

**Documentation of statistics for  
National Accounts 2018**

## 1 Introduction

The national accounts are a description of a country's economy and its development. It consists of a description of the economy as a whole and the economic transactions between individuals, companies and institutions. The national accounts also include transactions between Denmark and abroad. The first Danish national accounts date back to the 1930s. Consistent time series of annual national accounts goes back to 1966, while quarterly national accounts are available as of Q1 1990.

## 2 Statistical presentation

The National Accounts provide an overview of the activities and developments in the Danish economy. The statistics include figures for economic aggregates such as gross domestic product (GDP), household consumption, government finances, investment, export and import, employment and wages, and profits and productivity in the various industries. In addition, there are figures for the many subdivisions that can illuminate different 'sections' throughout the Danish economy.

The compilation of National Accounts in 2020 is affected by additional uncertainty in the context of the Covid-19 pandemic. This is especially true in the first compilations where source material is scarce. As more information becomes available, the National Accounts will be updated. Read more (only available in Danish) at [www.dst.dk/Nationalregnskab](http://www.dst.dk/Nationalregnskab).

### 2.1 Data description

The national accounts describe the Danish economic flows. Two general perspectives are considered in the national accounts: one functional and one institutional.

In the functional national accounts, detailed information on product flows is available in the shape of production, import and export, intermediate consumption, final consumption expenditure and gross fixed capital formation, including information about the incomes generated in the process. Information is also available about the factors of production in the form of labour and capital goods that have participated in the production process. The functional national accounts are calculated in both current and fixed prices. This means that the country's economic situation can be assessed both in terms of level and real growth.

The institutional national accounts highlight the distributive and financial transactions. Sectoral breakdown is done in non-financial corporations, financial corporations, public administration and services, households and non-profit institutions targeting households (NPISH).

This statistical documentation documents the functional national accounts. Several parts of the national accounts are documented separately in the following statistical documentation:

- [Fixed Capital Stock](#)
- [Employment and Compensation of Employees in National Accounts](#)
- [Productivity](#)
- [Input-Output Tables](#)
- [Financial accounts](#)

## 2.2 Classification system

In the national accounts, several different international classifications are used - in some cases with Danish adaptations or subdivisions.

### Industries

The industry classification used in the national accounts is based on Danish Industrial Classification of All Economic Activities 2007 ([DB07](#)). In the national accounts, the following aggregation levels are used for industries: 10a3, 19a2, 36a2, 69 and 117.

- The quarterly national accounts: 10a3
- Preliminary annual national accounts: 10a3, 19a2, 36a2 and 69.
- Final annual national accounts: 10a3, 19a2, 36a2, 69 and 117.

### Investment types

Investments in the national accounts are compiled in a Danish adjustment to a classification recommended in [SNA2008](#).

- Fixed assets
- Dwellings
- Buildings other than dwellings
- Other structures and land improvements
- Transport equipment
- ICT equipment, other machinery and equipment and weapon systems
- Cultivated biological resources
- Intellectual property products

### Groups of consumption

The consumption of households is classified by Classification of Individual Consumption by Purpose ([COICOP](#)).

Government consumption is classified by Classification of the Functions of Government ([COFOG](#)).

Consumption in NPISH is classified by Classification of the Purposes of Non-Profit Institutions serving Households ([COPNI](#)).

### Sectors

Institutional sectors [ESA 2010](#).

One dimension in the national accounts is the product dimension. In Denmark, an adjusted version of Statistical Classification of Products by Activity ([CPA](#)) is used for product numbers. The final national accounts consist of approximately 2,350 adjusted product balances.

## 2.3 Sector coverage

The national accounts cover all sectors of the economy.

## 2.4 Statistical concepts and definitions

The balance of payments: The balance of payments is a specification of the value of the economic

transactions abroad within a given period.

**Gross national income (GNI):** Gross national income (GNI) is generated by deducting from the gross domestic product the net property income to Rest of World (ROW), net compensation of employees to ROW, and production and import taxes minus subsidies (net) to ROW.

**Gross Domestic Product (GDP):** Gross domestic product, GDP, indicates the size of a country's economy. GDP can be calculated in three ways:

- Gross domestic product (GDP) in market prices is calculated from the production side by subtracting from production at market prices the total value of intermediate consumption at buyer prices.
- It can also be calculated from the income side as compensation of employees plus the surplus of production and mixed income plus taxes on production, net.
- Finally it can be calculated from the application side as the sum of all final uses in buyer prices minus the import of goods and services.

**Gross Value Added (GVA):** GVA is equal to the gross domestic product at base prices and is calculated for the individual business types as production at base prices minus intermediate consumption at buyer prices and is thus also equal to the sum of other production taxes (net), compensation of employee, and surplus of production and mixed income. For society as a whole, gross value added can also be calculated as the gross domestic product at market prices minus net product taxes.

**The national economy:** The national economy covers the transactions made by resident entities within a given period, such as a year or quarter.

**Fixed prices:** Calculation of fixed prices is necessary to make comparisons over time where the effect of price developments needs to be eliminated. Fixed prices are calculated using the prices from in the previous year, and these form the basis for calculating the chained values. In addition, fixed prices with a fixed base year (e.g. 2000) are also calculated.

**Supply Balance:** A compilation of the national accounts which shows both the supply of goods and services in a country over a period of time as well as the use of these goods. By definition, supply and use are always the same. The components of the supply balance are GDP and imports of goods and services on the supply side and consumption, gross investments and exports of goods and services on the usage side.

**Chained values:** Periodic changes (e.g. years) that are chained to create comparability over longer periods of time.

**Current prices:** Current prices are the price level that applies to goods and services in the current period. The contrast to current prices is Fixed prices.

**Primary income:** The income that resident entities receive through their direct participation in the production process and the income that the owner of a financial asset or natural capital receives in return for providing capital or natural capital to another institutional entity.

**Production boundary:** A productive activity is defined as an activity exercised under the control and responsibility of the entity that uses labour, capital as well as goods and services to produce goods and services. The activity does not include natural processes that take place without human participation or management, such as growth in fish stocks. An exception to this rule is production done in households. The only item production in households to be included is the construction of dwellings on one's own account and the production, storage, and processing of agricultural products for own use. The only service production in the households to be included is housing services that homeowners produce, services in the home provided by hired help, and volunteer activities that

result in the production of goods, such as construction of a home, clubhouse, or other type of building which is registered as production.

**Residential unit:** An entity is a resident of a country if it is located within the economic territory of that country and conducts or intends to conduct economic activities and transactions to a significant extent for a period of at least one year.

**Economic area:** The economic area is understood as:

- The geographical area managed by a government within which persons, goods and services, and capital move freely.
- Duty-free zones.
- The national airspace, territorial waters, and the part of the continental shelf that lies within the international waters under the sovereignty of the country.
- Territorial enclaves (e.g. Danish embassies and consulates abroad).
- Deposits of oil, natural gas, etc. in international waters outside the country's continental shelf, which are utilized by resident entities.

## **2.5 Statistical unit**

The units in the national accounts are defined as all the economic transactions between two Danish residents or between a Danish and a foreign resident.

## **2.6 Statistical population**

The national accounts cover all the economic transactions that are within the production boundary and are done within a given period, e.g. a year or quarter.

## **2.7 Reference area**

Denmark excl. Faroe Islands and Greenland. The Danish national accounts cover the activity carried out by Danish resident entities and is thus not defined by where the activity takes place geographically.

## **2.8 Time coverage**

National accounts figures are available on a quarterly and annual basis. The quarterly national accounts cover the period from Q1 1990 and onwards. The annual national accounts cover the period 1966 and onwards.

## **2.9 Base period**

Chained values are calculated with 2010 as the reference year.

## **2.10 Unit of measure**

DKK million.

## 2.11 Reference period

The national accounts cover transactions that have happened within the quarter or year.

## 2.12 Frequency of dissemination

Quarterly numbers are published 8 times annually.

Annual numbers are published 4 times annually.

## 2.13 Legal acts and other agreements

[The Danish Statistics Act](#) § 6 and §§ 8-12.

[Regulation \(EU\) No. 549/2013](#) of 21 May 2013 on the European System of National and Regional Accounts in the European Union (ESA2010) (OJ L 174 26.06.2013, p. 1).

[The Commission Decision](#) of 17 December 2002 further clarifying Annex A to Council Regulation No. 2223/96 as regards the principles for measuring prices and quantities in the national accounts.

## 2.14 Cost and burden

The statistics are based on information collected by Statistics Denmark for the compilation of other statistics. As such, there is no direct reporting burden in the compilation of the national accounts. Often, questionnaires for statistics included in the national accounts have been prepared in consultation with the national accounts to ensure sufficient data to meet the needs of the national accounts as well.

## 2.15 Comment

The compilation of National Accounts in 2020 is affected by additional uncertainty in the context of the Covid-19 pandemic. This applies particularly in the first compilations where source material is scarce. As more information becomes available, the National Accounts will be updated. Read more (only available in Danish) at [www.dst.dk/Nationalregnskab](http://www.dst.dk/Nationalregnskab). [Here](#) there are relevant notes and working papers describing the challenges associated with the preparation of National Accounts in the context of the Covid-19 pandemic. Information about new sources that may improve the compilation of National Accounts will be available in the National Accounts news releases (only available in Danish).

Questions about the statistics can be addressed to:

- Quarterly national accounts: Carmela Moreno, tlf. 39 17 30 63, e-mail: [cam@dst.dk](mailto:cam@dst.dk)
- Annual national accounts: Christina Just Brandstrup, tlf. 39 17 36 33, e-mail: [cjb@dst.dk](mailto:cjb@dst.dk)
- Supply and use tables: Jens Holst Jensen, tlf. 39 17 34 84, e-mail: [jhj@dst.dk](mailto:jhj@dst.dk)
- Fixed capital stock and investments: Christian Gysting, tlf. 39 17 36 65, email: [cgy@dst.dk](mailto:cgy@dst.dk)
- Constant prices: Lars Gustafsson, tlf. 39 17 34 87, email: [lag@dst.dk](mailto:lag@dst.dk)
- Employment and compensation of employees in national accounts: Sabawon Ghazi, tlf. 39 17 35 45, email: [sg@dst.dk](mailto:sg@dst.dk)
- Productivity: Magnus Børre Eriksen, tlf. 39 17 36 68, email: [mbe@dst.dk](mailto:mbe@dst.dk)
- Input-output tables: Peter Rørnøse Jensen, tlf. 39 17 38 62, email: [prj@dst.dk](mailto:prj@dst.dk)

### 3 Statistical processing

Virtually all available economic statistics are applied as data sources when making the national accounts. When the first version for a given period is prepared, it takes place before all information about the period is available. Then the calculations are made on the basis of the structure of the latest final national accounts, which is projected with indicators from, for example, cyclical statistics. When new sources are ready, they are continuously incorporated into the national accounts according to a fixed rhythm. Three years after a given period, the national accounts are considered to be final.

#### 3.1 Source data

The source for the national accounts consists of statistics on economic activity, business structure and prices. The different versions of the national accounts are based on different sources.

The final national accounts are calculated at a time when the sources are available in their final versions and in a very detailed form.

On the other hand, the quarterly national accounts and the first interim annual figures are calculated relatively shortly after the end of the reference period. The sources of these inventories are therefore relatively few and in many cases only preliminary, and because of this, the most important source is the final national accounts that form the basis for the projection along with available indicators.

In the following, the sources for the different version of the national accounts are listed:

Quarterly national accounts (QNA60): Production and turnover in manufacturing industries, Purchases and sales by enterprises (only partly), Stocks of manufacturers and wholesale, Producer and import price index for commodities, Retail turnover index, External trade statistics, Balance of payments, Consumer price index, Net price index.

Quarterly national accounts, revised (QNA90): Same as QNA60 + Purchases and sales by enterprises, Purchases and sales by manufacturing industries, Financial industries and FISIM.

Quarterly national accounts 180 days (only Q4): Same as QNA90 + Government finance statistics, Agricultural accounts statistics.

Preliminary annual national accounts (t-1): Same as QNA180 + volume indicators for non-market individual services produced by general government, Accounts statistics for non-profit institutions serving households (NPISH).

Preliminary annual national accounts (t-2): Same as preliminary ANA (t-1) + Accounts for non-agricultural industries, Accounts for public corporations, Household budget survey, Energy accounts.

Final annual national accounts (t-3): Same as preliminary ANA (t-2) + General enterprise statistics, Industrial commodity statistics, Manufacturers' purchase of raw materials.

#### 3.2 Frequency of data collection

Sources for the national accounts are continuously collected. The frequency of each source depends both on how quickly the first version is used by the national accounts and how quickly it is declared as the final version.

### **3.3 Data collection**

Most of the data for the national accounts are collected via deliveries from the primary statistics in Statistics Denmark. In addition, supplementary information is collected to a lesser extent to ensure that the national accounts achieve full coverage, among other reasons. The supplementary information is primarily publicly available information on companies' activities, products, and development through information on companies' websites, in newspapers and the like, but can also be obtained through direct contact with the companies and authorities.

### **3.4 Data validation**

In addition to the data validation performed by the primary statistics, a number of other data validation procedures are performed after the national accounts receive the data. Among other things, there are validation procedures that ensure internal and external consistency for certain variables. In addition, a number of confrontation routines are carried out to ensure that a correct financial interpretation of the (partial) results can be made. There is no uniform procedure for this, but time series are often used for the individual variables, where any breaks or other irregularities are detected. This may give rise to further studies of sub-areas where the producers of primary statistics are involved. The scope and depth of the different validation procedures depend on the time available for the calculations, which is considerably shorter for the quarterly and preliminary annual national accounts than for the final national accounts.

### **3.5 Data compilation**

The data processing takes place in several steps. The scope of the process depends partly on the availability of sources and partly on calculation methods, as well as how much time is available.

#### **Final annual national accounts**

The final annual national accounts are prepared at a very detailed level where virtually all sources are incorporated, which also ensures that the final national accounts subsequently can be used as a benchmark for the quarterly and preliminary national accounts for later periods.

First, the sources are recoded to match the concepts of the national accounts, which in the final national accounts also include product numbers where possible. There are a total of approximately 2,350 products covering both goods and services. In order to ensure total coverage for the national accounts, enumeration or estimation is made using supplementary sources in areas where the source material does not have total coverage.

Then, based on the collected and processed statistics, totals for all parts of the national accounts are compiled. This includes among others production values and intermediate consumption for all industries, measurements for the various consumer groups and types of investment, as well as public consumption.

Next, supply-use matrices are compiled, which collect the full source material and provide an unreconciled national account to begin with. The matrices have two dimensions:

1. Industry / group of consumption / investment type dimension
2. Product dimension.

The matrices are reconciled in two rounds. In the first round, the product dimension of the matrices is balanced, which means that on the one hand the approach (production + import) and on the other the application (intermediate consumption + consumption + investment + export) for each of the approx. 2,350 product balances must balance.



As an example, it creates an imbalance if a company has reported their production and export on different product numbers for different primary statistics. In such a case the company's reports across primary statistics must be investigated, which may give rise to corrections or deviations from one or more primary statistics.

In the second round of reconciliation, it is attempted to bring each industry / consumer group / investment type close to the totals previously determined based on the primary sources. This process may also give rise to further investigations that result in corrections or deviations from primary statistics.

After reconciling the supply-use matrices at current prices, the same matrices are reconciled at fixed prices. Alongside the reconciliation of the supply-use matrices in current prices, the corresponding price indices are processed and prepared. When the matrices are ready at current prices, a detailed deflation of all values is done. The deflation eliminates the effect of price developments in the national accounts figures.

After this, the national accounts are available in both current and fixed prices. The fixed prices show the real development in the components of the national accounts. The most important part of the fixed-price calculations is the gross domestic product, GDP, at fixed prices, which is the basis for showing how much the economy has overall grown over the period - either by quarter or year-GDP growth.

Following the reconciliation of the final national accounts at current and fixed prices, the investment matrices are compiled and reconciled. The investment matrices show what the various industries invest in. The investment matrices are primarily based on the adjusted supply-use matrices in both current and fixed prices and are supplemented by detailed information primarily from accounting statistics, public accounts, import and export.

### **Final quarterly national accounts**

When a final annual national account has been calculated, a new enumeration is done for the quarters of that year, so that the sum of the four quarters always corresponds to the annual figures. Then a manual reconciliation of supply and use is done in the figures, taking into account the sources available for a quarterly edition.

### **Quarterly and preliminary annual national accounts**

First, the sources are recoded to match the concepts of the national accounts (for example, industries and consumer groups). This ensures consistent processing of the sources across the primary statistics and that the sources can be used in conjunction with the final national accounts.

Then the actual national accounts calculations begin. In the quarterly and first bid of the annual national accounts, the general method is a projection of the individual series (industries, consumer groups, investment types, etc.) with the development of selected indicators where the level in the previous versions of the national accounts is used as a benchmark. Price indices for each series are also incorporated. In addition, selected sources are incorporated into the level of the national accounts as they become available.

Sources that are always incorporated in this way are general government expenditure and income, foreign trade, construction activity, stock figures, financial industries and FISIM. This results in unreconciled national accounts (both in current and fixed prices), meaning that supply and use are not reconciled. In the next step, reconciliation takes place where the approach and application (both in current and fixed prices) are balanced with each other. The series that do not balance are corrected over several rounds. The assessment of which series need to be corrected for imbalances is done both by returning to the primary source statistics where they are available and by estimates.

The calculation period for the quarterly as well as the preliminary annual national accounts is typically 2-5 weeks.

### **3.6 Adjustment**

Seasonal adjustments are made for normal seasonal fluctuations in the quarterly national accounts. Data is seasonally corrected using the X-12 ARIMA software package with a fixed model selection. The models are evaluated and adapted once a year.

Indirect seasonal correction is used, which means that the individual time series are seasonally adjusted at the detailed level, and that the seasonally adjusted main sizes such as GDP are formed by aggregating the detailed seasonally adjusted time series.

The seasonally adjusted GDP is calculated from the production side, as it has the greatest correlation with the directly seasonally adjusted GDP. This results in a statistical discrepancy on the usage side that is not corrected for.

In the seasonal correction, Easter is taken into account to a certain extent and pre-corrected if the effect is significant. No other separate correction is made for working and trading days. Experience shows that it is difficult to estimate the exact effect of Easter. Especially in the years when Easter changes between the first and second quarters compared to the previous year, there are major changes in the correction.

As such, the seasonal adjustment must be interpreted more cautiously than usual in these cases. Read more about the seasonal adjustment of the quarterly national accounts in the note [The seasonally adjusted GDP](#) (Det sæsonkorrigerede BNP – in Danish).

## **4 Relevance**

The National Accounts are relevant to anyone involved in economic matters ranging from the economic ministries use of the National Accounts in planning, analysis, forecasting and modeling purposes for industry organizations and other similar organizations, to the general interest in knowledge of the economy's structure and development. The National Accounts division is evaluating feedback from users at an ongoing basis.

#### **4.1 User Needs**

The quarterly national accounts are primarily used for monitoring and analysing the current economic development. The figures from the quarterly national accounts also serve as a basis for the preparation of forecasts for the economy, for the authorities' work with the budgets for the general government Finansloven/the Finance Act and for financial planning in general.

Annual and quarterly national accounts figures also form an important part of the basis for analyses of the economic structure of the country and provide an opportunity to compare the economy in Denmark with the economy in other countries. National accounts figures therefore have a broad user group, from "Mr. and Mrs. Denmark" who sporadically wants information about society, to public and private institutions that actively use figures from the national accounts in their ongoing tasks.

Among other things, Statistics Denmark's macroeconomic model, ADAM, is based on national accounts statistics. Other key users are the Ministry of Finance, Danmarks Nationalbank, research institutions and financial analysts. In addition, international organizations such as the IMF, the OECD, the World Bank, the UN, and Eurostat use national accounts data in their statistics and analyses.

#### **4.2 User Satisfaction**

There are no actual user satisfaction surveys for the national accounts, but Statistics Denmark has several forums where central users of the national accounts and adjacent statistics have the opportunity to participate, for example:

##### **Economic Statistics User Committee**

The Economic Statistics User Committee has the following general tasks:

- discuss and evaluate the results achieved and the planned development of economic statistics
- discuss users' use of economic statistics and their need for new statistics
- discuss the quality, documentation, and dissemination of economic statistics

Read more about the [Economic Statistics User Committee](#), where the commissariat as well as minutes and appendices from previous meetings are available in Danish.

##### **Info meetings on the quarterly national accounts**

In connection with the publication of the quarterly national accounts, information meetings are held, where members of the Economic Statistics User Committee have the opportunity to ask questions and get detailed explanations of the latest figures.

#### **4.3 Data completeness rate**

The National Accounts comply with the following regulations:

[Regulation \(EU\) No. 549/2013](#) of 21 May 2013 on the European System of National and Regional Accounts in the European Union (ESA2010) (OJ L 174 26.06.2013, p. 1).

[The Commission Decision](#) of 17 December 2002 further clarifying Annex A to Council Regulation No. 2223/96 as regards the principles for measuring prices and quantities in the national accounts.

## **5 Accuracy and reliability**

The ability of the National Accounts to describe the economic reality accurately partly depends on the uncertainty associated with the sources and partly on the model assumptions underlying the calculation of the national accounts. Some parts can be calculated more accurately than others, as there is better access to source data. The first versions for a period's national accounts will be more uncertain than the final version, which comes after three years, as new sources are continuously revised.

### **5.1 Overall accuracy**

Some parts of the national accounts can be calculated more accurately than others, because there is better source data in these areas. For example, for the industrial area there is generally quite accurate data, while for Danish-based companies that live from buying and reselling goods abroad, there is less accurate data. Finally, there are also areas where very limited source data exists, including, for example, consumption of owner-occupied housing and undeclared work. In these areas, the figures for the national accounts are almost exclusively based on calculations and estimates, and therefore the accuracy here is expected to be lower.

The first versions of a given period are made before all data for the period is available. The starting point for these versions will be the most recent final annual national accounts. This applies to areas where secure new information is available. Other areas that give an impression of developments - for example, indicators from cyclical statistics - are used for areas where no secure information is available. These preliminary versions will thus be less accurate than later versions. Where the uncertainty may be particularly pronounced is in cases where the actual development turns out to be different from the development of the indicators chosen to project the development. When new data sources are ready, they are incorporated into the new versions and the accuracy improves.

Another condition that affects the precision and reliability of the national accounts is that errors in the many different source statistics of the national accounts can be corrected after the final version of the national accounts has been prepared. At this point, these corrections cannot be included in the national accounts until a main revision is carried out periodically, where long time series of final years can be corrected. This helps to reduce both the reliability and precision of the national accounts. In the long run, however, the precision and reliability of the national accounts are re-established because corrections in the source statistics are included in the main revisions.

### **5.2 Sampling error**

Not relevant for these statistics.

### **5.3 Non-sampling error**

The National Accounts is a very comprehensive statistic with an elongated production process with many parties involved, undertaking both manual and automatic procedures. During the entire calculation process in the various versions, data consistency checks and checks of various sums and balances are performed on an ongoing basis, which means that many errors are found and corrected well before the figures are published. More rarely, errors are found that turn out to be more extensive or have been found for a number of years. In these cases, the developments in the series are weighted higher than the level in the series and therefore such errors are only corrected in the main revisions, which are made approx. every 5 years. Significant single-fault errors which for various reasons have not been corrected or given rise to increased uncertainty, will be addressed in the related News from Statistics Denmark.

Many of the sources used in the national accounts are not fully comprehensive. Therefore, in many areas enumerations are made to try to achieve full coverage of the economic transactions. For example, companies with few employees are not included in the accounting statistics and there is only limited information on their turnover, input and number of employees. In trying to cover these companies, one must therefore assume that the input structure or production per employee is not significantly different from comparable companies covered by the statistics.

As a result of large differences in statistical coverage, and thus the availability of data, of the various activities of the economy, there is a varying uncertainty in different areas. Particularly in the informal economy, where there is no accounting coverage, as well as the risk of under-reporting in questionnaires, uncertainty will be greater and the risk of coverage errors greater. As with all other parts of the national accounts, this area is calculated according to internationally agreed guidelines and methods of calculation, which try to take account of under-reporting by using enumeration factors. However, the relatively small share of the informal economy of the total economy means that the risk of coverage errors is not decisive for the accuracy of the overall national accounts.

Globalization entails, among other things, that Danish companies are increasingly choosing to organize themselves internationally. Consistent treatment of globalized companies across different statistics presents major challenges. This is particularly problematic for the quarterly and preliminary national accounts, as it requires a very resource-intensive and manual approach to data collection and processing in primary statistics. Therefore, sources that are collected and incorporated into the earliest editions of the national accounts are likely to be inconsistent. The aggregated and very time-consuming calculations of the first editions of the national accounts sometimes mean that these inconsistencies are either not detected or cannot be addressed in both the primary statistics (eg the balance of payments) and the national accounts. In the final version of the national accounts, the problems with the statistical coverage of globalized companies are reduced, but still present. Statistics Denmark is still working to ensure faster, more efficient and consistent processing of globalized companies' reports across statistical areas. As the globalized companies are often very large, some corrections can lead to very large revisions that can directly affect the national accounts' main figures, including GDP.

There are no actual statistics on investment activity in Denmark and currently the most reliable source is the accounting statistics. It is only available after approx. 1.5 years and therefore preliminary estimates of investment activity must be based on, inter alia, the number of employees and turnover in the construction industry. One source of uncertainty is that multi-annual investments must be accounted for in national accounts along the way, while in accounts they are often expensed when the investment is completed. A further source of investment uncertainty is the investment activity of globalized companies in other countries for which there is poor coverage. Work is currently underway in Statistics Denmark to improve statistical coverage of investment activity.

Calculations in constant prices are another source of revisions between the different versions of the national accounts and therefore a source of uncertainty. The reason that larger revisions may occur in fixed prices than in current prices, although the same price indices are available at two calculation times, are composition effect. The first preliminary versions of the national accounts are calculated in a more aggregated level than the final one and therefore a weighted price index is often used, which is typically based on the composition of goods and services in the final final year in, for example, an industry's total production. When calculating the final national accounts, the product dimension is added, which allows for a more detailed and accurate deflation. Thus, if the product mix is different from previous years, it may lead to revisions in fixed prices without necessarily having been revisions in current prices or in the price indices. Consequently, revisions can occur at fixed prices that cannot be traced back to revisions in the source statistics.

The estimate of real growth in output by general government is subject to several types of uncertainty. In the first versions of quarterly national accounts, real growth is calculated according

to the input method, which means that the various cost components are deflated with the associated price index, for example input and labor costs. In later versions of both quarterly and annual national accounts, real growth in output by general government is calculated mainly according to the output method via so-called volume indicators. Volume indicators are a way of quantitatively measuring how much is produced in the public sector, for example classes taught in primary schools and hip surgeries in public hospitals. As there is no data for calculating volume indicators in the earliest versions of the national accounts, the transition from the input to the output method may give some variation in the measured real growth in the public sector. In addition, recalculating a quarter or year volume indicator may also give rise to revisions as the data base varies from version to version. In addition, the data methodology and methods of the output method continue to be under development and quality assurance. There are a number of notes regarding measurement of real growth in public consumption, under *documentation* on the subject page for [Real expenditures by general government](#).

#### **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 ESA 2010 regulation requires that Eurostat assess the quality of data reported under the ESA transmission program. This is done on the basis of the countries' quality reports which are not published independently by Eurostat. The report is prepared annually. Read the quality assessment of Denmark's national accounts in:

- [Quality Report, Denmark 2017 - National Accounts](#)

#### **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

Regular revisions of national accounts for previously published years and quarters are performed according to a fixed rhythm. The national accounts' publication calendar can be viewed under *documentation* on the subject page for [Annual national accounts]

<https://www.dst.dk/en/Statistik/emner/nationalregnskab-og-offentlige-finanser/aarligt-nationalregnskab>).

With approx. 5-10 year intervals, main revisions are carried out, where long time series of final national financial years are updated. This improves the accuracy and reliability of the national accounts because all changes and corrections in the source statistics, as well as calculation errors, are taken into account. In addition, manual revisions of all national accounts series are made when new international manuals are adopted. The most recent manual revision of the Danish national accounts was carried out in 2014.

## 6 Timeliness and punctuality

The first version of the quarterly national accounts is published 60 days after the end of the quarter. In connection with the publication of the fourth quarter at the end of February, the first version of the annual national accounts is also published. Almost three years after the end of the year, the final annual and quarterly national accounts are published. The national accounts are published in a timely manner.

### 6.1 Timeliness and time lag - final results

The quarterly national accounts are first published 60 days after the end of the quarter. 90 days after the end of the quarter, revised quarterly accounts are released.

The first version of the preliminary annual national accounts is published at the end of February the following year. The annual national accounts are then revised in March, June, and November of the same year, as well as in November of the following year. The final annual national accounts are published annually 3 years after the year the data is collected for.

### 6.2 Punctuality

The national accounts are published in a timely manner.

## 7 Comparability

The national accounts are prepared in accordance with international guidelines and will therefore be comparable across countries. The current guidelines were implemented in 2014 and are used to revise the national accounts back to 1966. The national accounts reflect all parts of the economy, so most economic statistics contain figures that have their counterparts in the national accounts. However, be careful to compare figures from the national accounts with other economic statistics, as the transition is often complicated by different definitions and requirements for coverage. However, the national accounts are in full compliance with the balance of payments and government finance statistics.

### **7.1 Comparability - geographical**

The UN has prepared a manual for the preparation of the national accounts, the System of National Accounts (SNA), which the EU has prepared a European interpretation of (European System of Accounts (ESA)). The current SNA2008 manual is followed by most countries in the world, while the corresponding ESA2010 manual is followed by all European countries. Therefore, national accounts figures are internationally comparable to a high degree.

### **7.2 Comparability over time**

The first official Danish national accounts were made during the 1930s and in 1945 the first results covering the period 1930-1944 were published.

After a thorough revision of the national accounts figures, in 1962 comparable national accounts figures for the period 1947-1960 were published. Subsequently, the time series was expanded with the years until 1976.

In 1968, the United Nations published the System of National Accounts, which gave rise to a major revision of the Danish national accounts.

In 1973, national accounts in accordance with SNA1968 for the period starting in 1966 were published.

In 1993, a new SNA was published, which was later accompanied by the ESA1995 manual as a European interpretation.

In 1997, the Danish national accounts went through a major revision and national accounts were published according to SNA1993 / ESA1995 back to 1966.

In 2008 the latest SNA was published and in 2010 the latest ESA manual was published. In 2014, SNA2008 / ESA2010 were implemented in the Danish national accounts figures back to 1966, which ensure that the national accounts are comparable from 1966 to the present.

### **7.3 Coherence - cross domain**

There is full consistency between the national accounts and the statistics for the balance of payments as well as general government expenditure and income. National accounts are also connected to a number of other statistics, including accounting statistics, agricultural statistics, consumer survey, etc. However, there may be discrepancies for several reasons:

- Variable definitions may differ
- Differences in the calendar year delimitation, which is always the actual year in the national accounts
- The national accounts must cover all economic activities, including illegal activities
- Errors in the primary statistics found during the preparation and reconciliation of the national accounts are not always corrected in the primary statistics

### **7.4 Coherence - internal**

There is by definition full internal consistency in the national accounts. The internal consistency includes both the functional and the institutional national accounts.



## 8 Accessibility and clarity

The National Accounts statistics are published in the StatBank under [National accounts and government finances](#). The publications are accompanied by Danish press releases.

### 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

These statistics are published in three different Danish press releases. One for the GDP indicator, one for the quarterly national accounts and one for the annual national accounts.

### 8.5 Publications

The national accounts are published only in Danish. In the period from 1999 to 2011, as well as in 2014, the National Accounts were published in the publication National Accounts.

Commentary, including explanations of significant revisions, to the latest statements of the annual national accounts (in Danish):

- [September 2014 \(major revision\)](#)
- [November 2016 \(data revision\)](#)
- [March 2017](#)
- [June 2017](#)
- [November 2017](#)
- [March 2018](#)
- [June 2018](#)
- [November 2018](#)
- [March 2019](#)
- [June 2019](#)
- [November 2019](#)

Statistics Denmark's collection of historical statistics contains a large number of national accounts-related publications, also in Danish under [Historical Statistics](#).

### **8.6 On-line database**

The statistics are published in a number of tables in the StatBank under [National accounts and government finances](#).

### **8.7 Micro-data access**

More detailed data are available at a charge. It is possible to buy data from the approximately 2,350 product balances at current prices, prices of the previous year and at constant prices, typically in the form of, e.g. a single product balance or the product composition of a given consumption group.

Information on gross fixed capital formation is also sold in its most detailed form, i.e. as information on the product composition of a given industry.

Please contact the office for National Accounts if you wish to hear more about the possibilities for tailored national accounts data.

### **8.8 Other**

The national accounts provide table sets to Eurostat, so that Denmark's national accounts figures are included in the [Eurostat database](#). The figures are provided via Eurostat to the [OECD database](#).

A database of national accounts figures is also provided to ADAM (the macroeconomic model in Statistics Denmark). External users can access ADAM's database for a fee.

### **8.9 Confidentiality - policy**

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

### **8.10 Confidentiality - data treatment**

The primary statistics included in the national accounts each meet a level of discretion where individuals and companies cannot be identified. This means that further discretion is not required at the level that the national accounts are published at.

## 8.11 Documentation on methodology

The documents are in Danish unless otherwise noted.

Method description for the quarterly national accounts can be found on the subject page for [Quarterly national accounts](#).

Method descriptions for annual national accounts can be found on the subject page for [Annual national accounts](#).

In addition, reference is made to the following:

- [Quarterly National Accounts - Method Documentation \(English\)](#)
- [Annual National Accounts - Method Documentation \(GNI Documentation\)](#)
- [Documentation of the GDP indicator](#)
- [Revisions of the quarterly national accounts](#)
- [Seasonally adjusted GDP](#)
- [New indicator for vehicle procurement](#)
- [Household consumption by sources of indicators](#)
- [Chaining and aggregation in the quarterly national accounts](#)
- [Fixed price calculations - sources and methods](#)
- [Chained values. Calculation of growth contributions and aggregated series](#)
- [Need for better investment estimates](#)

An introduction to the national accounts can be found in textbook form: Bent Thage & Annette Thomsen: "Nationalregnskabet", the series Erhverv og Samfund, Handelshøjskolens Forlag, 2004 (Danish).

Christen Sørensen: "Nationalregnskab, betalingsbalance og udenrigshandel - økonomisk samfundsbeskrivelse", Forlaget Systime, 2000. (Danish).

Francois Lequiller & Derek Blades: "Understanding National Accounts", OECD, 2014 (English).

## 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.

### 9.1 Contact organisation

Statistics Denmark

### 9.2 Contact organisation unit

National Accounts, Economic Statistics.

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