

**Documentation of statistics for
Employment and Compensation of Employees in National
Accounts 2023**

1 Introduction

Employment and wages in national accounts shed light on labor market developments in a way that makes it possible to compare labor market developments with developments in, for example, GDP, production, and value added, as measured in national accounts. The statistics have been revised since the last publication. In this revision, the statistics have been revised back to 1981. The purpose of the revision is to incorporate new knowledge and new methods and to ensure uniform compilation methods for all countries. Read more at https://www.dst.dk/ext/national/HR2024_over_EN--pdf

2 Statistical presentation

For many analytical purposes it is useful to include information on labour inputs in production. In such cases, definitions of labour inputs must be consistent with the concepts used in national accounts. Labour inputs in production are shown by employment (measured by the number of persons employed) and hours worked.

2.1 Data description

The National Accounts are designed to present a complete picture of the economy. The National Accounts provide the conceptual and actual tool to bring to coherence all economic activity and development in Denmark.

For many analytical purposes it is useful to include information on labour inputs in production. In such cases, definitions of labour inputs must be consistent with the concepts used in national accounts.

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2.2 Classification system

The national accounts series of employment and hours worked are compiled for the total economy, the institutional sector *general government* and by national accounts industries. The same applies to compensation of employees, however in addition, a more detailed sector disaggregation is compiled for the institutional sector accounts.

Statistics Denmark's [industrial classification](#) 2007 (DB07), which is a Danish version of the EU NACE, rev. 2. and the UN's ISIC, rev. 4, contains a number of standard classifications: the 127, 36, 19, and 10 classifications.

The final national accounts classification of 117 industries corresponds (with few deviations) to the 127 standard classification, and the 117 industries of the national accounts can be aggregated to the other standard classifications. For this reason, national accounts figures can easily be compared to and used in connection with other statistics that are based on the DB07-standard classifications.

However, comparisons with other statistics at a detailed industry level will often show differences, partly because of differences in definitions of variables, and partly because of the calendar year delimitation of the national accounts and its requirement of total coverage of the economic activity.

Internationally there is a high degree of comparability with the national accounts of other countries because the Danish national accounts are compiled in accordance with the definitions in the European System of National Accounts ESA2010.

2.3 Sector coverage

All sectors.

2.4 Statistical concepts and definitions

Labour Inputs and Compensation of Employees in National Accounts : The national accounts' employment, compensation of employees and hours worked are compiled in accordance with the definitions in the EU's [European System of National and Regional Accounts](#) (ESA2010), which is a European version of the UN's [System of National Accounts](#) (SNA2008).

- The employment figures contain persons supplying their labour in the production of goods and services in Denmark regardless of their place of residence or whether their activities are within the law, as long as the production is within the production boundary of national accounts. The employment figures reflect the average number of employed persons in the course of the period (year or quarter). Persons temporarily absent from their work but still have a formal attachment to their job, e.g. persons on maternity leave, are included in the employment figures. Only the primary job is reflected in the statistics.
- Hours worked are actual hours worked, e.g. paid vacation is excluded and unpaid overtime is included. Hours worked include working time in primary jobs as well as secondary jobs if applicable.
- Compensation of employees is defined as the total remuneration in cash and kind payable by an employer to an employee. Compensation of employees can be divided into wages and salaries in cash and in kind and employers' social contribution. Wages and salaries include any social contributions taxes etc. payable by the employee. Employers' social contributions cover payments made by the employer to social security funds as well as private funded schemes. In the case of civil servants, payments are made directly from the employer to the employee or former employee without involving insurance firms or creating a fund to cover these future obligations. To reflect the future obligations incurred by the employer in these instances, an imputed social contribution is calculated.

2.5 Statistical unit

The statistical unit in national accounts industries is the local kind-of-activity unit (local KAU) and is different from the institutional unit, which is an economic entity, typically enterprises, that is capable of engaging in economic activities and transactions with other units in their own.

An institutional unit can comprise one or more local KAUs, but a local KAU belongs to one and only one institutional unit. Local KAUs are grouped by industries, institutional units are grouped by institutional sectors.

2.6 Statistical population

All units generating Danish economic activity.

2.7 Reference area

All persons regardless of national residence, who deliver labour inputs to the production of goods and services within the *production boundary* of Denmark's national accounts.

2.8 Time coverage

Consistent annual time series regarding employment, compensation of employees and hours worked go back to 1966. Quarterly time series go back to 1990, 1st quarter.

2.9 Base period

Not relevant for these statistics.

2.10 Unit of measure

The national accounts' employment is measured by the number of persons employed and the volume of labour input in production is measured by hours worked. Compensation of employees is measured by DKK.

2.11 Reference period

The reference period of the figures in the final, annual national accounts is the calendar year whereas the reference period of the quarterly national accounts are the quarters. Flow figures refer to transactions during the year or the quarter, while employment figures are yearly or quarterly averages.

2.12 Frequency of dissemination

Annual and quarterly respectively.

2.13 Legal acts and other agreements

Legal authority to collect data: Act on Statistics Denmark §6 and §§8 - 12.

EU regulation: European Parliament and Council Regulation (EU) No 549/2013 of 21 May 2013 on the European system of national and regional accounts in the European Union (ESA2010) (EUT L 174 26.6.2013, p.1).

2.14 Cost and burden

No direct burden of respondents.

2.15 Comment

For further information, please contact Statistics Denmark.

3 Statistical processing

The primary statistical basis for compiling employment, compensation of employees and hours worked in Denmark's national accounts is the Working Time Accounts (WTA), which integrates the existing labour market statistics.

In selected areas, alternative sources are applied in order to obtain consistency with the remaining national accounts, and supplementary sources are utilized in order to fulfill the obligations of ESA2010.

3.1 Source data

The primary sources of the annual compilation of employment, compensation of employees and hours worked are:

- The annual working time accounts balanced on national accounts industries
- Statistics on general government
- Institutional sector accounts
- Labour force survey (LFS)
- National accounts in other respects

The primary sources for the compilation of quarterly data are:

- The quarterly working time accounts balanced on national accounts industries
- Quarterly government finances
- The balance of payments

3.2 Frequency of data collection

Quarterly national accounts are published eight times during a year. Annual national accounts are published three times during a year.

3.3 Data collection

Not relevant for these statistics.

3.4 Data validation

The data validation is carried out in three steps according to the main process of setting up a national accounts system.

1. In the first step a thorough validation of primary data sources is carried out. For more information reference is made to the specific documentation of statistics of each primary source.
 - 1 In the second step an initial data validation is carried out when the national accounts are created. The national accounts receive and process the data on a unit level, which allow national accountants to go back to each data source for more information.
2. In the final step a validation of data sources is carried out with focus on coherence between sources, when production and profits are confronted with labour inputs and compensation of employees.

3.5 Data compilation

The data compilation is described under *data validation*.

3.6 Adjustment

No data corrections are made besides what is described under *data validation*.

4 Relevance

As fundamental data for everyone dealing with socioeconomic conditions like economic ministries, organizations, the press, the financial sector, larger companies, students and researchers. Quarterly national accounts are used as the basis for analyzing the economic development. National accounts continuously evaluate feedback from users via national and international forums.

4.1 User Needs

Important users are economic ministries, organizations, the press, the financial sector, larger companies, students and researchers. National accounts are used as the basis for analyzing the economic cycles, structure and long term development.

4.2 User Satisfaction

Go to [Committee for Economic Statistics](#) (available in Danish only).

4.3 Data completeness rate

The National Accounts is in alignment with the following regulations:

- Council Regulation (EU) No 549/2013 of May 21 2013 on the European system of national and regional accounts in the European Union (ESA2010) (OJ L 174 26.06.2013, p. 1).
- Commission Decision 98/715 Official Journal of the European Communities, 16 December 1998, L 340, p. 33.

5 Accuracy and reliability

The uncertainty in national accounts figures is closely linked to the reliability of the data sources used. Figures for employment, compensation of employees, and hours worked are primarily based on processed statistics derived from administrative registers. These data are compiled and processed within a consistent framework, making the estimates relatively reliable especially for the final structural years. However, minor adjustments are made during the data processing – for instance, to account for the shadow economy, illegal economic activities, and unpaid work. These components are inherently more uncertain, as they are more difficult to measure accurately.

5.1 Overall accuracy

No formal uncertainty estimates are available. However, there are uncertainties in the sources used. The main source for the compilation of the National Accounts is the Working Time Accounts, which themselves integrate a range of data sources. The uncertainty related to this is described in section on accuracy and reliability in the [documentation of statistics](#) (WTA). In addition, there is uncertainty associated with the processing of the Working Time Accounts, where several adjustments are made to ensure that the labour input figures are comprehensive and comply with ESA 2010. The main uncertainties in relation to these adjustments concern the shadow and illegal economy as well as unpaid hours, which are based on uncertain sources and assumptions. A decomposition of these contributions can be found in a [transition table](#).

5.2 Sampling error

Not relevant for these statistics.

5.3 Non-sampling error

In some cases, the definitions in WTA do not follow the national accounts' definitions, particularly when the activity-based industry classification in the national accounts deviates from the traditional industry classification. This leads to inter alia the transfer of wages, employment, and hours between industry and trade. For the most recent preliminary year, there is greater uncertainty because the figures from the accounting statistics used for these transfers are not yet available. The structure from the latest available year will be used instead. This can have an impact on the productivity.

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

When the national accounts were based on the definitions in ESA2010, Denmark's national accounts underwent a major revision in September 2014. This involved a thorough examination and quality evaluation of all levels. In 2024 the national accounts has been revised again.

A reasonable accuracy of the national accounts figures is maintained by balancing the national accounts at a very detailed level.

The inaccuracy of the national accounts figures relates to the inaccuracy of the various sources used. In relation to employment, compensation of employees and hours worked, the combination of primary sources consisting of official statistics based on register data and the use of a coherent framework facilitating cross checks help maintain a reasonably accuracy of the figures. In addition, the conceptual consistency and, over time, the uniform adaptation of the sources contribute to reduce the inaccuracy of the national accounts figures. In particular, the combination of the primary sources into a coherent system in many cases uncovers errors, which therefore are not reflected in the final national accounts.

Quarterly figures for employment, compensation of employees and hours worked are primarily based on quarterly trends of the working time accounts (WTA). The WTA-basis underlying the first quarter edition is a preliminary, unpublished version. The revised quarter editions are based on preliminary, published WTA-versions. Inaccuracy of preliminary versions of WTA as well as the adjustment of the statistics to conform to the national account framework will affect the reliability. However, the juxtaposition in the framework of the national accounts contributes to reduce the inaccuracy.

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 final statistics are published 3 years after the reference year. At the same time preliminary statistics are published for the two subsequent years. The final year and the first preliminary year are based on the final structural years for the Working Hours Account, while the latest preliminary year is based on a forecast of the Working Hours Account.

The quarterly series are revised on a continuous basis. As a principal rule only quarters in the current year are revised. When new annual data is published the quarterly data is revised to ensure consistency with annual data. At the same time quarters of the current year are revised. The first preliminary estimate for the first quarter is based on a data basis where the first two months of the quarter are based on a preliminary internal calculation of the Working Time Account, while the last month of the quarter is a forecast made in connection with the seasonal adjustment (X13-ARIMA-SEATS). The development of national accounts wages, employment and hours worked follows, as a general rule, the development of the Working Time Account for the non-seasonally adjusted figures.

6 Timeliness and punctuality

The quarterly national accounts are published first time 50 days after the end of the quarter and in a revised form 90 days after the end of the quarter. The quarterly sector accounts are published 90 days after the end of the quarter. The statistics are published according to schedule. The statistics are published according to schedule.

6.1 Timeliness and time lag - final results

The quarterly national accounts are published first time 50 days after the end of the quarter and in a revised form 90 days after the end of the quarter. The quarterly sector accounts are published 90 days after the end of the quarter.

First version of preliminary yearly national accounts figures are published end of March the following year. The final figures are published 3 years after the reference year.

6.2 Punctuality

The quarterly and annual statistics are published according to schedule.

7 Comparability

It is a fundamental that the national accounts to the largest possible extent are comparable over time. This means e.g. that new sources always have to be adapted to the concepts of the national accounts, and that changes of existing sources cannot be seen directly as changes of variables and concepts in the national accounts. The quarterly national accounts are consistent with the annual national accounts. Internationally there is a high degree of comparability with other countries because its compiled in accordance with the definitions in the European System of National Accounts ESA2010.

7.1 Comparability - geographical

Internationally, there exists a high degree of comparability with the national accounts of other countries, since the Danish national accounts are compiled in accordance with the definitions in the European System of National Accounts (ESA2010).

7.2 Comparability over time

It is a fundamental imperative that national accounts to the largest possible extent are comparable over time. This means e.g. that new sources always have to be adapted to the concepts of the national accounts, and that changes of existing sources cannot be seen directly as changes of variables and concepts in the national accounts statistics.

However, fundamental changes of nomenclatures, e.g. industrial classification or consumption classification, invariably result in changes in the national accounts, as was the case recently with the introduction of Statistics Denmark's latest industrial classification DBo7.

7.3 Coherence - cross domain

Statistics Denmark's [industrial classification](#) 2007 (DB07), which is a Danish version of the EU NACE, rev. 2. and the UN's ISIC, rev. 4, contains a number of standard classifications: the 127, 36, 19, and 10 classifications.

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The quarterly national accounts are consistent with the annual national accounts.

Compensation of Employees can be found for example in StatBank tables NAHO2 and NKHO2.

Internationally there is a high degree of comparability with the national accounts of other countries because the Danish national accounts are compiled in accordance with the definitions in the European System of National Accounts ESA2010.

7.4 Coherence - internal

By definition, there is complete internal consistency in national accounts.

8 Accessibility and clarity

These statistics are published in a Danish press release, at the same time as the tables are updated in the StatBank. In the StatBank, these statistics can be found under the subject [National accounts by industry](#) and [Complete national accounts](#). For further information, go to the subject page] (<https://www.dst.dk/en/Statistik/emner/oekonomi/nationalregnskab>).

8.1 Release calendar

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

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.

8.2 Release calendar access

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

8.4 News release

These statistics are published quarterly in a Danish press release

8.5 Publications

The statistics were previously included in these now discontinued publication series:

- [Statistiske efterretninger](#)
- Chapters in [Statistical Yearbook](#) og [Statistical Ten-Year Review](#)

As well as in the annual publication [Nationalregnskab](#).

8.6 On-line database

The statistics are published in the StatBank under in the following tables:

- [NABB10](#): Employment (10a3-grouping) by socioeconomic status, industry and time
- [NAHB](#): Employment and population by socioeconomic status and time
- [NKHB](#): Employment and population by socioeconomic status, seasonal adjustment and time
- [NKBB10](#): Employment (10a3-grouping) by socioeconomic status, industry, seasonal adjustment and time
- [NABB19](#): Employment (19a2-grouping) by socioeconomic status, industry and time
- [NABB36](#): Employment (36a2-grouping) by socioeconomic status, industry and time
- [NABB69](#): Employment (69-grouping) by socioeconomic status, industry and time
- [NABB117](#): Employment (117-grouping) by socioeconomic status, industry and time

8.7 Micro-data access

Data is not available additionally detailed than published.

8.8 Other

Internal deliveries to [ADAM](#).

8.9 Confidentiality - policy

[Data Confidentiality Policy](#) for Statistics Denmark is applied.

8.10 Confidentiality - data treatment

Not relevant for these statistics.

8.11 Documentation on methodology

Methodological documents (in Danish) related to the national accounts statistics can be found under Documentation on the topic page [Nationalregnskab](#).

Specific information about Denmark's 2024 benchmark revision: [Major revision of national accounts](#).

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 these statistics is in the division of National Accounts, Climate and Environment, Economic Statistics. The contact person is Martin Brandstrup, tel.: + 45 2380 5750, and e-mail: BRN@dst.dk.