

Documentation of statistics for Quarterly Labour Force 2024

1 Introduction

The purpose of the Quarterly Labour Market Status (KAS) is to provide a description of the Danish population's affiliation to the labour market. KAS is an averaging of the population's affiliation to the labour market per quarter and per year and is published annually. KAS covers the whole population from 2017 and on, while it covers the employed part of the population 1st. - 4th. quarter from 2008 to 2017.

2 Statistical presentation

The Quarterly Labour Market Status (KAS) is an annually individual-based averaging which is calculating the Danish population's affiliation to the labour market per quarter and per year. The statistic is among other things also distributed on information about demography and information about the work place for employees. The statistic is published in StatBank Denmark.

2.1 Data description

KAS is published annually with an averaging of the population's main attachment to the labour market per quarter in the year.

In KAS the population can be divided into three main groups:

- Employed persons
- Unemployed persons
- Persons outside the labour force

The statistic is published with background information that are attached to either the person or the work place where the person is employed. Information about the person are:

- demographic information (gender, age, ancestry)
- educational information (status of education)

The information about the work place are among others:

- industry
- sector
- workplace address

2.2 Classification system

The Quarterly Labour Market Status (KAS) is based on the Labour Market Account (LMA). LMA is a longitudinal register which contains information about the population's primary attachment to the labour market on every day of the year. LMA classifies the population's primary attachment to the labour market according to international guidelines from ILO (International Labour Market Organization). The classification is called ICSE (International Classification of Status in Employment). The ILO guidelines focus on survey based statistics. The guidelines are therefore operationalized to use for LMA since it is a register-based statistics. The purpose of KAS is to measure employment and the labour force, and therefore, according to the ILO, a short reference period shall be used. The ILO guidelines consist of e.g. a set of rules for prioritizing the main connection to the labour market. The guidelines prescribe that employment has higher priority than unemployment and other activities outside of the labour force. On the basis of these guidelines the key variable in AMR and KAS socioeconomic status is thus formed.

Socio-economic status In LMA and KAS, a short reference period is used.

Overall, the population is divided into three groups:

- Employed
- Unemployed
- Persons outside the labour force

Employed persons perform work for at least one hour during the reference week and who are employed on the last working day of November. The employed are either employees, self-employed, or assisting spouses. For the self-employed and assisting spouses, information on the number of working hours is not available, and they are therefore identified on the basis of performing work that generates income. The self-employed are persons who own a personally owned business, typically a sole proprietorship or a partnership. Assisting spouses are persons who receive a share of the business profits from their spouse. Assisting spouses with a salary agreement are counted as employees. Persons who are temporarily absent are also counted as employed. This applies to employees with temporary absences of less than 45 days, as well as employed persons who are temporarily absent due to illness exceeding the employer's period or on parental leave, but who maintain a permanent connection to an employer.

The socio-economic status of employees follows a skill level based on the DISCO-08 occupational classification. Employees are thus divided into the following groups:

- Employees with managerial responsibilities
- Employees at the highest level
- Employees at the intermediate level
- Employees at basic level
- Other employees
- Employees not specified (u.n.a.)

The skill level can be achieved through formal education as well as through training and practice. For a description of the levels, principles and codes of the occupational classification, see [Danish Statistics Occupational Classification \(DISCO-08\)](#). Information on the skill level of employees working for the state, municipalities or regions is taken from the wage statistics for the state and municipal sectors, respectively. For privately employed employees, the information is either taken from the wage statistics for the private sector or is generated by imputation based on, among other things, the highest level of education completed and the industry in which the person is employed.

Activated persons who are in supported employment and receive a salary (A-income subject to labor market contributions) are also counted as employed. This includes persons in wage-subsidized jobs, flex jobs, sheltered jobs, service jobs, adult apprentices, and persons undergoing vocational rehabilitation. Persons in company internships do not receive a salary and are therefore not counted as employed.

The primary attachment to the labor market is determined based on the international guidelines from the ILO (International Labour Organization). These guidelines include, among other things, a set of priority rules, where employment is given higher priority than unemployment, and unemployment is given higher priority than other states outside the labor market.

Employed persons, together with unemployed persons, constitute the economically active population – the labour force.

Unemployed persons include persons who, during the reference period:

- are not in work

- are available for work, and
- are seeking work.

Similar to the official unemployment statistics, the unemployed in RAS are calculated as gross unemployed persons. Gross unemployed persons consist of *activated* recipients of unemployment benefits and social assistance who are assessed as ready for work, as well as net unemployed persons, who are *unemployed* recipients of unemployment benefits and social assistance who are assessed as ready for work. Read more on Statistics Denmark's website [Unemployment concepts](#). Gross unemployed persons who are activated in a paid job are counted as employed in RAS.

Persons outside the labour force also include old-age pensioners, persons in education, children and youth, as well as the group "other persons outside the labor force." The "other persons outside the labor force" is a residual category that cannot be placed in a socioeconomic category based on information in Statistics Denmark's registers. This group may consist of:

- Homemakers
- Young people supported by their parents
- Persons who earn a living from undeclared work
- Discouraged unemployed persons who have given up seeking work and are not registered as unemployed

States and activities outside the labor force are prioritized based on the reliability of the underlying information and the degree of potential attachment to the labor market. The prioritized order is as follows:

- Persons receiving public support: persons employed without pay, persons undergoing guidance and upskilling, recipients of vocational rehabilitation benefits, maternity or sickness benefits during unemployment, social assistance, introduction benefits, early retirement, and flex benefits. If a person receives multiple types of public support, the state with the highest number of weekly hours is chosen as the primary connection to the labor market.
- Persons in education
- Children and youth (i.e., persons under 16 years of age)
- Recipients of old-age pension or other pensions
- Other persons outside the labor force

Industrial Classification DBo7 The statistic follows the Danish Industrial Classification of all Economic Activities 2007 ([DBo7](#)).

Sector KAS can be distributed on sectors according to ESA2010

Municipalities KAS is published at [municipality level](#) in StatBank Danmark.

2.3 Sector coverage

The statistic covers all sectors.

2.4 Statistical concepts and definitions

Employment rate: The number of employed persons as a proportion of a given population group

Activity rate: The number of individuals in the labor force (employed and unemployed) as a proportion of a given population group

2.5 Statistical unit

Averaging of the number of persons in the population.

2.6 Statistical population

The population is persons in the population.

2.7 Reference area

Denmark, by [Regions, Provinces and Municipalities](#).

2.8 Time coverage

2008-2024 for employed persons and 2017-2024 for labour market status.

2.9 Base period

Not relevant.

2.10 Unit of measure

Persons.

2.11 Reference period

KAS is an annual statistic which provides an average of the population's primary attachment to the labour market quarterly and yearly.

2.12 Frequency of dissemination

The statistic is published annually.

2.13 Legal acts and other agreements

§ 6 in Law about Statistics Denmark.

2.14 Cost and burden

The statistics is compiled on administrative and statistical registers. Therefore there is no response burden.

2.15 Comment

More information about KAS on [employment](#)

3 Statistical processing

The quarterly labour force statistic is based on the Labour Market Account (LMA) which is a longitudinal register. LMA contains information about the population's primary attachment to the labour market on every day of the year. KAS is an average calculation of the population's primary attachment to the labour market broken down by quarters and years. If a person is employed for 91 days in a quarter of 91 days, that person counts as 1 employed. If a person is employed for 30 days, unemployed for 15 days and in education for 46 days, that person counts as 30/91 employed, 15/91 unemployed and 46/91 in education in the quarter.

3.1 Source data

KAS is based on the Labour Market Account (LMA). The data sources in LMA are various internal and external registers, e.g.:

- eIncome register
- The central business register
- The register with information about persons receiving public benefits
- The educational register
- The employment classification module
- The income register
- The population register
- The register for persons receiving maternity or sickness benefit

3.2 Frequency of data collection

The statistic is annually.

3.3 Data collection

During the production of the Labor Market Account (AMR_UN), an initial data processing of the individual data sources takes place, and these are stored in a source database. Subsequently, a cross-sectional data processing (also called overlap processing) is carried out, where information from the various registers is compared and corrected if necessary. Finally, the data are combined with other registers to add background information and to classify the entire population.

3.4 Data validation

The data foundation for KAS is The Labour Market Account (LMA). LMA is produced both with and without an hourly standardization. The non-hourly standardized longitudinal register (LMA-UN) is the data foundation for RAS, and therefore the data validation takes place in LMA-UN.

During the production of AMR the most important data validation are:

1. Employee job data: The data source is the eIncome Register. Information is extracted on the workplace where the job is performed. The workplace information forms the basis for data on industry, sector, and geography. In some cases, the employer's reporting is incorrect, and corrections are made as needed. The eIncome Register also contains information on the occupational code (DISCO_o8) for employees in companies covered by the wage statistics. If the company is not covered by the wage statistics, the occupational information is added from the Occupational Classification Module when available.
2. Self-employed data: The data sources are the Business Statistics Register, the Income Statistics, the eIncome Register, and the Unemployment Statistics. These sources are individually validated when compiling information on the self-employed.
3. Absence due to sickness and maternity/paternity leave: The data come from the Maternity and Sickness Benefits Statistics. The data are processed to provide a preliminary determination of whether the absence is from employment or unemployment.
4. Cross-sectional data processing / data validation

The purpose of the cross-sectional data processing and validation is to delete, correct, or create labor market statuses in cases where the different data sources do not match. This is done through so-called overlap processing. The main overarching areas are:

- Selection of jobs for the self-employed based on a set of criteria
- Determination of whether absence due to maternity/paternity leave or sickness is from employment or unemployment
- Harmonization of information on supported employment

Subsequently, the data are linked to other registers and sources as needed.

3.5 Data compilation

Data processing in AMR takes place in several steps. The first step involves checking and processing data from various sources, which are then loaded into a source database. Data are loaded on people receiving public benefits, employees, self-employed, assisting spouses, students, recipients of maternity/paternity and sickness benefits, and pensioners. Additionally, paid hours are imputed for the self-employed and assisting spouses. The second step involves overlap processing of the data, during which “illegal overlaps” between labour market statuses are corrected and links between different statuses are established.

After the overlap processing, the population is classified according to international guidelines from the ILO, as described in more detail under "Groupings and Classifications". The guidelines include a set of priority rules for determining the primary attachment to the labor market. According to the guidelines, employment has higher priority than unemployment, while unemployment has higher priority than statuses outside the labor force. Subsequently, the data are linked to the Business Statistics Register to obtain background information (industry, sector, workplace municipality, etc.) about the workplaces of employed individuals. The data are also linked to the population statistics to construct the resident population in Denmark. In this process, the socio-economic group “other persons outside the labor force” is also imputed; these are individuals residing in Denmark who do not belong to a known socio-economic group.

The AMR-UN register is then formed. This is a non–full-time equivalent longitudinal register containing information on the population’s attachment to the labor market, and it forms the data basis for RAS. In RAS, the population’s attachment to the labor market is measured at the end of November, but based on AMR-UN, it is possible to measure labor market attachment at arbitrary points during the year.

AMR is also produced in a full-time equivalent version (AMR-TN). In this version, the entire population always has a labor market attachment of 37 hours per week. Some of these hours may, for example, be as employment, while other hours may be education or simply hours without attachment to any known socio-economic category. Read more about statistical processing in LMA] (<https://www.dst.dk/en/Statistik/dokumentation/documentationofstatistics/labour-market-account/statistical-processing>).

3.6 Adjustment

No corrections of data besides what is described under data validation and data compilation.

4 Relevance

The quarterly labour force statistic (KAS) is primarily used to structural analysis of the labour market, because the statistic has a very detailed level of information. The statistic is therefore relevant to external as well as internal users and as foundation for analyzing the populations employment over the year.

4.1 User Needs

KAS is first published in 2018 and has been requested especially by users of RAS. RAS is an annually status at the end of November on the populations primary attachment to the labour market. There are users of RAS who wish to be able to have information about the attachment to the labour market for the population broader during the year than on a specific day in the year. The statistic is furthermore relevant to municipalities with wide seasonal fluctuations in the employment over the year due to for example tourism. Besides this there is a general wish to clarify the populations attachment to the labour market in the best possible way, and with KAS as supplement to the existing and long series in RAS a better foundation for clarifying the labour market attachment for the population can be provided.

4.2 User Satisfaction

KAS is first published in 2018 with information about the populations employment 2008-2016. From 2019 and on the rest of the population are also included. The user satisfaction has therefore not been evaluated. The user's committee for labour market statistics is involved in the development of KAS.

4.3 Data completeness rate

There are no regulations in this area. KAS follows as good as possible the guidelines from the ILO (International Labour Organization). The ILO is a UN organization that, among other things, sets international guidelines for how the population's attachment to the labor market should be measured. ILO guidelines are primarily aimed at survey-based measurements (such as the Labour Force Surveys), where individuals provide information about their labor market attachment themselves. Since RAS is based on register data, the ILO requirements have been operationalized for use in a register-based measurement. The ILO guidelines include a set of priority rules for determining the primary attachment to the labor market. According to these guidelines, employment has higher priority than unemployment, while unemployment has higher priority than statuses outside the labor force.

5 Accuracy and reliability

KAS is an average calculation of the populations primary attachment to the labour market, and the statistic uses the Labour Market Account (LMA) as data source. KAS does not have the same uncertainties as statistics based on surveys. KAS is produced by using a wide range of data sources which are integrated, corrected, and harmonized, and can therefore measure the populations attachment to the labour market significantly better than the single statistics can.

5.1 Overall accuracy

KAS is a register-based total count of the people resident in Denmark, and is used to measure the populations attachment to the labour market. Regarding sources of uncertainties it's mainly the following:

Determination of the primary attachment to the labour market for a person with more than one job at the end of November: In these cases the primary job is determined by the number of hours worked. The job with the most hours is defined as the primary. For self-employed and assisting spouses the information about working hours is always imputed, and in some cases that goes for employees as well. For employees the imputed part has though decreased from 14 pct. in 2008 to barely 4 pct. in 2017. The imputation can in some cases mean that the wrong job is pointed out as the primary.

Number of self-employed and assisting spouses: The periodisation of jobs for self-employed and assisting spouses is more uncertain than for employees. A series of information is used to validate whether the person actually is active in a job as self-employed/assisting spouse. There will however be a more significant uncertainty about the number of self-employed and assisting spouses than about the number of employees.

Employed distributed by industry: There are some uncertainties concerning which workplace the specific employee job is situated, because a number of reports from the employers are insufficient. The insufficient reports causes a necessary search for and correction of errors regarding the workplaces, but even though the errors are corrected in the best possible way there will continuously be uncertainties about parts of the information about workplaces - especially on a detailed level. The uncertainties are especially linked to the detailed distributions of employment in the public sector and particularly on the municipality sector. In that area the distributions on industries within "residential care activities" (industry 87) and "social work activities without accommodation" (industry 88) are uncertain on a more detailed level, but also between the two industry. Detailed distributions on "Education" (industry 85) are also affected by uncertainties.

5.2 Sampling error

Not relevant.

5.3 Non-sampling error

No further comments.

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

KAS is based on the labour market accounts (AMR). In AMR, a wide range of data sources are integrated, checked for errors, and harmonized in a statistical system. Therefore KAS can provide a broader and more coherent picture of the labor market than individual statistics can. At the same time, RAS is a complete enumeration of the population, meaning it does not carry the same uncertainty as statistics based on samples.

The following uncertainties are associated with the statistics:

Determination of the primary connection to the labor market when a person has multiple jobs at the end of November: In such cases, the primary job is selected as the job where the person normally works the most hours. This information is imputed for self-employed persons and assisting spouses, and in some cases also for employees. For employees, the proportion has fallen from 14 pct. in 2008 to around 6 pct. in 2024. Imputation can, in some cases, result in the wrong job being designated as the primary job.

Number of employed self-employed persons and assisting spouses: For self-employed persons and assisting spouses, the periodisation of jobs throughout the year is more uncertain than for employees. Various information is used in the production to assess whether the person is actually active in a job as self-employed or assisting spouse. There is, however, greater uncertainty associated with counts of self-employed persons and assisting spouses than with counts of employees.

Employment by industry: There is some uncertainty regarding the workplace of individual employee jobs, as some employer reports are incomplete. Incomplete reports require error checking and correction of workplaces. Even when errors are corrected as thoroughly as possible, some uncertainty remains regarding parts of the workplace information, particularly at a detailed level. These uncertainties are especially relevant for detailed distributions of employment by industries in the public sector, particularly at the municipal level. Here, distributions by industries within institutional care (industry group 87) and social services without institutional care (industry group 88) are uncertain at a more detailed level, as well as between these two groups. Detailed distributions within education (85) are also associated with some uncertainty.

Subdivision of employees by skill level (i.e., managers, employees at upper level, employees at medium level, employees at basic level, other employees, and employees not specified) is based on information about work functions reported to Statistics Denmark's wage statistics. Smaller private sector enterprises (fewer than 10 full-time employees) are not required to report this information, and the classification of employees by skill level is instead based on imputation where possible. In such cases, the quality of the information on skill level is therefore significantly lower.

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

When RAS is published data is considered final. However data can be revised as a result of changes in methods or new information available.

6 Timeliness and punctuality

From the publication of figures for the end of November 2018 onwards, the release is carried out in two stages. In the first release, persons outside the labor force are grouped together in a single category. This publication takes place approximately 11 months after the reference point. In the second publication, which occurs approximately 15 months after the reference point, persons outside the labor force are divided into different socioeconomic groups.

6.1 Timeliness and time lag - final results

No preliminary figures are published.

6.2 Punctuality

These statistics are published without delay, with reference to the announced time of publication in the release calendar.

7 Comparability

The statistics were first published in 2018 with data for employed persons in the first to fourth quarters of 2008-2016. With the exception of a change in the occupational classification in 2010, the statistics for employed persons are comparable throughout the period 2008-2016. From 2017, in addition to persons in employment, the statistics also include the rest of the population with information about their primary attachment to the labour market. KAS is based on administrative registers with national characteristics, which makes it difficult to compare the statistics internationally.

7.1 Comparability - geographical

KAS is based on administrative registers with national characteristics, which makes it difficult to compare the statistics internationally. KAS follows the international guidelines from the International Labour Organization (ILO) for estimating the population main attachment to the labour market. The ILO guidelines are however pointed towards survey-based statistics (the Labour Force Surveys), where the person itself provides the information about the connection to the labour market. Since KAS on the other hand is based on register data, the ILO guidelines are adjusted for use for RAS. It is therefore recommended that the Labour Force Surveys (LFS) are used for international comparisons, while KAS is mainly used to illustrate national structures.

7.2 Comparability over time

The statistics are comparable for persons employed throughout the period 2008-2024, with the exception of a change in the occupational classification.

Changes in classification of occupation

The level of skills for employees are determined by DISCO-08, which is reported to the wage statistic. From 2010 the classification is changed, which means that the level for 2008-2009 are based on DISCO-88, while it from 2010 is based on DISCO-08. The changes are due to changes in the international classification behind: [ISCO](#). The change causes the number of employees on highest level to increase with about 200,000 persons, while the number of employees on the middle level dropped proportional. The change had impact on among other large groups of employees all pedagogic work, some nursing work and some from the financial sector.

Change in population extraction

From 2017 onwards, the statistics include not only the employed population but also the rest of the population. This is possible because, starting in 2017, the population is extracted so that the time span between the reference and registration dates is consistent month by month. This means that, for example, comparable employment rates can be calculated for each quarter.

7.3 Coherence - cross domain

The number of people employed and unemployed in KAS deviates from other statistics. You can read more about the differences below:

Registerbased labour force statistic (RAS)

RAS is a status over the populations primary attachment to the labour market on the last work day of November, and has since 2015 (like RAS) used LMA as data foundation.

See also the documentation of statistics for [Register-Based Labour Force Statistics](#).

7.4 Coherence - internal

KAS is based on the Labour Market Account (LMA) which is compiled on a number of different sources. KAS is the result of an average calculation of the population's primary labour market attachment in every day in the quarter in LMA.

8 Accessibility and clarity

The statistics are published in the StatBank under [Quarterly employed persons](#).

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

Not relevant.

8.5 Publications

No publications planned.

8.6 On-line database

The statistics are published in the StatBank under [Quarterly employed persons](#) in the following tables:

- [KAS200](#): Average activity and employment rates by region, ancestry, age, sex, and period
- [KAS201](#): Average population by region, socioeconomic status, ancestry, age, sex and period
- [KAS202](#): Average population by socioeconomic status (detailed), age, sex and period
- [KAS204](#): Average activity and employment rates by country of origin, frequency, age, sex and period
- [KAS205](#): Average population by country of origin, socioeconomic status (detailed), age, sex and period
- [KAS208](#): Average population by country of origin, socioeconomic status, age, sex and period
- [KAS209](#): Average population by region, education, socioeconomic status (detailed), age, sex and period
- [KAS210](#): Average population 13-70 years by region, socioeconomic status, age, sex and period

The statistics are published in the StatBank under [Quarterly labour force statistics, employment](#) in the following tables:

- [KAS300](#): Average number of employed by industry (DB07 127-grouping), socioeconomic status, age, sex and period
- [KAS301](#): Average number of employed by region (work place), industry (DB07 36-grouping), socioeconomic status, age, sex and period
- [KAS302](#): Average number of employed by region (residence), industry (DB07 36-grouping), socioeconomic status, age, sex and period
- [KAS305](#): Average number of employees by region (workplace), sector, age, sex and period
- [KAS307](#): Average number of employees by industry (DB07 36-grouping), sex and period
- [KAS308](#): Average number of employed by country of origin, industry (DB07 36-grouping), socioeconomic status, age, sex and period
- [KAS309](#): Average number of employed by industry (DB07), sex and period
- [KAS310](#): Average number of employed by region (residence), education, industry (DB07 36-grouping), age, sex and period
- [KAS311](#): Average number of employed by industry (DB07 127-grouping), ancestry, sex and period

8.7 Micro-data access

KAS is based on LMA (AMR_UN) which is available through Statistics Denmark's researcher arrangement (Forskningsservice) under consideration of the [general rules of anonymity in Statistics Denmark](#).

8.8 Other

LMA is annually being delivered to Statistics Denmark's Customer Centre and Statistics Denmark's researcher arrangement (Forskningsservice).

8.9 Confidentiality - policy

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

8.10 Confidentiality - data treatment

Since KAS is an average calculation no discretion has been done on data published in the Statbank.

8.11 Documentation on methodology

Documentation on methodology only in Danish.

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 Labour Market, Social Statistics. The contact person is Pernille Stender, tel.: + 45 2492 1233, and e-mail: PSD@dst.dk.