

## Is the Danish working time short?

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**From a European perspective, the Danish working time is often described as short, and if the average hours worked by Danes in employment is compared to that of other EU countries, their working time is indeed short.**

**However, many men and women participate in the labour market in Denmark, and taking this into account, is the Danes' working time then actually short? This is the question that we examine in this analysis in which the Danes' weekly working time is assessed by two different methods. In this context, we also look into groups in Denmark working more or less than the average of other European countries.**

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### Major findings of the analysis:

- The Danish employment rate is relatively high, and Danish women have the third highest employment rate in the EU.
- If the working time is assessed in proportion to the number of persons in the population, the Danes' average weekly working time is in the mid-range and slightly above the EU average. The Danish working time per person in the population, however, is shorter than that of Sweden, Germany and Great Britain.
- The relatively short working time per person in employment is partly due to the fact that many students are working too. If students are disregarded, the Danish working time per person in employment is closer to, but still approximately one and a half hours shorter than the European countries included in the analysis.
- The working time per person in employment between 60 and 74 years is about the average of the European countries included in the analysis, whereas the working time per person in the population in this age group is somewhat above the average. This is because the employment rate among the 60-74-year-old Danes is relatively high.
- The working time for highly educated persons in Denmark is generally below the average for the European countries in the analysis, regardless if this is assessed per person in employment or per person in the population. The working time for persons with short and medium level education is marginally above the average when assessed in proportion to the number of persons in the population with short and medium level education.

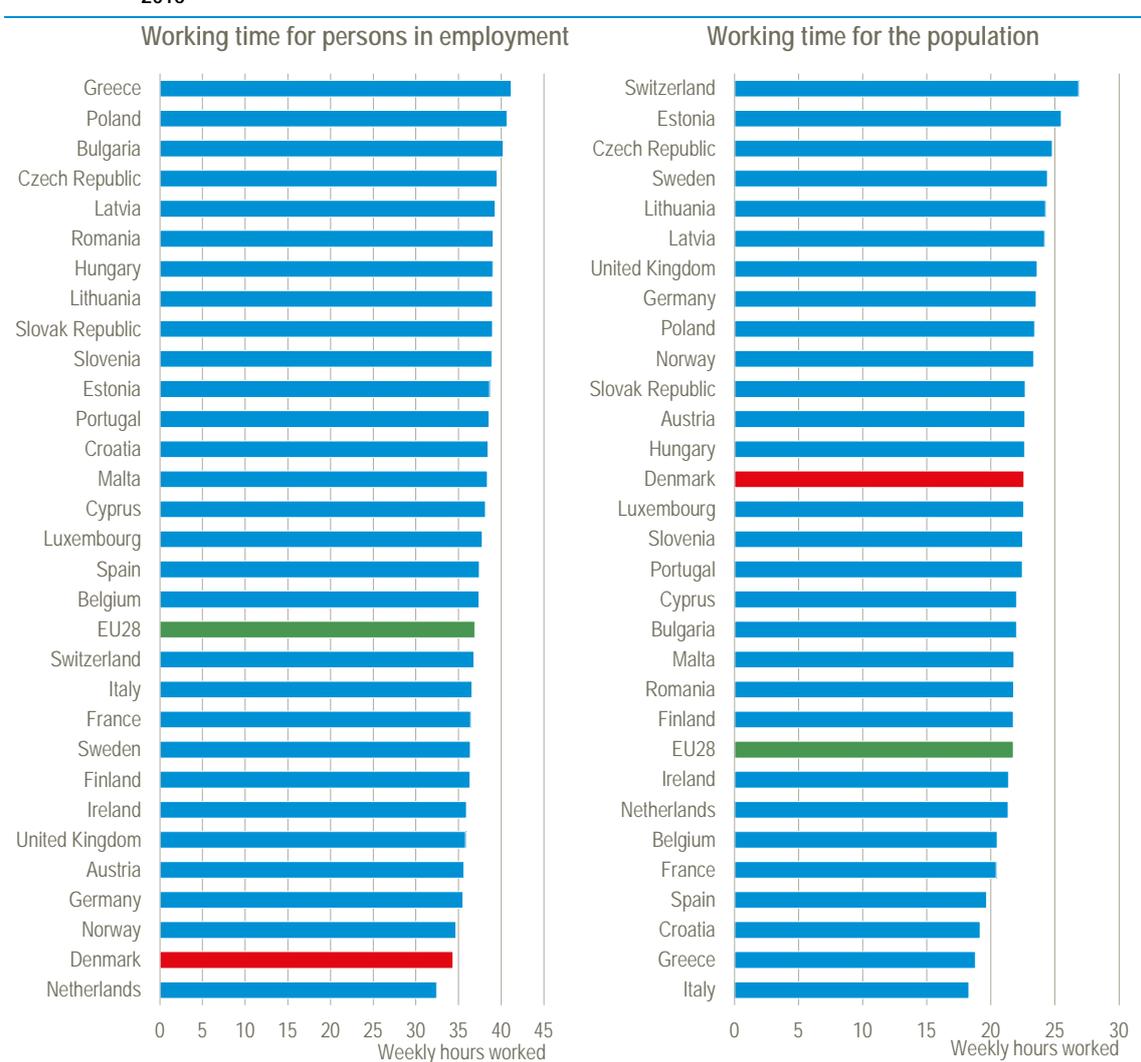
### Relatively short working time per person in employment in Denmark

In 2016, persons in employment in Denmark performed 34 actual hours worked per week on average. Accordingly, the Danish working time together with that of the Netherlands were the shortest in the EU and somewhat shorter than the EU average of 37 hours.

In several of the countries to which we usually compare ourselves (e.g. Sweden, Germany and Great Britain), the working time is also shorter than the average, yet longer than in Denmark. Especially in the Eastern European countries, the working time is longer than the EU average.

If the actual hours worked are proportioned to the population – instead of the number of persons in employment – the Danish population scores quite differently. In this assessment, the weekly working time is in the mid-range and above the EU average. However, countries such as Sweden, Germany and Great Britain also have a longer average working time than Denmark when assessed in this way; see figure 1.

Figure 1 Average weekly working time per person in employment and per person in the population. 15 to 74 years. 2016



Note: Number of working hours is assessed as actual hours worked. The calculations are based on Eurostat's working time statistics, which only include persons for whom the working time is longer than zero hours. This means that persons in employment with a working time of zero hours in the reference week, e.g. due to holiday or sickness, are not included in Eurostat's statistics. In this way, differences between the countries in the number of holidays or sick days are not taken into account. The EU28 average is calculated as an average based on the countries' employment rate/population, which means that large countries such as Italy, Spain and France weigh relatively heavily in the calculation. Alternatively, the EU28 average can also be calculated as a simple average of the countries' average working time, which increases the EU28 average for working time per person in employment by 0.8 hours and per person by 0.4 hours. However, Denmark still has shorter working time per person in employment (3.4 hours less) than the EU28 average and longer working time per person in the population (0.4 hours more) than the EU28 average. Norway and Switzerland are not members of the EU and are not included in the EU28 average.

Source: Eurostat and own calculations.

The above shows that when comparing the working time in different countries, we should also look at the average working time of the population and not just that of persons in employment, as a high average working time per person in employment may be connected with a concentration of the working time on a few hands. The working time is more evenly distributed in the Danish population, but in a number of other countries, the working time is concentrated on fewer individuals, who are in return working more on average than persons in employment in Denmark.

As it appears from figure 1, the countries' working times are relatively close and small changes in the countries' working time can consequently result in major shifts in the ranking of the countries. This should also be seen in the light of the fact that the assessments are subject to uncertainty; see box 1. In addition, it should be noted that the focus in the figure above is on the average weekly working time, not including holidays and other types of absence.

#### Box 1. Assessment of the average weekly working time

The analysis is based on Eurostat's Labour Force Survey. The labour force survey is a questionnaire survey which is prepared by the same guidelines in all EU countries and, as a result, it is comparable across EU countries. Statistics Denmark prepares the Danish labour force survey. To document various aspects of working conditions, the labour force survey asks persons in employment about the number of hours in the person's main employment and number one sideline. The assessment of the average weekly working time includes persons between 15 and 74 years who participate directly in the labour force survey (the interviewees) as well as persons whose working time is stated via another family member.

For all countries, the labour force survey is subject to a certain degree of sampling error. In addition, there may be differences between the countries in terms of the data quality of the assessment of hours worked, especially in terms of identifying absence and overtime. There is a clear tendency for the old EU15 countries to better detect temporary absence from employment (e.g. due to holiday and sickness) in their labour force surveys than the new EU28 countries.<sup>1</sup> In this context, it should also be noted that e.g. the questions regarding absence and overtime typically concern the persons' main employment, whereas no questions are asked about absence and overtime concerning the persons' second employment. A less detailed collection of working time information generally results in hours worked being overestimated.

The average weekly working time per person in employment and per person in the population is calculated as the sum of all hours actually worked in main jobs as well as in sideline jobs in proportion to the number of persons in employment and the number of persons in the population, respectively. The average working time is calculated for the 15-74-year-old persons, as this is the typical age span of the economically active population used in the labour force survey.

Against the background of the working time figures published by Eurostat in the labour force survey, it is not possible to make a different age span than 15-74 years. However, Statistics Denmark has been given access to microdata for 21 EU countries (including Denmark) as well as Norway and Switzerland, which makes it possible to calculate the working time for e.g. 15-64-year-old persons or 25-59-year-old persons. Using these age spans, Denmark's working time per person in employment is also shorter than the average for the 23 countries, whereas the working time is longer than average when proportioned to the population.

In the analysis, actual hours worked are applied, which indicate the number of hours actually worked (exclusive of absence and inclusive of overtime). This applies regardless if the work is paid or unpaid, registered work or illegal (including moonlighting) etc. This means that the difference between the countries' working time may also reflect the extent to which respondents include e.g. unpaid work and illegal work (including moonlighting).

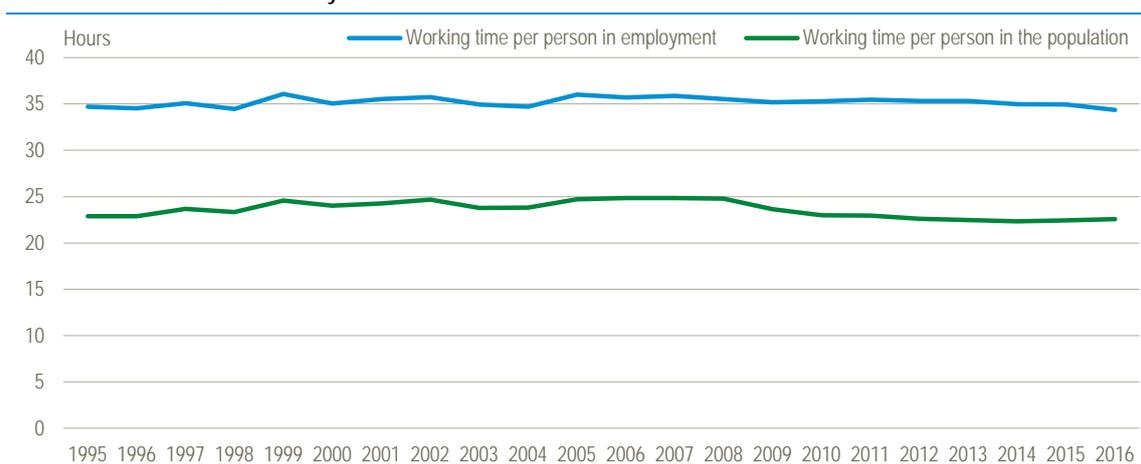
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<sup>1</sup> This is what appears from a special extract from Eurostat based on the labour force survey (LFS) (on the variable NOWKREAS) for 2016. A corresponding result was presented for the year 2011 in connection with "Task force on the measurement of absence and working time in the LFS"; see Eurostat's working group (LAMAS), December 2015.

### Largely unchanged working time

Through the last 20 years, the Danes' average working time has remained largely unchanged, regardless if the working time is calculated per person in employment or per person in the population; see figure 2. The average working time increased slightly in connection with the boom in the mid-2000s, but after 2008 the working time per person in the population dropped, whereas the working time per person in employment remained essentially unchanged. This is due to the financial crisis during which the employment rate for the 15-74-year-old persons declined (but not the population), and this affected the labour force evenly and not just those working a few hours.

Figure 2 Average weekly working time per person in employment and per person in the population in Denmark from 1995 to 2016. 15-74 years

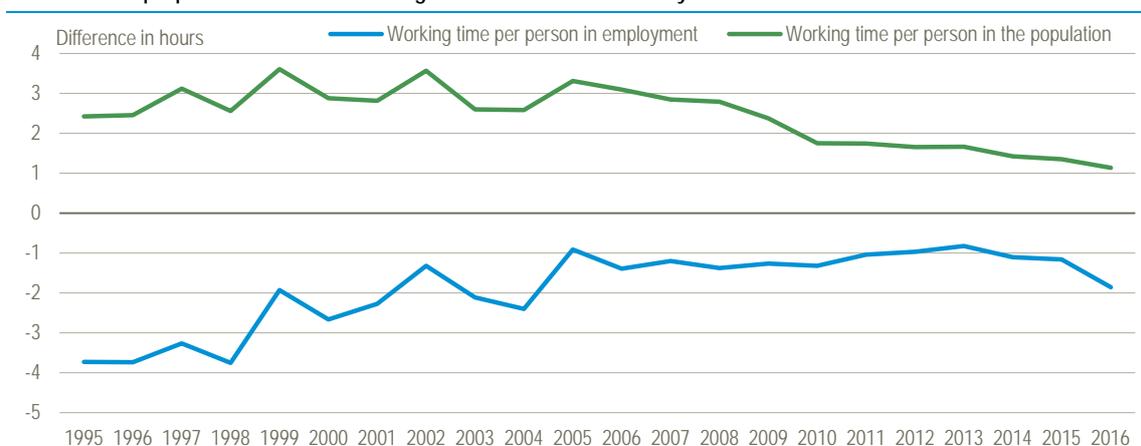


Note: Same note as in figure 1.

Source: Eurostat and own calculations.

Whereas the Danish working time per person in employment has been fairly stable since 1995, the average working time among the 15 EU countries for which the working time can be assessed back to 1995 has gone down by more than two hours from 1995 to 2016.<sup>2</sup> This means that the difference in working time between Denmark and the EU15 countries has been reduced, so that the Danish working time per person in employment in 2016 is around two hours below the EU average; see figure 3. In 1995, Denmark had the third shortest working time and, in 2016, the second shortest working time out of the EU15 countries when calculated per person in employment.

Figure 3 Average weekly working time per person in employment and per person in the population in Denmark in proportion to the EU15 average from 1995 to 2016. 15-74 years



Note: Same note as in figure 1.

Source: Eurostat and own calculations.

<sup>2</sup> In addition to Denmark, the 15 EU countries are Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and Great Britain.

Looking at the working time per person in the population, the difference between Denmark and the EU15 countries is also reduced, which is primarily due to an increase of approximately one hour in the average working time per person in the EU15 from 1995 to 2016. In 1995, the Danish working time per person in the population was well over two hours above the EU15 average, but in 2016, the difference was about one hour. In 1995, Denmark had the third longest working time out of the 15 countries and in 2016 it ranked fifth in terms of longest working time per person in the population.

#### Box 2. Analysis from the Danish Ministry of Finance on working time

In May 2017, the Danish Ministry of Finance published the analysis "Arbejdsudbud i Danmark i et internationalt perspektiv" (labour supply in Denmark from an international perspective). The analysis focuses on the development in the Danes' working time from 2002 to 2015 highlighting Denmark's working time compared to that of other EU and OECD countries.

The Danish Ministry of Finance also uses the Eurostat statistics based on the labour force surveys. The Ministry of Finance calculates the average working time per week in 2002 based on the respondents' main jobs and number one sideline jobs for persons aged 15+. This is multiplied with an average number of weeks worked in 2002, which comes from an estimate in OECD's Employment Outlook 2004. This results in an average number of hours worked per person in employment on an annual basis for 2002, which is projected by means of the growth in average working time based on the national accounts figures up to 2015.

Despite differences in e.g. method and countries applied as a basis of comparison, there is a high degree of consistency between the conclusions of this analysis and the analysis of the Danish Ministry of Finance. In this way, the Ministry of Finance also finds that the Danes' working time in 2015 calculated in proportion to the population is in the mid-range among the countries considered.

Moreover, the analysis from the Ministry of Finance shows that the average working time has declined up through the 1970s and 1980s, but has been fairly stable since 1990 – with a few variations, however. In this way, the working time increased from the end of the 1990s until the early 2000s, and from the mid-2000s, the working time declined, so that in 2015, it was at roughly the same level as in the early 1990s.

#### Many women in the labour force in Denmark

In Denmark, the employment rate is relatively high compared to the other European countries, especially for Danish women. The employment rate indicates the share of the working age population – or in a given age interval – that is in employment. The employment rate was 62 per cent for Danish women in 2016, which is the third highest in the EU. The employment rate for women was almost 9 percentage points above the EU average, and for Danish men the employment rate was 5 percentage points above the EU average.

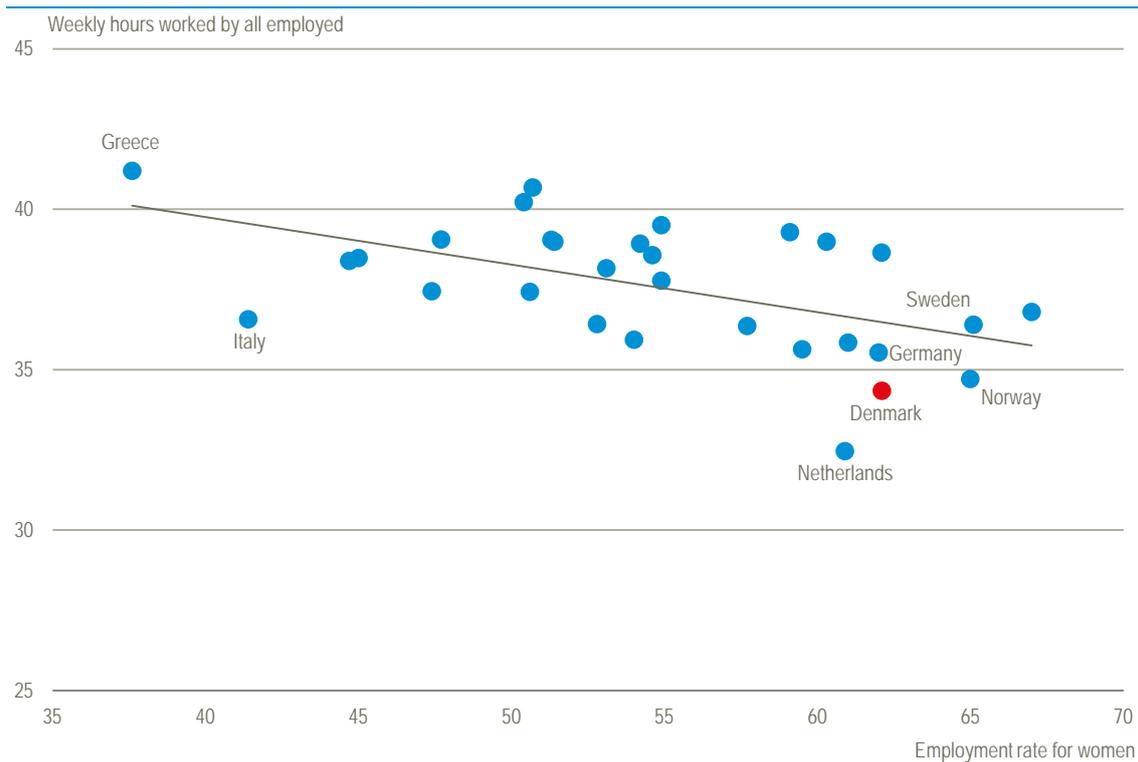
The high employment rate of Danish women is combined with the fact that a large share of the women work part-time – e.g. while they have young children. A little less than 38 per cent of Danish women between 15 and 74 years who are in employment, indicate that they are working part-time, which is 5 percentage points above the EU average. On its own, this drags down the average working time for persons in employment.

The high employment rate among Danish women may be a result of men and women to a greater extent sharing the domestic duties. This can drag down the average working time per person in employment in Denmark, even though the total working time of the household may be above the average for households in the EU.

There is a moderate tendency that countries such as Denmark with a high female employment rate typically have shorter working time, whereas countries with a lower female employment rate generally have longer working time.<sup>3</sup> This appears from figure 3, which shows that across the EU countries there is a negative correlation between women's employment rate and the average working time.

<sup>3</sup> This correlation (p value=0.003) also applies when the Netherlands, Greece and Italy are disregarded in the figure.

Figure 4 Correlation between the employment rate of women and the average working time for all persons in employment between 15 and 74 years. 2016



Note: Same note as in figure 1.

Source: Eurostat and own calculations.

### Many students are dragging the Danish working time down

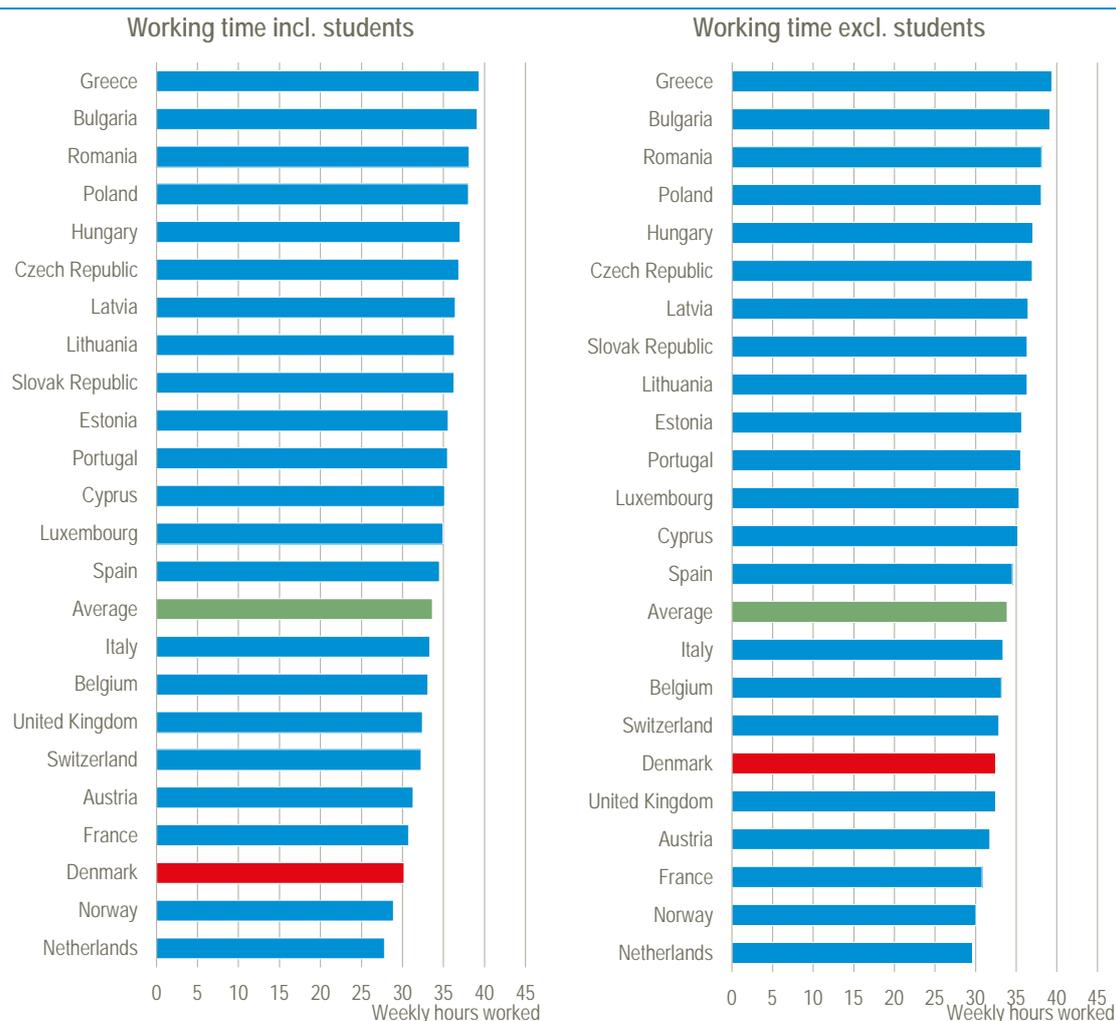
Many young persons are working alongside their studies in Denmark. This may be e.g. spare time jobs as shop assistants, and for students in higher education it may be study-related employment.<sup>4</sup> Among the persons in employment who are also students, the average working time was approximately 16 hours per week. Since the working time of students is a good deal below the average, this group will drag down the average working time for persons in employment.

When the working time per person in employment is calculated including students, the Danish working time is about three and a half hours shorter than the average for the countries for which microdata is available; see box 3. If, on the other hand, the working time per person in employment is calculated exclusive of students, the Danish working time is only about an hour and a half shorter than the average. Calculated in this way, not just Norway and the Netherlands, but also France and Austria have shorter working time than Denmark, while Denmark is at the same level as Great Britain. A great part of the explanation for the shorter working time in Denmark in proportion to the average for the included countries is that we have many students in employment.<sup>5</sup>

<sup>4</sup> In 2015, approximately 290.000 students were in employment in Denmark; see *Analyse af udviklingen i uddannelsesaktiviteten* (analysis of the development in educational activity) by Statistics Denmark, September 2016.

<sup>5</sup> If you look at the working time per person in the entire population, the Danes' working time including students is *not quite* one hour above the average for the 23 countries. If the working time is calculated exclusive of students, the Danish working time is *well over* one hour above the average.

Figure 5 Average weekly working time per person in employment between 15 and 74 years. 2015



Note: Number of working hours is calculated as actual hours worked including zero hours worked; see box 3. This is why the working time is shorter than in figure 1.

Source: Own calculations based on microdata from Eurostat.

### Box 3. Labour force surveys for other European countries

Statistics Denmark has been given access to microdata from the labour force surveys from 21 EU countries (including Denmark) as well as Norway and Switzerland. Microdata for the 23 countries is available up to and including 2015. The seven missing EU countries are Germany, Sweden, Finland, Ireland, Croatia, Slovenia and Malta. It has not been possible for Eurostat to give access to microdata for these seven countries, as these countries have not made agreements concerning the exchange of microdata from the labour force surveys among the statistical offices of the member countries. The working time includes the persons' main jobs and number one sidelines, and is calculated as hours worked including zero hours worked. Persons in employment with a working time of zero hours may be e.g. persons who are temporarily absent due to holiday or sickness.

It should be noted that Eurostat's own assessments of working time do not include employment where the working time is zero. This means that Eurostat's assessment is not the actual average working time per person in employment, but rather the average working time for persons in employment who are at work. Persons in employment with a working time of zero hours have been included in the calculations based on microdata, as it is estimated to be fair that hours worked should also reflect differences in holiday and sickness between the countries. This means that the assessment of average working time per person in employment and per person in the population based on calculations on the basis of microdata (see figure 4 and table 1) is lower than Eurostat's assessment of working time per person in employment or per person in the population (see figure 1). These assessments take into account that e.g. holidays are relatively long in Denmark compared to other countries, and the working time per person in the population in Denmark is 0.7 hours longer than the average of the 23 countries when the average working time for the 23 countries is calculated as a weighted average of the population size of the countries. If the working time of the 23 countries is calculated as a simple average, the Danish working time per person in the population is 0.4 hours below the average, but still in the mid-range.

### Working time below average for highly educated Danes

This section deals with the average working time of various groups in Denmark compared to the average of the 23 countries. The results are summarised in table 1, where index 100 corresponds to the average of the 23 countries. An index number below 100 means that the Danish working time is below average, whereas an index number above 100 corresponds to a Danish working time above the average of the 23 countries.

Table 1 The Danish working time per person in employment and per person in the population calculated for selected groups in proportion to the average of 23 European countries. 2015

	Working time for persons in employment	Working time for population
	index 100 = av. of 23 countries	
Men .....	91	99
Women .....	91	107
15-29 years .....	71	95
30-44 years.....	95	101
45-59 years.....	99	112
60-74 years.....	101	129
Unmarried .....	82	98
Married .....	96	104
Widow/widower, divorced or separated .....	101	112
Low level education.....	81	102
Medium level education.....	92	102
High level education .....	95	95
Citizenship in the country .....	91	103
Citizen from EU15.....	98	108
Citizen from other European country .....	90	91
Other countries .....	94	95
Cities (densely populated areas) .....	89	101
Towns and suburbs (medium populated areas) .....	92	106
Rural area (sparsely populated areas) .....	91	100

Source: Own calculations based on microdata from Eurostat.

Table 1 shows e.g. that the working time for Danish men and women is below the average of the included countries when working time is calculated per person in employment, but men and women generally have a higher employment rate in Denmark. If the working time is calculated instead in proportion to the population, the working time for men is close to the average, whereas for women it is above the average. It is thus women who pull up the working time per person in the population in Denmark.

Calculated per person in employment, the working time for 15-29-year-old persons in Denmark is somewhat shorter than the average for the 23 countries, whereas the working time calculated per person in the population for this age group is closer to the average. When the 15-29-year-old persons have a relatively short working time per person in employment, this is due to the fact that many young persons are working while they study and consequently they are included in the persons in employment. As opposed to young people, the working time per person in the population from 60-74 years is well above the average.

Looking at the working time broken down by educational level, the working time of Danes with high level education is below the average in terms of both methods. For persons with low and medium level education, the working time per person in employment is also below average, whereas the working time per person in the population is slightly above the average.