

**Documentation of statistics for
The Annual and Quarterly Working Time Accounts 2014
Quarter 3**

1 Introduction

The purpose of establishing the Working Time Accounts (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. At the moment, the statistics include data on sex, industry, sector (general government/corporations and organizations) and socio-economic status (self-employed persons, assisting spouses or employees).

WTA is an integrated statistics with consistent time series for employment, jobs, hours worked and compensation both on an annual and quarterly basis. The data base consists of a number of primary statistics and adjusted to the framework provided by the WTA system.

2 Statistical presentation

The Working Time Accounts produce integrated statistics with consistent time series on employment, jobs, number of hours worked and compensation of employees on an annual and quarterly basis. The data basis is made up by a number of primary statistical data, which are adapted and adjusted to achieve agreement of the concepts and definitions used in the WTA system.

The statistical sources used in the WTA are:

- The Register-Based Labour Force statistics (RAS),
- Establishment-related employment statistics (ERE statistics),
- The Structural Earning Statistics (SES),
- Employment Statistics for Employees (BfL) og
- The Labour Force Survey (LFS).

2.1 Data description

The system for the Working Time Accounts is the result of a three-year project established in 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 concentrated 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 Accounts and the Working Time Accounts 1995-97" ("Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97") in which two new statistical systems were presented. In 1999 the WTA were presented by Statistics Denmark with the inclusion of annual as well as quarterly statistics.

In December 2012 the Working Time Accounts were adjusted, implying that new data sources (primarily based on eIncome) are used for the compilation. Subsequently, the WTA are compiled on the basis of a new system. As changes have been made to the population, concepts, sources as well as methods, this has resulted in revised levels and revised developments throughout the year.

As from the publication of the quarterly WTA 4th quarter 2012 in March 2013, a change has also been made to the method applied for calculating hours worked for self-employed and assisting spouses. Taken as whole, this change gives rise to a downward adjustment of hours worked of almost 2 pct. in the WTA. However, for the group self-employed and assisting spouses this adjustment is higher (15 to 17 pct.). If a further distribution is made by main occupation and secondary occupation for self-employed and assisting spouses, the adjustment ranges around 10 pct. for the main occupations and nearly 46 pct. for the secondary occupations. Furthermore, as from

March 2013, a minor adjustment has been made for employees with respect to previously erroneous data to eIncome for regions and municipalities. This applies to the circumstance that unpaid absence for salaried employees was not deducted from the data reported with regard to paid hours worked during the period January 2008 to September 2011.

As from 1 January 2013, a new industrial version is incorporated (DB07r2). Compared to the previous industrial version (DB07r1), this implies that only detailed industries in main group 42 are affected, civil engineering work. The original 3 industries are replaced by 7 new industries. See further documentation on the adjustments.

As from 2008 a new distribution of sectors is incorporated into the Working Time Accounts based on the new National Accounts Manual ESA2010. The new distribution of sectors implies that the contents of the individual sectors have been changed. Furthermore, a new sector, private non-profit organizations, which covers, e.g. selected societies and associations, has been separated. These adjustments have resulted in a reduction of employment in the general government sector. A detailed description of the adjustments is given in the paper on [New sector code in the employment statistics](#).

In connection with the publishing of the statistics for the 2nd quarter in September 2013, the table WTA32 in StatBank Denmark has been updated. The table WTA32 contains annual WTA figures distributed by, e.g. the 117- and 69- industrial groupings (DB07) in the National Accounts. The reason for this is that previously it was only possible to distribute the industries according to the two sector groups: the general government sector versus businesses and organizations. An appendix to the WTA production system has led to the output subsequently divided into more detailed sectors based on sectoral distributions in the RAS and ERE statistics. This implies that it has now become possible also to distribute the WTA by other sector groupings, i.e. market activities and non-market activities, i.e. in the same manner in which the industry aggregates in the National Accounts are delimited. In relation to the former classification, this implies that the sector non-profit institutions serving households (NPISH), which was grouped in industries in the National Accounts that were engaged in market activities, has now been transferred to industries in the National Accounts that are engaged in non-market activities.

It is not possible to draw comparisons between the new WTA and the former WTA, as the sources, population, method and concepts have been changed compared to the previous WTA.

2.2 Classification system

Industry: Industry indication is linked to the workplace and specific workplace's main activity, according to Statistics Denmark Danish Industrial Classification. Danish Industrial Classification is a 6-digit nomenclature based on the EU industrial nomenclature, NACE, which constitutes the first 4 digits of the Danish Industrial Classification. In WTA publish aggregated industry reports, where the activities subdivided by industry codes are aggregated to [Statistics Denmark's standard classifications](#). Also WTA publish statements broken down by [national accounts industrial aggregates](<https://www.dst.dk/~ / media/Kontorer/06-Nationalregnskab/nr-erhvervsgrupperingerdb07-pdf.pdf>)

Sector: Sector uses national account sectors (ESA 2010 sectors) to make a 2 group sector breakdown in the WTA: *general government* versus *Corporations and organizations*.

- *General government* includes central government, regional government, municipal government, and social security funds.
- *Corporations and organizations* includes private corporations, public corporations, private nonprofit organizations and sector not stated.

A detailed description of the transformation to ESA 2010 sectors is given in the paper [Ny sektorkode i beskæftigelsesstatistikkerne](#) (New sector code in the employment statistics).

Socioeconomic Status: Socioeconomic status is in WTA alone a breakdown if you are an employee, self-employed or assisting spouse (i.e. 3 groups).

Full time: In the annual Working Time Accounts a few tables are broken down according to work on full-time and part-time in the series Statistical News ("Statistiske Efterretninger"). In the present context, full-time work is defined as at least 32 paid hours of work in the job per week for employment over the entire week, or at least 139 paid hours of work in the job for employment over the entire month. Self-employed persons and assisting spouses work full-time in their main job. If they work as self-employed in their secondary job, they are working part time.

2.3 Sector coverage

WTA covers all the ESA 2010 sectors Danish registered companies can be assigned (ie all sectors excluding rest of the world and foreign-controlled entities).

However, WTA sectors aggregated to a division into 2 groups, respectively *Corporations and organizations* and *General government*.

General government includes central government, regional government, municipal government, and social security funds.

Corporations and organizations includes private corporations, public corporations, private nonprofit organizations and sector not stated.

See [sectors](#) for more detailed information on ESA2010 sectors.

2.4 Statistical concepts and definitions

Employment: Employment is an assessment of how many people (headcount) employed at any given time. Employed is, if one has an attachment to a workplace in the form of a job where you at least have one hour of paid work in the reference week. See [detailed description of concepts](#).

Job: Jobs shows the number of jobs that are active (excluding temporary absences in the form of eg. maternity or other leave) at any given time. The labor market statistics is a job actively, if there is a minimum of 1 paid hour per week. A job is defined as a person connected to a workplace. The same person can have several jobs at the same time. See [detailed description of concepts](#).

Compensation of Employees: Compensation of employees in the WTA include compensation of employees in cash or in kind which the employer pays to an employee for work performed in an accounting period. See [detailed description of concepts](#).

Hours Worked: Hours worked are defined as hours paid by employers, including paid overtime and excluding paid hours of absence. Unpaid overtime hours and black work are excluded from the calculation of hours worked in the WTA. See [detailed description of concepts](#).

2.5 Statistical unit

- Paid hours worked.
- Earned DKK.
- Number of persons.
- The number of jobs.

An employed person can have one or more jobs. A job is defined as a person connected to a workplace. In each job the person performs a number of hours worked and receive as compensation a salary measured in DKK.

The working time account is not calculated at the level of individual jobs. Data in WTA is aggregated, where the number of hours worked, compensation of employees, the average number of jobs and the average employment summed to industry level (6 digit DB), sector (2 groups), socioeconomic status (3 groups), sex (2 groups), and scope of work (5 groups). From this level data is summarized for publication level (including various types of industrial aggregates).

2.6 Statistical population

Employed employees, self-employed and assisting spouses of Danish registered enterprises.

2.7 Reference area

Denmark.

2.8 Time coverage

Q1 2008 - Q1 2014.

2.9 Base period

Not applicable to this statistic.

2.10 Unit of measure

- Employment is calculated as the number of people.
- Job is calculated as the number of jobs.
- Hours worked is calculated as the number of hours. In STATBANK these are calculated in 1000 hours.
- Compensation of employees is measured in DKK. In STATBANK compensation of employees measured in millions DKK.

2.11 Reference period

01-01-2008 - 30-09-2014

2.12 Frequency of dissemination

Annual and quarterly statistics are published.

2.13 Legal acts and other agreements

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

WTA provides labor market data to EUROSTAT business short-term regulation (STS) and the national accounts (ESA / ESA).

STS: Council Regulation (EC) concerning short-term statistics:

- Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics, 1165/98, OJ L 165, p.1, 05-06-1998.
- European Parliament and Council Regulation (EC) No 1158/2005 of 6 July 2005 amending Council Regulation (EC) No 1165 / 98 concerning short time statistics. 1158/2005, OJ L 191, p.1, 22-07-2005.
- Commission Regulation (EC) No 586/2001 of 26 March 2001 implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of Main Industrial Groupings. 586/2001, OJ L 86, p 11, 27-03-2001.
- Commission Regulation (EC) No 1503/2006 of 28 September 2006 implementing and amending Council Regulation (EC) No 1165/98 concerning short-term statistics as regards definitions of variables, list of variables and frequency of data compilation. 1503/2006, OJ L 281, p 15, 12-10-2006.
- Commission Regulation (EC) No 656/2007 of 14 June 2007 amending Regulation (EC) No 586/2001 implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of industry groups. 656/2007, OJ L 155, p 3, 15/06/2007.
- COMMISSION REGULATION (EC) No 1178/2008 of 28 November 2008 amending Council Regulation (EC) No 1165/98 concerning short-and Regulation (EC) No 1503/2006 and (EC) No 657/2007 as regards adaptations following the revision of statistical classifications NACE and CPA. 1178/2008, OJ L 319, p 16, 29-11-2008.

ESA / ESA: Council Regulation (EC) on the European system of national accounts:

- Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the European Community. 2223/96 OJ L 310, p.1, 30-11-1996.
- European Parliament and Council Regulation (EC) No 1392/2007 of 13 November 2007 amending Council Regulation (EC) No 2223 / 96 with respect to the transmission of national accounts data. 1392/2007, OJ L 324, p.1, 10-12-2007.
- Commission Regulation (EU) No 715/2010 of 10 August 2010 amending Council Regulation (EC) No 2223/96 as regards changes in the national accounts as a result of the revision of the statistical classification of economic activities NACE rev. 2 and the statistical products by activity (CPA). 715/2010, OJ 210, p.1, 11/08/2010.

2.14 Cost and burden

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

2.15 Comment

Differences in concepts and statistics on employment and number of hours worked are described in the following paper [begrebsforskelle](#).

Additional documentation of differences between the employment statistics can be found at [employment](#).

Documentation relating exclusively to the working time accounts can be found at [the Working Time Accounts](#).

3 Statistical processing

The population and concepts as well as levels of the variables are defined by annual structural data sources. Short-term data sources are applied in projecting these levels over the months of the year and in periods for which structural data are not available. Summation of the data in the Working Time Account are conducted before they are projected. Data in the Working Time Account are seasonally adjusted both for use in Denmark as well as for use in Eurostat's STS. The system contains a data-editing system, a correction system and a dissemination system.

3.1 Source data

In deciding which data sources to apply in compiling the WTA, attention is centred on the major advantages provided by each individual statistics. For example, register-based data are used to ensure complete coverage in the calculation of employment, number of jobs, aggregate payroll costs and paid hours of work. Register-based short-term statistics are used for describing the development throughout the year in the same variables. Information from the wage and salary system of the business enterprises is used to convert paid hours of work into hours worked during the year. Personal interviews are used to obtain information on the distribution of hours worked during the year as well as information on the groups that are not covered by the registers.

The WTA are compiled on the basis of three primary data sources:

1) The Register of Employment Statistics forming the basis for both:

- the Register-based labour force statistics [RAS statistics](#)
- and for the Establishment-related Employment Statistics [ERE statistics](#)

Employment Statistics for Employees [BfL](#)

The three above-mentioned statistics are compiled on the basis of eIncome:

2) [The Structural Earning Statistics](#)

3) The Labour Force Survey [LFS](#)

The WTA use the Register of Employment Statistics for obtaining data on jobs and persons employed at end-November as well as annual data on aggregate payroll costs (compensation of employees) and annual paid hours of work for employees.

The Statistics on Earnings are used in the WTA for converting paid hours of work into hours worked by employees during the year. Where the above-mentioned structural statistics set the level for the statistics in the WTA, the short-term statistics are used for describing the development throughout the year.

The Employment Statistics for Employees contain monthly data on jobs, paid hours of work and total wage and salary costs relating to employees throughout the year. The data are used in the WTA for projecting compensation of employees, hours worked, employment, primary and side line jobs for employees during the year.

The Labour Force Survey is used for describing the development in the number of hours worked during the year.

Furthermore, the Labour Force Survey is also used for measuring the effect derived from each day of absence from work during the Easter holiday on the distribution of hours worked between the months March and April. Subsequently, the effect derived from the Easter holiday is calculated by counting the number of Easter days of absence, falling in each of the two months during each year.

The Labour Force Survey is also applied in undertaking projections of employment and jobs for self-employed and assisting spouses during the period, following the latest November-statistics of the Register of Employment Statistics. Finally, the LFS is applied in describing how many more hours of work were performed by self-employed and assisting spouses compared to hours worked by employees.

For self-employed and assisting spouses, the development in employment and jobs is calculated as a steady development from one structural statistics to another (employed persons in the Register-based Labour Force Statistics and the number of jobs in the Establishment-related Employment Statistics). However, rolling annual statistics from the Labour Force Survey are used for projections in the period following the latest structural statistics (i.e. after the end of November 2011).

The basis for calculating hours worked by self-employed persons and assisting spouses are hours worked per job for employees. These hours are enumerated by the number of jobs for self-employed persons and assisting spouses and adjustments are made on the basis of the number of more hours worked by self-employed persons and assisting spouses compared to hours worked by employees according to the Labour Force Survey.

Average employment (and average number of jobs) over the year is estimated as an average figure of average employment during the 4 quarters of the year (respectively average number of jobs of 4 quarters). Against the background of the projections, it is possible to compile preliminary annual statistics for the period following the latest structural statistics.

The Working Time Accounts are exclusively based on existing data sources, which are subsequently converted to the concepts used in the WTA. The WTA is flexible in its choice of primary sources, which can be replaced by other sources, if these have proved to be more accurate. The choice of primary source decides the amount of data editing necessary. When it comes to integrating all the sources, however, all the concepts are consistent in conforming to international standards and every variable fulfils the requirement of the system for the WTA.

3.2 Frequency of data collection

Is not relevant to this statistic as the WTA only make use of already existing statistics (ie no new reports).

3.3 Data collection

Is not relevant to this statistic as the WTA only make use of already existing statistics (i.e. no new reports).

3.4 Data validation

Data are already checked for errors in the primary statistics. In the WTA further checks, troubleshooting and debugging are carried out. This is partly based on the information from the producers of the input sources, partly systematic (mostly figurative) controls the internal consistency between variables and over time, and by comparisons with other published statistics. Finally developments are systematically being discussed with stakeholders from other statistics, including in the context of short term statistics interest groups (where data is typically assessed on the level of News from Statistics Denmark, which for the quarterly statistics will say aggregated to 10 industrial groups and 2 sector groups). When developments looks strange, then the reason behind this is being analyzed, with possible assistance from producers of input statistics, and if errors are detected then corrections are included in the system. In some cases, the statements lead to corrections in the primary statistics.

Each series are examined quarterly by evaluating the series over time (monthly from 2008 onwards) level:

- employees: 127-industrial grouping * 2 sector groups
- self-employed and assisting spouses: 36 industrial groupings

In connection with the annual estimates error detection is carried out also by gender and full time / part time.

Calculations to illustrate the internal consistency in the WTA (assessed accordingly over time at the above level):

- Hours worked per. employee
- Hours worked per. employed
- Hourly wage (compensation of employees / hours worked for employees)
- Wage per employee (compensation of employees / number of employed workers)

Comparisons with published statistics:

- National Accounts (employment, hours and compensation of employees)
- Employment of Employees (full-time jobs and compensation of employees)
- Public employment statistics
- Indices of average (hourly) earnings in the private and public sector
- Labour Force Surveys (employment and development in hours worked)
- Number of persons employed in the construction industry

It is possible in the system for the Working Time Account to enter corrections in the input data sources as well as in the output data sources of the Working Time Account before they are disseminated. It is also possible to make feedback to those responsible for the input data sources.

3.5 Data compilation

WTA is a statistic that is based on the integration of several input data sources / existing statistics. In the WTA a lot of development is continuously taken place in the form of revisions due to new data input sources, data breaks in existing input sources, revisions in line of industry codes, new sector codes, new or changing needs of users (national and international), need for projecting data back in time to periods of the current system does not cover, etc. A special workflow that does not fall on a regular basis throughout the year, are descriptions of the method, answering various questionnaires (about strategy, comparability to other areas of statistical methodology development, etc.), updating of publishing calendars, formation of specific data to the STS (eg. weights, changes to

population coverage and groups of STS transmissions, changes to seasonal adjustment, etc.). This workflow can involve work and coordination between employees in different offices or departments. These tasks may well just start with an external query and end after analyzes and response. For more comprehensive changes may be needed for explanatory analyzes and preparation of memoranda for internal use, to Eurostat or to the website. This will typically happen in the incorporation of new annual structural data, and major revisions (where data is typically revised throughout the time series length). If the elucidations results in recommendations to revise (all or part of) the WTA begins a new project. In the following description, the above mentioned operations are not described.

Overview: Structural data constitutes the basis of the variables conceptual boundaries and levels. Thus, the WTA use annual data at the micro level (job level) from the Register of Employment Statistics. Earnings statistics are in the WTA used for converting paid hours of work to hours worked. Short-term statistics is used for distributing structural annual data over the months. Thus, employment from the Register-based labour force statistics (RAS statistics) and jobs and aggregate payroll costs (compensation of employees) and annual paid hours of work for employees from the the Establishment-related Employment Statistics (ERE statistics) is distributed to a monthly basis with the help of BFL's monthly data. Employment Statistics for Employees (BfL) is also used to predict job, employment, compensation of employees and hours worked by employees in the period after the latest available annual structural data. The LFS is used to describe the distribution of hours worked during the year. Furthermore, the LFS is used for projecting the number of employed and jobs for self-employed and assisting spouses in the period after the latest annual structural data. Finally, the LFS is used for describing how many hours self-employed and assisting spouses work compared to employees.

More detailed description of work:

The necessary data sources are loaded.

Data is aggregated, integrated and projected: BFL and the Structural Earning Statistics are used on micro-level, in a preliminary step: As data from Structural Earning Statistics is imported, more updated workplace information from Employment Statistics for Employees (BfL) is transferred to data from the Structural Earning Statistics (including information on line of industry and sectors). Data from different sources are aggregated (to the extent this have not already be done so when loading the data). Any previous corrections to the input data (BFL or RAS / ERE) is included. This is followed by a calculation of factors for the number of paid hours actually worked in relation to the number of hours paid per years. These factors are transferred to relatively detailed structural data from the Register of Employment Statistics. Factors are calculated (based on BFL) to distribute annual data. Further factors are computed (based on LFS) to describes the distribution of hours worked during the year. Enumeration factors calculated for BFL level to the level of the The Register of Employment Statistics end of November statements (RAS, ERE Statistics) for variables paid hours of work, main job and side line jobs and salary for employees. The calculated projection factors (and in the initiation of the WTA also factors to project from 2009 to 2008), which describes the development of jobs, employment, compensation of employees, hours worked for employees over the year. Data from different sources are integrated and projected.

Aggregated publishing data are formed: The most current version of the structural data from The Register of Employment Statistics is found. Non-corrected data for jobs, hours worked and compensation of employees are gathered in a single table. Non-corrected data is integrated with corrected data. Only data for the latest version of the reference period are included. Data is enriched with various aggregate line of industry (Dst's Std-groups) and it is ensured that the variables and formats match names and formats used for publishing purposes and troubleshooting. The WTA is broken up on detailed sectors by means of end of November statements (Register-based labour force statistics (RAS statistics) / the Establishment-related Employment Statistics (ERE statistics)). Based on these data (not least for the national accounts industry aggregates) data sets are generated

to the National Accounts at various levels of aggregation.

Data are seasonally adjusted, debugged and corrected: Initially an overall quality checks are implemented to see if something is wrong, just to be sure there is not a need for new input data deliveries. If necessary, the process stops here and the responsible person for the input data is contacted to find out what the problem is about / possibly to secure new supplies, and it is agreed, if necessary, who makes the adjustments and how. Because Easter can have very serious consequences for the development of hours worked, data are seasonally adjusted . Actual data, trading day adjusted data and seasonally adjusted data are also formed on Business Short Regulation (STS) groups so that these may also be used for troubleshooting. Actual and seasonally adjusted data are error detected in detail, mainly due by means of graphics. In addition, consistency checks are carried out (between variables, over time and in comparison to other statistics). This also takes place primarily based on graphics. Where deviations look strange any corrections are calculated for input sources and/or output data. It is checked whether the cause is an industry shift. Responsible of the input statistics are contacted in order to to carry out analysis. If it turns out that there is a need for corrections, these can be incorporated to the various input sources, or they can be incorporated to the WTA output data. Cyclical interest group meeting are hold. This may reveal the need for additional troubleshooting and corrections.

Data are analyzed and disseminated: The story in the data are found for the most recent data. If necessary notes on the subject site will be updated. Special features are described for use in eg News from Statistics Denmark and quality declarations. Quality declarations in Danish and English are updated. Danish and English figures, tables, stories and explanations in News from Statistics Denmark, Statistical News, Yearbook, STS, etc. are updated and proofread. Various data deliveries to Macro Database, various series for the STS, deliveries to internal users (including National Accounts and various stakeholders in relation to the short term statistics forum) as well as deliveries to external users are formed, controlled at an overall level and delivered. Answers to questions from the press, questions from the national accounts, Eurostat, Labor Movement's Business Council (Arbejderbevægelsens Erhvervsråd, AE), Danish Industry (DI), Danish employers' association (DA), the trade unions (LO), the Productivity Commission, ministries, or just one-off requests from individuals or organizations / companies. Any press contacts are reported.

Data are archived.

3.6 Adjustment

No corrections of the data are carried out beyond what has already been described during data validation, data processing and seasonal adjustment.

4 Relevance

Users interested in the social and economic statistics have expressed satisfaction with the quality of the statistics. However, they also expressed frustration over large data breaches, especially in the transition to e-Income-based sources.

4.1 User Needs

Among users are politicians, ministries, interest groups, businessmen, researchers, major private companies 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.

4.2 User Satisfaction

When major revisions are released, the changes are described in quality declarations and in potential more comprehensive notes available at the website. In addition users are oriented about the background for the changes, when the changes are put into force, and the reference period the changes are related to, as early as possible in the process via user committees (user committee for labour market statistics and user committee for economic statistics), in the forum of short term statistics and on interest group meetings . In addition, revisions of the Working Time Accounts are discussed and coordinated with the national accounts.

User Committee for Labour Market Statistics includes the areas employment, unemployment, wage subsidies jobs, earning statistics and statistics on absence. The user committee hold meetings one or twice a year to ensure running contact and dialog on the scope of statistics, developments, quality and communication. The members of the committees are important users of the products of Statistics Denmark within the subject areas of the user committee.

The User Committee for Economic Statistics covers the topics national accounts, public finances, short term statistics, external economy, globalization, employment, prices, consumption and financial statistics. The committee normally hold meetings in June and December. At these meetings the revisions of the Working Time Accounts has generally been embraced, as no users has doubted that the quality of the WTA has been improved significantly. However, the data breaks been more difficult for the users to deal with. Especially for the national accounts and its users and for the Productivity Commission has the restructuring to using the eIncome statistics - especially with the very significant drop in the levels of hours worked - has given rise to much frustration and additional work load.

4.3 Data completeness rate

Up to now the delimitation of data supplies from the Working Time Account to the short-term business statistics (STS) has only been the sector group “business enterprises and organizations, i.e. exclusive of “general government sector”. In other words, the population in the short-term business statistics is for the time being greater than the market share of the economy, which is covered by the Regulation, as sector code 89: Non-profit institutions serving households (NPISH) is not excluded from the data deliveries from the Working Time Account.

5 Accuracy and reliability

There are no calculations of the measures of accuracy.

See section quality assessment.

5.1 Overall accuracy

There have been no measurements of the magnitude of revisions, etc.

In general, the quality of data has improved significantly with the use of the new eIncome source. Previously, the WTA was calculated by combining a multitude of different sources. After the reorganization in 2012 the WTA is based primarily on eIndkomst sources. This is the same basic data for most of the sources included in the WTA, which ensures a high degree of internal consistency. In addition, the date markers, for when a job is active, have become much more precise, both in the annual structural statistics on jobs and employment at the end of November and the distribution over the year. Industry and sector rankings in eIncome is based on current work locations of employees. This is significantly more accurate than the projections underlying the former WTA. Hours statements have become much more precise, both because the date markers for when the job is active have become much more precise, but also because of eIncome now have a total population of employee relationships in Danish enterprises including reports on number of paid hours of work.

Not only is there has been a significant quality improvement related to the transition to eIncome. Over time, the eIncome register have also been improved. Thus, a quality measure for the calculation of hours worked is the proportion of hours paid in eIncome that have been imputed because they have either not been reported or because they have proved to be invalid:

Total: - 2008: 14.3 per cent. - 2009: 11.2 per cent. - 2010: 10.2 per cent. - 2011: 7.9 per cent. - 2012: 5.4 per cent. - 2013: 3.8 per cent.

It divided into:

Companies and organizations:

- 2008: 17.5 per cent.
- 2009: 13.3 per cent.
- 2010: 11.6 per cent.
- 2011: 9.3 per cent.
- 2012: 6.9 per cent.
- 2013: 4.6 per cent.

Government:

- 2008: 7.3 per cent.
- 2009: 7.2 per cent.
- 2010: 7.6 per cent.
- 2011: 5.2 per cent.
- 2012: 2.6 per cent.
- 2013: 2.4 per cent.

In general, there is a tendency that more and more report information on hours paid to eIncome, which guarantee a better quality over time. Furthermore, the guidelines from the tax authorities on the reporting of hours paid to eIncome have become more clear, and the precision and knowledge of concepts is increased in the reporting over time so that, for example, the reporters become aware that unpaid absences is not be included in the reported hours paid.

5.2 Sampling error

Not applicable to this statistic.

5.3 Non-sampling error

Some reports to eIndkomst for employees lack information on hours paid or the reported information has been found to be invalid. Therefore imputed (estimated) paid hours of work for these reports.

It is assumed in the WTA, that the end of November employment in RAS and number of jobs in ERE statistics equals the average employment (number of jobs) per. day in November. This is done because daily information on employment and the number of jobs is not available.

The structural statistics RAS and ERE statistics determines the WTA levels for each variable. Short-term statistics are used to project these levels over the year. Only the categories where there are non-missing figures in the RAS / ERE statistics will be projected. If the value is below 200 primary jobs, respectively 100 secondary job at the end of November, this level will be kept constant over the year (projection factor = 1). Are there too few observations in BFL category over the year the development from BFL at a more aggregate level are used (typically from a more aggregated industry level).

When the LFS is used to adjust for how much more self-employed and assisting spouses work compared to employees, it is not possible for us to take into account that the self employed has a tendency to overstate their report more than employees do.

5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

5.6 Quality assessment

The margins of statistical uncertainty associated with the Working Time Accounts are related to the statistical uncertainty of the individual primary statistical data 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 Accounts. Especially, the juxtaposition of information from the primary sources in a joint system of the Working Time Accounts implies that the results will automatically be compared and thereby reveal any errors and inherent problems of consistency in the basic concepts and data. 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 uncertainty of the primary sources, see the respective quality declarations:

- Register-based Labour Force Statistics [RAS](#)
- Establishment-related Statistics on Employment [ERE statistics](#)
- [The Structural Earning Statistics](#)
- The Labour Force Survey [LFS](#)
- [Employment Statistics for Employees](#)

Self-employed and assisting spouses make up the group for whom the lowest quality of data is available on number of jobs (with activity over 1 weekly working hour), length of job (duration of each individual job) and number of hours worked in each individual job in the data sources.

When the LFS is applied in adjusting how many more hours are worked by self-employed and assisting spouses compared to hours worked by employees, it is impossible for us to take into account that there is a tendency for self-employed to overstate, to a greater extent, than is the case for employees. It would be extremely subjective, if we were to introduce a factor for the extent of this overstatement made by the self-employed compared to the employees. However, we have an assumption that this overstatement is greatest in cases where the workplace for the self-employed (and the assisting spouse) is the residence of the self-employed, as it must be assumed that the relation between working time and leisure time becomes more blurred. This applies, especially, to employment in agriculture, etc. and small businesses in retailing and hotels and restaurants.

In eIncome information is reported with regard to paid hours in the jobs in the individual reference month. The quality of this information naturally reflects the quality of the the data reports. Generally, we think that the information has a high quality. However, particularly related to the data on unpaid hours of absence and overtime hours there may be quality problems in the primary data of the eIncome register. Some problems have been revealed with respect to data reports of paid hours for employees paid by the month who are not paid for in periods of absence. This has, particularly, applied during the first couple of years with eIncome. When the respondents become aware that the number of hours worked has to be changed in the case of unpaid absence and the respondents then suddenly begin to report this information correctly, it has subsequently an impact on the projection of hours throughout the year and the development from one year to another. Unfortunately, the awareness of this reporting of hours does not occur simultaneously for everybody, but happens gradually, and this is the reason why it can be difficult to find these erroneous data reports in the production system and rectify these backwards in time. In connection with the publication of WTA 2012Q4 in March 2013, such erroneous data reported to eIncome for salaried employees in municipalities and regions have been adjusted backwards in time (for the period January 2008 to August/September 2011). This has been carried out by using monthly data reported to the statistics on earnings with regard to hours of absence for which employees do not receive any pay. The hourly data of the statistics on earnings are distributed in greater detail than is the case for hourly data reported to eIncome.

Until now, it has not been possible to apply short-term sources for analyzing leave during the year, one reason is that it has not yet been possible to unequivocally decide when the information on leave stems from employment and when the information relate to persons who are not economically active. When WTA incorporate data from the Danish Labour Market Account, we will be better at analyzing the development of leave stemming from employment over the year. Incorporating a better description of leave from employment during the year in the WTA is scheduled to 2015/2016.

It is assumed in the WTA that persons on leave have not performed any hours worked. This assumption has been made, because we are unable to analyze, to a greater degree, the number of hours worked during leave, although it is, in principle, possible to be on, e.g. part-time maternity

leave in Denmark.

In connection with the release of Q2 2013, in September, there was uncertainty in the seasonally adjusted figures due to the timing of Easter. In real terms, there was a large increase in hours worked in the second quarter, both compared to the previous quarter and the same quarter last year. This is due to the fact that Easter fell in 2013 partly in March (first quarter) and partially in April (second quarter), while the entire Easter in 2012 fell in April (second quarter). The applied seasonal adjustment model can not take into account individual Easter day location. It may have caused a little too sharp downward adjustment in hours worked in the second quarter, and a corresponding upward adjustment of hours worked in the first quarter. This occurs to a lesser extent also with respect to compensation of employees, as there are groups of employees who have not compensated absences.

There is no uncertainty calculations.

5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](#). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

5.8 Data revision practice

The Quarterly Working Time Accounts will be currently published in accordance with Statistics Denmark's specialized goals of timeliness, which with respect to the quarterly statistics implies not later than by the end of the subsequent quarter.

Data on employment for employees is available from both the provisional version as well as from a final version, and consequently the two most recent quarters will be subject to revision in conjunction with the compilation of each quarterly statistic.

When new structural data are incorporated (register of employment statistics and structural statistics on earnings) in connection with the compilation of the Annual Working Time Accounts, the levels as from this year will be revised, i.e. also during the entire period of projection. When the structural data are incorporated, the data in the Working Time Accounts are considered to be final.

However, data in the Working Time Accounts can be subject to revision as a result of updated values in the primary sources, in the case of methodological changes or use of new information and sources.

6 Timeliness and punctuality

Working hours are regularly published in accordance with Statistics Denmark's benchmark goals.

For quarterly statistics concerned, this goal implies the publications to be released at the latest by the end of the following quarter. For the sake of short-term business regulation (STS), this implies the WTA to be published typically mid the last month of the following quarter. (The requirement for most employment series for STS is 2 months and 15 days).

For annual statistics concerns, this implies publications to be released at the latest by the end of the following year. In the interest of national accounts the annual WTA will be published in June with provisional figures for the previous year. This makes the annual WTA for the year t to be published in the same month as the publication of the quarterly WTA for the period $1 \text{ quarter } t + 1$.

The transition to the new WTA resulted, however, that annual WTA 2011, based on the new eIncome sources, were not published until December 2012, whereas the publication of the quarterly statistics has not given rise to any delay.

6.1 Timeliness and time lag - final results

The Working Time Accounts are published once a year with annual figures, and four times a year with quarterly figures. The first publication of annual data covering the period 1995-1998* was on November 30th 1999.

The present publication of the WTA statistics are published on the basis of eIncome statistics. Release time for the annual statistics is the reference year + 6 months. The latest year are preliminary figures calculated on the basis of the quarterly accounts. Release time for the quarterly statistics is the reference quarter +2 months and 15 days.

The statistics are available both in a preliminary version and the final version, so WTA for the last two quarters will be reviewed at each quarterly statement of the WTA. New knowledge or time for thorough debugging can cause changes in the other quarters which do not affect the annual working time account. When new structural data (RAS, ERE-statistics and the structural statistics on earnings) are incorporated in connection with the calculation of the annual WTA, the levels from the latest year where structural data is available and throughout the projection period is revised. When the data structure is incorporated, data up to and including the last year with structural data is considered to be final in the Working Time Account.

The time series covers the period:

- Q1 2008 - Q1 2014 in the quarterly WTA, published June 12, 2014, and
- 2008-2013 in the annual WTA with the release on 20 June 2014.

6.2 Punctuality

For the quarterly Working Time Account 87.5 percent (7 out of 8 publications) is published exactly as planned or ahead of schedule . One releases (third quarter 2013) did not comply with the pre-announced period, as the data quality was found too poor, and therefore the release was delayed for three days.

The annual WTA has been published three times on the basis of eIncome input data (since December 2012), and all the pre-announced publication dates were met (100 per cent) .

Data to Eurostat short term business statistics (STS) are evaluated against the requirements for quarterly interim STS data (a deadline within 2 months after the reference quarter) and here 71.4 per cent of the releases met the requirements (5 out of 7 were released as scheduled) .

For the final STS quarterly data 87.5 per cent (7 out of 8 of the releases) were transmitted according to the required deadline (within 2.5 months after the reference quarter).

7 Comparability

WTA deliver labor market data to Eurostat's corporate short-term regulation (STS) and the national accounts (ESA / ESA). Therefore, changes in these regulations typically result in changes in the WTA. A description of the transitional tables between the WTA and the National Accounts can be found in the publications on the National Accounts. Transitional tables between the WTA and the Register-based Labour Force Statistics and the Establishment-related Employment Statistics is published in Statistical News ("Statistiske Efterretninger") for the annual WTA.

7.1 Comparability - geographical

The Danish Working Time Accounts are worked out according to international guidelines, European System of Accounts (ESA 2010) and International Labour Organisation (1988: Current International Recommendations on Labour Statistics), the latest of which is reviewed in 2013 (Resolution concerning statistics of work, employment and labour underutilization, 19. International Conference of Labour Statisticians).

The population of the WTA are persons affiliated to Danish registered companies, which is consistent with ESA2010 boundaries. ESA2010 includes working in resident companies (see ESA 2010 paragraphs 2.04 to 2.11) (colloquially called 'the daytime population'). ILO / ICLS guidelines include the resident population (colloquially called 'the nighttime population').

Since the WTA is primarily a register-based statistics it does not include information about unpaid overtime, undeclared work and criminal work.

We work in Statistics Denmark on exploiting information from Register of foreign services in Denmark (Register over Udenlandske Tjenesteydelser i Danmark, RUT) to create a better illumination of border work. RUT included hiring out labor, corporate transferees and sole proprietorships that provide services in Denmark, but not taxable in Denmark. RUT-employment is not a part of the nighttime population (typically used for population delineation of social statistics, including labor market statistics), since workers do not reside in Denmark. The national accounts is about to disentangle, whether RUT employment relationships should be included in national accounts employment (in terms of the activities are conducted in Denmark and thus should be included in the daytime population) or whether they should be categorized as "import of foreign services" (as they are engaged are employed by - and receives salary, from - the foreign company). The part of the RUT employment to be included in the national accounts daytime population, will also be included also in the Working Time Accounts employment.

7.2 Comparability over time

The compilation of Working Time Accounts 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 Accounts System. This implies that adjustments of existing sources cannot immediately be seen as changes of variables and concepts in the Working Time Accounts Statistics, although adjustments of the level of the specific variable may be made according to the new and improved information.

Special conditions relating to the publication of Working Time Account June 2013: Annual detailed structural data from the Register-based Labour Force Statistics (RAS), Establishment-related Statistics on Employment and Structural Statistics on Earnings for 2011 are incorporated into the Working Time Accounts in connection with the publishing of WTA statistics June 2013, and this implies that data for 2011 and onwards have been adapted to the new levels.

As from 2008 a new distribution of sectors is incorporated into the Working Time Accounts based on the new National Accounts Manual ESA2010. The new distribution of sectors implies that the contents of the individual sectors have been changed. Furthermore, a new sector, private non-profit organizations, which covers, e.g. selected societies and associations, has been separated. These adjustments have resulted in a reduction of employment in the general government sector. A detailed description of the adjustments is given in the paper on [New sector code in the employment statistics](#).

As from 1 January 2013, a new industrial version is incorporated (DB07r2). Compared to the previous industrial version (DB07r1), this implies that only detailed industries in main group 42 are

affected, civil engineering work. The original 3 industries are replaced by 7 new industries. Further [documentation on the adjustments to lines of industry](#).

With respect to the transition to eIncome sources in connection with the revision of the WTA December 2012, a number of changes have been made which are of importance to, especially, the levels but also to the development of series in the WTA, compared to previously. The transition to eIncome in the Register-based Labour Force Statistics and the Establishment-related Employment Statistics has given rise to a break in the data series, not least due to the fact that the date indications in eIncome are far more accurate than previously, which has a bearing on the compilation of jobs and employment by end-November.

In conjunction with the transition to eIncome, the job definition applied in the private sector has been changed. Previously, a job in the Register of Employment Statistics (the annual register forming the basis for compiling the Register-based Labour Force Statistics and the Establishment-related Employment Statistics) in the private sector was defined as a person's attachment to the business enterprise. In the public sector, the job was defined as a person's attachment to a workplace. After the establishment of eIncome, the job definition is homogenous in the private and the public sectors, as the job is now defined as a person's attachment to a workplace.

A job involving less than 1 hour of paid work per week is excluded from the job definition. The same requirement applies to the definition of persons employed, however, there is no requirement as regard the number of hours worked in relation to temporary absence. This is a definition applying internationally, and has been applied by Statistics Denmark. However, with eIncome the possibility of operationalizing this requirement has been considerably improved, as it can now be defined on the basis of information concerning paid hours of work. Previously, a minimum pay requirement was in force.

Previously, jobs in the WTA were defined on the basis of statistics compiled at the end of November as:

- Number of jobs = number of primary jobs + number of secondary jobs

Where main jobs and secondary jobs were defined on the basis of employment as:

- Number of primary jobs = employment
- Number of persons on maternity leave from primary jobs
- Number of persons on labour market leave from primary jobs

Number of secondary jobs: number of secondary contracts of employment

- Number of persons on maternity leave from secondary jobs
- Number of persons on labour market leave from secondary jobs

Following the revision in December 2012, jobs in addition to the person's secondary jobs are also included, implying that:

- Number of jobs = number of primary jobs + number of sideline jobs

Furthermore, jobs where the person is on sickness leave are explicitly identified and are deducted from the number of jobs in the same way as jobs where the person is on maternity leave.

Number of primary jobs = employment

- Number of persons on maternity leave from primary jobs
- Number of persons on sickness leave from primary jobs
- Number of persons on labour market leave from primary jobs

Number of sideline jobs = number of sideline contracts of employment

- Number of persons on maternity leave from sideline jobs
- Number of persons on sickness leave from sideline jobs
- Number of persons on labour market leave from sideline jobs

These two effects do not have an impact on employment, but they have an impact on the number of jobs. The inclusion of all sideline jobs implies that there are a greater number of small jobs following the revision. The identification of sickness leave implies that the number of jobs has been reduced by the number of persons on sickness leave, i.e. there are fewer primary jobs and sideline jobs that previously.

In the former WTA (before the use of eIncome sources), secondary jobs for assisting spouses (about 1,000 secondary jobs in 2007) were included. In the former WTA also CRAM and AKM self-employed persons (a total of about 10,500 secondary jobs November 2007) were included. These groups of secondary jobs are not available in the new WTA. At that time, the information was based on data that were subject to great uncertainty.

Due to the more precise dating of contracts of employment for employees in each month of the year on the basis of eIncome sources, the new WTA contain fewer employee jobs. When there are fewer employee jobs, then there are also fewer jobs as self-employed that are trumped by employee jobs in the prioritization of the person's primary employment at the end of November. Subsequently, the number of self-employed persons in employment (and assisting spouses) increases.

In conjunction with the revision in December 2012, the population in the WTA has been extended to include jobs for persons living abroad, but working in Denmark and liable to taxation in Denmark (i.e. all persons incorporated in eIncome, - and not as in the Register-based Labour Force Statistics restricted to the resident population).

Conceptually, compensation of employees in the WTA have been changed, implying that compensation of employees are now identical with the payroll costs published in the Establishment-related Employment Statistics comprising A-income, from which labour market contributions are paid, i.e. wages and salaries, fees, etc., including holiday allowances, wages and salaries during sickness and leave, wage subsidies of any kind, remunerations to board members, committees, etc. and pension-like payments to previous employees, all amounts include labour market contributions. Compensation of employees also include ATP-contributions (Danish Labour Market Supplementary Pension Scheme) and the taxable value of fringe benefits. Furthermore, the total actual contributions for pension schemes are included in the Central Pensions System operated by the Danish tax authorities. Reimbursement of maternity and sickness benefits for the employer is not part of compensation of employees in the WTA.

Compensation of employees in the WTA only include earned pensions in pension funds, but exclude, for the time being, earned public service pension. The reason for this is that Statistics Denmark is not able to unequivocally identify economically active civil servants and employees in public service-like pension schemes and neither does Statistics Denmark have a system for calculating earned contributions at individual level for these groups. When this system is fully developed, earned contributions for public service pension will be incorporated as part of the compensation of employees in the WTA.

The most important methodological changes have been made by the calculation of hours in the WTA, which is now based on the paid hours of work in eIncome, whereas the Statistics on Earnings are used for converting these hours of work into hours worked. The distribution of hours throughout the 12 months of the year is calculated by means of information on paid hours in BfL during the year and hours work in the Labour Force Survey during the year.

There was previously a problem involved in the calculation of hours worked during the year. Previously, hours worked by employees were calculated on the basis of the relational equation:

- Hours worked for employees = (hours worked per job during the year) * number of jobs during the year
- Hours worked per job during the year were calculated on the basis of the Statistics on Earnings. The problem here is that minor jobs are excluded from the Statistics on

Earnings, i.e. jobs with duration of less than 1 month or less than 8 hours a week.

As the Statistics on Earnings are not compiled on the basis of a full-scale survey, hours per job were enumerated by applying the number of jobs from the Register of Employment Statistics, which contain all jobs over the year. Previously, hourly information was not available in the Register of Employment Statistics, and consequently it was impossible to assess the size of these jobs, including whether there were any bonus payments or other irregular payments or whether there were jobs with actual activity. Minor jobs were included in the number of jobs over the year from the Register of Employment Statistics.

The combination of overstated hours per job from the Statistics on Earnings with many, but also minor jobs from the Register of Employment Statistics has implied that hours worked were previously overstated.

In connection with the publishing of statistics for 4th quarter 2012 in March 2013, the method applied in calculating hours worked for self-employed and assisting spouses has also been changed.

Previously, number of hours worked by self-employed persons (including assisting spouses) was calculated as:

- =number of jobs for self-employed
- *hours worked per job for employees in the WTA
- *(hours worked by self-employed/hours for employees) for jobs in the LFS

When annual hours for self-employed and assisting spouses were calculated in the Working Time Accounts, the annual hourly data formed the basis for the employees. These data were corrected by the number of more hours worked, as stated, by the self-employed (respectively, assisting spouses) in relation to the hours worked by the employees in the Labour Force Survey. In this way, attempts are made to correct the differences in level as a result of the different types of data reports (data reported by business enterprises or by information stated by the persons in employment). Simultaneously, information on annual lengths of jobs is implicitly transferred (i.e. information on duration of jobs) from employees. Information on duration of jobs is not as such available for self-employed and assisting spouses. As self-employed and assisting spouses typically work many hours, the basis for hours worked in the main jobs was working hours for full-time employees. For the secondary jobs, it was assumed that the working time corresponded to half of the hours worked in the main jobs. When number of hours worked by employees was raised by the more number of hours worked by self-employed and assisting spouses in the Labour Force Survey, all jobs (main and secondary employment) were applied for, respectively, self-employed, assisting spouses and employees in the Labour Force Survey.

As from March 2013 the calculation has been changed (and introduced throughout the entire period as from 1st quarter 2008). Firstly, we do not want to restrict ourselves to full-time jobs for employees, as it is not expedient to apply a hourly threshold, as the calculations are affected by the bias that self-employed and assisting spouses overstate, to a great extent, than employees in the Labour Force Survey. Secondly, the LFS is conducted as a sample survey subject to statistical uncertainty, especially with regard to small groups. Consequently, we have combined the group of self-employed and assisting spouses in the calculation of average hours per job. We do not want to

base ourselves on information about secondary jobs in the LFS. The present method is described in section 1.2.

The "sideline job factor", i.e. the relationship between paid hours in sideline jobs and paid hours in main jobs ranges according to Employment Statistics for Employees (BfL) around 0.30 of the hours in the main job and not 0.5 as previously assumed. It is assumed that the relationship between hours worked and paid hours is similar in the main and sideline jobs. It is not possible for us to distribute the data from the statistics on earnings (which we apply in conversion from paid hours to hours worked) in main and sideline jobs.

The new data sources, especially eIncome-based, open up the possibility in the WTA to perform monthly calculations. Previously, the short-term sources were only available on a quarterly basis. The circumstance that employment for employees is available on a monthly basis has not only resulted in a far greater accuracy in the development over the year, including processing of data, Easter holiday, Strikes, leap years and other effects, which are of significance to the distribution during the year. This has also resulted in a greater accuracy with regard to the seasonal adjustment of the series in question, including the possibility of conducting seasonal adjustments despite the fact that the series only go backwards in time to the beginning of 2008. With the monthly data, there are enough observations to conduct the seasonal adjustment. In connection with the revision by the end of 2012 of the WTA, the work sharing between the National Accounts and the WTA has been changed, implying that the WTA make adjustments to those matters that can be adjusted at level of jobs, while the National Accounts conduct further adjustments at a more aggregated level. This change in the work sharing gives rise to greater difference between the concepts used in the WTA and those used in the National Accounts. In contrast, the work sharing of adjustments implies that adjustments are conducted, to the greatest possible extent, where the expertise is centred. Finally, the change in the work sharing has also resulted in fewer revisions in the WTA, which is, subsequently, no longer dependent on final data in the National Accounts.

7.3 Coherence - cross domain

A fundamental principle of the Working Time Accounts is to document the coherence between statistics utilized in the Working Time Accounts and to document coherence between the primary statistical data and the Working Time Accounts.

The Danish Working Time Accounts are worked out according to international guidelines.

Transitional tables between the WTA and the Register-based Labour Force Statistics (employment) and the Establishment-related Employment Statistics (jobs and compensation of employees) is published in Statistical News ("Statistiske Efterretninger") for the annual WTA. A description of the transitional tables between the WTA and the National Accounts (employment, hours and compensation of employees) can be found in the publications on the National Accounts.

The basis of the number of jobs in the Working Time Account is end of November statements of the number of jobs in the Establishment-related Employment Statistics (ERE statistics). Unlike in the ERE statistics WTA number of jobs also include jobs in business statistics below the activity limit used in business statistics and also include jobs for people in eIncome not resident in Denmark.

Employment includes persons who are temporarily absent due to leave, but who have an affiliation to a workplace in the form of a job to return to. The transformation from job to employment include deduction of the persons sideline jobs at the end of November and addition of the number of people who are either on sick leave, maternity leave or childcare leave from employment. Employment in the The Register of Employment Statistics end of November (representing average employment per day in November in the WTA) includes, in addition to RAS employment also employment for persons not resident in Denmark. The Working Time Accounts employment for self-employed and assisting spouses is defined in the same manner as in the register-based labor

force statistics (RAS), where self-employed consists of the following three groups: employers, VAT payers and other self-employed.

To get the average number of employees in Q4 WTA take an average of employment in October, November and December. The average employment during the year is calculated as the average number of employees in the 12 months of the year, or an average of employment in the four quarters of the calendar year. Similarly, the number of jobs in the year is calculated as the average number of jobs in each of the 12 months, where the number of jobs end of November in the Register of Employment Statistics represents the average number of jobs in the month of November in the WTA.

The concept of earnings in the WTA is the same as that used in the ERE statistics, but the population is slightly different because the ERE statistics operates with an activity limit (in accordance with international guidelines for business statistics), which is not used in labor market statistics (or economic statistics).

The revision in December 2012 implied a change in the division of labor between national accounts and work accounts so that the working time account adjusts what can be adjusted on job level, while national accounts make further adjustments on a more aggregate level. This change of labor division leads to greater differences between the working time accounts and national accounts figures. On the other hand it implies that adjustments are made to the extent possible where the greatest expertise is. Finally, the changes in labour division also implies fewer revisions of the Working Time Accounts, which is hereby no longer be dependent on the final data in the national accounts.

The new WTA also includes jobs for employees who do not live in Denmark, if they have jobs in companies in Denmark or on Danish ships. The WTA does not include employees of foreign companies working in Denmark the rules on hiring out of labor.

The compilation of Working Time Accounts 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 Accounts System. This implies that adjustments of existing sources cannot immediately be seen as changes of variables and concepts in the Working Time Accounts Statistics, although adjustments of the level of the specific variable may be made according to the new and improved information.

There may be several reasons for the lack of data comparability between the different statistics: - Differences in compilation methods - Differences in the population - Differences in the definitions - Differences in the margins of statistical errors - Differences in the time of publication.

7.4 Coherence - internal

See section **Overall accuracy**.

8 Accessibility and clarity

The statistics are published in:

- News from Statistics Denmark (Nyt fra Danmarks Statistik),
- in the series Statistical News ("Statistiske Efterretninger") and
- in the Statbank Denmark ("Danmarks Statistikbank").

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

8.2 Release calendar access

The Release Calendar can be accessed on our English website: [Release Calendar](#).

8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

8.4 News release

The WTA is published in News from Statistics Denmark, [see](#).

8.5 Publications

The WTA is included in the Statistical Yearbook of Chapter **Labour, earnings and income** Section **Employment**.

A report: *Integrated labour market statistics - the Labour Market Accounts and the Working Time Accounts 1995-97 (Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97)* was published in December 1998. In this report, the Working Time Accounts were presented including a far more detailed description of the applied primary sources and conceptual differences between these (The report is available at [Dst bookshop](#)).

8.6 On-line database

Data are available, free of charge, from the database [Statbank Denmark \(Danmarks Statistikbank\)](#), see [WTA-tables](#).

The quarterly tables are:

- ATR20: Quarterly Working Time Accounts distributed by Statistics Denmark's Industrial Classification of All Economic Activities (DB07), sector, type and socio-economic status (replaces ATR11KV)
- ATR24: Working Time Accounts (seasonally adjusted) distributed by industrial activity (DB07 10-grouping), type and socio-economic status (replaces ATR3KV)
- ATR26: Working Time Accounts (seasonally adjusted) distributed by sector, type and socio-economic status (replaces ATR4KV)

The annual tables are:

- ATR30: Annual Working Time Accounts distributed by Statistics Denmark's Industrial Classification of All Economic Activities 2007 (DB07), sector, type, socio-economic status and sex (replaces ATR11)
- ATR32: Annual Working Time Accounts on the basis of the National Accounts industrial classification by activity (DB07), sector, type, socio-economic status and sex (replaces ATR22)
- ATR: Index of working hours data (2010 = 100) by gender, sector and type (replacing ATRI)

The former (not continued) time series for the period covering quarters (1st quarter 1995 - 2nd quarter 2012) and the years 1995-2010* are available from StatBank Denmark under finished series.

It is not possible to draw comparisons between the new WTA and the former WTA, as the sources, population, method and concepts have been changed compared to the previous WTA.

8.7 Micro-data access

Data in the WTA is aggregated, where the number of hours worked, compensation of employees, the average number of jobs and the average employment summed to 6 digit industry level (DB), sector 2, socioeconomic status 3, sex, and 5 groups of scope of work. From this level data is summarized for publication level (including different types of industrial aggregates).

The basic material consists only of existing statistics. The primary statistical data for the compilation of quarterly working time accounts is widely stored, but detailed non-published information is not made available.

8.8 Other

The WTA transmit various data series to the EUROSTAT-STTS.

STS-variable Annex A: Industrial Annex B: Construction Annex C: Retail trade and repair Annex D: Other services Employment (sts variable 210) INDEMPPL CONSEMPL RTDEMPPL SERVEMPL Hours worked (sts variable 220) INDHOUR CONSHOUR RTDHOUR SERVHOUR Gross Wages and Salaries (sts variable 230) INDEARN CONSEARN RTDEARN SERVEARN

In addition, the WTA delivers data to internal users, especially for the national accounts, but also to other stakeholders in relation to the short term statistical forum.

8.9 Confidentiality - policy

There is usually no need to discretionate since WTA is based on aggregated data. See also Statistics Denmark [privacy policy](#).

8.10 Confidentiality - data treatment

There is usually no need to discretionate since the WTA is based on aggregated data.

However, discretion has been carried out in relation to deliveries to EU-STTS, as some industry groups is not relevant or only relevant to a very limited extent in Denmark. These are industry 2-digit NACE groups : 'Bo6', 'Bo8', 'Bo9', 'C19'.

In section **data treatment** is a description of the individual work processes in the regular operation of the WTA.

8.11 Documentation on methodology

A report: *Integrated labour market statistics - the Labour Market Accounts and the Working Time Accounts 1995-97* (*Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97*) was published in December 1998. In this report, the Working Time Accounts were presented including a far more detailed description of the applied primary sources and conceptual differences between these (The report is available at [Dst bookshop](#)).

The Working Time Accounts will currently be published in the series *Labour Marked* (Statistical News), together with the release of the main results in *News from Statistics Denmark*.

8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

9 Contact

The administrative placement of this statistics is in the division of Labour Market. The persons responsible are Michèle Naur, tel. +45 3917 3414, e-mail: mln@dst.dk and Pernille Stender, tel. +45 3917 3404, e-mail: psd@dst.dk

9.1 Contact organisation

Statistics Denmark

9.2 Contact organisation unit

Employment, Labour Market, Social Statistics

9.3 Contact name

Michèle Naur

9.4 Contact person function

Responsible for the statistics

9.5 Contact mail address

Sejrøgade 11, 2100 Copenhagen

9.6 Contact email address

mln@dst.dk

9.7 Contact phone number

+45 3917 3414

9.8 Contact fax number

+45 39 17 39 99