

## The quarterly working time account

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<b>0.3 Responsible Authority, Office, Person, etc.</b> Labour Market Michèle Naur, tel +45 39 17 34 14, e-mail: mln@dst.dk	<a href="#">4 Comparability</a> <a href="#">5 Accessibility</a> <a href="#">6 Bilag</a>  <b>Contact info</b> Labour Market Michèle Naur ☎ +45 39 17 34 14 ✉ mln@dst.dk
<b>0.4 Purpose and History</b> The purpose of establishing the Working Time Account (WTA) is to compile time series on hours worked. Furthermore, it is also intended to compile data on earnings and employment for the national accounts statistics, adopting the definitions of work, earnings and employment as applied in the national accounts.	<b>Shortcut to this page</b> <a href="http://www.dst.dk/declarations/70784">www.dst.dk/declarations/70784</a>

The system for the Working Time Account is the result of a 3-year project established at Statistics Denmark in 1995 with grants by The European Social Fund. The purpose of the project was to improve the current statistical description of the Danish labour market. The background to the WTA is that there has been a considerable expansion in the number of statistics covering the labour market and the fact that the figures from different statistics are not immediately comparable. The project work has been centred on developing statistical systems integrating already existing labour market statistics. In December 1998 the project ended with the publication of a report: "Integrated Labour Market Statistics - the Labour Market Account and the Working Time Account 1995-97" ("Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97") in which 2 new statistical systems were presented. In 1999, the WTA were presented by Statistics Denmark with the inclusion of annual as well as quarterly statistics.

Generally revised quarterly figures with time series as from 1st quarter 1995 are available in Statbank Denmark at /ATR1KV, /ATR2KV and /ATR11KV. Seasonally adjusted series are available at /ATR3KV and /ATR4KV.

A description of the special conditions in relation to publishing data on September 2012, and a more thorough description of the method behind the Working Time Account, can be seen in the document attached to section 6 in this declaration of content.

### 0.5 Users and Application

Among users are politicians, officials, researchers and others interested in the development of the Danish labour market.

The areas of application are mainly the national accounts, economic models, economic government departments and labour market organizations.

Data from the WTA are integrated in the Danish national accounts. Furthermore, data on employment, hours worked, compensation of employees from the WTA are also supplied for EUROSTAT's regulation on short-term statistics (STS).

### 0.6 Sources

The quarterly forecast is based on a number of primary statistics, which are:

- Annual Working Time Account (WTA, [www.dst.dk/declarations/46613](http://www.dst.dk/declarations/46613))
- Register-based Labour Force Statistics ([www.declarations/848](http://www.declarations/848))
- Establishment-related Employment Statistics (ERE) ([www.declarations/1029](http://www.declarations/1029))
- The Labour Force Surveys (LFS) ([www.dst.dk/declarations/857](http://www.dst.dk/declarations/857))
- Monthly data reports of A-income (MIA, *elncome*) (annex 2 in the attached documentation)
- ATP-employment Statistics (based on the Danish Labour Market Supplementary Pension Scheme ([www.dst.dk/declarations/845](http://www.dst.dk/declarations/845)))
- Indicators for aggregate payroll costs, based on labour market contributions for employees, ([www.dst.dk/declarations/847](http://www.dst.dk/declarations/847)).

*The Annual Working Time Account (WTA)* is an integrated statistics with consistent data series for employment, jobs, hours worked and compensation of employees at an annual basis. The basic data material consists of a number of primary statistics, which have been adjusted and adapted in such a way that there is consistency between the applied concepts and definitions. The annual WTA sets the level for the variables in the quarterly working time account concerning hours worked and compensation of employees.

*Register-based labour force statistics (RAS)* and *Establishment-related Employment Statistics (ERE)* are compiled on the basis of a joint register, i.e. Register of Employment Statistics. The population of the Register of Employment Statistics is made up by the population resident in Denmark as of 1 January. The population is classified by its primary and, if any, secondary attachment to the labour market at the end of November of the previous year. In the Register of Employment Statistics, persons in employment are distributed by, respectively, employees, self-employed and assisting spouses.

The Central Salary Information Register is one of the source registers of the Register of Employment Statistics. However, there is frequently some degree of uncertainty connected to the information on jobs recorded in the register, with respect to the length of time of each job. This applies especially to jobs, which do not relate to the reference time at the end of November. Consequently, the detailed information from this source is applied only to determine employment in the 4th quarter of the WTA.

In relation to the publication of employment in the RAS, the only difference is that the WTA exclude persons under the age of 15 (A more detailed description of the transition between employment in the RAS and the WTA can be seen in annex 6).

A more detailed description of the transition between statistics on jobs and statistics on compensation of employees in the statistics on employment in business and the WTA can be seen in annex 6. The jobs, which are thus calculated at the end of November, are assumed to represent average jobs for the 4th quarter of the year in the WTA.

*The Labour Force Surveys (LFS)* are sample surveys that are continuously conducted during all weeks of the year. The surveys are conducted as rolling panel surveys by means of telephone-based interviews or by means of questionnaires with information on the population's labour market attachment. For persons in employment, information is available with respect to jobs, working hours, absence from work, etc. Information is available concerning employees, self-employed persons and assisting spouses. The Labour Force Surveys are applied in the WTA for describing the quarterly development in the number of hours worked by employees and to analyse the number of hours worked by self-employed persons and assisting spouses. By the 4th quarter of 2007, rolling year from the labour force surveys (containing data on the last four quarters) is applied for projecting average employment and average jobs for self-employed persons and assisting spouses.

*Monthly data reports of A-income (MIA)* is an employment indicator, which calculates the number of gross jobs. The quarterly trends in the MIA are in the

WTA incorporated as short-term data source for describing the quarterly trends in jobs as well as in the employment data series for employees at detailed industry level. As from 2008 MIA has been replaced by elincome reports. These reports primarily differentiate from MIA by being continuous (not monthly) reports on A-income. (More detailed information on MIA can be found in annex 2).

*ATP-employment Statistics* is a quarterly compilation of persons in employment aged 16-66, measured in terms of full-time employment, based on the quarterly payments made by the business enterprises to the Danish Labour Market Supplementary Pension Scheme (ATP). Each individual employee is covered by the ATP pension scheme provided that the employee in question works more than 9 hours per week at the same employer. The scheme implies that the size of the ATP contribution paid varies in accordance with the number of hours worked by each individual employee. The quarterly reports of data submitted by the ATP fund to Statistics Denmark makes it possible to undertake a conversion of the payments made by each individual business enterprise into number of full-time employed persons. Full-time employment is divided by industries on the basis of the industrial classification of the business enterprises. The ATP statistics are applied in the WTA for extrapolation of MIA backwards in time, for the period before reports to MIA were made on a full-scale basis, and for conducting employment checks on the quarterly WTA.

*Indicators for aggregate payroll costs* are based on a calculation of the employers' data reports, submitted to the Danish tax authorities, of labour market contributions retained. The labour market contributions retained constitute a known percentage of wages and salaries before taxes. Consequently, the aggregate payroll costs can be calculated by enumerating this percentage to a 100 percent. Labour market contributions are reported on the basis of the SE number allocated to each employer. The aggregate wage and salary cost indicator has not been published as a separate statistic since the compilation of statistics for the 4th quarter of 2008, but is solely compiled for the purpose of being incorporated in the Working Time Account, where it is used for quarterly projections of the compensation of employees from the Annual Working Time Account.

#### **0.7 Legal Authority to Collect Data**

Not relevant for the Working Time Account as they are compiled exclusively on existing statistics.

#### **0.8 Response burden**

No response burden. New systems for reporting data have not been established. All data requirements are fulfilled by existing statistics.

#### **0.9 EU Regulation**

The Working Time Account is harmonized according to the requirements in the regulations in relation to short term statistics and national accounts.

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### **1 Contents**

#### **1.1 Description of Contents**

Integrated statistics with consistent time series on hours worked, jobs, employment and compensation of employees on a quarterly basis.

#### **1.2 Statistical Concepts**

The quarterly Working Time Account currently contains statistical data for industry groups and a classification by public/private sector (non-market/market production). Statistics will be presented for employees, self-employed and assisting spouses. In the Statbank, series from the working time account are presented according to:

- old industrial classification (aggregates of Nace rev. 1.1 at /ATR1KV, /ATR2KV)
- the new industrial classification (aggregates of Nace rev.2 at /ATR11KV),
- and seasonally adjusted series (at /ATR3KV and /ATR4KV).

### *Jobs*

The *average number of jobs* is calculated as the sum of primary and secondary jobs. The WTA are thus the only labour market statistics that include the secondary jobs for self-employed and assisting spouses. The average number of jobs each day over the period is estimated, and only jobs filled by persons over 15 years. Persons, who are temporarily absent from the labour market, are not covered by the statistics on jobs.

(The method for calculating average number of jobs can be seen in annex 3 of the attached document in section 6).

1. *Number of jobs = number of primary jobs + number of secondary jobs*

### *Employment*

The *average number of employed* consist of the average number of persons above the age of 15 who every day during the period have been paid either as self-employed, assisting spouse or as employee. Persons who are temporarily absent due to leave, but who are connected to a workplace in the form of having a job to return to, are counted as being employed. In the WTA, employment for self-employed and assisting spouses is delimited in the same way as in the Register-based Labour Force Statistics.

(The method for calculating average number of employed can be seen in annex 4 of the attached document in section 6).

2. *Employment = primary jobs + persons on leave + persons on maternity leave*

### *Hours worked*

Hours worked are defined as hours paid by employers, including paid overtime and excluding paid hours of absence. Paid hours of overtime are defined as the number of paid hours worked in excess of normal paid hours (i.e. contractual hours) and include extra hours of work for part-time employed without additional overtime pay. Paid meal breaks are regarded as hours of availability and are included in hours worked. Hours worked include hours paid by employers, which have been carried out by persons aged over 15, including the hours in jobs that are not part of either the persons main employment or the persons largest secondary job. Unpaid overtime hours and undeclared work are excluded from the calculation of hour of work performed in the WTA.

(The method for calculating hours worked can be seen in annex 4 of the attached document in section 6).

3. *Actual hours worked = average actual hours worked per job x number of jobs.*

*Compensation of employees* is calculated in accordance with the definitions in the Danish national accounts. Compensation of employees includes total wages and salaries in cash or in kind paid by the employer to an employee for work performed in an accounting period. Compensation of employees also includes employers' actual or calculated social contributions, including contribution to pensions. The time series on compensation of employees only cover employees compensation of employees paid out over the period, and not compensation of employees paid out for self-employed persons and assisting spouses.

(The method for calculating compensation of employees can be seen in annex 5 of the attached document in section 6).

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## **2 Time**

### **2.1 Reference Period**

Numbers of persons employed and jobs are obtained as a quarterly average.

Hours worked and compensation of employees refers to the activity in the quarter under survey.

## 2.2 Date of Publication

The Working Time Account is published four times a year with quarterly figures as from the 1st quarter 1995.

## 2.3 Punctuality

The Working Time Account are normally released without delays.

However, the publication of the working time account in 2009 was leased at a later time than usually due to an amendment of the Danish VAT Act.

## 2.4 Frequency

Quarterly and annual data are published.

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## 3 Accuracy

### 3.1 Overall accuracy

There are no figures on the size of the revisions, etc., which have been undertaken.

### 3.2 Sources of inaccuracy

The margins of statistical uncertainty associated with the working time statistics are related to the statistical uncertainty of the individual primary statistical sources that are used. The conceptual consistency and the uniform adaptation of sources over time contribute to a reduction of the margins of statistical uncertainty in the Working Time Account. Especially, the juxtaposition of information from the primary sources in a joint system will reveal, if any, errors, and subsequently errors can be taken into account in the WTA. These errors and inconsistencies are reported back to the primary sources. The work on integrating statistical systems will thus be instrumental in enhancing the general data quality of the primary statistical data.

For a description of the statistical uncertainties of the primary sources see the respective declarations of contents:

- Annual Working Time Account (WTA, [www.dst.dk/declarations/46613](http://www.dst.dk/declarations/46613))
- Earnings Statistics for the private sector ([www.dst.dk/declarations/861](http://www.dst.dk/declarations/861))
- Earnings Statistics on central and local government employees ([www.dst.dk/declarations/862](http://www.dst.dk/declarations/862))
- Register-based Labour Force Statistics ([www.dst.dk/declarations/848](http://www.dst.dk/declarations/848))
- Statistics on Employment in Businesses ([www.dst.dk/declarations/1029](http://www.dst.dk/declarations/1029))
- The Labour Force Surveys (LFS) ([www.dst.dk/declarations/857](http://www.dst.dk/declarations/857))
- Monthly data reports of A-income (MIA) (annex 2 of the attached document in section 6)
- ATP-employment Statistics (based on the Danish Labour Market Supplementary Pension Scheme ([www.dst.dk/declarations/845](http://www.dst.dk/declarations/845)))
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There is a statistical uncertainty connected to the conversion of data reports on administrative (SE) numbers to workplace units in the quarterly WTA for the period after January 1.st 2008. These distributions are calculated on the basis of structural data for 2007, see the description in the annex attached in section 6..

There is uncertainty to the extrapolated data on employment, job and hours worked as from 2008 due to the replacement of MIA by eIncome reports by January 1.st 2008.

There is a statistical uncertainty associated with MIA representing the seasonal pattern of employment and not only the seasonal pattern of jobs. MIA represents the number of gross jobs; consequently, if the seasonal pattern in the primary employment differs from the seasonal pattern of the secondary employment the seasonal pattern of employment will be associated with some uncertainty.

Furthermore, there may be differences in the seasonal patterns for average

employment and average number of jobs compared to the seasonal patterns found in the primary data sources, if there are major differences in the development in the short-term statistics (MIA) over the year and the levels that apply in the 4th quarter of the year from the Register-based Labour Force Statistics and the Statistics on Employment in Businesses. There is also a statistical uncertainty associated with the fact that the structural statistics from the Register-based Labour Force Statistics and the Statistics on Employment in Businesses, which are status observations at the end of November of the year, represent the 4th quarter of the year.

For the purpose of reducing the uncertainty with regard to estimating the number of hours worked, the indices of hourly earnings derived from the statistics on earnings have been used in adjusting the number of hours worked.

See also annex to the declaration of content, section 6.

### **3.3 Measures on accuracy**

There are no calculations of the measures of accuracy.

Since 2009 the changes in the data sources have resulted in considerable revisions of the previous statistics of the quarterly WTA. These revisions are described in a paper available from the Internet at:  
[www.dst.dk/Statistik/emner/beskaeftigelse/arbejdstidsregnskab.aspx?tab=dok](http://www.dst.dk/Statistik/emner/beskaeftigelse/arbejdstidsregnskab.aspx?tab=dok)

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## **4 Comparability**

### **4.1 Comparability over Time**

The compilation of Working Time Account is based on the idea that the figures are comparable over time to the highest possible degree. The sources will continuously be improved and replaced by other sources if these have proved to be more accurate. New sources will always be adapted to the concepts of the Working Time Account System. This implies that adjustments of existing sources cannot immediately be seen as changes of variables and concepts in the Working Time Account Statistics, although adjustments of the level of the specific variable may be made according to the new and improved information.

### **4.2 Comparability with other Statistics**

The lack of data comparability between sources is attributable to differences in:

- compilation methods
- populations
- definitions
- margins of statistical errors
- times of publication.

A fundamental principle of the Working Time Account is to document the coherence between statistics applied in the Working Time Account and to document coherence between existing statistics and the Working Time Account.

At the international level there is also a high degree of comparability as the Danish Working Time Account are worked out according to international guidelines, cf. EUROSTAT 1996: European System of Account (ESA 1995) and International Labour Organisation 1988: Current International Recommendations on Labour Statistics.

The Working Time Account are published on the new industrial classification (DB07/NACE rev.2.) as well as on the old industrial classification (DB03/NACE rev.1.1.).

Transitional tables between the WTA and the Register-based Labour Force Statistics (employment) and the Statistics on Employment in Businesses (jobs and compensation of employees) can be seen in annex 6.

A description of the transition between the WTA and the National Accounts can be found in the publications of the National Accounts.

#### 4.3 Coherence between provisional and final statistics

The quarterly figures can be subject to changes as a result of updated values in the primary sources, changes in methodology, in use of new data sources or in the annual values on which the data are projected in the quarterly system.

The quarterly system will be currently used for calculating annual values. When new annual values for all variables have been calculated in the annual WTA, it will be necessary to adjust the quarterly figures to the level of annual values. This implies that the quarterly figures will be available in an additional provisional version although there are no changes in the primary data sources.

The quarterly figures for compensation of employees and hours worked for employees are raised to an annual level once every year, when new annual statistics are available. If there are any revisions, annual figures as well as quarterly figures will be adjusted for the entire period covered by the time series. The quarterly figures are not considered to be final until there are no longer any revisions in the annual WTA. Furthermore, there may be changes as the result of revisions in the quarterly primary statistics used by the WTA. When the provisional version of data for the most recent quarter is published, a revised version of the data for the previous quarter is also published, which is based on new values of the primary statistical data. They are made available in provisional as well as in final versions.

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### 5 Accessibility

#### 5.1 Forms of dissemination

The statistics are published in *News from Statistics Denmark (Nyt fra Danmarks Statistik)* in the series *Statistical News ("Statistiske Efterretninger")* and in *Statbank Denmark ("Danmarks Statistikbank")*.

#### 5.2 Basic material: Storage and usability

The basic material consists only of existing statistics. The basic material for the compilation of quarterly Working Time Account is widely stored, but detailed non-published information is not made available.

#### 5.3 Documentation

A report: "Integrated labour market statistics - the Labour Market Accounts and the Working Time Account 1995-97" ("Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97") was published in December 1998. In this report, the Working Time Account was presented; including a far more detailed description of the applied primary sources and conceptual differences between these (The report is available at [www.dst.dk/boghandel](http://www.dst.dk/boghandel)).

#### 5.4 Other Information

Other information is not available.

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