuring labour market tightness in this manner might not give the adequate impression. Vacancies are not always announced through public job postings, and far from all applicants are (gross) unemployed at the time of application. Therefore, this determination is an approximation of the tightness of the labour market. Much real demand for labour is not announced in a job posting. One reason could be that employers do not consider the likelihood of receiving qualified applications to be commensurate with the expenses incurred in the process – another that employers find the labour they need through other channels. Moreover, most vacancies are filled through ‘job-to-job transitions’, and therefore the calculated measure of

the labour supply should rightly include people in employment who are looking for new jobs. Another uncertainty is associated with the circumstance that some of the (gross) unemployed are, in effect, more genuine jobseekers than others, while this Analysis implicitly assumes that they are equal.

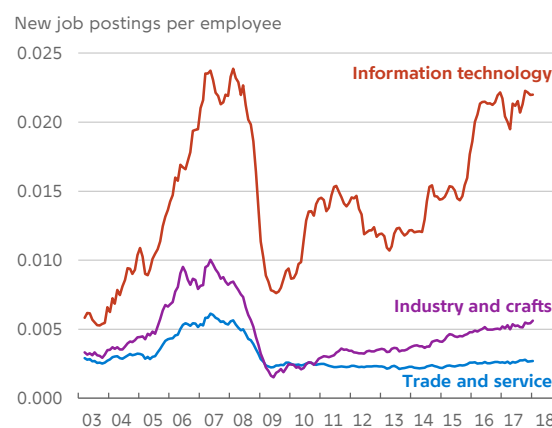
There is further uncertainty when it comes to the tightness of a specific subset of the labour market (in this case construction). This uncertainty is related to the match between the number of new job postings (determined by vacancy) and the unemployed (determined by unemployment fund). Given that the employees of a sector may be members of different unemployment funds and given that unemployment funds do not all break down unemployment figures by professional groups, this method is subject to considerable uncertainty. The smaller the segment of the labour market considered, the greater the uncertainty.

A mismatch between the skills of the unemployed and the skills required by employers may cause problems. In other words, one segment of the labour market may be experiencing a shortage of qualified labour, while, overall, there are enough spare resources to fill the jobs posted. The lower the general unemployment rate, the more pronounced these problems tend to become.

The number of IT job postings relative to the sector’s employment has increased roughly to the level seen at the peak in the mid-2000s, cf. Chart 10. On the other hand, growth in the number of new job postings per employee in trade and service as well as industry and crafts has been particularly weak, and the level is still far from that of the mid-2000s. The low level in trade and service is in contrast to the vast increase in employment in recent years, given that the service sectors have been the drivers of employment growth. Part of the explanation of this paradox could be that the labour force has expanded considerably. This means that labour has not come exclusively from the ranks of the unemployed (including foreign labour), but also from retention of older employees.

### More jobs are posted, especially in IT

Chart 10



Note: Own seasonal adjustment. 3-month moving averages.  
Source: Jobindex, Statistics Denmark and own calculations.

### Demographic changes have reduced the employment rate

Overall, the population of working age<sup>2</sup> has increased by a total of just over 130,000 since 2008.

<sup>2</sup> For these purposes, working age is defined as all individuals aged 20-69.

Broken down by origin, this reflects an increase of 180,000 immigrants and just under 40,000 descendants, while the population of Danish origin has decreased by 85,000, cf. Chart 11. By comparison, waged employment of working age has increased by 75,000 and 15,000 full-time equivalents for immigrants and descendants, respectively, while the number of full-time employees of Danish origin has decreased by 95,000. This development emphasises the need for foreign labour to support the labour demand of the upswing.

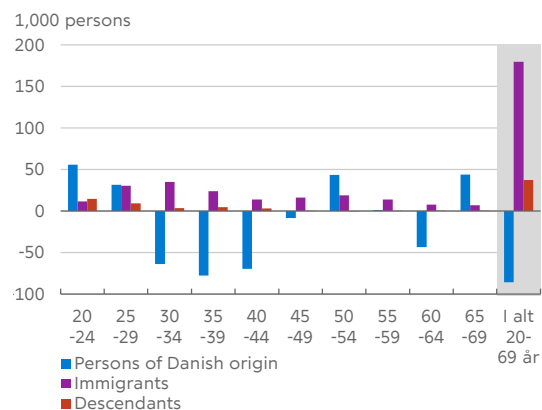
Hence, the rise in employment during the upswing reflects an increase in the population of working age. However, measured in terms of this increase, employment is not at the level of the overheating in 2008, cf. Chart 12. One reason is that demographics have reduced the employment rate. The lower employment rate is the result, inter alia, of a decline in the number of people in high-employment age groups and an increase in the number of people in age groups that are less likely to be employed. Since the overheating in the 2000s, the small birth cohorts from the 1980s have fully entered the labour market. As a result, there are fewer 30-44-year-olds of Danish origin, cf. Chart 11. Given that people in their 30s and 40s tend to have high employment rates, demographics have pulled down the overall employment rate. Thus, in the spring of 2018, the employment rate of people of Danish origin was 1.5 percentage points lower than it, ceteris paribus, would have been with the age distribution of 2008, cf. Chart 12. With an unchanged age distribution, the employment rate would roughly have been in line with the peak of 2008.

Given that the population of working age has overall increased relatively more than employment since 2008, the employment rate is now lower. Viewed in isolation, this in part reflects a lower structural level due to demographics. Consequently, in a historical comparison of the overall employment rate, it is essential to bear underlying demographic changes in mind, and the employment rate is not likely to reach the peak level of the 2000s anytime soon.

Developments have varied considerably across age groups since 2008. The employment rate of older people, in particular, has increased, cf. Chart 13. This indicates that the reforms introducing later retirement have led to a rise in the number of older people in the labour market, contributing to the substantial expansion of the labour force. Conversely, the trend towards increased education has

Since 2008, immigration has increased the population aged 20-69 years

Chart 11

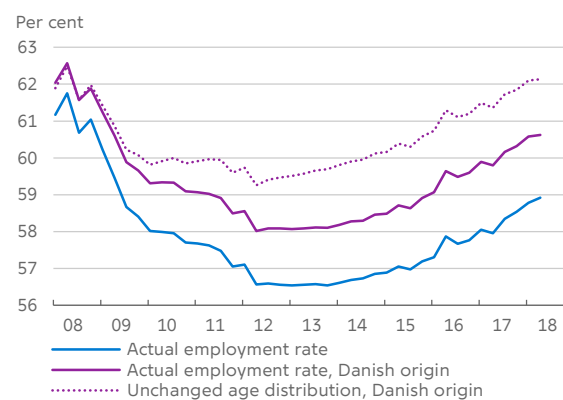


Note: Change in population numbers from 2008 until April 2018. Own seasonal adjustment.

Source: Statistics Denmark and own calculations.

Change in age distribution has reduced the employment rate

Chart 12



Note: Employment rate for 20-69-year-old employees, full-time equivalents. Own seasonal adjustment.

Source: Statistics Denmark, Jobindsats and own calculations.

had an impact on the employment rate of younger age groups, which has declined during this period. Among the mid-age groups, only the employment rate of the 50-59-year-olds matches that seen in 2008. The employment rates of the 30-39-year-olds and the 40-49-year-olds are 5 and 2 percentage points, respectively, below the peak of 2008.

Viewed in isolation, the demographic headwinds are also likely to reduce per capita output growth, cf. Ellermann-Aarslev, Hvolbøl and Pedersen (2018).

### Attracting foreign labour to support the upswing may become more difficult

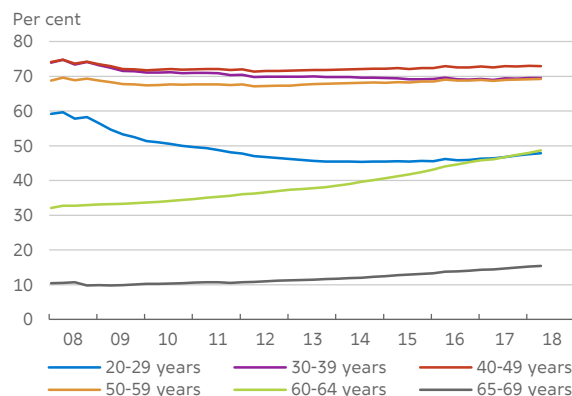
The sustainability of the current upswing is dependent on a continued influx to the labour force. Seeing that the reforms already implemented only to some extent prevent demographics from reducing the labour force, an influx of foreign labour is necessary to support the continued demand for labour during the upswing.

However, there are indications that attracting foreign labour may become more difficult in the future. Capacity pressures are increasingly affecting the home countries of foreign workers. Over recent years, the reported labour shortage has increased substantially to a level far exceeding that of the mid-2000s, cf. Chart 14. Given that the economic structures of these countries have changed considerably in recent years following their integration into EU, a direct comparison with the 2000s is hardly appropriate, and other measures of economic pressures also fail to provide the same impression as the shortage indicator. Moreover, the indicators are based on a questionnaire survey conducted on a sample of firms and, accordingly, could be subject to considerable uncertainty. But unemployment has declined substantially in the home countries of many foreign workers – in several cases to levels below that in Denmark, cf. Chart 15. Other things being equal, this will provide better opportunities for foreign workers to find jobs in their home countries rather than seeking jobs in Denmark.

However, wages are generally higher in Denmark than in the home countries. Viewed in isolation, this makes a job in Denmark seem attractive, especially if wages are spent mainly in a low-priced home country. Since 2012, wages, measured in terms of the International Labour Organisation's, ILO, definition of earnings, have been showing a slight upward trend in the home countries relative to Denmark, both in manufacturing and in construction. But wages, especially in Eastern European countries, are still far from the Danish level.

### Substantial increase in the employment rate of older people

Chart 13

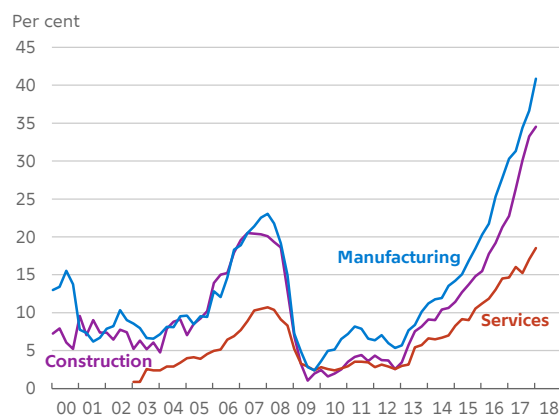


Note: Employment rate for employees, full-time equivalents. Own seasonal adjustment. The employment rate of 65-69-year-olds has an upward bias due to data limitations, given that the employment figures include all employees older than 64 in employment, while population figures include 65-69-year-olds. However, the effect is assessed to be limited.

Source: Statistics Denmark, Jobindsats and own calculations.

### Growing labour shortages in EU11

Chart 14



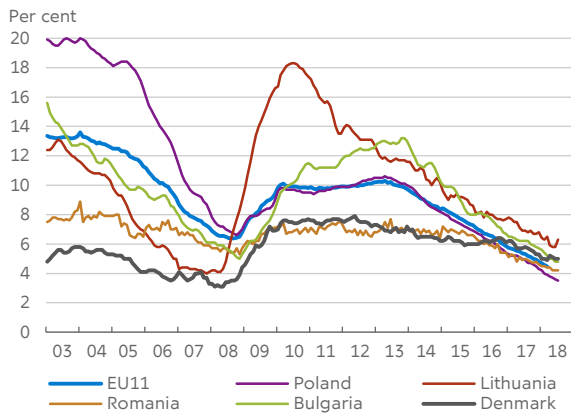
Note: Proportion of firms responding 'labour shortage' when asked about factors limiting their business. EU11 covers Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Due to insufficient data, Croatia is not included in manufacturing and services. Aggregate indicators are weighted by the population of working age.

Source: European Commission and own calculations.



### Unemployment has dropped sharply in the home countries of most foreign employees

Chart 15



Note: Unemployment for EU11 is a weighted average of unemployment in the individual countries (mentioned in the note to Chart 14) from the Labour Force Survey, LFS, relative to their population sizes.

Source: Eurostat and own calculations.

## Literature

Ellermann-Aarslev, Christian, Tina Saaby Hvolbøl and Erik Haller Pedersen (2018), Prosperity growth facing demographic headwinds, *Danmarks Nationalbank Analysis*, No. 1, January.

Kristoffersen, Mark Strøm (2018), Why is nominal wage growth so low? *Danmarks Nationalbank Analysis*, No. 10, July.

### ABOUT ANALYSIS



As a consequence of Danmarks Nationalbank's role in society we conduct analyses of economic and financial conditions.

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