Danish GDP and GNI

Sources and methods

2012

DANMARKS STATISTIK

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Preface

This publication describes in detail the sources and methods used for the compilation of the Danish national accounts. It replaces the previous documentation "Danish National Accounts – Sources and Methods 2003" from 2007. With the new documentation the description of sources and methods are brought up to date and reflects the current compilation methods, guidelines (ESA2010) and classifications. It is available in English only.

The documentation uses 2012 as a reference year, but the descriptions relate to the sources and methods generally used in the compilation process. The description is limited to the compilation of final GDP and GNI. Hence the compilations of provisional annual and quarterly accounts and institutional sector accounts are not described.

Final GDP is compiled at the most detailed level using all available relevant sources for describing the economic activity within the national accounts framework. Examples are account statistics for private enterprises, government finance statistics, household budget survey and foreign trade statistics. In order to fit all this information into one figure – GDP – an extensive amount of adjustment must be made. Also, confronting data at the detailed level reveals inconsistencies in the sources that must be overcome. In the Danish national accounts this confrontation of data takes place in the Supply-use tables which contains 2 350 products and 117 industries.

The documentation is written with reference to the GNI Regulation (1287/2003) according to which Member States are obliged to provide updated documentation of their national accounts. It uses a common structure used by all EU member States.

Chapter 1 gives an overview of the system of accounts. Chapter 2 describes the revision policy and the timetable for revising and finalizing the estimates and the major revisions since the last version of the documentation. Chapters 3, 4 and 5 describe the compilation of GDP from the production side, the income side and the expenditure side respectively. Chapter 6 describes the balancing or integration procedure and validating the estimates. Chapter 7 gives an overview of the allowances for exhaustiveness. Chapter 8 describes the transition from GDP to GNI. Chapter 9 and 10 list main classifications used and main data sources used respectively.

The documentation was written by employees in the divisions for National Accounts, Government Finances and External Economy. Main contributions have been made by Maria Nilsson, Brian Südel, Jens Holst Jensen and Annette Thomsen. Ralf Frimand was responsible for the layout of the publication.

Statistics Denmark, August 2016.

Jørgen Elmeskov, rigsstatistiker
Kirsten Balling, kontorchef

List of content

1. Overview of the system of accounts

1.0 Introduction

1.1 Main approaches

In accordance with the Commission Regulation (EC) No 109/2005, the Danish national accounts cover the economic territory of the Kingdom of Denmark except for the Faeroe Islands and Greenland.

The Danish national accounts consist of both annual and quarterly accounts. The official balance of payments estimate is consistent with the national accounts rest-of-the-world account. As from 2014 the Danish national accounts are compiled in accordance with the guidelines in the European System of Accounts (ESA 2010). Consistent time series are available back to 1966.

The final Danish national accounts are built around a set of supply and use tables. Initial unbalanced GDP estimates are to a large extent calculated independently from the output and expenditure sides and balanced in a detailed product balance system covering around 2 350 products. With the balanced supply and use tables as a starting point, symmetrical industry x industry input-output tables are constructed annually on the basis of the "industry technology assumption". Annual institutional sector accounts are compiled using information on institutional sector and industry from the accounting statistics and the balanced supply-use tables as a starting point.

Annual financial accounts are also produced and net-lending from the financial transaction account and the non-financial accounts are reconciled in a balancing process. In addition capital stock estimates (produced fixed assets) are compiled using gross fixed capital formation series at industry level, which secures consistency between investment and capital stock series. This system also produces consumption of fixed capital series.

Finally, labour productivity and total-factor productivity figures and regional accounts are produced for annual figures. Also supplementary accounts related to the environment are compiled.

As regards the classifications of industries, both the primary statistics and the national accounts are based on the NACE Rev. 2. The Danish industry classification *Dansk Branchekode*, DB 07, is a national, more detailed version of the NACE Rev. 2.

As regards commodity classifications, both product statistics covering manufacturing and external trade statistics use the EU's CN (Combined Nomenclature). The national accounts' product classification (around 2 350 products) likewise complies with the CN classification, but at a higher level of aggregation. The national accounts' product balances can be converted to the EU's CPA product classification at the 4-digit level

As regards the classification of household final consumption, the Danish national accounts are based on the international classification of individual consumption by purpose, COICOP, and there are no exceptions of any kind. The most detailed consumption grouping comprises 72 groups.

All units and transactions in the general government sector are classified according to the COFOG. Product transactions involving general government are cross-classified by transaction type (ESA 2010), by industry for the producer unit concerned (DB 07), by sector for the institutional unit concerned (ESA 2010) and by function for the relevant transaction (COFOG).

1.1.1 Organisation of national accounts work in Statistics Denmark

Statistic Denmark's organisation chart as at January 2016 is attached in Annex 1 and the organisation chart for the national accounts as of February 2016 in Annex 2. Statistics Denmark is divided into five directorates, three for statistics on particular fields, one for user services and one for communication and sales. Under the Act on Danmarks Statistik *[Lov om Danmarks Statistik]*, the institution is independent of government as regards all technical aspects of statistics. It is headed by a Board of Governors whose members are appointed by the Minister of Social Affairs and the Interior. Since the Act was passed in 1966, the members of the Board have been experienced representatives of the business world, the world of research and local government. No

ministries are represented. Under the legislation, the National Statistician, who is appointed as a permanent official, is responsible for the technical and administrative management of the institution and is also Chairman of the Board. He reports directly to the Minister of Social Affairs and the interior all administrative and economic issues. It is Danish parliamentary practice for all draft EU legislation which is to be negotiated in the Council to be put before the *Folketing*'s Europe Committee, which gives the Minister a negotiating brief. This ensures that Parliament retains control over the extremely important share of statistical output which arises from EU legislation and which therefore actually comes within the scope of the Board.

From the organisational point of view within Statistics Denmark, responsibility for national accounts falls to the Directorate for Economic Statistics. The work is divided among two divisions known as "National Accounts" and "Public Finances". In addition the balance of payments is compiled in the division “External Economy” and it is ensured that the rest of the world account is consistent with the balance of payments. As annex 2 shows, the National Accounts division employs 35 persons. In the division for Public Finances about 20 persons are working on national accounts.

The National Accounts division is responsible for the estimates of the “functional” national accounts, that is the goods and services account including supply and use tables and input-output tables in current and constant prices. The division is also responsible for non-financial institutional sector accounts for households, non-financial corporations, the rest-of-the-world account and the reconciliation of the non-financial sector accounts. In addition it is responsible for capital stock estimates, labour productivity, regional accounts, environmental accounts and quarterly accounts. It is also responsible for administrative uses of the national accounts, i.e. fourth own resource (GNI), third own resource (VAT).

The Public Finance division calculates the general government sector including financial accounts. In addition, the division is responsible for non-financial sector accounts for financial corporations and NPISH (Non-Profit Institutions Serving Households) and annual financial accounts for all sectors. Regarding administrative use of the national accounts, the division is responsible for the excessive deficit procedure (EDP). The division also covers accounting statistics for industries dominated by publicly controlled corporations and it collects and publishes primary statistics for local government (municipalities and counties) and some credit market statistics.

1.1.2 Supervisory and control systems in place

The use and control of primary statistics – from preliminary to final accounts

Danish quarterly national accounts are published up to eight times a year, the general rule being that the first “flash” version of a new quarter is replaced by a revised version of the same quarter as well as the two previous quarters. Quarterly accounts are calculated by a much smaller system that uses indicators to extrapolate the majority of its series from a certain point of time. Some series are however determined by data received from other divisions of Statistics Denmark for instance data on foreign trade and balance of payments from the division of External Economy, government accounts and financial accounts from the division of Government Finances. The first version of the figures for a calendar year is the sum of the quarterly figures for four consecutive quarters. When new estimates of annual figures are compiled, the quarterly figures are revised accordingly.

The final accounts are published almost 3 years after the end of the respective year. The final 2012 figures were published in November 2015. The system for compilation of final accounts is a much bigger system that as far as possible utilises all available statistical sources at a very high level of detail. At the same time new provisional figures for the two following years are published. The figures for the year following the “final” year are generally calculated with a lower level of detail like in the quarterly system, but where it is feasible to use calculation systems and methods from the system for final accounts (except the supply-use framework), the results from these calculations are preferred to results from the quarterly calculations. For the most recent preliminary year, the data sources used in the final accounts are in general not yet available, so here it is necessary to fall back to the methods used for the quarterly accounts.

It follows from the brief description that statistical sources are as far as possible taken into account in the national accounts calculations as soon as the data is available.

Several important statistical sources are used in preliminary accounts before they are used in the final system. This is an opportunity to first test the reliability of such sources. If what seems to be obvious errors are detected the problems are as far as possible solved in cooperation with the office responsible for the source data in question. However, the tight production schedule for preliminary figures does not leave time for thorough investigations into the content of data files received a few days before they must be used for the actual calculations. The early use of data sources can, however, at least give us a hint on problems we need to give some special attention before the final calculations.

A few examples can illustrate how data is received from other divisions of Statistics Denmark:

External trade: Preliminary data are received for the quarterly accounts. The data is updated as more information is collected. The final version of the annual figures may be agreed upon close to the point of time where it is needed for the calculations, often after discussions with the national accounts division on the precise interpretation of specific transactions.

Industrial accounts statistics is the most important source for economic information on private units. It is prepared in Statistic Denmark's division for Business Development. In this case the national accounts division receive a single final version in the form of data-files containing the individual data – including the estimated values - for all units in the survey. The Results are received in time to be used in preliminary annual figures one year before they are needed for the final annual accounts. If some year-to-year developments in the data seem suspicious investigations into the matter may already start here well before the data is needed for the final accounts. Before the files from the industrial accounts statistics are processed to be used as input into the systems of the final accounts they are run through a number of checks and comparisons with information from other sources.

Data for General government is received from the division for Government Finances as a file containing the full system of coded records from that division's "DIOR" database. It is coded by COFOG groups, ESA 2010 codes and industry codes. In the national accounts division data are converted into the form that is needed, when data is entered into the SUT-framework. DIOR-data are extracted for use in preliminary as well as final accounts. Before the data is declared final, a number of corrections to the original data are usually agreed upon. A short time before the data is needed as input in the final SUTs, the final version is "frozen". Hereafter further corrections are only accepted in exceptional cases when both divisions agree on the necessity of changes.

The central position of the balanced SUT as a control system

Danish national accounts are characterised by the central position of the supply and use tables in the estimation of the main aggregates of the national accounts. A description of the balancing system can be found in chapter 6: "The balancing or integration procedure and validating the estimates". As the title indicates the purpose of the compilation of SUTs is not alone to provide a reliable base for I-O tables, but also to provide a confrontation between estimates from different sources at a very detailed level.

Already when data are combined into files for targets for total output, input, GFCF etc. a considerable number of suspicious values are encountered. When the first version of the – unbalanced – SUT file is put together it is furthermore necessary to compare the initial estimates of supply for certain product groups with estimated use. A closer study usually reveals errors in primary statistics – often of types that would have been difficult to find if accounts statistics had been the only source. A few examples of such errors are:

- A unit has outsourced all domestic production of goods, but its headquarters is still classified as manufacturing and the remaining domestic sales of products is classified as own produced products.
- One or more affiliated units abroad are included in the activity shown as domestic production of an enterprise.
- Units that have changed ownership, taken part in reconstructions or fusions with other units have sometimes been found to have been included in accounts statistics more than once under different identifications.
- Turnover in some big enterprises have in some cases been recorded as taking place simultaneously with production, whether delivered to customers or not, while it is recorded as purchased at a later time or at the time when it has left the country (crossed the border) on the uses side.
- Bankruptcies and restructuring of enterprises can lead to strange omissions in the various statistical sources. We have for instance experienced that important goods were missing from imports according to foreign trade statistics, but were needed for input or GFCF according to other statistical sources.

- Imports or exports may have been included both in trade in goods and trade in services. This type of problems has turned up for instance in airlines, airports and oil-companies.

In the recent years many of the problems detected have emerged in connection with globalisation, for instance outsourcing abroad, more or less complete recording of foreign trade in industrial services (between affiliates or between non-affiliated units) and management services between affiliates.

In practice the work on preparation and balancing the SUT-files raises a number of questions that need to be answered by the people responsible for the relevant statistical sources. Often the explanation is found in cooperation. It may, however, be too late to correct the published figures as primary statistics is often declared final before the errors are detected, but the feedback from national accounts will usually lead to correction of similar errors in the following years. It is our clear impression that inquiries into these balancing problems are of considerable importance for the quality of the SUT and hence the national accounts.

The establishment of a "large case unit" in 2015 is expected to have a positive impact on the national accounts in the future. The "large case unit" will take care of the complex business models for large multinational corporations (*profiling*) and make the confrontation of primary statistics as part of data validation (in the primary statistics) before entering the national accounts. This work is in line with the work described in chapter 2 leading to a revision of the balance of payments in October 2016 and the national accounts in November 2016.

Service Level Agreements and the like

The publication schedule for national accounts determines the deadlines for the various versions of quarterly, provisional and final annual accounts. The publication schedule is based on policies decided within Statistics Denmark as well as the deadlines for reporting to Eurostat. Each year a formal "Office contract" is set up between the division and the management that stipulates targets for timeliness, correctness and reliability of the published national accounts figures.

The final accounts are incorporated in the "November version" of the annual national accounts. As the final accounts will provide a new benchmark for the provisional annual accounts for the following two years, a production plan is prepared to ensure, that the various components are ready when they are needed for the calculations and that the final accounts are available when they are needed for production of preliminary and quarterly accounts.

It is obvious that planning of the production process for quarterly, provisional and final annual data would be very difficult without knowledge on when to expect the versions of the primary statistics that are needed for the various versions of the national accounts. It is also important to be able to foresee the introduction of new statistical sources, the phasing out of existing sources or just the changes in file formats, software or other techniques that influence the statistical product.

There is a tradition for coordination meetings with "External Economy" and "Government Finances". Participants are typically the Heads of divisions and the people belonging to the sections directly involved in the work on these issues. The output of these meetings is agreement on a time schedule and deadlines for data deliveries to the national accounts. It is also common practice that people from national accounts are invited to participate in meetings preceding the establishment of new primary statistics that can provide information for national accounts purposes.

Recently six coordination groups have been established in order to further formalise the cooperation within macro-economic statistics. The task of these coordination groups is in the first place to make and follow up on service-level agreements but also to have follow-up discussions on specific data problems and development projects. For the time being service level agreements exist for the following data sources:

- Foreign trade in goods
- General government (non-market)
- Financial sector including FISIM

In addition, a formal agreement on the cooperation between Statistics Denmark and the Central Bank exists. The cooperation with the Central Bank relates to quarterly financial accounts and property income and financial transactions of the balance of payments.

Quality-reports, internal audits and the like:
An analysis of revisions is carried out and published with the July and November versions. The analysis of revisions is based on the assumption that the final accounts represent "the truth" about that year. When looking at differences between preliminary and final figures for Denmark it should be kept in mind that the level of detail, the available data and not least the available time and resources used on final accounts are of a fully different magnitude than those used for preliminary figures. Furthermore the methods for compilation of final accounts are qualitatively different from those used for provisional figures.

Detection of errors in final accounts is not entirely unknown. When such errors can be corrected without significantly disturbing growth rates, they corrected figures are introduced in the SUT that is being balanced[1]. A comprehensive system of notes is used to document the adjustments made during the work on the final accounts as well as those adjustments that will need to await the next general revision.

Regular meetings are held with representatives of the suppliers of primary statistics in connection with the publishing of the first version of each new quarter. These meetings tend to concentrate on the relations between the most recent developments in preliminary statistical sources and the corresponding figures in the national accounts.

Another type of meetings is known within Statistics Denmark as "Konjunkturforum". The name covers a number of small groups, each of which covers a specific statistical product and consisting of members from those division that have a common interest in the statistics in question. Meetings are held regularly before the releases of new figures. It also covers regular joint meetings for all members of these groups. In these meetings the latest published version of the national accounts is a fixed item on the agenda, but the meetings will usually discuss any important new developments of common interest.

As mentioned previously in this section, the establishment of a large case unit, in which the national accounts division is highly involved, is expected to have a positive impact on the quality of the national accounts.

1.2 The revisions policy and the timetable for revising and finalising the estimates; major revisions since the last version of the GNI Inventory

Revision policy for current revisions
Final national accounts data are calculated three years after the reference year (year t+3). Several versions of preliminary accounts are calculated before that. The first version is available as the sum of quarters two months after the end of the reference year, and the last preliminary version is published at the end of year t+2 (see table 1.1).

Table 1.1 illustrates the revision policy (apart from benchmark revisions) for the Danish national accounts followed by Statistics Denmark from November 2001. The revision policy is announced to the users so that they always know how many periods will be revised.

[1] In other cases it might be decided to keep the time-series at the present level until the entire series can be corrected in the next major revision.

Table 1.1 Revision policy of the Danish NA, from 2001

Year	Month of publishing	Year T, Q1	Year T, Q2	Year T, Q3	Year T, Q4	Year T
T	End May	P				
	Begin. July	R				
	End August	-	P			
	Begin October	R	R			
	End November	-	-	P		
T+1	Begin. January	R	R	R		
	End February	-	-	-	P	P (SQ)
	Begin. April	R	R	R	R	R (SQ)
	Begin. July	R	R	R	R	R (SQ)
	Begin. October	-	-	-	-	-
	End November					R (AP1)
T+2	Begin. January	R	R	R	R	-
	Begin. April	-	-	-	-	-
	Begin. October	-	-	-	-	-
	End November					R (AP2)
T+3	Begin. January	R	R	R	R	-
	Begin. April	-	-	-	-	-
	Begin. October	-	-	-	-	-
	End November					F
T+4	Begin January	F	F	F	F	

Note:
P First published SQ: Sum of quarters
R: Revised AP1: First preliminary annual calculation
F: Final AP2: Second preliminary annual calculation
Figures are published unchanged compared to the earlier published figures.
The revisions of the quarterly figures in January T+2, T+3 and T+4 are made in order to make the quarterly figures consistent with the annual figures.

Revision policy for benchmark revisions

It is important to understand that in the Danish national accounts compilation system, which has been the basis since the first publication of a supply-use table in 1973, every year is compiled in "level". The concept of "benchmark revisions" in the case of the Danish national accounts is therefore related to the introduction of new international guidelines, new classifications, new sources that need to be introduced in level instead of as growth rates or eventually the correction of larger errors. These revisions are usually pooled together as described in chapter 2.

The most recent major revision was published in September 2010. It introduced ESA 2010, addressed GNI reservations set in 2012 and also implemented other well defined revisions. In November 2016 a revision of the national accounts is planned. This revision is mainly related to goods sent abroad for processing and merchanting and it follows a revision of the balance of payments back to 2005 to be published in October 2016.

Impact of the transition from ESA 1995 to ESA 2010

In September 2014 the most recent major revision was published. It introduced ESA2010, addressed GNI-reservations and also implemented other well defined revisions. The major revision was carried back to 1966 at the level of input-output tables.

As appears from table 2.21, the transition items, that have an effect on GNI, are Research and development market (1a); Research and development, non-market (1b); Valuation of output for own final use (2); Non-life insurance (3); Weapon systems (4); Sector classification (6) and VAT based EU resource (8). The by far largest effects come from Research and development that accounts for 2,6 of the total impact of 2,8 percent on GDP.

The transition items that do not have an impact on GNI are Decommissioning costs (5); Small tools (7); Index-linked debt instruments (9), Central bank – allocation of output (10); and land improvements (11).

Table 1.2 shows the transition table from the GNI questionnaire 2015. It presents the total effect of the transition items on GDP for the years 2010-2014.

Table 1.2 Transitions from ESA95 to ESA2010

		2010	2011	2012	2013	2014
		DKK mill.				
R&D created by a market producer	(1a)	37 399	34 236	36 121	37 154	38 936
R&D created by a non-market producer	(1b)	14 186	14 750	15 290	15 292	16 026
Valuation of output for own final use	(2)	86	88	42	43	43
Non-life insurance	(3)	-4 624	-3 477	-1 556	-1 292	-1 124
Weapon systems	(4)	1 611	1 109	1 291	1 337	1 200
Decommissioning costs	(5)					
Sector classification	(6)	23	29	48	56	53
Small tools	(7)					
VAT-based EU resource	(8)	1 609	2 083	2 105	2 170	2 239
Index-linked debt instruments	(9)					
Central bank – allocation of output	(10)					
Land improvements	(11)					
Total		50 290	48 817	53 341	54 759	57 372

Note: For 2012 and onwards it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

1.3 Outline of the production approach

For 2012, the calculation of output-based GDP can be summarised in table 1.3 below:

Table 1.3 GDP Production approach, 2012

	Value	Pct. of GDP
	DKK mill.	pct.
Output at basic price	3 362 422	179
- Intermediate consumption	1 738 713	92
+ taxes on products	272 919	14
- Subsidies on products	14 003	1
GDP	1 882 625	100

The aggregate estimate of value added is based on an estimate at the level of the national accounts' most detailed industry grouping. The calculations of value added up to the initial output-based estimate of GDP are for most industries at a much more detailed level, namely the DK-NACE extremely detailed grouping of 726 industries.

GDP according to the production and expenditures approaches are balanced at the 117-industry level in the supply and use tables. Balanced values for value added divided by industry appears in the final national accounts for 117 industries in prices for the year in question and as time series of Laspeyeres chain indices based on estimates in the previous year's prices.

The statistical unit for the estimate of output and value added in the ESA 2010 is the local KAU (local kind-of-activity unit, which in Danish is synonymous with the producer unit, the workplace[2]). In the ESA 2010, these units are grouped into industries. When discussing the estimate of GDP from the production side, it is therefore logical to proceed industry by industry. However, the primary statistics available will almost always be based on

[2] "Workplace" and "Local kind of activity unit" are used synonymously throughout this inventory. The same applies to the word "producer unit" except in a few cases where referred to as "institutional producer unit".

a grouping of the somewhat broader institutional units (firms) by main activity (a grouping into "sub-sectors", or "firm branches"). Throughout the process of estimating value added on the basis of primary statistics, we have to look out for and take account of the relationships between institutional producer units (firms) and local kind-of-activity units (producer units).

If we look at the statistical coverage of the economy in primary statistics in the form of accounting statistics, we see that there is a broad division into four sectors/subsectors:

1. Sectors with complete accounts and (virtually) full coverage of the population via administrative or statistical returns
2. Sectors with complete accounts and partial coverage of the population via administrative or statistical returns
3. Sectors with a combination of physical and economic accounts
4. Sectors with no accounting statistics

In group 1, there is, of course, no noticeable problem with sampling or grossing up, since virtually all producer units are covered by the ongoing estimates. The challenge here is basically to convert the primary statistics' accounts to the concepts of national accounts. This group contains for example general government.

In group 2, which covers the vast majority of activity in the economy, much of the work of producing exhaustive and reliable estimates consists in ensuring that the samples used are representative and that the figures are grossed up to the total population. This group contains for example sectors/industries covered by account statistics for non-agricultural private sector and account statistics for industries predominated by public corporations.

In group 3 the basis for the national accounts estimates are physical quantities or areas. This group contains agriculture and dwellings.

Group 4 is empty because all industries/sectors are covered by account statistics. Prior to the major revision published in September 2014 this group contained non-profit institutions serving households (NPISH), but new account statistics has moved this sector to group 3.

Table 1.4 shows a breakdown of gross value added (GVA) 2012 by the four groups.

Table 1.4 Gross value added based on various accounting statistics, 2012

Breakdown of gross value added according to the four sectors/subsectors in chapter 3.1.2		
		pct.
1	Sectors with complete accounts and (virtually) full coverage of the population via administrative or statistical returns	27.4
2	Sectors with complete accounts and partial coverage of the population via administrative or statistical returns	63.2
3	Sectors with a combination of physical and economic accounts	9.4
4	Sectors with no accounting statistics	0.0
	Total	100.0

After initial processing of the various accounting statistics, data are transferred to a common accounting plan in the so called *Intermediate System*. The Intermediate System comes in two versions.

The *Intermediate System I* is simply a file that contains the data from the four main compilation systems after they are transformed to the common codes. In this file firms (institutional units) are broken down wherever necessary into producer units, so that the statistical unit for the calculation of value added, as required in ESA2010, is the producer unit or a constructed unit of homogeneous production. Despite the detailed level of information in the intermediate system, various accounting items still do not correspond to national accounts concepts because information from accounts alone is insufficient to perform the full transition. These corrections include corrections for borderline cases on the supply and use side. The adjustments made for the transition to ESA2010 national accounting concepts and borderline cases are described in more detail in chapter 3.

The *Intermediate System II* is the result of a number of corrections to the first version of the system that transfers the data from business accounts to ESA2010 principles. These corrections are made to production and to intermediate consumption.

The following corrections are made to the *production estimate*:

1. Own-account gross fixed capital formation
2. Production, storage and processing of agriculture products for own-account by households
3. Dwelling services produced by owner-occupiers
4. Household services produced by employing paid domestic staff
5. Products used for payments in kind
6. Products added to the inventories of finished goods and work-in-progress
7. Revenue from licenses and royalties

Volunteer activities that result in goods and products bartered are considered insignificant in the Danish economy and there is no corrections made to the production for this in the national accounts. The account statistics for non-agricultural private sector is on local KAU. After the transformation of accounting statistics to the intermediate system there are no specific corrections made for products supplied by one local KAU to another within the same institutional unit to be used as intermediate input or for final use.

Price corrections to changes in inventories are made on the production for finished goods, work in progress and goods for resale. On the expenditure side price corrections are made to changes in inventories of raw material. The price corrections are described in section 3.3 and chapter 5.11.

The following corrections are made to *intermediate consumption* for the transition to ESA2010 and the *inclusion* of borderline cases:

1. Inexpensive tools used for common operations and small devices
2. Non-life insurance service charges
3. FISIM purchased by resident producers
4. Financial intermediation services paid for directly
5. Expenditure on licenses and royalties

The following borderline cases are assumed to be a part of *intermediate consumption in the business accounts*, and further corrections for theses borderline cases are therefore *not needed*:

1. Costs of using rented fixed assets
2. Subscriptions, contributions or dues paid to non-profit business associations
3. Goods and services received from another local KAU of the same institutional unit that comply with the definition of IC
4. Goods and services used as inputs to ancillary activities
5. Expenditure by employees, reimbursed by the employer, in items necessary for the employers' production
6. R&D acquired to be used solely in the creation of further products of R&D

The following corrections are made to *intermediate consumption* for the transition to ESA2010 and the *exclusion* of borderline cases:

1. Research and development
2. Expenditure by employers to be treated as wages and salaries in kind
3. Payments for government licences and fees that are to be treated as other taxes on production

The Following borderline cases are assumed to be excluded from *intermediate consumption in the business accounts*, and further corrections for these borderline cases are therefore *not needed*:

1. Items to be treated as GFCF (except R&D)
2. Expenditure to be treated as the purchase of non-produced assets

3. Use by market or own-account producers units of collective services provided by government units
4. Goods and services produced and consumed within the same accounting period and within the same local KAU
5. Payments for licenses for using natural resources (e.g. land) that is to be treated as rents, i.e. a payment of property income
6. Decommissioning for large capital assets

The main initiative aimed at ensuring that coverage is exhaustive consists primarily of the very important work carried out to ensure that the business register is updated to include new units. This work is made easier by the fact that the threshold values in the VAT and tax systems are extremely low, so that all regular economic activity currently has to be registered in a public administrative register which feeds into the business register. It is estimated, that all regular economic activity is captured via the use of the business register. Hidden activity and wages and salaries in kind are captured via special calculations that are not based on the business register.

1.4 Outline of the income approach

For 2012, the calculation of income based GDP can be summarized as in table 1.5:

Table 1.5 GDP, income approach, 2012

	Value	% of GDP
	DKK mill.	pct.
Compensation of employees	977 516	51.9
+ Gross operating surplus and mixed income	640 958	34.0
+ Taxes on production and imports	312 445	16.6
- Subsidies	48 293	2.6
= GDP	1 882 625	100.0

All components of GDP from the income side (GDP(I)) are compiled at the 117 national accounts industry level. Compensation of employees and taxes and subsidies on production are compiled directly using independent sources. Compensation of employees is based on the Working time accounts (WTA), and taxes and subsidies are based on government accounts. Gross operating surplus and mixed income is compiled as a residual using value added after the balancing of GDP(P) and GDP(E).

The main sources used for compiling GDP from the income side are:

1. The annual working time accounts (WTA) (compensation of employees)
2. The system for compiling fixed capital in the national accounts (consumption of fixed capital, CFC)
3. Administrative data (accounting information) for compiling general government (other taxes on production and imports and other subsidies on production)
4. Value added at industry level as a result of balancing GDP(P) and GDP(E)
5. Gross operating surplus and mixed income are compiled as residuals.

All components and sources are collected – directly or indirectly - through regular enterprise surveys or administrative registers. Taxes and subsidies are available from general government accounts, compilation of CFC is based on annual estimates of capital stocks for various types of capital, compensation of employees is to a large extent based on administrative tax information and gross operating surplus and mixed income is compiled as a residual using value added after balancing GDP(P) and GDP(E).
The most important independent source used for GDP(I) is the annual working time accounts (WTA) which is used for the compilation of compensation of employees in the national accounts. Compensation of employees includes all payments in cash and in kind that employers pay their employees for the work done. Compensation of employees consists of wages and salaries on the one side and employers social contributions on the other side.

For compensation of employees adjustments are made to WTA in order to arrive at the national accounts estimate. Table 1.6 shows at the aggregate level the relation between compensation of employees in the WTA and the national accounts.

Table 1.6 Compensation of employees in the WTA and the national accounts, 2012

	DKK mill.
Working Time Accounts	954 386
Alternative or additional sources	24 104
of this, national accounts population	-133
of this, employers' imputed pension contributions	4 829
of this, employers' actual non-pension contributions	2 018
of this, supplement for black wages	3 552
of this, supplements for wages and salaries in kind	11 071
Final harmonisation	-975
Final national accounts estimate	977 515

In general, the estimate of the consumption of fixed capital (CFC) is not relevant to GDP or GNI. There is, however, one very important exception to the rule, namely non-market activity, where by convention output is calculated from the costs point of view and where CFC is one of the cost components. Non-market activity occurs in general government (S.13) and non-profit institutions serving households, NPISH (S.15).

General government and NPISH capital stock consists of buildings, structures such as roads, bridges etc., machinery, transport equipment and intangible fixed assets. Prior to the introduction of ESA2010, Winfrey curves and straight line depreciation was applied. With the introduction of ESA2010 in September 2014 the geometric depreciation method was incorporated into the calculations from the year 2008 and onwards, except for dwellings and non-residential buildings, where geometric depreciation was incorporated from 1995 and onwards. For the new types of capital, Research and Development and Military Weapon Systems, geometric depreciation was applied for the whole time series.

1.5 Outline of the expenditure approach

For 2012, the calculation of expenditure-based GDP can be summarised as in table 1.7 below:

Table 1.7 GDP, expenditure approach, 2012

	Value	% of GDP
	DKK mill.	pct.
Total final consumption expenditure	1 410 337	74.9
Household final consumption expenditure	877 971	46.6
NPISH final consumption expenditure	30 731	1.6
General government final consump. expenditure	501 635	26.6
Gross capital formation	370 127	19.7
Gross fixed capital formation	356 786	19.0
Changes in inventories	9 851	0.5
Acquisitions less disposals of valuables	3 490	0.2
Exports of goods and services	1 008 578	53.6
Imports of goods and services	906 417	48.1
GDP	1 882 625	

The table shows that household final consumption expenditure in Denmark made up a little less than half of GDP in 2012, general government final consumption expenditure a good quarter, gross capital formation one-fifth and net exports the final 6%. Exports of goods and services accounted for 54% and imports 48%.

By far the largest share of expenditure-based GDP is calculated using a direct estimate. The most important exceptions are household final consumption expenditure of hotel and restaurant services, dwelling services and final consumption expenditure in NPISH, which are all calculated indirectly from the supply side.

Regarding the estimate of the black economy, data are based on survey data obtained from supplementary questions asked once a year in connection with the LFS. Also illegal activities are included.

Since the Danish national accounts are adjusted in a detailed product balance system, there is a systematic confrontation in connection with the balancing. One of the strongest cross-checks for the compilation of national accounts consists in comparing information from purchasers on their acquisitions less disposals of the individual products or groups of products with information on the sellers' side on supplies to the domestic market.

Other than for those areas of the economy (general government, owner-occupied dwellings, NPISH), where the output- and expenditure-based calculations cannot by definition be independent, GDP from the production side and GDP from the expenditure side are largely independent of one another prior to balancing. These independent estimates are described briefly below.

The main idea behind the calculation of household consumption expenditure is a breakdown into groups by purpose/products, each group being calculated on the basis of the most reliable of the available sources, but in a way which seeks to make optimum use of all available information. The basic breakdown of household consumption expenditure is into retail and non-retail consumption expenditure. The former is the share of final consumption expenditure of goods which involves retail trade. In this context, retail trade excludes motor vehicles etc. and energy goods, which are not covered by the DOI. The two most important sources are:

- The retail index (Danish abbreviation DOI), which contains information on level of sales to private individuals, and
- The household budget survey (Danish abbreviation FU)

For gross fixed capital formation, all components are as far as possible estimated using the expenditure approach. Since the accounts for non-agricultural private sector in 1999 was extended to cover most industries with market producer units, it has been possible to estimate the capital formation in tangible fixed assets in most industries with a distribution by buildings, structures and a residual consisting of machinery, transport- and other equipment. The estimates from the uses side are confronted with the available information on the domestic supply of investment goods by product in an “investment matrix” framework similar to the framework used in supply and use matrices. The estimates for the construction of new buildings are based on either the accounting statistics which provides a very detailed coverage of the actual observations, or a calculation based on the exhaustive register of buildings (the BBR), and prices per square meter for the different types of buildings. The estimate of private market Research and Development (R&D) is mainly based on R&D statistics (in line with the so-called Frascati manual) and foreign trade statistics. Non-market R&D is based on government accounts.

For changes in inventories, account statistics are used. For a correct estimate of GDP, it is necessary to split changes in inventories (reported at market prices on the respective dates) between the start and end of the period in question into product transactions in national accounts terms and revaluations (plus, in some cases, other volume changes). In the national accounts, changes in inventories (product transactions) are posted to the capital account whereas revaluations go to the revaluation account. It is also ensured that the estimate of changes in inventories at industry level is consistent with the estimate based on special information on the individual products.

For imports and exports of goods and services, the sources are the foreign trade statistics and the balance of payments statistics. Im- and export figures are consistent with the balance of payments.

1.6 The balancing or integration procedure, and main approaches to validation

Before the balancing of GDP can take place in the supply and use tables (SUT), so-called target totals for supply and use are compiled. This is done by collecting the information from intermediate system 2 and other systems

in the target total module. When the target totals for supply and use are compiled, they are subsequently distributed by 2 350 products.

The current system of SUTs for Denmark was established in the mid-seventies. Since then the calculation of annual SUTs has been a totally integrated part of the compilation of final annual National Accounts in both current and constant prices.

The integration of SUT in the compilation of National Accounts implies that a number of NA aggregates are derived directly from the SUT. This in particular relates to all the NA aggregates in the "Goods and services account" and the "production account". The integrated procedure is in contrast to a procedure where SUT are compiled after the production of the NA figures implying a number of restrictions on the totals of the SUT.

The Danish SUT are compiled in connection with the final annual accounts, which are released with a delay of almost three years (November t+1). The structural information entailed in the SUT for the latest final year is used in the compilation of preliminary annual and quarterly national accounts but no balanced preliminary or quarterly SUT are produced.

The process of constructing the SUT for a given year can be summarised into the following steps:

The first step is to gather all the available data on the actual year on target totals and other values that can be entered directly into the system as predetermined.

The next step is to create a complete initial version of the SUT. This version is compiled using automatic processes, but at this stage a number of unsolved problems will remain: For some products supply will not equal uses. For most categories of use the totals will usually differ from their targets. Total trade and transport margins and total VAT may also differ from their respective targets. This step is referred to as "Automatic balancing".

Then follows a step, where the initial version of the product-balances is adjusted manually. The unsolved problems are examined closely. In many cases such problems will reveal errors in the calculations that produce data-input to the product-balances or in the primary statistics itself. Solutions to such problems may be found in co-operation with the relevant divisions of Statistics Denmark and may involve changes in supply, predetermined uses or target-totals. A number of products are redistributed between uses to bring the distance between totals and targets within an acceptable range for each category of use. Corrections to the initial balances are entered into the system to create a new - but not yet final - version. This step is referred to as "Manual balancing"

In the last step the differences between totals and targets are removed except where such differences are considered acceptable. In this step trade and transport margins and VAT are finally adjusted to their targets. This step is referred to as "Final balancing".

As described above, the balancing of GDP from the production side, GDP(P), and GDP from the expenditure side, GDP(E), takes place in an integrated supply-use framework.

Table 1.8 shows an extract from the process table for 2012. Process tables show how initial primary statistics are corrected, adjusted and balanced in order to compile GDP. Annex 7 shows the full process table. Table 1.8 shows that the balancing accounts for -0,5 percent on GDP(P) and +0,9% on GDP(E).

Table 1.8 Compilation of GDP, extract from the process table, 2012

	Total sources	Data validation	National accounts adjustments	GDP before balancing	Balancing adjustments	Balanced GDP
	DKK mill.					
GDP(P)	1 840 308	13 407	38 426	1 892 141	-9 515	1 882 625
GDP(E)	1 847 469	-6 344	25 474	1 866 599	16 027	1 882 625
	pct. of GDP					
GDP(P)	97.8	0.7	2.0	100.5	-0.5	100.0
GDP(E)	98.1	-0.3	1.4	99.2	0.9	100.0

Note: The difference between balanced GDP(P) and GDP(E) is purely due to rounding errors in the process table

GDP from the income side, GDP(I), is not described in the process table, because it is not an integrated part of the balancing in the supply-use framework. It is therefore not relevant to show GDP(I) before balancing and balanced GDP(I) in this context.

1.7 Overview of the allowances for exhaustiveness

GDP from the production side is generally considered the most reliable. Therefore, the exhaustiveness adjustments have mainly been described from the production side in the tabular approach to exhaustiveness (TAE) and the process tables. However, some exhaustiveness adjustments are calculated from the demand side, for example Illegal activities relating to narcotics and areas in the black economy where the household budget survey (HBS) is considered more reliable; the so-called discrepancy method.

Explicit allowances for exhaustiveness

Allowances for exhaustiveness are made for the following N-types (TAE taxonomy):

N1 Producer should have registered
N2 Illegal producer
N3 Producer not obliged to register
N5 Registered entrepreneur not included in statistics
N7 Not all required data are asked

N1 covers output in the “black economy” which includes both work that is hidden to the authorities in order to avoid taxes and under-reporting and associated VAT-fraud. There is no allowance for intermediate consumption associated with output in the “black economy” as this is assumed to be already accounted for.

N2 covers illegal activity relating to smuggling, drugs and prostitution. There is no allowance for intermediate consumption associated with illegal activity as this is assumed to be already accounted for.

N3 adjustments cover values for farmers’ output for own consumption etc. They are available from agricultural statistics and are assumed to cover farm-gate sales as well, most of which presumably come under the “black” economy (N1). The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by ESA2010. Table 7.11 shows the adjustments by industry. Total adjustments to value added amount to 78 mio. DKK.

N5 covers adjustments for value threshold in source statistics. There are adjustments to both output and intermediate consumption.

N7 covers adjustment for production for own final use by market producers and wages and salaries in kind (“fringe benefits”). There are only adjustments to output.

There are no adjustments for N4 Registered legal person is not included in statistics (they are included in N5).

Adjustments for N6 Mis-reporting by the producer are included in N1.

Table 1.9 gives an overview of explicit exhaustiveness adjustments according to the TAE, which is the result of carrying out the TAE exercise.

Table 1.9 Summary of TAE (table 3A), 2012

	N1	N2	N3	N4	N5	N6	N7	Total	Percent of GDP
	DKK mill.								pct.
S11	-	-	-	-	570	-	19 216	19 786	1.05
S12	-	-	-	-	-	-	-	-	-
S13	-	-	-	-	-	-	0	0	0.00
S14	9 522	2 859	78	-	1 298	-	557	14 314	0.76
S15	-	-	-	-	-	-	-	-	-
Nace A	13	-	33	-	-	-	31	77	0.00
Nace B	-	-	-	-	0	-	32	32	0.00
Nace C	104	-	45	-	136	-	3 913	4 198	0.22
Nace D	-	-	-	-	-	-	160	160	0.01
Nace E	-	-	-	-	1	-	28	29	0.00
Nace F	2 989	-	-	-	166	-	1 037	4 192	0.22
Nace G	977	1 930	-	-	569	-	2 377	5 854	0.31
Nace H	174	-	-	-	74	-	562	810	0.04
Nace I	1 454	-	-	-	65	-	5 571	7 090	0.38
Nace J	314	-	-	-	181	-	1 736	2 232	0.12
Nace K	-	-	-	-	-	-	-	-	-
Nace L	-	-	-	-	52	-	161	212	0.01
Nace M	27	-	-	-	393	-	3 711	4 131	0.22
Nace N	15	-	-	-	214	-	269	498	0.03
Nace O	-	-	-	-	-	-	14	14	0.00
Nace P	39	-	-	-	-	-	12	51	0.00
Nace Q	56	-	-	-	-	-	63	119	0.01
Nace R	355	-	-	-	-	-	39	395	0.02
Nace S	1 901	928	-	-	18	-	55	2 903	0.15
Nace T	1 104	-	-	-	-	-	-	1 104	0.06

The adjustments as presented in the table are mainly made at the detailed level using the supply use tables (SUT), which contain information at product level for explicit adjustments for the “black” economy (N1), illegal activity (N2), production of output for own final use (N3) and fringe benefits and production of capital goods for own final use (N7). This makes it possible to extract the detailed information at industry level and it also ensures that the allowances are balanced in the different approaches to GDP.

1.8 The transition from GDP to GNI

The transition from GDP to GNI is conducted by applying information from the Danish balance of payments statistics (BOP). This information is applied directly, that is without any correction to the BOP figures being performed. The BOP is used directly in The Rest of the World account in the national account.

For BOP the competency is divided between Statistics Denmark and the Central Bank, *Danmarks Nationalbank*. The former conducts the compilation of the current account and the capital account and the latter the financial account and the international investment position. Danmarks Nationalbank also conducts the compilation of property income except for a minor item. Property income is the most important item in the GDP-GNI transition. The BOP compilation is compatible with IMF's Balance of Payments Manual, sixth version (BPM6). BOP is published by Statistics Denmark.

1.9 Main classifications used

The national accounts' grouping by industry – used for *compiling GDP from the production side* (GDP(P)) - is based on the six digit classification DB07 (Dansk Branchekode 2007) which again is a more detailed version of NACE rev. 2 at the four digit level.

There are five levels of grouping for publication of the final national accounts, covering 117, 69, 36a2, 19a2 and 10 industries respectively. The compilation of GDP(P) is done at the level of 117 industries. The national accounts level of 117 industries is based on the DB07 standard grouping of 127 industries. There are two reasons why the national accounts cannot use the 127 standard grouping as their most detailed level of publication. Firstly, it does not match the functional breakdown of construction activity in the national accounts, and secondly, within some of the 127 groups, the national accounts need to separate market activity and output for own use from (other) non-market activity.

The 117 grouping of industries is also used for compensation of employees, which is the most important independent component of *GDP from the income side* (GDP(I).
For the expenditure approach (GDP(E)), the classification of household final consumption expenditure (72 groups) based on COICOP is the most important. In addition the classification of government final consumption expenditure (10 groups) according to COFOG and a classification by 13 types of assets are used.

1.10 Main data sources used

The most important sources used for the production approach are:

- Accounts Statistics for Non-Agricultural Private Sector
- General Government Finance statistics
- Account statistics for industries predominated by public corporations

The most important source used for the income approach is:

- Quality Declaration for the Annual and Quarterly Working Time Accounts

The most important sources used for the expenditure approach are:
• Household-budget-survey
• International-trade-in-goods
• International-trade-in-service

The source used for the transition from GDP to GNI is:
• Balance of Payments

All the source statistics are described on Statistics Denmarks' website in "Documentation of statistics". Extracts of these "Documentation of statistics" are shown in chapter 10.

2. The revisions policy and the timetable for revising and finalizing the estimates; major revisions since the last version of the GNI Inventory

2.0 The revisions policy and the timetable for revising and finalizing the estimates

2.0.1 Current revisions

Final national accounts data are calculated three years after the reference year (year t+3). Several versions of preliminary accounts are calculated before that. The first version is available as the sum of quarters two months after the end of the reference year, and the last preliminary version is published at the end of year t+2.

Table 2.1 illustrates the revision policy (apart from benchmark revisions) for the Danish national accounts followed by Statistics Denmark from November 2001. The revision policy is announced to the users so that they always know how many periods will be revised.

Table 2.1 Revision policy of the Danish NA, from 2001

Year	Month of publishing	Year T, Q1	Year T, Q2	Year T, Q3	Year T, Q4	Year T
T	End May	P				
	Begin. July	R				
	End August	-	P			
	Begin October	R	R			
	End November	-	-	P		
T+1	Begin. January	R	R	R		
	End February	-	-	-	P	P (SQ)
	Begin. April	R	R	R	R	R (SQ)
	Begin. July	R	R	R	R	R (SQ)
	Begin. October	-	-	-	-	-
	End November					R (AP1)
T+2	Begin. January	R	R	R	R	-
	Begin. April	-	-	-	-	-
	Begin. October	-	-	-	-	-
	End November					R (AP2)
T+3	Begin. January	R	R	R	R	-
	Begin. April	-	-	-	-	-
	Begin. October	-	-	-	-	-
	End November					F
T+4	Begin January	F	F	F	F	

Note:
P First published SQ: Sum of quarters
R: Revised AP1: First preliminary annual calculation
F: Final AP2: Second preliminary annual calculation
Figures are published unchanged compared to the earlier published figures.
The revisions of the quarterly figures in January T+2, T+3 and T+4 are made in order to make the quarterly figures consistent with the annual figures.

The data available for preliminary accounts are subject to revisions and less detailed than data available for final national accounts. The most important sources for quarterly accounts (which form the basis for the first preliminary estimate as the sum of four quarters) are short term statistics in general and most notably:

- VAT statistics
- Foreign trade statistics
- Industrial production index
- Retail trade index
- Government finance statistics (based on quarterly accounting information from local and central government)

- Balance of payments
- Price indices
- Labour market statistics

The most important sources for annual national accounts are:

- Accounting statistics
- Product statistics (ProdCom, agricultural statistics)
- Foreign trade statistics
- Government finance statistics
- Monetary finance statistics
- Household budget survey
- Balance of payments
- Price statistics
- Labour market statistics

Moving from the first preliminary annual estimate (sum of four quarters) end of February t+1, annual sources are gradually implemented as they become available. As an important example, accounting statistics is implemented for the first time in the calculation of November t+2 while the ProdCom statistics is implemented in the supply use tables published for the first time in November t+3. Government Finance statistics on an annual basis is implemented for the first time in July t+1.

The reliability of preliminary national accounts figures are measured and published along with the publication of the national accounts. The difference between the real growth rate in the preliminary accounts and the final accounts is used for two measures: average deviation and bias. The average deviation shows the size of the revisions whereas the bias shows whether the revisions are systematic. A negative bias shows that the growth rate is generally underestimated in the first estimate while a positive bias shows a systematic overestimation in the first estimate.

One major explanation for the difference in growth rates is the methodology. In the preliminary accounts the calculation methods are more crude and at a more aggregate level because a short production time is important. Another explanation for differences in growth rates between preliminary and final accounts are due to revisions of primary data and the availability of more detailed data sources in the final accounts. In addition some estimates are based on assumptions or indicators in the preliminary accounts.

Table 2.2 shows main results of the revision analysis of annual growth rates for the period 1980-2012. Revisions are shown for the publication 3-4 months after the end of the year as well as for the publication 12 months after the end of the year.

In order to understand the information in table 2.1 an example for illustration can be of use: Assume that the final estimate of growth in GDP is 3.0 percent in two following years, t and t+1. Assume also that the preliminary estimates of growth in year t is 3.5 percent and 2.3 percent in year t+1. Revisions are 0.5 and -0.7 percentage points respectively in the two years. The average deviation (ignoring the sign) is 0.6 percentage points. The bias (respecting the sign) is –0.1 percentage points.

Table 2.2 Revisions of annual real growth rates 1980-2012

	First publication	Publication 12 months after the end of the year
	pct.-points	
Average deviation	0.54	0.54
Bias	0.08	-0.01
The 23 years revisions distributed according to the numerical value of the revision:	number of years	
0.0 – 0.5 pct. point	19	15
above 0.5 – 1.0 pct. point	8	13
above 1.0 – 1.5 pct. point	6	5

2.0.2 Benchmark revisions

The following describes the major steps in the development of the Danish national accounts from the beginning in the 1930'ies up till today. It is important to understand that in the Danish national accounts compilation system, which has been the basis since the first publication of a supply-use table in 1973, every year is compiled in "level". The concept of "benchmark revisions" in the case of the Danish national accounts is therefore related to the introduction of new international guidelines, new classifications, new sources that need to be introduced in level instead of as growth rates or eventually the correction of larger errors. These revisions are usually pooled together as described below. At the end of this section a planned revision of the national accounts in November 2016 is described. This revision follows a revision of the balance of payments back to 2005 to be published in October 2016.

The history of national accounts in Denmark began in the 1930'ies. The first publication took place in 1945 covering the years 1930-1944. The publication included input-output tables, and the use of input-output tables has been and still is the foundation of the compilation of GDP. Further development of the national accounts took place in the following years, and in 1947 a coverage and level of detailed was reached which was kept until the mid 1970'ies. In 1962 the results of a comprehensive revision of the years 1947- was published.

In 1968 work on the development of a new national accounts system was initiated. This included the introduction to new classifications and SNA68. A detailed supply-use system formed the core of the system. In 1973 a first result in the form of a supply-use table for 1966 was published. The regular publication started in 1978. In the coming years further developments took place beginning with preliminary accounts then institutional sector accounts and finally quarterly accounts. By the beginning of the 1990'ies a complete set of national accounts (apart from financial accounts) was available and published annually.

In 1993 a major revision of the national accounts was started. The major revision is a combination of the introduction to ESA95, revision of sources and methods, new classifications and change to 1990 as a reference year for constant price estimates. The results from the major revision were published in 1997. In 2001 the national accounts were extended by financial accounts and estimates of fixed capital (capital stock estimates).

In 2005 Statistics Denmark published the results of a benchmark revision called the "datarevision". This benchmark revision was minor in the sense that no new classifications and definitions were introduced and that ESA95 is still followed. The larger exceptions, affecting the compilation of GDP, are:

- The distribution of FISIM to users
- Foreign trade of services are now recorded gross for im- and export. Before they were recorded as net-import or net-export.
- New COFOG classifications

As the national accounts has gradually introduced new accounting statistics, the existing compilation systems were - for the larger part - unchanged. New systems were developed for the compilation of dwellings, bank services, public non-market services and the gross-recording of foreign trade in services. In other areas the revisions follow a revaluation of the compilations fx in areas of growing importance in the economy.

In September 2011 new industries based on the Nace rev. 2 classification was introduced. It was a "clean" transformation to new industries in the sense that no other revisions were implemented and all main aggregates were left unchanged. Five levels of aggregation were defined: 10a3, 19a2, 36a2 and 117. The 69 grouping is close to Eurostat's most detailed level for compiling national accounts by industries.

In September 2014 the most recent major revision was published. It introduced ESA2010, addressed GNI-reservations and also implemented other well defined revisions. The major revision was carried back to 1966 at the level of input-output tables. The revision is described in detail in the following sections.

Parallel with the implementation of ESA2010, the new guidelines for compiling balance of payments (BPM6) were implemented in the balance of payments statistics and published in October 2014 (Rest of the World account is consistent with the balance of payments). As part of the implementation of BPM6 some additional questions were included in the questionnaire on international trade in services as from 2013. The new variables have made it possible to validate the information by comparing more directly vis-à-vis other statistical domains.

Against that background, the foreign activities of selected larger Danish enterprises have been mapped and it revealed a need to revise the balance of payments. Due to the results of this investigation as well as due to some recent changes in existing data, the balance of payments will be revised in October 2016. The statistics will be revised back to 2005 and the figures will be published in October 2016.

The revision of the balance of payments will be implemented in the national accounts and published in November 2016. For GDP from the production side, the revision is limited to the industries affected by the revision of the balance of payments (10 out of a total of 117 industries). For GDP from the expenditures side, all expenditure components except government final consumption expenditure and NPISH final consumption expenditure are affected. Some of the problems addressed by the revision of the balance of payments statistics had gradually made it increasingly difficult to balance the supply-use tables, so it is expected, that the continuing effort to confront data already at the level of primary statistics will be to a future benefit of the national accounts.

2.1 Major revisions due to the transition from ESA 1995 to ESA 2010

Table 2.3 gives an overview of the impact of changes from ESA95 to ESA2010 as defined in the manual on the changes between ESA95 and ESA2010. The table shows for each transition item the effect on GDP(P), GDP(E), GDP(I) and the transition to GNI. The table was published as part of the publication of the results of the implementation of ESA2010 in September 2014. One important result of the major revision published in September 2014 was, that we could distinguish and quantify the effects of the implementation of ESA2010 and the revision of data and sources (some of which were revisions related to reservations) for the year 2008. In the following, the presentations therefore relate to the year 2008.

However, for GNI own resource purposes the transition items are quantified all years from 2010.

Table 2.3 Total effect of implementing ESA2010, 2008

		Total effect GDP	Research and development		Valuation of own account production	Non-life insurance	Military weap. system	Decommissioning costs	Sector delimitation (pub. sector)	Small tools	VAT-based third EU own ressource	Index-linked debt instruments	Centralbank – allocation of output	Land improvements	Construction activity abroad	FISIM (resid. and non-resid.)
			Market	Non-market												
			1a	1b	2	3	4	5	6	7	8	9	10	11	24	25
		current prices, DKK mill.														
Production approach (P)																
P.1	Output of goods and services	38 408	25 301	13 052	54	-5 103	103	-	70	-	-	-	-	-	4 931	-
P.2	Intermediate consumption	-10 504	-7 845	-	-	- 519	-2 140	-	-	-	-	-	-	-	-	-
B.1g	Gross value added	48 912	33 146	13 052	54	-4 584	2 243	-	70	-	-	-	-	-	4 931	-
D.21	Taxes on products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.31	Subsidies on products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenditure approach (A)																
P.3 S14	Househ. final consumpt. exp.	-3 411	-	-	-	-3 411	-	-	-	-	-	-	-	-	-	-
P.3 S15	NPISH final consumpt. exp.	8 563	-	-69	-	-	-	-	8 632	-	-	-	-	-	-	-
P.3 S13	Gen. gov. final consumpt. exp.	-9 484	-	-1 025	-	-	103	-	-8 562	-	-	-	-	-	-	-
P.51g	Gross fixed capital formation	49 487	33 146	14 147	54	-	2 140	-	-	-	-	-	-	-	-	-
P.52	Changes in inventories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.53	Acqui. less dispos. of valuabl.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.61	Exports of goods	-2 184	-	-	-	-	-	-	-	-	-	-	-	-	-2 184	-
P.62	Exports of services	19 614	-	-	-	-1 028	-	-	-	-	-	-	-	-	20 642	-
P.71	Imports of goods	-382	-	-	-	-	-	-	-	-	-	-	-	-	-382	-
P.72	Imports of services	14 054	-	-	-	145	-	-	-	-	-	-	-	-	13 909	-
Income approach (I)																
D.1	Compensation of employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B2.g/B.3	Gross operating surplus and mixed income	48 912	33 146	13 052	54	-4 584	2 243	-	70	-	-	-	-	-	4 931	-
D.2	Taxes on prod. and imports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.3	Subsidies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GDP (P=A=I)		48 912	33 146	13 052	54	-4 584	2 243	-	70	-	-	-	-	-	4 931	-
D.1	Comp. of empl. rec. from RoW	-1 054	-	-	-	-	-	-	-	-	-	-	-	-	-1 054	-
D.1	Comp. of empl. paid to RoW	50	-	-	-	-	-	-	-	-	-	-	-	-	50	-
D.2	Taxes on prod. and imp. t. EU.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.3	Subsidies rec. from the EU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.4	Property inc. rec. from RoW.	-6 197	-	-	-	-	-	-	-	-	-	-	-	-	-6 197	-
D.4	Property income paid to RoW.	-2 370	-	-	-	-	-	-	-	-	-	-	-	-	-2 370	-
GNI		43 982	33 146	13 053	54	-4 584	2 243	-	70	-	-	-	-	-	-	-
		pct.														
	Effect of ESA2010 on GDP	2.8	1.9	0.7	0.0	-0.3	0.1	-	0.0	-	-	-	-	-	0.3	-
	Effect of ESA2010 on GNI	2.5	1.9	0.7	0.0	-0.3	0.1	-	0.0	-	-	-	-	-	-	-

As appears from table 2.3, the transition items, that have an effect on GNI, are Research and development market (1a); Research and development, non-market (1b); Valuation of output for own final use (2); Non-life insurance (3); Weapon systems (4); Sector classification (6). The change related to the VAT based EU resource (8) had no effect on the nationally published figures, because we already followed the ESA2010 recording. For EU fourth own resource purposes, we aligned with ESA95. The by far largest effects come from Research and development that accounts for 2,6 of the total impact of 2,8 percent on GDP.

The transition items that do not have an impact on GNI are Decommissioning costs (5); Small tools (7); Index-linked debt instruments (9), Central bank – allocation of output (10); and land improvements (11).

Table 2.4 shows the transition table from the GNI questionnaire 2015. It presents the total effect of the transition items on GDP for the years 2010-2014.

Table 2.4 Transition from ESA95 to ESA2010, GNI Questionnaire 2015

		2010	2011	2012	2013	2014
		DKK mill.				
R&D created by a market producer	(1a)	37 399	34 236	36 121	37 154	38 936
R&D created by a non-market producer	(1b)	14 186	14 750	15 290	15 292	16 026
Valuation of output for own final use	(2)	86	88	42	43	43
Non-life insurance	(3)	-4 624	-3 477	-1 556	-1 292	-1 124
Weapon systems	(4)	1 611	1 109	1 291	1 337	1 200
Decommissioning costs	(5)					
Sector classification	(6)	23	29	48	56	53
Small tools	(7)					
VAT-based EU resource	(8)	1 609	2 083	2 105	2 170	2 239
Index-linked debt instruments	(9)					
Central bank – allocation of output	(10)					
Land improvements	(11)					
Total		50 290	48 817	53 341	54 759	57 372

Note: For 2012 and onwards it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

In the following, all transition items are described in more detail for the years 2010-2012.

(1a) R&D created by a market producer

Capitalisation of R&D created by a market producer is the transition to ESA2010 with the largest effect on GDP.

The new treatment of *own account R&D produced by a market producer* implies, that output increases by the costs for the R&D activity including a mark-up for net-operating surplus. The increase in output is recorded as gross fixed capital formation.

Expenditure on *purchased R&D by a market producer* is moved from intermediate consumption to gross fixed capital formation. This implies that *all* purchased R&D is recorded directly as gross fixed capital formation and that purchased R&D is excluded from the value of own account R&D. However purchased R&D in the industry named *Research and development* (that produces R&D for sale) is not recorded directly as GFCF because it is considered to be included in the value of the sale of the final R&D results.

The effect on GDP and GNI is shown in table 2.5. For a more detailed description please see chapter 5.

Table 2.5 R&D by a market producer

		2010	2011	2012
		DKK mill.		
Production	P.1	28 440	24 219	25 169
Intermediate consumption	P.2	-8 959	-10 017	-10 952
Gross value added	B.1g	37 399	34 236	36 121
Gross fixed capital formation	P.51g	37 399	34 236	36 121

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

(1b) R&D created by a non-market producer

Capitalisation of R&D created by a non-market producer also has a big effect on GDP.

Own account R&D produced by a non-market producer is valued as the sum of costs – like the way output is normally valued for a non-market producer. The difference is that output is now recorded as GFCF and not government consumption expenditure or NPISH consumption expenditure as was the case under ESA95.

Purchased R&D by a non-market producer is included as intermediate consumption in own account R&D.

Consumption of fixed capital generated by R&D capital stock is now included in non-market output and therefore increases government and NPISH consumption expenditure.

The effect is shown in table 2.6.

Table 2.6 R&D by a non-market producer

		2010	2011	2012
		DKK mill.		
Production	P.1	14 185	14 750	15 258
Intermediate consumption	P.2	0	0	0
Gross value added	B.1g	14 185	14 750	15 258
NPISH consumption	P.3	-80	-47	-39
Government consump.	P.3	-2 015	-1 864	-2 172
Gross fixed capital formation (NPISH)	P.51g	148	126	120
Gross fixed capital formation (gov.)	P.51g	16 133	16 535	17 381

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

To determine what is R&D in General Government, the following COFOG groups are used: 1.4 Basic research, 1.5 R&D general public services, 2.4 R&D defense, 3.5 R&D public order and safety, 4.8 R&D economic affairs, 5.5 R&D environmental protection, 6.5 R&D housing and community amenities, 7.5 R&D health, 8.5 R&D recreation, culture and religion, 9.5 Education n.e.c. and 10.8 R&D social protection. For a more detailed description please see chapter 5.

(2) Valuation of output for own final use for a market producer

The effect of including a mark-up to account for net-operating surplus on output for own final use for a market producer is very small.

The mark-up on output for own final use is calculated using the assumption that the ratio between capital and output for the production of output for own final use is the same as in the sectors S.11 and S.12 combined. This ratio is used to estimate the capital needed for the production of output for own final use. It is furthermore assumed that the real return to capital is 2.5 percent and the mark-up is thus calculated as 0.025 times the capital stock.

It should be noted that for the most part production of output for own final use in the Danish national accounts is already valued at market prices and therefor no markup is needed (e.g. this is the case for owner-occupied dwellings).

The result is shown in table 2.7. A more detailed description can be found in chapter 7.

Table 2.7 Mark-up on own account output for a market producer

		2010	2011	2012
Production approach				
Output of goods and services	P1	86	88	42
Intermediate consumption	P2	0	0	0
Gross value added	B.1G	86	88	42
Expenditure approach				
Gross fixed capital formation	P51g	86	88	42
Income approach				
Gross oper. surplus and mixed inc.	B.2G+B.3G	86	88	42
Gross domestic product (ESA2010)	B.1*G	86	88	42
Gross national income (ESA2010)	B.5*G	86	88	42

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

(3) Non-life insurance

Non-life insurance output is calculated using the sum-of-costs approach, which is one of the possible methods according to ESA2010. As table 2.8 below shows output consists of different cost elements, where intermediate consumption and wages is by far the most important contributor. In addition to the cost elements a mark-up for net-operating surplus is added. It has been chosen to use 1,5% of own funds. This mark-up is consistent with calculations for life-insurance.

Table 2.8 Calculation of output for large non-life insurance companies, 2008

		DKK mill.
	Intermediate consumption excl. FISIM	4 286
+	Wages and salaries	5 855
+	Depreciation	234
+	Taxes (lønsumsafgift)	644
+	Return on own capital (1,5%)	768
=	Output of large non-life insurance compannies	11 787

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

This new output calculation affects the different elements of GNI. Table 2.9 below show which elements that are affected.

Table 2.9 Effect of calculating non-life insurance using the sum of costs approach

		2010	2011	2012
		DKK mill.		
Production approach				
Output of goods and services	P1	-5 536	-2 997	847
Intermediate consumption	P2	-912	480	2 403
Gross value added	B1G	-4 624	-3 477	-1 556
Expenditure approach				
Total final consumption expenditure	P3	-5 092	-3 912	-3 380
Household final consumption exp.	P3	-5 081	-3 919	-1 695
NPISH final consumption exp.	P3	0	0	0
General gov. final consumption exp.	P3	-11	6	42
Exports of goods and services	P6	-937	-863	-350
Imports of goods and services	P7	-1 404	-1 298	-447
Income approach				
Gross oper. surplus and mixed inc.	B2G+B3G	-4 624	-3 477	-1 556
Gross domestic product (ESA2010)	B1*G	-4 624	-3 477	-1 556
Gross national income (ESA2010)	B5*G	-4 624	-3 477	-1 556

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

(4) Weapon systems

The classification of expenditure on military weapon systems has changed due to the introduction of ESA2010. Before the revision acquisition of weapon systems was, unlike other acquisitions, classified as intermediate consumption. The information needed for the classification of weapon systems as GFCF has always been available in the central government accounts but not used due to the convention in ESA95. After the implementation of ESA2010 the information in the central government accounts on acquisition of weapon systems is used to obtain investment (GFCF) figures for weapon systems. Consumption of fixed capital on these figures is calculated using the PIM and is part of general government consumption expenditure.

The available information on weapon systems is the same as for all other areas in the central government accounts and after the revision it is also classified in the same system and as part of the same process – the only change being that these expenditures are now GFCF and not intermediate consumption. The information in table 2.10 shows the impact of this change in the figures for government finance statistics:

Table 2.10 Weapon systems

		2010	2011	2012
		DKK mill.		
Production	P.1	-320	28	-96
Intermediate consumption	P.2	-1 931	-1 080	-1 387
Consumption of fixed capital	P.51c	1 611	1 109	1 291
Gross domestic product	B.1g	1 611	1 109	1 291
Final consumption expenditure	P.3 S13	-320	29	-96
Gross fixed capital formation	P.51g	1 931	1 080	1 387

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

(5) Decommissioning costs

Decommissioning costs for large capital assets has no effect. There has been no observation of large capital assets with decommissioning costs in Denmark.

(6) Government, public and private sector classification

Two changes in ESA2010 affect the delimitation of general government: The stronger emphasis on control and the new market non-market criteria.

As a result of the stronger emphasis on control, private schools are moved from General Government (S.13) to NPISH (S.15) which also moves General Government final consumption expenditure to NPISH final consumption expenditure. There is no effect on GDP because these units are simply moved from one sector to another and the calculation method has not changed.

As a result of the new market non-market criteria, the public infrastructure company (A/S Øresund) has moved from non-financial corporations (S.11) to general government (S.13). This implies that the calculation method is now based on the sum of costs, which has a minor effect on GDP.

Table 2.11 Sector delimitation

		2010	2011	2012
		DKK mill.		
Production	P.1	23	29	48
Intermediate consumption	P.2	0	0	0
Gross value added	B.1g	23	29	49
NPISH consumption	P.3	8 787	8 825	8 919
Government consump.	P.3	-8 764	-8 797	-8 871

Note: For 2012 it should be noted, that data are not consistent with other chapters of this documentation. Data in this table are from the GNI questionnaire September 2015, where 2012 onwards were preliminary figures. The reference year in the GNI inventory is final 2012 as published in November 2015.

(7) Small tools

Before the revision a share of acquisitions of durable equipment expensed in business accounts was considered to consist of purchases of small tools not exceeding 500 ECU measured in prices of 1995. Originally a calculation was established to estimate the correct share, taking into account the sizes of purchases of durable equipment treated as current expenses and the development in prices and rates of exchange.

When, in ESA 2010, the 500 ECU limit was abolished it was decided to treat a limited number of product codes from the detailed Supply and Use tables as "Small tools" that are fully treated as intermediate consumption while small purchases of other durables are now treated as GFCF. As the effect of this change did not provide any clue to whether intermediate consumption/GFCF should be higher or lower than hitherto, it was decided to keep the practice that 12% of acquisitions of durables included in current expenses are treated as intermediate consumption.

(8) VAT-based third EU own resource

The VAT-based third EU own ressource is treated as a transfer according to ESA2010. According to ESA95 it was treated as taxes paid to the rest of the world. The values are exclusive of Denmark's contribution to the UK-rebate. The impact is shown in table 2.4.

(9) Index-linked debt instruments

There are almost no index linked debt instruments in Denmark, so no effect.

(10) Central bank – allocation of output

Denmark followed the guidelines in ESA2010 before the revision, so no effect.

(11) Land improvements

Denmark recorded expenditure on land improvements as GFCF already before the revision, so no effect.

2.2 Major revisions since the last version of the GNI Inventory other than due to conceptual changes in ESA 2010

2.2.1 Country specific reservations

Denmark had one country specific reservation regarding dwellings:

(1) Following the discontinuation of the survey on rents for community housing, the estimation of dwelling services needs to be based on a new annual source and the issue of the continuity of the series needs to be investigated.

The reservation was addressed as part of the major revision in 2014 and lifted in December 2015.

Output for dwellings is calculated using the stratification method where the buildings register is stratified according to location, size, age, quality and type of dwelling making for a total of 7.040 strata. A new source for rents based on a register for applications for housing-related benefits from the Ministry of Social Affairs – the so-called Register of housing-related social benefits (in Danish "Boligstøtteregistret") - was introduced. Roughly 500.000 rents are available on an annual basis. Each entry on rent in the register has a code identifying the dwelling it relates to.

This code is also available in the buildings register, and the stratified buildings register is combined with observations on rents from the ministry of social affairs and so the data on rents from the Register of housing-related social benefits can be matched to the exact dwelling they relate to in the buildings register. For all dwellings that have a match, the observed rent is used.

The average rent per square meter within each stratum is then calculated and used for all dwellings within the stratum that do not have an observed rent, given that there are five or more observed rents in the stratum. If there are less than five observed rents in the strata, a regression model is used at a more aggregate level.

The reservation was initially addressed in the 2014 questionnaire with the effects on GNI as shown in table 2.12:

Table 2.12 Effects on GDP and GNI as a result of work done on reservation (1) dwellings

		2002	2003	2004	2005	2006	2007	2008	2009
		DKK mill.							
Output	P.1	-4 431	-2 297	-2 387	-5 377	-7 275	-10 790	-10 735	-9 913
Interm. Consump.	P.2	-693	-1 509	-1 086	-825	-361	215	1 062	679
GVA	B.1g	-3 738	-788	-1 301	-4 552	-6 914	-11 005	-11 797	-10 592
S.14 Household consumption	P.3	-3 738	-788	-1 301	-4 552	-6 914	-11 005	-11 797	-10 592
GOS and mixed inc.	B.2g+B3g	-3 738	-788	-1 301	-4 552	-6 914	-11 005	-11 797	-10 592
GDP		-3 738	-788	-1 301	-4 552	-6 914	-11 005	-11 797	-10 592
GNI		-3 738	-788	-1 301	-4 552	-6 914	-11 005	-11 797	-10 592
		pct.							
Effect on published GDP		-0.27	-0.06	-0.09	-0.29	-0.42	-0.65	-0.67	-0.64

During the direct verification process, which took place in June 2015, the calculation was followed step by step at the most detailed level. During this process, it was identified, that the buildings register on square meters used in the new calculation for 2007 and 2008 were not fully updated. The implication of this was that the number of square meters used for the new calculation was underestimated. A new calculation has been done for these two years using updated registers on square meters. The effect on GDP and GNI, which was incorporated in the 2015 GNI-questionnaire, is shown in table 2.13 below.

Table 2.13 Effects on GDP and GNI as a result of work done on reservation (1) dwellings

		2002	2003	2004	2005	2006	2007	2008	2009	2010
		DKK mill.								
Output	P.1						3 477	3 708		
Interm. Consump.	P.2						231	244		
GVA	B.1g						3 246	3 465		
S.14 Household consumption	P.3						3 246	3 465		
GOS and mixed inc.	B.2g+B.3g						3 246	3 465		
GDP							3 246	3 465		
GNI							3 246	3 465		
		pct.								
Effect on GNI ESA95, 2014 questionnaire							0.19	0.20		

2.2.2 Transversal reservations

I The treatment of cross border property income

This transversal reservation is composed of four parts:

1) Reinvested earnings on FDI,
2) Interest and dividends received by mutual funds,
3) Withdrawals of income from quasi corporations
4) Recording of taxes on property income.

After thorough investigations and analysis it was concluded that no further work was needed for 1), 3) and 4). However, work needed to be done on *2) interest and dividends received by mutual funds* in order to get this reservation lifted.

As part of the major revision, the treatment consistent with ESA95 has been implemented. This means that retained earnings in mutual investment funds will be considered as distributed to the owners (households).

For investments funds issued in Denmark (in S.123 and S.124) the value of retained earnings (D.4432) is calculated as the sum of interest and dividends received less interest and dividends paid[3]:

D.4432=D.41 (R)+ D.42 (R) – D.41 (U) – D.4431 (U)

Where (R) is resource and (U) is use. The values of interest and dividends are known from the data we receive from the financial supervisory authority.

To allocate the retained earnings, the ownership share for the different sectors has been used. In the period 1995 to 2013 the share for the Rest of the World (S.2) has been between 2 and 4 percent.

The calculation for investment funds issued by the Rest of the World owned by Danish residents is slightly different. We don't have the values for received and paid property value directly. We only have the values of the stock owned. In order to estimate the value for retained earnings, we assume the foreign investment funds have the same structure in receiving and paying out property income. This means that if an investment fund issued worth 100 DKK in Denmark has retained earnings of 10 DKK, then an investment fund issued abroad worth 100 DKK also have retained earnings of 10 DKK.

From 2013 and onwards, the Danish Central Bank will collect data on reinvested earnings in mutual investment funds paid to and received from the rest of the world. Table 2.14 shows that the effect on GNI is minor, ranging between -213 mill. DKK and +158 mill. DKK.

[3] This method has been consulted with Eurostat

Table 2.14 Effects on GDP and GNI as a result of work done on property income related to interest and dividends received by mutual funds.

		2002	2003	2004	2005	2006	2007	2008	2009
		DKK mill.							
D.4 Property income received	D.4	5	8	84	118	278	219	89	412
D.4 Property income paid	D.4	175	192	192	331	447	260	56	254
GNI		-170	-184	-108	-213	-169	-41	33	158

Transversal reservation I was lifted in December 2015

II The calculation and allocation of financial intermediation services indirectly measured (FISIM)

This reservation was lifted 27/02 2014 with no revisions.

III The treatment of entities with little or no physical presence

This reservation was lifted 17/09 2013 with no revisions.

IV The treatment of car scrap schemes

Car scrap schemes have so far been treated as a subsidy on products. As part of our major revision and in line with the agreement in the GNI committee, car scrap schemes are now treated as transfers.

The effect on GDP and GNI is very small and is shown in table 2.15.

Table 2.15 Effects on GDP and GNI as a result of work done on transversal reservation IV car scrap schemes

		2002	2003	2004	2005	2006	2007	2008	2009
		DKK mill.							
Output	P.1								
Interm. Consump.	P.2	117	152	161	176	163	148	178	133
GVA	B.1g	117	152	161	176	163	148	178	133
Subs. Products	D.31	-120	-155	-165	-180	-165	-150	-181	-135
S.14 Household consumption	P.3	3	3	4	4	2	2	4	2
GOS and mixed inc.	B.2g+B3g	-117	-152	-161	-176	-163	-148	-178	-133
Subsidies	D.3	-120	-155	-165	-180	-165	-150	-181	-135
GDP		3	3	4	4	2	2	4	2
GNI		3	3	4	4	2	2	4	2

Transversal reservation IV was lifted in June 2015

V The treatment of cooperative dwellings

This reservation was lifted 17/09 2013 with no revisions.

VI The inclusion of illegal activities in national accounts

Denmark has - until the major revision in September 2014 - included illegal activities in GDP and GNI for own resource purposes only. As part of our major revision illegal activities have been included in our published national accounts. In relation to that we have updated and improved our estimates, but the basic methodology remains as described in our GNI inventory.

The effect on the revisions between data submitted in the 2013 GNI questionnaire and the 2014 GNI questionnaire is shown in table 2.16. The biggest change relates to new calculations of import of prostitution, drugs and smuggling (which wasn't included before) and the total effect on GDP is minor.

The total effect of illegal activities on Danish GDP and GNI is described in chapter 7.

Table 2.16 Effects on GDP and GNI as a result of work done on transversal reservation VI Illegal activities

		2002	2003	2004	2005	2006	2007	2008	2009
		DKK mill.							
Output	P.1	-519	-435	-414	-548	-442	-356	-225	-183
Interm. Consump.	P.2	0	0	0	0	0	0	0	0
GVA	B.1g	-519	-435	-414	-548	-442	-356	-225	-183
S.14 Household consumption	P.3	1 028	1 119	1 283	999	1 324	1 776	1 725	2 328
Import	P.7	1 548	1 554	1 698	1 548	1 766	2 132	1 950	2 511
GOS and mixed inc.	B.2g+B.3g	-519	-435	-414	-548	-442	-356	-225	-183
GDP		-519	-435	-414	-548	-442	-356	-225	-183
GNI		-519	-435	-414	-548	-442	-356	-225	-183

Transversal reservation VI was lifted in December 2015.

VII The recording of the vehicle registration tax

This reservation was lifted 27/02/ 2014 with no revisions.

VIII intermediate consumption of dwelling services

During the cross country comparisons of this reservation it was identified, that Denmark has no intermediate consumption of insurance services in the dwellings industry – these expenses were recorded as household final consumption expenditure. It was agreed, that a reallocation from household final consumption expenditure to intermediate consumption should be made. The effect on GDP and GNI is shown in table 2.17 below.

Table 2.17 Effects on GDP and GNI as a result of work done on transversal reservation VIII intermediate consumption of dwellings

		2002	2003	2004	2005	2006	2007	2008	2009	2010
		DKK mill.								
Output	P.1									
Interm. Consump.	P.2	438	458	481	530	613	668	685	685	714
GVA	B.1g	-438	-458	-481	-530	-613	-668	-685	-685	-714
S.14 Household consumption	P.3	-438	-458	-481	-530	-613	-668	-685	-685	-714
GOS and mixed inc.	B.2g+B.3g	-438	-458	-481	-530	-613	-668	-685	-685	-714
GDP		-438	-458	-481	-530	-613	-668	-685	-685	-714
GNI		-438	-458	-481	-530	-613	-668	-685	-685	-714
		pct.								
Effect on GNI ESA95, 2014 questionnaire		-0.03	-0.03	-0.03	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04

Transversal reservation VIII was lifted in December 2015

2.2.3 Major revisions other than revisions due to reservations

In addition to changes related to the implementation of ESA 2010 and changes related to reservations, some other major revisions to data and methods were introduced as well. The most significant changes are described in the following.

New account statistics for NPISH (non-profit institutions serving households)

A new account statistics for NPISH (non-profit institutions serving households) has been established in order to provide sufficient information for compiling a full set of accounts for this sector.

Value added in the NPISH sector (S.15) is doubled in the revised accounts - from 9,7 to 20,3 bill. DKK in 2008, a total of 10,6 bill. DKK. Of this, 2,3 bill. DKK comes from a new account statistics and 8,3 bill. DKK comes from general government (private schools). The effect on GDP of the account statistics is +0,1 percent in 2008 and is reasonable stable over time.

Imputed pension contributions for civil servants

Before the revision, imputed pension contributions for civil servants were – by convention – compiled using information on paid pensions to retired civil servants. As part of the major revision, a new compilation method based on information on employed civil servants has been introduced. The new compilation method decreases general government consumption expenditure by 8,7 bill. DKK or 1,9 percent and GDP decreases by 0,5 percent in 2008. The effect of the new compilation of imputed pension contributions varies over time. From 1966 to 1993 it increases GDP and from 1994-2013 it decreases GDP.

Value added in agriculture

A number of adjustments to the calculation of value added in agriculture have been made. One is related to intermediate consumption of financial intermediation services, which were double counted. Another correction is related to the production of Christmas trees which wasn't reclassified from *Forestry* to *Agriculture* when nace rev. 2 was introduced. The total effect of the revision is an increase in value added in agriculture of 1,2 bill. DKK in 2008. Due to balancing, the effect on GDP is insignificant.

Production of energy

Before the revision, the production of energy (electricity and heating) was defined by activity at the detailed level of industries. As part of the revision, the production of energy is allocated to the unit actually producing the energy. This means that the electricity industry also produces heating, for example. The change of principle has no effect on GDP. In addition output of electricity is revised due to the incorporation of new taxes and subsidies (PSO) and revision in the foreign trade statistics. Export of natural gas is also revised due to changes in the foreign trade statistics. The incorporation of new taxes and subsidies reduce GDP by 0,8 bill. DKK in 2008. The revisions to the foreign trade statistics related to electricity and gas reduce GDP by 0,1 bill. DKK in 2008. In total, the revisions in the energy industries reduce GDP by 1,2 bill. DKK or 0,1 percent in 2008.

Commercial television

Output and consumption expenditure of commercial television, fx. Cable television was not included before the revision. The inclusion of commercial television increases GDP by 2,3 bill. DKK or 0,1 percent in 2008.

Household expenditure on hotels

The use of output in hotels has been revised and a larger part is now allocated to household consumption expenditure. The new distribution is based on information from VisitDenmark (the Danish tourist agency). The revision increases household consumption expenditure and GDP by 3,3 bill. DKK or an upward adjustment of GDP by 0,2 percent in 2008.

2.3 Planned actions for improvements

As a result of the implementation of BPM6 in the balance of payments – more specific the new treatments of goods sent abroad for processing and merchanting – some difficulties and inconsistencies vis-à-vis other statistical domains were revealed. Therefore an investigation into these difficulties and inconsistencies was carried out and it was found necessary to revise the balance of payments. The revised balance of payments will be published in October 2016. It will be implemented in the national accounts and published in November 2016. A more detailed description can be found in section 2.1.

3. The production approach

3.0 GDP according to the production approach

For 2012, the calculation of output-based GDP can be summarised in table 3.1 below:

Table 3.1 GDP, Production approach, 2012

	Value	Pct. of GDP
	DKK mill.	pct.
Output at basic price	3 362 422	178.6
- Intermediate consumption	1 738 713	92.6
+ taxes on products	272 919	14.5
- Subsidies on products	14 003	0.7
GDP	1 882 625	100.0

The aggregate estimate of value added is based on an estimate at the level of the national accounts' most detailed industry grouping. The estimates for the 117 individual industries are set out in Sections 3.7 - 3.25, which explain the calculations for each of the NACE subsections. The calculations of value added up to the initial output-based estimate of GDP are for most industries at a much more detailed level, namely the DK-NACE extremely detailed grouping of 726 industries. The national accounts are balanced at the 117-industry level in the supply and use tables. Balanced values for value added divided by industry appear in the final national accounts for 117 industries in prices for the year in question and as time series of Laspeyeres chain indices based on estimates in the previous year's prices.

Table 3.2 is a cross table showing value added at basic prices in 2012 by industry (NACE A21) and institutional sectors.

Table 3.2 Output, intermediate consumption and gross value added by industry and institutional sector, 2012

NACE section		Sector	Output	Intermediate consumption	Gross value added	PCT of GVA
			DKK mill.			pct.
A	Agriculture, forestry and fishing	S.11	27 680	19 301	8 379	0.52
		S.13	749	411	338	0.02
		S.14	60 483	37 843	22 640	1.39
B	Mining and quarrying	S.11	65 699	9 109	56 590	3.49
		S.14	85	29	56	0.00
C	Manufacturing	S.11	652 516	442 658	209 857	12.92
		S.14	10 437	4 985	5 452	0.34
D	Electricity, gas, steam and air conditioning supply	S.11	93 408	54 787	38 621	2.38
		S.14	138	69	69	0.00
F	Construction	S.11	155 822	92 270	63 552	3.91
		S.13	9 015	6 233	2 782	0.17
		S.14	40 775	32 580	8 195	0.50
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	S.11	349 193	160 151	189 042	11.64
		S.14	23 215	14 543	8 671	0.53
H	Transportation and storage	S.11	333 475	263 914	69 561	4.28
		S.13	5 415	3 102	2 313	0.14
		S.14	14 835	4 820	10 016	0.62
I	Accommodation and food services activities	S.11	40 781	22 861	17 920	1.10
		S.14	15 004	9 186	5 818	0.36
J	Information and communication	S.11	147 765	78 545	69 219	4.26
		S.13	3 716	1 598	2 119	0.13
		S.14	4 397	2 542	1 855	0.11
K	Financial and insurance activities	S.12	167 115	64 696	102 419	6.31
L	Real estate activities	S.11	107 356	42 260	65 096	4.01
		S.13	1 891	886	1 005	0.06
		S.14	133 945	35 158	98 786	6.08

Table 3.2 Output, intermediate consumption and gross value added by industry and institutional sector, 2012 cont.

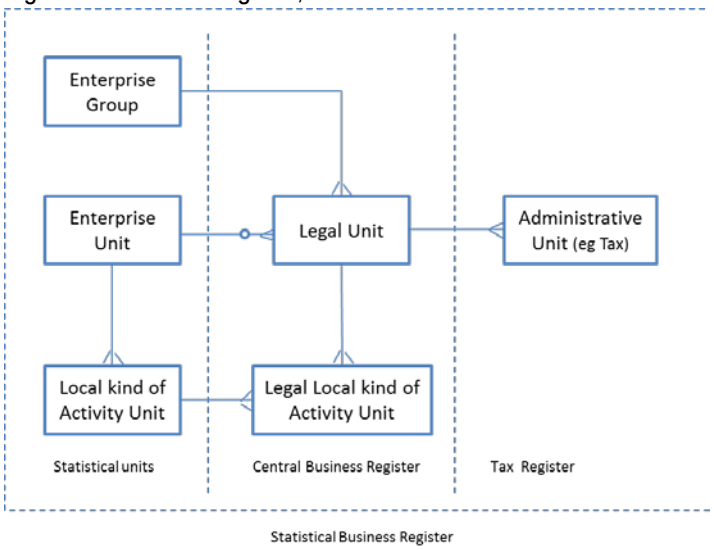
NACE section		Sector	Output	Intermediate consumption	Gross value added	PCT of GVA
			DKK mill.			pct.
M	Professional, scientific and technical activities	S.11	144 009	71 312	72 698	4.48
		S.12	395	123	272	0.02
		S.13	5 089	1 184	3 905	0.24
		S.14	12 160	6 030	6 130	0.38
N	Administrative and support service activities	S.11	79 178	44 831	34 347	2.12
		S.13	13 291	7 912	5 378	0.33
		S.14	9 286	3 723	5 563	0.34
O	Public administration ad defence; compulsory social security	S.11	5 112	1 476	3 636	0.22
		S.13	139 498	50 835	88 663	5.46
		S.14	3	1	2	0.00
P	Education	S.11	2 114	1 147	968	0.06
		S.13	124 617	32 352	92 266	5.68
		S.14	1 384	322	1 062	0.07
		S.15	15 655	4 331	11 324	0.70
Q	Human health and social work activities	S.11	18 050	5 002	13 048	0.80
		S.13	219 730	65 453	154 277	9.50
		S.14	12 545	1 922	10 622	0.65
		S.15	6 164	3 157	3 006	0.19
R	Arts, entertainment and recreation	S.11	19 088	8 309	10 780	0.66
		S.13	14 541	5 554	8 988	0.55
		S.14	3 386	895	2 491	0.15
		S.15	4 836	2 086	2 750	0.17
S	Other service activities	S.11	14 754	4 809	9 946	0.61
		S.13	7 379	2 499	4 879	0.30
		S.14	7 387	2 408	4 979	0.31
		S.15	13 237	6 505	6 732	0.41
T	Activities of households as employers; etc.	S.14	4 624	0	4 624	0.28
	Total		3 362 422	1 738 713	1 623 709	100.00

3.1 The reference framework

3.1.1 The business register

In Denmark only one Central business register exists. It is run by *Statistics Denmark*, *Skat* (Customs and Tax) and *Erhvervsstyrelsen* (Danish Business Authority). The business register used in Statistics Denmark for statistical purposes is a copy of the Central business Register plus additional information, as shown in figure 3.1.

Figure 3.1 Business register, overview



For statistical purposes, Enterprise and Local KAU is used. The administrative units are the Legal unit and the Production unit. For VAT-purposes, the SE-unit is used.

All businesses receive a number related to the legal unit in the central business register (CVR-number) when they first register for business. In most cases, there is a one-to-one relationship between the Legal unit and the Enterprise. In some cases, if an enterprise covers more than one legal unit, Statistics Denmark decides in each case in which branch the enterprise is placed.

A legal unit can have one or more production units. The same goes for the enterprise, which can have one or more local KAUs. Normally there is a one-to-one relationship between the production unit and the local KAU. However, in some cases, if an enterprise covers more than one legal unit, Statistics Denmark can decide that one local KAU covers more than one production unit.

The Administrative-unit is the level at which VAT is settled. All legal units have at least one administrative unit and always one with the same identity-number. It is possible for a legal unit to have more than one Administrative-unit, and therefore several administrative-numbers.

All businesses have to register for VAT if their turnover exceeds 50.000 DKK during a 12 month period, which is a small amount. Registration for VAT automatically implies registration in the central business register, which therefore has a very high degree of coverage. If businesses have employees, they are obliged to register in the central business register. Also very small Danish units without reports to the tax system often want to be registered in the publicly (www) available central business register.

All administrative and statistical units are registered with the following information:

1. Identity number
2. History
3. Main and secondary branch
4. Owner and ownership-form
5. Name and address
6. Telephone number
7. Sector-code which shows which institutional sector the unit belongs to.
8. Legal form
9. Information on employment and turnover
10. Information on most recent update (when, who and what)

The central business register is automatically updated when new businesses start or old businesses close down. The above-mentioned three agencies are responsible for updating different parts of the central business register. For creation and death of legal units:

- Government: *Statistics Denmark*
- Private and public owned corporations: *Erhvervsstyrelsen*
- Sole proprietorships: *Skat*

Most of the updating takes place on the internet via the website virk.dk and digital reporting. This implies that the businesses themselves do most of the updates using a digital signatur. Statistics Denmark can always correct the branch and “lock” the updates made by businesses and other authorities. Statistics Denmark can make all types of updates of production units. For Statistics Denmark, it is a quality, that information in the Central Business Register (CBR) and the Statistical Business Register (SBR) is as identical as possible at a given point in time.

In the part of the register used for statistical purposes (SBR), local KAUs are followed over time. In addition to automatic takeovers of local KAUs from the CBR (takeovers of Local KAUs based on the creation of new legal local KAUs by the creation of new production units on the same address and with the same branch) an important source is monthly reporting of wages and salaries (at the micro level, identifiable by the person) to the tax authorities, that are passed on to Statistics Denmark immediately. This way it is possible to register takeovers and separations of local KAUs for work places with more than three employees with a very high degree of quality. When a correction is made to a /local KAU, the correction is followed through to the enterprise. Often there is a one-to-one relation between the enterprise and the local KAU. All cases are considered separately.

Updates and corrections of units are made in the SBR/CBR. For statistical purposes in Statistics Denmark so called “frozen” versions of the SBR are made that lock the unit to a geographical location, activity, size etc. for the period in question. All published statistics are based on a frozen version of the SBR.

3.1.2 Breakdown of the economy into sectors, sub-sectors and industries

The statistical unit for the estimate of output and value added in the ESA 2010 is the local KAU (local kind-of-activity unit, which in Danish is synonymous with the producer unit, the workplace[4]). In the ESA 2010, these units are grouped into industries. When discussing the estimate of GDP from the production side, it is therefore logical to proceed industry by industry. However, the primary statistics available - and thus the statistical methods relevant to use - will almost always be based on a grouping of the somewhat broader institutional units (firms) by main activity (a grouping into "sub-sectors", or "firm branches"). For example, the management of housing and business premises as part of the activity of pension funds will be subject to the requirements for the submission of accounts and statistical reporting which apply to pension fund activity, which means that all units, right down to the smallest, have to report. The letting of housing and non-residential property which is not hived off into a property company but is an integral part of the pension fund's investment activity is thus not included in the primary statistics for firms whose main activity is the letting of property. Throughout the process of estimating value added on the basis of primary statistics, we have to look out for and take account of the relationships between institutional producer units (firms) and local kind-of-activity units (producer units).

If we look at the statistical coverage of the economy in primary statistics in the form of accounting statistics, we see that there is a broad division into four sectors/subsectors:

1. Sectors with complete accounts and (virtually) full coverage of the population via administrative or statistical returns

S.13 General government
S.121 The central bank
S.122+S.123 Deposit taking corporations except the central bank+Money market funds (MMFs)
S.124 Non-MMF investment funds
S.128 Insurance corporations
S.129 Pension funds
S.15 Non-Profit Institutions Serving Households (NPISH), partly

2. Sectors with complete accounts and partial coverage of the population via administrative or statistical returns

S.11 Non-financial corporations (other than agriculture and dwellings)
S.125 Other financial intermediaries, except insurance corporations and pension funds
S.126 Financial auxiliaries
S.127 Captive financial institutions and money lenders
S.14 Households (other than agriculture and dwellings)
S.15 Non-Profit Institutions Serving Households (NPISH), partly.

3. Sectors with a combination of physical and economic accounts

S.11 Agriculture and dwellings where the form of ownership is non-financial corporations
S.14 Agriculture and dwellings where the form of ownership is households (sole proprietorships)

4. Sectors with no accounting statistics
Empty

[4] “Workplace” and “Local kind of activity unit” are used synonymously throughout this inventory. The same applies to the word “producer unit” except in a few cases where referred to as “institutional producer unit”.

This breakdown is fundamental. In group 1, there is, of course, no noticeable problem with sampling or grossing up, since virtually all producer units are covered by the ongoing estimates. The challenge here is basically to convert the primary statistics' accounts to the concepts of national accounts. In group 2, which covers the vast majority of activity in the economy, much of the work of producing exhaustive and reliable estimates consists in ensuring that the samples used are representative and that the figures are grossed up to the total population. The new (established in 2014) accounting statistics for S.15 NPISH is placed here, and it increases the share of the economy covered by account statistics compared to before the major revision in 2014. This is also the reason why group 4, sectors with no accounting statistics now is empty (compared to the previous GNI inventory, sources and methods 2003).

For agriculture and dwellings (group 3) the basis for the national accounts estimates are physical quantities or areas. For agriculture the basis is Economic Agricultural Accounts, EAA, (a bridge table is presented in chapter 3.7). For dwellings the basis is the stratification model as recommended in Commission Regulation 1722/2005 and described in detail in chapter 3.18.

Table 3.3 shows a breakdown of gross value added (GVA) 2012 by the four groups.

Table 3.3 Gross value added based on various accounting statistics, 2012

Breakdown of gross value added according to the four sectors/subsectors in chapter 3.1.2

		pct.
1	Sectors with complete accounts and (virtually) full coverage of the population via administrative or statistical returns	27.4
2	Sectors with complete accounts and partial coverage of the population via administrative or statistical returns	63.2
3	Sectors with a combination of physical and economic accounts	9.4
4	Sectors with no accounting statistics	0.0
	Total	100.0

Below, the four sectors and sub-sectors are discussed individually.

3.1.3 Sectors with complete accounts and full coverage (group 1)

In 2012, these sectors together accounted for 27% of total gross value added in the economy.

Below are descriptions of general government (3.1.3.1), financial corporations (part of) (3.1.3.2) Non-profit-institutions serving household (partly) (3.1.3.3).

General Government (S.13)

Delimitation of the sector

In Denmark, S.13 covers only those institutional units that are government non-market producer units and which are subject to government control. All government-controlled market producer institutional units are considered to constitute independent institutional units. If they are not legal corporations, they are treated in the national accounts as quasi-corporations with autonomy of decision-making and are included in the corporate sector (S.11). For example, all local government utilities (water supply, drain service etc.) are included in the non-financial corporations sector S.11 even though their accounts in some cases are integrated in the local government accounts. In the Danish national accounts, therefore, the institutional sector S.13 is identical with the population of government non-market producer units, and all output is calculated from the cost side. This coincidence is very useful from the point of view of both the actual calculations and the analytical uses of national accounts.

However, some institutional units in S.13, who are classified as non-market producers, may have some market output as secondary activity, which is part of government sales. Denmark has a derogation in the transmission program until 2017 regarding the distinction of the receipts from government sales between those related to market output and non-market output.

Those economic units which are considered to be government non-market producers but contain local kind-of-activity units that produce market output are classified in the business register, to distinguish them from full market producers and private non-market producers, i.e. NPISHs. This classification is crucial to ensure that there are no units left out or double-counted. The business register also has ownership codes, to identify all government-owned corporations and quasi-corporations. Those units which are coded as government non-market producer units and those which are coded as government-owned market producer units are combined in the statistical system into *the public sector*, i.e. S.13, general government, and S.11001, public corporations.

Subsectors

The general government sector S.13 is divided into three subsectors:

S.1311: Central government
S.1313: Local government
S.1314: Social security funds.

Central government (S.1311) comprises central government institutions financed and controlled by central government and the Danish National Church ("*Folkekirken*"). Under the Danish constitution, the latter has special status compared with other religious communities and unlike them receives direct funding from central government. Local government consists of *kommuner* (district, i.e. "municipal", authorities) and *Regioner* (counties). Social security funds cover *a-kasse*r (unemployment insurance funds) and *Lønmodtagernes Garantifond* (employees' wage guarantee fund).

As part of the major revision published in September 2014, more emphasis was put on government control when deciding the sector classification of non-market producers mainly financed by general government. The result is, that some institutions (mainly private schools and some welfare institutions), funded but not controlled by general government were moved from S.13 to sector S.15 Non-profit institutions.

Statistical sources

For central government, the main statistical source is central government accounts. For local government, the main source is local government accounts for all 98 municipalities and 5 counties. For the “self-owning” institutions, under both central and local government (extra budgetary units, for example universities), annual accounts, assumed to cover the whole population, are collected. For the social security funds, the statistical source is their annual accounts, which are collected for all units concerned.

Links with the business register

As mentioned, the units included in the statistical system as producer units in S.13 and those units which are classified in the business register as government non-market units are exactly the same. The grouping of government units by purpose, COFOG, is only added in the statistical processing system for general government and not in the business register.

From primary public accounts data to national accounts statistics

The accounting plan in central government accounts is not the same as that used for local government accounts. All municipalities follow one common accounting plan and all counties follow one common accounting plan which they are obliged to use. When compiling national accounts, the accounts for central government, local government, “self-owning” institutions and social security funds are coded with national accounts classifications based on ESA 2010. Then they are stored in one compilation system, the *DIOR database* [*Databasen for integrerede offentlige regnskaber, i.e.* database for integrated public accounts]. All individual entries at the most detailed level of the primary accounting systems are given an ESA 2010 code. All entries are classified by type of transaction, by purpose and by industry.

Output of government non-market producer units

According to ESA 2010 output (P.1) of government non-market producer units is the sum of:

Intermediate consumption (P.2)
Compensation of employees (D.1)
Consumption of fixed capital (K.1)
Other taxes on production (D.29) less other subsidies on production (D.39).

Government final consumption expenditure is calculated as follows:

Output (P.1)
minus
Revenue from sales (from both non-market output - "user payments" - and sales of market products produced as a secondary activity)
Minus
Output of capital goods for own use
Plus
social transfers in kind of market goods and services.

Output of capital goods for own use is research and development and own-produced software. Social transfers in kind of market goods and services cover general government purchases on the market of health services (health insurance services) and aids and appliances made available to households. These last products are not included as intermediate consumption by general government but are entered directly as final uses in a special category for government final consumption expenditure on market products.

Table 3.4 shows the relationship between general government output and government final consumption expenditure in 2012.

Table 3.4 Relationship between S.13 output and S.13 final consumption expenditure

	DKK mill.
+ Compensation of employees	314 639
+ Consumption of fixed capital	55 926
+ Intermediate consumption	178 020
+ Other taxes on production and	2 990
- Other subsidies on production	6 643
= Output	544 932
+ Social transfers in kind	29 972
- Revenue from sales	55 010
- Capital goods for own use	18 260
= Consumption expenditure	501 635

Breakdown of output by industry and product

In the *DIOR* database for government accounts, all producer units are recorded in terms of DK-NACE industry and COFOG code by purpose. The total output value of the general government sector is divided into the national accounts' 117 industries on the basis of the industry codes in *DIOR* which are the same as the industry codes for the units in the *CVR*.

In the DIOR database intermediate consumption, compensation of employees and other taxes on production less subsidies on production has been calculated from the accounts data mentioned above. Compensation of employees compiled using these sources is used to replace the figures from the working time accounts (WTA) as described in chapter 4.2 and 4.8. However consumption of fixed capital is not compiled using the administrative sources described here. A description of the compilation of consumption of fixed capital can be found in chapter 4.12.

The breakdown of output by product is based on the detailed *DIOR* industry codes that correspond to the detailed DK-NACE classification. In 2012, general government output was divided in the national accounts product balance system over 109 products, 42 for output from various activities counted as public consumption expenditure, 44 for the corresponding public receipts from sales with uses other than public consumption expenditure and three products for own-produced capital goods (one for software and two for research and development).

In the national accounts product classification, the individual products have seven characters, a letter followed by six digits. Products for government final consumption expenditure have Q as the first character. Products for

public receipts from sales have S as the first character and, finally, own-produced capital goods has K as the first letter.

Intermediate consumption

DIOR contains all government accounts entries with national accounts classifications. Intermediate consumption divided into the national accounts' 117-industry grouping is obtained by simple aggregation.

Breakdown of intermediate consumption by product

The industry-level input structures for the individual general government industries were originally established for the year 1984, when the accounting plans in both central and local government accounts were considerably more detailed than in later years. The input structure established at that time was then modified as part of the annual balancing of supply use tables, which adjusted the use of each specific product to the available supply, while total intermediate consumption of each industry was held fixed according to the DIOR-database. Since 2001 cost structure surveys for general government have been conducted and implemented as part of the annual balancing of the supply use tables.

Other taxes on production less other subsidies on production

Since the value of government non-market output is calculated from the cost side, other taxes less subsidies on production are relevant to the estimate of value added at basic prices and hence GNI. Other taxes on production in general government are calculated from government accounts, which have the necessary detail on the structure of taxes and subsidies.

Financial corporations (S.12) except S.125, S.126, S.127

Subsectors S.121 Central Bank, S.122+S.123 Deposit taking corporations except the central bank + Money market funds (MMFs) and S.124 Non-MMF investment funds are covered by complete accounts. These subsectors are subject to extremely close public supervision by the Danish supervisory authority (Finanstilsynet) and their annual report is the preferred source. The annual report is based on mandatory submission of standardised accounts. For mortgage credit institutions published accounts are used, as they have more detailed information.

Subsector S.128 Insurance corporations and S.129 Pension funds are also covered by complete accounts from the annual reports from the Danish supervisory authority (Finanstilsynet). In addition the annual report from ATP (Arbejdsmarkedets Tillægs Pension) is used.

The calculations are described in chapter 3.17 Financial and insurance activities (K).

Non-profit institutions serving households, NPISH (S.15), partly

The new criteria in ESA2010 for the delimitation of the public sector resulted in the move of (mainly) some private schools from General government (S.13) to non-profit institutions serving households, NPISH (S.15). This part of the NPISH sector is therefore covered by administrative data.

The administrative data are records received directly from the Ministry of Education. The records are detailed and classifying according to ESA 2010 is straightforward.

The data source for high school level education and business schools, are primarily administrative records, but supplemented by annual reports from schools for children with disabilities. The annual reports are then grossed up using data on wages.

The other source for NPISH is a new account statistics which is described under group 2.

3.1.4 Sectors with complete accounts and partial coverage (group 2)

Group 2 accounts for by far the largest share of market output in the economy. The main sources are:

a) Account Statistics for Non-Agricultural Private Sector, which is by far the most important, covering for 2012 all non-financial producer units other than general government and industries where public corporations traditionally predominate and (section 3.2.4.1).

b) Statistics based on accounts data from the Danish tax authorities (SKAT), which cover the remainder of the economy, mainly certain personal service industries. This is accounts data of less detail, but of high quality, because they are used for individual tax assessment (section 3.2.4.1).

It should be borne in mind that statistics based on accounts data from the Danish tax authorities is used for the grossing up of the accounts Statistics for Non-Agricultural Private Sector as well as for compiling the industries mentioned under b).

c) Account statistics for industries predominated by public corporations (section 3.2.4.2)

d) Accounts for S.125, S.126 and S. 127 (section 3.2.4.3)

e) Account Statistics for Non-Profit institutions serving households (NPISH), S.15 (section 3.2.4.4)

Below the four sources and their use in the national accounts are described - with an emphasis on the Accounts Statistics for Non-Agricultural Private Sector, which is by far the most important.

Account Statistics for Non-Agricultural Private sector

Annex 3 shows the questionnaire used for the accounts Statistics for Non-Agricultural Private Sector. Similarly, Annex 4 shows the Tax form report for 2012 from which the standardised accounting data are retrieved. Annex 5 then shows the much more detailed SLS-E (SLS-E=Statens Ligningssystem for Erhvervsdrivende, the government tax assessment system for businesses) accounting form which was used in years 1988-1990, and whose more detailed plan is used to divide up the present more highly aggregated items into cost components in those industries where statistics based on accounts data from the Danish tax authorities is still the only available source of accounts statistics[5].

The connection between the accounting plan in the questionnaire for accounts Statistics for Non-Agricultural Private Sector and the plan in the intermediate system is shown in table 3.7.

The questionnaire for the accounts Statistics for Non-Agricultural Private Sector is designed to ensure that the accounts statistics can live up to the requirements of the Structural Business Statistics Regulation (SBS). By normal standards in this field, the degree of detail must be said to be very high. In the statistics based on accounts data from the Danish tax authorities there is much less detail, even when the basis is the more detailed layout which applied previously, where the structure of costs is still used for the detailed breakdowns. For the calculation of value added, the fewer details in the statistics based on accounts data from the Danish tax authorities have no noticeable significance, but the lack of information on capital formation in this source is a handicap when it comes to the expenditure-based estimate of capital formation.

Coverage and method used for grossing up accounts statistics for Non-Agricultural Private Sector

Chapter 10 shows the Quality Declaration for Accounts Statistics for Non-Agricultural Private Sector 2012. The declaration contains a detailed description of the collection, validation, compilation and accuracy of the data in this statistics.

Coverage and method used for grossing up statistics based on accounts data from the Danish tax authorities

[5] To the extent that accounts data from the Danish tax authorities is still the only source for the distribution of cost by components the ratios from the 1988-1990 surveys are still used to break down some cost categories. However the importance of this calculation is diminishing. Service industries whose main activity is not VAT –exempt are covered by the much more detailed accounts statistics. As mentioned in the description of this source, accounts data from the Danish tax authorities is utilised in the compilation of the accounts statistics, but the detailed distributions by cost components is here based on those enterprises and establishments for which detailed accounts information is available.

The main basis for these statistics is the standardised accounting information which corporations and the self-employed have to report to the tax authorities as a part of their tax form reports.

The reporting unit is the firm, i.e. the legal unit, as determined by form of ownership, i.e. corporations with share capital, private companies, cooperative associations, partnerships or sole proprietorships.

The obligation to submit returns took effect with the 1986 income year. Since then, various restrictions have been introduced, some reducing the amount of detail required and some cutting back the number of firms obliged to report.

The most important exemptions from the reporting obligation are:

- firms with net turnover below DKK 500 000 in the current or previous income year;
- companies quoted on the stock exchange;
- partnerships;
- financial intermediation [commercial and savings banks]

For industries not covered by accounts Statistics for Non-Agricultural Private Sector, Statistic Denmark's National Accounts Division receives (from the Primary Statistics Division) complete accounting figures at the level of individual firms and then stratifies and grosses up the figures for national accounts purposes in its own calculation systems.

For this grossing up, the General enterprise statistics[6] is used, where VAT turnover are aggregated/split into legal units, i.e. firms, the units in the statistics based on accounts data from the Danish tax authorities. VAT legislation allows firms/company groups to remit VAT at a unit level which is either lower or higher than firm level. The two arrangements are called "partial registration" and "joint settlement". By far the most common option is for firms to register a special unit for their export sales, since they thus gain a liquidity advantage. In the General enterprise statistics (as in ordinary VAT statistics), these partial registrations are netted out and, in addition, units which settle VAT jointly are split into the individual firms.

The accounting figures are stratified in the national accounts grossing-up by detailed DK-NACE industry, the institutional sector of the firm (S.11 or S.14) and two size groups measured in terms of VAT turnover. Within each DK-NACE industry, firms are split into four groups: a) large corporations, b) small corporations, c) large firms which are sole proprietorships and d) small firms which are sole proprietorships. "Large" and "small" are defined by reference to the median sales of corporations/sole proprietorships respectively in the Generel enterprise statistics. For each individual firm in the statistics based on accounts data from the Danish tax authorities, the appropriate VAT turnover are obtained by matching with the Generel enterprise statistics register at firm number level. In this context, partnerships are classified as corporations, in accordance with the national accounts sectoral delimitation.

The figures for each stratum are grossed up by calculating the ratio:

$$A = \frac{VAT\ turnover\ in\ the\ population\ \ in\ the\ stratum}{VAT\ turnover\ in\ \ firms\ in\ the\ accounting\ \ figures\ in\ the\ stratum}$$

This "A ratio" is then used as the grossing factor for the aggregated firm accounts within the stratum, to gross the figures to the total population. One advantage of this grossing procedure is that the "net turnover" in the accounts, which correspond to turnover in the national accounts sense, are grossed up using VAT turnover as the raising variable. Experience has shown that net turnover and VAT turnover correlate very closely.

[6] The Generel enterprise statistics integrate information from three other business statistics, which are compiled for different unit types. The three statistics comprise the Accounts statistics, which are compiled at the enterprise level, VAT statistics, which are compiled at the administrative level used by the Danish Central Customs and Tax Administration, and Establishment-related employment statistics, which are compiled at the local kind-of-activity level. The different unit types imply, that results from the three statistics are not strictly comparable. This is counterbalanced by the General enterprise statistics as the information is processed to the same unit level, the enterprise.

Periodisation, Account statistics for non-agricultural sector

The accounts statistics for a given year t cover firms whose accounting year closes between 1 May of year t and 30 April of year t+1. The national accounts make no attempt to further periodizing the statistics.

National accounts processing of the grossed up Accounts Statistics for Non-Agricultural Private Sector

The description of the national accounts processing of the account statistics is presented in a number of steps:

I. Consistency check and transition from firm branches to national accounts industries
II. Correcting the workplace and firm file
III. Collection of firm and workplace information
IV. Recoding of workplace industries which conflict with firm branches
V. Breakdown of firm entries by workplace
VI. National accounts processing when trading activity is included
VII. Grossing up for enterprises below threshold
VIII. Recoding to the intermediate system format
IX. Comparison of account statistics and industrial commodity statistics
X. Division between the accounts statistics, the statistics based on account data from the Danish tax authorities and other calculation systems

Each step is described below:

I Consistency check and transition from firm branches to national accounts industries

Account Statistics for Non-Agricultural Private Sector received from primary statistics

In 2012 the account statistics cover DK-NACE industries 051000-099000, 101110-332000, 383100-383200, 411000-439990, 451110-479900, 493200, 493220-522120, 522220, 522400-592000, 611000-639900, 681000, 683110-683210, 691000-701010, 702100-829900, 951100-952900. Within these areas, the account statistics for non-agricultural private sector covers firms, where the labour input is at least half the full year's work for one person.

The population is based on a business register extract, covering all units which were active during 2012.

The account statistics for non-agricultural private sector is received from the Business Structure Division in three parts:

- a firms file, which includes accounting information for firms with a firm branch within the industries covered;
- a workplace file, which consists of accounting information for workplaces (producer units) with kind-of-activity unit codes within the industries covered;
- a file, with summary information on workplaces with kind-of-activity industries which are not covered by the account statistics but which belong to firms with a firm branch within the scope of accounts statistics, referred to below as the "remainder file". This contains only information on the CVR number/workplace code, kind-of-activity industry, firm branch and FTEs for the workplaces in question.

The three parts are set out in Figure 3.2.

Within the accounts statistics information exist for each enterprise as well as for those of its workplaces that belongs to industries within the scope of this statistics. Where detailed workplace data can be subtracted from detailed enterprise data, the residuals will represent the sum of its workplaces belonging to industries outside the scope of the industrial accounts statistics. These residuals can be empty (in practice insignificant) or they can represent one or more KAUs, as shown in the “remainder”-file. In practice the number of such “remainders” is rather small due to the widened scope of the accounts statistics and the calculation is of less importance.

Figure 3.2 Overview of the coverage of workplaces in files from the account statistics for non-agricultural sector

Workplace Firm	Workplaces within the scope of the accounts statistics	Workplaces outside the scope of the accounts statistics
Firms within the scope of the accounts statistics	1. Go into the firm file. Go into the workplace file	2. Go into the firm file. Go into the "remainder" file
Firms outside the scope of the accounts statistics	3. Go into the workplace file (FBRUDE units)	4.

Logically, it is the firms and workplaces in areas 1 and 2 which together make up the accounts statistics supplied to the intermediate system in terms of both firms and workplaces. Area 3 includes workplaces which belong to firms outside the scope of the Account statistics for non-agricultural sector. In the case of these workplaces the information which can be compiled in the accounts statistics system is considered more reliable than the information that can be found in statistics based on accounts data from the Danish tax authorities. To avoid inconsistencies with the breakdown of the firms in question in the tax accounts statistics system, the accounting information calculated here is removed from the firm-level information of the statistics based on accounts data from the Danish tax authorities before the remainder is broken down by kind-of-activity branches outside the scope of the industrial accounts statistics. The units in question are called, technically, FBRUDE, which is explained later. However the number of such units is usually small since the scope of the industrial accounts statistics has been widened to include most of the market production in service industries. In principle, area 4 should be blank. If there is anything here, it is because the branch allocation of some of the accounts statistics workplaces has been corrected.

The firm file contains the most information, with only the county and municipality codes omitted. Of course balance sheet items and items for property income transactions are missing from the workplace file, but information on wages and salaries etc. and indirect production costs is also missing from this file. Table 3.5 below shows which items occur in each of the files when they are received from the Business Structure Primary Statistics Division. The right-hand side of the table shows the MLS [intermediate system] code in those cases where the items translate directly to this coding.

Table 3.5 Account statistics for non-agricultural private sector at firm level and workplace level

Label	Variable	# in firm record	# in work-place record	MLS-code	MLS-text
CVR number (also in "remainder")	CVRNR	1	1		
Workplace number(also in "remainder")	ARBNR		2		
Workplace code	AKODE		3		
DB07 branch (also in "remainder")	BRANCHE_DB07	2	4		
10-branch code	BRA010_DB07	3	5		
19-branch code	BRA019_DB07	4	6		
36-branch code	BRA036_DB07	5	7		
127-branch code	BRA127_DB07	6	8		
	NACE_DB07	7	9		
	NACE2_DB07	8	10		
	NACE3_DB07	9	11		
	RESHOV1_DB07	10	12		
	RESDEL1_DB07	11	13		
Main branch (also in "remainder")	HBRA_DB07	12	14		
Firm's main branch	FIRMA_DB07		15		
Ownership code	VIRKFORM	13	16		
Credit information	KREDOPL	14	17		
County code	REGION2007	15	19		
Municipality code 2007	KOMKOD2007	16	20		
Province	LANDSDEL2007	17	21		
Post district	POSTNR	18	22		
Road code	VEJKODE	19	23		
House number from	HUSNR_FRA	20	24		
House number to	HUSNR_TIL	21	25		
Combination code	KOMB	22	18		

Table 3.5 Account statistics for non-agricultural private sector at firm level and workplace level, cont.

Label	Variable	# in firm record	# in work-place record	MLS-code	MLS-text
Most recent connection	SENESTE_TILKNYT		26		
Fictive workplace	FIKTIVT_ARBST		27		
Record entry code	JKOD	23			
FTEs	VAERK		28		
FTEs	AARSV	24			
Number of employees	BESK	25			
Data source	KILDE	26			
Sales	OMS	27	29		
Own-account work	AUER	28	30	1012	Manuf. of plant and machinery for own use
Other operating income	ADR	29	31	1019	Other, secondary operating income
Changes in inventories (including holding gains)	DLG	30	32		
Purchases (goods for resale)	KW	31	33	7019	Goods for resale, purchases
Purchases of raw materials, ancillaries and packaging	KRHE	32	34	2015	Other and unspecified purchases (consumption) of raw materials
Purchases of energy (excluding running of vehicles!)	KENE	33	35	2013	Purchases (consumption) of fuel and power
Purchases of processing to order	KLOE	34	36	2014	Purchases of processing to order and subcontracting
Rental expenditure	UDHL	35		7020	Expend. on rentals excluding heating
Acquisitions of equipment etc. expensed	UASI	36		7025	Acquisitions of equipment etc. expensed
Temporary employment agencies	UDVB	37		7042	Temporary employment agencies
Operational leasing	ULOL	38		7024	Operational leasing
Losses on ordinary bad debts	OTDE	39		7026	Losses on ordinary bad debts
Other external expenditure (incl. running of vehicles)	EKUD	40		7042	Other external expenditure
Wages and salaries	LGAG	41		4015	Wages/salaries & employer contribs.
Expenditure on pensions	PUDG	42		4016	Expenditure on pensions
Other expenditure on social security	AUDG	43		4017	Other staffing expenditure
Writing off and writing down of tangible and intangible assets	ANMI	44		5100	Writing off and writing down of non-financial fixed assets
Writing down of current assets	NOAK	55		5200	Writing down of non-fin. current assets
Secondary expenditure	SEUD	46		7060	Other operating expenditure
Profit/loss before financial and extraordinary items	RFEP	47			
Income from lasting interests	INKI	48		4030	Income from lasting interests
Other return on financial fixed assets	UDFA	49		4032	Other interest and dividend income
Interest etc. received from financial fixed assets	RIFA	50		4032	Other interest and dividend income
Interest etc. received from current assets	RIOM	51		4031	Interest etc. rec. from current assets
Writing down of financial fixed and current assets	NFAO	52		5300	Writing down of financial assets
Interest paid etc.	RUDG	53		4040	Interest paid
Extraordinary income	EOI	54		1060	Extraordinary income
Extraordinary expenditure	EOU	55		7061	Extraordinary expenditure
Annual pre-tax profit/loss	ARFS	56			
Corporation tax on annual profit/loss	SSAR	57		4041	Corporation tax
Annual profit/loss	AARE	58		4043	Profit/loss for tax purposes
Consolidation, i.e. trans. to/from equity	KEGN	59			
Dividends	UDBY	60		4044	Distributed income
Intangible fixed assets, total	IAAT	61		8110	
Land and buildings	GRBY	62		8120	Land and buildings
Technical plant and machinery	ATAM	63		8121	Technical plant and machinery
Other plant, machinery and equipment	AADI	64		8122	Other plant, machinery and equipment
Advance payments and tangible fixed assets etc.	FMAA	65		8129	Other tangible fixed assets (e.g. advances)

Table 3.5 Account statistics for non-agricultural private sector at firm level and workplace level, cont.

Label	Variable	# in firm record	# in work-place record	MLS-code	MLS-text
Tangible fixed assets, total	MAAT	66			
Amounts outstanding	TILG	67		8130	Financial fixed assets
Holdings of shares and equity	ABAE	68		8130	Financial fixed assets
Holdings of bonds and other securities	ABOA	69		8130	Financial fixed assets
Financial fixed assets, total	FAAT	70		8130	Financial fixed assets
Fixed assets, total	AAT	71			
Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	72	37	5060	Opening stocks of raw materials
Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	73	38	6060	Closing stocks of raw materials
Work in progress (opening stocks)	PVUF	74	39	5065	Opening stocks of finished goods
Work in progress (closing stocks)	UVUF	75	40	6065	Closing stocks of finished goods
Manufacture of finished goods (opening stocks)	ELPR	76	41	5065	Opening stocks of finished goods
Manufacture of finished goods (closing stocks)	ELUL	77	42	6065	Closing stocks of finished goods
Goods for resale (opening stocks)	HLPR	78	43	5061 / 5062	Opening stocks of goods for resale
Goods for resale (closing stocks)	HLUL	79	44	6061 / 6062	Closing stocks of goods for resale
Advance payments, purchased goods (opening stocks)	PFKV	80	45		
Advance payments, purchased goods (closing stocks)	UFKV	81	46	8149	Other current assets
Total inventories of goods (opening stocks)	PVBT	82	47	8141	Opening stocks
Total inventories of goods (closing stocks)	UVBT	83	48	8142	Closing stocks
Amounts outstanding from sales of goods and services	TSVT	84		8149	Other current assets
Work in progress on account of others	UIAF	85		8149	Other current assets
Other claims	ANTI	86		8149	Other current assets
Total claims	TGT	87		8149	Other current assets
Holdings of shares and equity	OBAE	88		8149	Other current assets
Holdings of bonds and other securities	OBAV	89		8149	Other current assets
Liquidity holdings	LIBE	90		8149	Other current assets
Securities and particip. interests, total	VKT	91		8149	Other current assets
Total current assets	OMAT	92		8149	Other current assets
Total assets	AT	93			
Equity, closing stocks	EGUL	94		8210	Equity
Provisions	HENS	95		8220	Provisions
Long-term debts to suppliers	LGL	96		8230	Long-term debts
Other long-term debts	ALG	97		8230	Long-term debts
Short-term liabilities to suppliers	KGL	98		8240	Short-term liabilities
Other short-term liabilities	AKG	99		8240	Short-term liabilities
Total liabilities	PAST	100			
Intangible fixed assets (additions)	TIAA	101		6102 / 6110	Software bought in/purchases of intang. assets, other and unspecified
Purchases of existing buildings (including land value)	KEB	102	49	6121	Purchases of existing buildings (including land value)
Construction expenditure, new building (excluding land)	OPNY	103	50	6123	Construction of new buildings (excluding land value)
Purchases of unbuilt land	KUBG	104	51	6122	Purchases of unbuilt land
Rebuilding and improvements to buildings and installations	OFBB	105	52	6124	Rebuilding and improvements to buildings
Roads, ports, open spaces, etc.	VHPK	106	53	6125	New layout and rebuilding of roads, ports, etc.
Total real estate (additions)	FET	107	54		

Table 3.5 Account statistics for non-agricultural private sector at firm level and workplace level, cont.

Label	Variable	# in firm record	# in work-place record	MLS-code	MLS-text
Technical plant and machinery (operating equipment)	DTAM	108	55	6134	Purchases of plant and machinery, other and unspecified
Other plant, machinery and equipment (additions)	TAAD	109	56	6134	Purchases of plant and machinery, other and unspecified
Total plant and machinery (additions)	TDRT	110	57		
Plant and equipment under construction	TFMA	111	58		
Total additions	ATIT	112	59		
Intangible fixed assets (disposals)	AIAA	113		6202 / 6210	Disposals of software/intangible assets, other and unspecified
Sales of buildings (including land value)	SABY	114	60	6221	Sales of existing buildings (including land value)
Sales of unbuilt land	SUBG	115	61	6222	Sales of unbuilt land
Sales of roads, ports, open spaces, etc.	SVHP	116	62	6223	Sales of roads, ports, open spaces, etc. (including land value)
Total real estate (disposals)	FEGT	117	63		
Sales of technical plant and machinery	STAM	118	64	6234	Sales of plant and machinery, other and unspecified
Sales of other plant, machinery and equipment	SADI	119	65	6234	Sales of plant and machinery, other and unspecified
Total plant and machinery (disposals)	ADRT	120	66		
Total disposals	AFAT	121	67		
Sales of own products	EOMS	122	68	1018	Other and unspecified net sales
Sales (goods for resale)	HOMS	123	69	1016	Sales of goods for resale
Input for main sales	XVA		70		
Gross profit	ZBF		71		

For the processing of the account statistics, it was decided to retain all information on the individual firms and workplaces up to the stage at which the processed statistics are put into a form such that they can be input into the intermediate system. The format and coding from the accounts statistics are also retained until this stage, to ensure that no information which might later be utilised for other purposes is lost. This means, for example, that the geographical coding in the processed accounts statistics could be used to compile regional accounts.

II Correcting the workplace and firm file

The logical first stage in the processing is to make corrections to the records for firms and workplaces which are received from the Primary Statistics Division.

All the figures in records from firm, workplace or remainder files can be corrected at this stage, and in practice most of the system for processing the accounts statistics will usually be run through a few times, as problems are identified and corrected[7].

III Collection of firm and workplace information

For both firms and workplaces, a few items are calculated which were not originally in the files: approximate production value and acquisitions of buildings (the latter for use with the breakdown of various figures from the firm information into workplaces). In addition, the firm file information on the firm branch is moved to variable FIRMA_DB07, so that this variable overall indicates the firm branch. These items are kept in the files throughout the further processing.

[7] The most common reason for corrections is that further studies of annual reports, products statistics and/or foreign trade of big enterprises reveal a need for reclassification of some workplaces.

Table 3.6 Items calculated to supplement the accounts statistics files

Label	Variable	# in the firm record	# in work-place record	MLS-code	MLS-text
Approximate production value	PROD	New	New		
Acquisitions of buildings, total	ABYGN	New	New		

The workplace file is divided into one part which has a firm in the firm file (i.e. where the firm to which the workplace belongs has a firm branch within the scope of the industrial accounts statistics) and a part which has a Firm BRanch outside (UDE) the firm file (FBRUDE part). For example, a manufacturing producer unit (workplace) belonging to a firm whose main activity is fire- and ambulance services occurs in the FBRUDE part. This is because fire- and ambulance service is not covered by the account statistics for non-agricultural private sector.

The firm file is matched with the file that contains workplaces which has the firm branch covered by accounts statistics. The remainder of the firm file, which ought to consist of workplaces outside the scope of the industrial accounts statistics, is calculated as a residual, as the firm data minus the sum of workplace data for the same firm. Records with suspect residuals are printed out. Prior to the comparison, various workplaces (mainly independent cooperatives) have to be combined into a joint CVRNR, which is used in the firm file for these units. A file with these workplaces is received every year from the Business Structure Division (primary statistics), but the original CVRNR is also kept in the record.

The firm file remainders which are not found in the workplace file are matched with the "remainder" file from the primary statistics division. Those firm remainders which are not found here are printed out so that we can decide whether the firm information needs to be corrected. Once we have considered all cases where workplaces have a corresponding combined CVRNR in the firm file, the remainder are mainly random differences with sales = 0. Conversely, we look for remainder workplaces which do not have a corresponding firm remainder. These are usually units with no FTEs - or very few. Warnings are also printed out if the firm file remainder has a number of FTEs which is different from the same firm's FTEs according to the "remainder" file, or if the firm's remainder sales are negative or the figure is otherwise suspect.

A test is made to detect cases where the firm's sales are lower in the firm statistics than in the workplace statistics. In such cases, it has mostly been the workplace figures which are the most credible. Cases of conflicting economic data may also come to light, along with cases where workplaces which has changed owners during the period come up several times under different CVR numbers.

It is important when compiling the final national accounts to establish the correct relationships between firms and the workplaces which belong to them, partly because many of the firm statistics items have to be divided up over workplaces and partly because - as was shown clearly during the work on the files - a number of errors are revealed during the process, often relating to some of the country's larger company groups.

Once input data have been corrected for obvious major errors, economic magnitudes can be allocated to the "remainder" file's workplaces. Where a firm has more than one "remainder" workplace, the figures calculated as residuals are divided up by unit on the basis of the FTEs in the "remainder" file. These workplaces are the accounts statistics' contribution to the intermediate system's industries outside the scope of the industrial accounts statistics (disregarding any subsequent corrections to the branch allocation of workplaces).

IV Recoding of workplace industries which conflict with firm branches

A check is made to reveal contradictory industry coding for units belonging to the same firm in firm- and workplace files. Even though in such cases it would have been less complicated to use the workplace file's branch coding, the firm file's branch coding can usually be assumed to be the more accurate and the one that most closely tallies with the industrial commodity statistics. The following checking and correction procedure is therefore carried out.

The branch coding in the firm file is checked for a match with the file with workplaces which have a firm branch covered by the accounts statistics. On the basis of the workplace file, figures are worked out for kind-of-activity

units, and for each firm (CVRNR) information is compiled on the composition of output value by DK-NACE industry (here, the variable previously worked out for approximate production value is used). The workplace information is combined with the firm file information. If a firm consists of a single kind-of-activity unit, the firm branch is transferred as the workplace branch for all the firm's workplaces. This is the most common situation. In other cases with conflicting branch coding, the workplace branch is corrected for the workplaces in the largest (or next largest) kind-of-activity unit if this is sufficient to produce consistency. In more complicated cases, automatic corrections of the industry allocations cannot be justified. Checklists are printed out, showing the firm with the breakdown by workplace before and after recoding. Where automatic recoding is considered improbable, the input data are instead corrected manually.

V Breakdown of firm entries by workplace

Some of the items for which there is information in the firm file only are considered in the national accounts to be workplace-related. These items are distributed over the firm's workplaces. Before that distribution, steps are taken to reconcile various items which occur in both the firm and the workplace files and which are to be used during the later calculation process. At this stage in the calculation it is assumed that the input data are corrected so that firm items can be calculated as the sum of the items for the workplaces which belong to them.

The following items (table 3.7) are added to the workplace file:

Table 3.7 Accounting items divided over workplaces belonging to a given firm

Label	Variable	# in firm record	Divided up/grossed up in workplace record, preferably *pro rata* with:
Record entry code	JKOD	23	Transferred
Number of employees	BESK	23	VAERK
Rental expenditure	UDHL	35	PROD
Acquisitions of equipment etc. expensed.	UASI	36	PROD
Temporary employment agencies	UDVB	37	PROD
Operational leasing	ULOL	38	PROD
Ordinary losses, bad debts	OTDE	39	OMS
Other external expenditure (including the running of vehicles)	EKUD	40	PROD
Wages and salaries	LGAG	41	VAERK
Expenditure on pensions	PUDG	42	VAERK
Other expenditure on social security	AUDG	43	VAERK
Acquisitions of intangible assets	TIAA	101	TDRT
Disposals of intangible assets	AIAA	113	ADRT

The calculation is in two stages. The first is for those workplaces which belong to firms within the scope of the industrial accounts statistics. Here, the work consists in dividing up the entries relating to the individual firm among the firm's workplaces. Wherever possible the figures are distributed proportionally with the above-mentioned variables. If any of these variables is empty or zero and is therefore not suitable for breakdown, the program will use default solutions such as a distribution based on sales or FTEs. Checks are also made to ensure that no impossible figures arise, such as negative consumption of raw materials or goods for resale.

In the second step, the missing items are then added to those workplaces which belong to firms outside the scope of the accounts statistics (FBRUDE units), wherever possible on the basis of the ratios in the supplemented workplace records belonging to the same DK-NACE industries. The workplaces are allocated a share of the item which is used as the basis for the comparison, corresponding to the average from the records completed earlier for non-FBRUDE workplaces. Default solutions are used here, too, if the preferred basis for comparison is not available. If calculation based on the DK-NACE industry is impossible because the branch contains only FBRUDE workplaces, a comparison with the workplace's NR117 branch is used for the calculation instead.

VI National accounts processing when trading activity is included

During the above stages, records are completed for all the accounts statistics workplaces. This edition of the workplace statistics cannot be transferred directly to the intermediate system, since trading activity is still scattered around in DK-NACE industries other than trade[8].

Each workplace outside the trade industries is now broken down into trade and other activity on the basis of the entries for trade sales and purchases and for opening and closing stocks of goods for resale. These are transferred in full to the trade part. A share of intermediate consumption is also transferred, along with shares to the BESK-, OTDE-, LGAG-, AUDG-, PFKV- and UFKV- as well as PRHB- and URHB- variables. Here, it is only the last two, opening and closing stocks of raw materials, which have any importance for the figures used during later stages.

The file with trade included, broken down into DK-NACE industries, is retained. For use in the statistics based on accounts data from the Danish tax authorities and the intermediate system, a file is set up in which the trade included is as a rule recoded to branch 460008, but trade in branch 107120, bakers' shops, is allocated to branch 472400, sales of bread.

A new workplace file is set up, consisting of workplaces from which the trade element has been removed + the trade element separated out with a breakdown by workplace.

As a general rule no information is available on secondary activities in workplaces classified in trade industries. If for instance manufacturing should take place inside such workplaces we might detect it when industrial accounts statistics is compared with commodity statistics. Our experience is, however, that manufacturing is treated as taking place in separate local KAUs whenever it has a significant size.

VII Grossing up for enterprises below threshold.

Since the statistics-year 1999 the Danish business register contains a marking of small firms – either firms which counts as hobby or inactive firms - which makes it possible to separate regular economic active firms in accordance with the recommendations of the EU. The recommendations are that the statistics should cover only firms, whose labour input is at least half the full year's work for one person. The effect of the criteria was that in 1999 about 220.000 firms out of roughly 500.000 firms were marked "small, inactive". The turnover of these firms was in 1999 about 6 billion DKK. corresponding to 0,3 percent of total turnover at 2.100 billion DKr.

The firms marked as small or inactive have not been covered by the accounts statistics since 1999. To take into account the turnover in active, but small and insignificant firms that can be estimated to around 0,1 percent of GDP a grossing up procedure has been established. Because this small amount of turnover is related to a huge number of firms it was decided to carry out the grossing-up at a more aggregated level instead of making detailed estimations of each firm. All variables in the Intermediate system have been grossed-up using turnover-based grossing-up factors. Based on the general enterprise statistics that contains turnover figures for all enterprises and includes information on whether each enterprise is covered by the accounts statistic a grossing-up factor is calculated for each combination of DK-NACE-industry/ESA2010-institutional-sector.

VIII Recoding to the intermediate system format

The intermediate system contains some information which refers to firm branches (institutional units grouped by industry on the basis of main activity), whilst the rest refers to kind-of-activity unit industries[9]. Each individual intermediate system [MLS] code refers to either firm branch or kind-of-activity industry information. Until now the files have contained records for each individual unit. With the conversion into files in the format used by the intermediate system, codes for individual units are removed, and the figures are aggregated to DK-NACE industries/ESA 2010 sectors. The sector codes are based on the ownership code, VIRKFORM, with the following translation (table 3.8):

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[8] In the Danish national accounts some industries are defined to include all production of products characteristic for the industry and to exclude the production of other products. Wholesale and retail trade are defined in this way.

[9] For use in the compilation of institutional sector accounts, an alternative file is compiled with the accounts statistics' contribution to the intermediate system. Here, some extra MLS codes are added for property income transactions and items relating to kind-of-activity units appear with both firm and kind-of-activity branch.

Table 3.8 Connection between ownership codes and ESA 2010 institutional sectors

Virkform	Sector	
010	S14	Sole proprietorship
020	S14	Estate of a deceased person
030	S11	Ordinary partnership
040	S11	Limited partnerships
050	S11	Jointly owned shipping firms
060	S11	Limited company
070	S11	Limited partnerships
080	S11	APS
090	S11	Foundation or "self-owning" institution (also S.15)
100	S11	Commercial foundation or "self-owning" institution
110	S11	Association (may also be S.15)
130	S11	Cooperative society (may also be S.12)
140	S11	Limited cooperative society (may also be S.12)
150	S11	Limited association or company (may also be S.15)
160	S11	European Economic Unit
170	S11	Branch of foreign limited company or units with similar legal ownership
180	S11	Branch of foreign APS or unit with similar legal ownership
190	S11	Branch of foreign limited enterprise
200	S11	Branch of foreign enterprise n.e.s.
210	S11	Other foreign enterprise
220	S11	Fixed business address of European Economic Unit
230	S13	Central government
240	S13	Counties [Amtskommuner]
250	S13	Municipalities [Primærkommuner)
260	S13	National Church parish councils
270	S99	Enterprise being set up
280	S13	Other owner n.e.s.
990	S99	Legal ownership not known

Those items that in the intermediate system will refer to the firm level are extracted from the accounts statistics firm file. The accounts statistics codes are transferred to the intermediate system, using the key shown in table 3.9, and a file is printed out with firm data in the intermediate system format.

Table 3.9 Transfer of items to the intermediate system [MLS] at firm level

Label	Variable	% transferred	MLS-code	MLS-text
		pct.		
Writing off and writing down of tangible and intangible assets	ANMI	100.0	5100	Writing off and writing down of non-financial fixed assets
Writing down of current assets	NOAK	100.0	5200	Writing down of non-financial current ass.
Secondary expenditure	SEUD	100.0	7060	Other operating expenditure
Income from lasting interests	INKI	100.0	4030	Income from lasting interests
Other return on financial fixed assets	UDFA	100.0	4032	Other interest and dividend income
Interest etc. received from fin. fixed assets	RIFA	100.0	4032	Other interest and dividend income
Interest etc. received from current assets	RIOM	100.0	4031	Interest etc. received from current assets
Writing down of financial fixed and current assets	NFAO	100.0	5300	Writing down of financial assets
Interest paid etc.	RUDG	100.0	4040	Interest paid
Extraordinary income	EOI	100.0	1060	Extraordinary income
Extraordinary expenditure	EOU	100.0	7061	Extraordinary expenditure
Corporation tax on profit/loss for the year	SSAR	100.0	4041	Corporation tax
Profit/loss for the year	AARE	100.0	4043	Profit/loss for tax purposes
Dividends	UDBY	100.0	4044	Distributed income
Intangible fixed assets, total	IAAT	100.0	8110	Intangible fixed assets
Land and buildings	GRBY	100.0	8120	Land and buildings
Technical plant and machinery	ATAM	100.0	8121	Technical plant and machinery
Other plant, machinery and equipment	AADI	100.0	8122	Other plant, machinery and equipment
Advance payments and tangible fixed assets etc.	FMAA	100.0	8129	Other tangible fixed assets
Amounts outstanding	TILG	100.0	8130	Financial fixed assets
Holdings of shares and equity	ABAE	100.0	8130	Financial fixed assets
Holdings of bonds and other securities	ABOA	100.0	8130	Financial fixed assets
Total financial fixed assets	FAAT	100.0	8130	Financial fixed assets
Amounts outstanding from sales of goods and services	TSVT	100.0	8149	Other current assets
Work in progress on account of others	UIAF	100.0	8149	Other current assets
Other claims	ANTI	100.0	8149	Other current assets
Total claims	TGT	100.0	8149	Other current assets
Holdings of shares and equity	OBAE	100.0	8149	Other current assets
Holdings of bonds and other securities	OBAV	100.0	8149	Other current assets
Liquidity holdings	LIBE	100.0	8149	Other current assets
Securities and participatory interests, total	VKT	100.0	8149	Other current assets
Current assets, total	OMAT	100.0	8149	Other current assets
Equity, closing stocks	EGUL	100.0	8210	Equity
Provisions	HENS	100.0	8220	Provisions
Long-term debts to suppliers	LGL	100.0	8230	Long-term debts
Other long-term debts	ALG	100.0	8230	Long-term debts
Short-term liabilities to suppliers	KGL	100.0	8240	Short-term liabilities
Other short-term liabilities	AKG	100.0	8240	Short-term liabilities

Similarly, those items which are to be input at kind-of-activity industry level are transferred from the accounts statistics workplace section. Most of the intermediate system items can be worked out simply on the basis of the accounts statistics codes in accordance with the following key (table 3.10):

Table 3.10 Transfer of items to the intermediate system [MLS] at workplace level

Label	Variable	% transferred	MLS-code	MLS-text
		pct.		
Sales of own products	EOMS	100.0	1018	Other and unspecified net sales
Own-account work	AUER	100.0	1012	Manu. of operating equipment for own use
Other operating income	ADR	100.0	1019	Other, secondary operating income
Purchases of raw materials, ancillary materials and packaging	KRHE	100.0	2015	Other and unspecified purchases (consumption) of raw materials
Purchases of energy (excl. running of vehicles)	KENE	100.0	2013	Purchases (consumption) of fuel and power
Purchases of processing to order	KLOE	100.0	2014	Purchases of processing to order and subcontracting

Table 3.10 Transfer of items to the intermediate system [MLS] at workplace level, cont.

Label	Variable	% transferred	MLS-code	MLS-text
		pct.		
Rent expenditure	UDHL	100.0	7020	Expenditure on rent, excl. heating
Exp. on the acquisition of consumables etc.	UASI	100.0	7025	Exp. on consumables
Temporary employment agencies	UDVB	100.0	7042	Temporary employment agencies
Operational leasing	ULOL	100.0	7024	Operational leasing
Ordinary bad debts	OTDE	100.0	7026	Ordinary bad debts
Other external expenditure (incl. the running of vehicles)	EKUD		Distrib.	as in costs survey etc.
Wages and salaries	LGAG	100.0	4015	Wages/salaries and employer contributions
Expenditure on pensions	PUDG	100.0	4016	Expenditure on pensions
Other expenditure on social security	AUDG	100.0	4017	Other staffing expenditure
(1)Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	100.0	5060	Raw materials, opening stocks
(2)Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	100.0	2015	Other and unspecified purchases (consumption) of raw materials
(1)Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	100.0	6060	Raw materials, closing stocks
(2)Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	-100.0	2015	Other and unspecified purchases (consumption) of raw materials
Work-in-progress (opening stocks)	PVUF	100.0	5065	Finished goods, opening stocks
Work-in-progress (closing stocks)	UVUF	100.0	6065	Finished goods, closing stocks
Manufacture of finished goods (opening stocks)	ELPR	100.0	5065	Finished goods, opening stocks
Manufacture of finished goods (closing stocks)	ELUL	100.0	6065	Finished goods, closing stocks
(1) Opening stocks (goods for resale)	HLPR	100.0	5061/ 5062	Opening stocks of work-in-progress for resale
(2) Opening stocks (goods for resale)	HLPR	100.0	7019	Goods for resale, purchases
(1) Closing stocks (goods for resale)	HLUL	100.0	6060/ 6061	Closing stocks of work-in-progress for resale
(2) Closing stocks (goods for resale)	HLUL	-100.0	7019	Goods for resale, purchases
Advance payments, purchased goods (closing stocks)	UFKV	100.0	8149	Other current assets
Total inventories of goods (opening stocks)	PVBT	100.0	8141	Opening stocks
Total inventories of goods (closing stocks)	UVBT	100.0	8142	Closing stocks
Intangible fixed assets (additions)	TIAA	100.0	6110	Software bought in/purchases of intangible assets, other and unspecified
Purchases of existing buildings (inc. land value)	KEB	100.0	6121	Purchases of existing buildings (including land value)
Constr. expenditure, new building (excl. land)	OPNY	100.0	6123	Constr. of new buildings (excl. land value)
Purchases of unbuilt land	KUBG	100.0	6122	Purchases of unbuilt land
Rebuilding and improvements to buildings and installations	OFBB	100.0	6124	Rebuilding and improvements to buildings
Roads, ports, open spaces, etc.	VHPK	100.0	6125	New layout and rebuilding of roads, ports, etc.
Tech. plant and machin. (operating equipment)	DTAM	100.0	6134	Purch. of plant & machin., other & unspec.
Other plant, machinery and equipment (additions)	TAAD	100.0	6134	Purch. of plant & machin., other & unspec.
Intangible fixed assets (disposals)	AIAA	100.0	6210	Disposal of software/ intangible assets, other and unspecified
Sales of buildings (incl. land value)	SABY	100.0	6221	Sales of existing buildings (incl. land value)
Sales of unbuilt land	SUBG	100.0	6222	Sales of unbuilt land
Sales of roads, ports, open spaces, etc.	SVHP	100.0	6223	Sales of roads, ports, open spaces, etc. (including land value)
Sales of technical plant and machinery	STAM	100.0	6234	Sales of plant and machin., other and unspecified.
Sales of other plant, machinery and equipment	SADI	100.0	6234	Sales of plant and mach., other & unspec.
Sales of own products	EOMS	100.0	1018	Other and unspecified net sales
Sales (goods for resale)	HOMS	100.0	1016	Sales of goods for resale
Purchases of raw materials, ancillaries and packaging	KRHE	100.0	2015	Other and unspecified purchases (consumption) of raw materials
Purchases (goods for resale)	KVV	100.0	7019	Goods for resale, purchases

The accounts statistics item for "other external expenditure", EKUD, is split into a number of MLS codes. Within most manufacturing industries, the division can be based on distributions compiled from surveys of the use of services. Some of these distributions date back to a survey form 1992, but adjustments have been introduced over the years. Since the accounts statistics has split expenditure on rent, acquisition of equipment treated as current expenditure, expenditure on temporary employment agencies, operational leasing and ordinary bad debts, into independent items, which they were not previously, the distribution keys from the services enquiry have been revised so that the shares for these items are no longer included. At the same time, account has been taken of the fact that a share of the EKUD item is motor vehicle fuel. The revised distribution keys are compiled only for national accounts industries, and so for each DK-NACE industry the key for the national accounts industry in which it is included is used (see table 3.11).

Table 3.11 Percentage shares of the EKUD item. Examples from manufacturing industries

National accounts industry:	MLS-code	100010	100020	100030	100040	100050
		pct.				
Exp. on insurance	4046	2.10	2.23	3.55	2.30	1.79
Software bought in	6102	2.71	0.53	1.25	2.48	1.16
Purchases of existing buildings	6121	7.18	2.29	0.34	1.60	2.98
Renting and operational leasing	7024	0.53	0.75	1.93	3.32	7.86
Repair and maintenance of buildings	7027	3.10	3.20	2.64	2.04	1.70
Repair and maintenance of structures	7028	0.49	0.65	0.64	0.45	0.42
Repair and maintenance of transport equipment	7029	1.31	1.40	5.19	1.16	0.77
Repair and maintenance of machinery and equipment	7030	11.48	15.12	14.85	10.43	9.79
Contributions to trade organisations, input	7040	2.74	1.66	1.81	1.09	1.04
Expenditure on licences and royalties	7041	1.22	0.96	4.10	1.97	2.32
Other external expenditure which is input	7042	65.75	69.95	63.40	72.39	68.58
External expenditure n.e.c.	7043	1.39	1.26	0.31	0.76	1.58
Total		100.00	100.00	100.00	100.00	100.00

The accounts statistics cover a much wider range of industries than the manufacturing industries that have been covered by surveys of the use of services. For industries not included in the services surveys, distribution keys for the EKUD item have had to be based on the old tax-based accounts statistics (SLS-E). These distribution-keys are available with a breakdown into both DK-NACE and national accounts industries (see table 3.12).

Table 3.12 Percentages of the EKUD ["other external expenditure"] item. Examples from industries not included in the services enquiry:

DK-NACE industry	MLS-code	561010	561020	562100	562900	563000
		pct.				
Expenditure on insurance	4046	1.51	1.62	1.34	1.91	1.43
Renting and leasing, n.e.c. and unspecified	7024	6.07	5.97	9.69	5.74	5.18
Repair and maintenance of buildings	7027	2.43	1.89	3.23	0.80	1.88
Repair and maintenance, n.e.c. and unspecified	7035	5.07	5.15	6.75	2.48	4.19
Other external expenditure which is input	7042	84.91	85.36	78.99	89.07	87.32
Total		100.00	100.00	100.00	100.00	100.00

IX Comparison of accounts statistics and industrial commodity statistics

"Commodity statistics", i.e. product statistics for the extraction of raw materials (except crude oil and natural gas) and manufacturing, are not used directly to determine the enterprises' main economic magnitudes in the national accounts, but are used primarily for the breakdown of sales by product. For this use, too, the commodity statistics' information on the enterprises' output has to be assigned to the same industries as in the accounts statistics. It is usually assumed that the industry allocation in the accounts statistics is most likely to be correct, since it is decided at a later stage on the basis of knowledge of the composition of output in the

accounting year in question, whereas the industry allocation in the commodity statistics shows the composition of output for a previous accounting year.

When the industrial accounts statistics was introduced in 1995 the firm accounts statistics were industry-allocated on the basis of an examination of the commodity statistics for that year. It is assumed that the accounts statistics still is the best source for industry allocation of firms. Since the workplace statistics is corrected to be consistent with the firm statistics, it must be assumed that it is still most logical, failing better information, to go by the accounts statistics if these conflict with commodity statistics.

The accounts statistics data on workplace sales of own products are first aggregated into kind-of-activity units. Since the kind-of-activity unit is not identified in the accounts statistics, a unit can be identified only as the sum of the firm's workplaces within a given DK-NACE industry. Thus the delimitation of workplaces can be affected for example by which version of the business register is used, and this can lead to difficulties for the comparison if the two statistics are not based on exactly the same register versions.

Attempts are made to combine the information in commodity statistics into kind-of-activity units which can be matched with those units which are compiled from accounts statistics. In this way most of the units can be compared with the corresponding units in the accounts statistics. There are obviously normally few and small problems in firms with only one kind-of-activity unit. In general, the majority of the matching problems seem to affect large units. In cases where the commodity statistics' kind-of-activity units appear to cover the same enterprise as in the accounts statistics to a reasonable extent, the accounts statistics' kind-of-activity industry is transferred automatically to the commodity statistics unit. Doubtful cases are examined more closely and in some cases the industry allocation in the accounts statistics may be corrected in the input data used for the final run[10].

An incomplete match can mean that a number of estimated corrections will have to be made to the breakdown of the industries' sales by product, which is otherwise based on the commodity statistics. When corrections are made it is usually seen too, that total sales in each of the national accounts' product balances should not be smaller than the sales which appear in the commodity statistics.

X. Division between the accounts statistics, the statistics based on accounts data from the Danish tax authorities and other calculation systems

Ideally, the different accounting systems, i.e. the accounts statistics system, the statistics based on accounts data from the Danish tax authorities the systems for calculating on the basis of industry-specific accounts statistics and the calculation system for government non-market activity (OIMA) in S.13 should have clear dividing lines at firm level. Within each system, it should be possible to divide up the relevant firms into workplaces/kind-of-activity units which can be allocated to functional industries. In particularly simple cases, the firm branch and the kind-of-activity industry may be assumed to match so well that kind-of-activity units from one system do not have to be placed in industries belonging to another system. However, the situation may sometimes be more complicated, and there is a risk of double-counting or omitting units. When the final national accounts are compiled, therefore, a great effort is made to ensure that the allocation of firms and producer units (workplaces) by industry remains consistent.

1. FBRUDE

Until 1999 data for most service industries had to be based on the SLS-E statistics and workplaces covered by the accounting statistics would often belong to firms within the scope of the statistics based on accounts data from the Danish tax authorities. In general, the accounts statistics must be assumed to be the more robust source. Their accounting plan is more specific and grossed up to the total population at a more detailed level. Therefore figures based on the industrial accounts statistics is usually preferred to figures based on other sources. However, the way in which firms are divided into kind-of-activity units must conform to the principle that the accounting items for a given firm's workplaces sum to the firm's accounting items (when these are estimated correctly in line with the chosen breakdown of the firm into kind-of-activity units).

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10 It has also happened that the industry allocation was corrected in both accounting and commodity statistics, if information on the character of the enterprise's output was obtained from other sources.

After the accounts statistics in 1999 was extended to cover most of the market producing service industries the borderline between industries based on this source and industries based on the statistics based on accounts data from the Danish tax authorities has become much clearer. Most of the complicated cases had been caused by firms with workplaces in manufacturing, wholesale trade or various business services that are now all within the scope of the accounts statistics.

The FBRUDE workplaces are transferred to the intermediate system together with the other workplace information in the industrial accounts statistics. The firms in the statistics based on accounts data from the Danish tax authorities should be divided up in a way which respects the accounting figures for these workplaces that have already been calculated. This happens by deducting the FBRUDE figures from the firm totals before the firm remainder is distributed over the other kind-of-activity units.

In practice an FBRUDE data set is worked out in the intermediate system format. This is the contribution of the same workplaces to the intermediate system, but it differs in being divided up into (the corrected) firm branches instead of kind-of-activity branches.

When the FBRUDE units are then separated out from the statistics based on accounts data from the Danish tax authorities' "firms", the items are recoded to the (reduced) accounting plan used here. The FBRUDE figures are compared with the corresponding accounting figures in the statistics based on accounts data from the Danish tax authorities for firms. If the separating out leaves the remainder with an invalid negative sign, the remainder is printed out in a warning list and the remainder item is entered as nil in the file which is then used for the breakdown into kind-of-activity units in the statistics based on accounts data from the Danish tax authorities . No further action is taken with insignificant and probably random differences of this kind. With larger differences there an explanation is looked for and in some cases, this may lead to corrections to the data input into the calculation systems.

2. The General Enterprise Statistics. Removal of dual coverage.

The General enterprise statistics which is the starting point for the statistics based on accounts data from the Danish tax authorities includes firms liable for VAT which at the same time may occur in public enterprises, government non-market activities or the industrial accounts statistics. For the national accounts estimate, it is vital that firm units be included once and once only, since otherwise there may be incomplete coverage or double counting. Therefore a system has been built into the national accounts calculation systems to separate out that part of the firms which would appear to belong to the calculations based on industry-specific accounts statistics, government non-market output (OIMA) in S.13 or the industrial accounts statistics, before the remainder is divided up in the statistics based on accounts data from the Danish tax authorities.

Due to the fact that the General enterprise statistics includes information on whether the source of information for each enterprise is the accounts statistic for non-agricultural sector, or the accounts statistics for industries where public corporations predominate, these removals are straight-forward.

When it comes to public units these also has to be “cleaned out” from the General enterprise statistics. Those which are liable for VAT are picked out and divided up according to whether they have market or purely non-market activity, the basis for the split being a list of central and local government VAT units compiled by the Public Finances and Prices Division. Enterprises with no market activity are taken out. Checklists are printed out with the VAT sales and purchases of those units which have been removed/retained, as the case may be. Finally, a check is made on which large units with ownership codes 230: central government, 240: counties and 250: municipalities were still occurring in the file. The majority proved to be units we treat as being covered by non-market activity, and which were therefore also removed from the data.

3. Transition from firm branches to national accounts industries in the statistics based on accounts data from the Danish tax authorities

A "control key" controls the choice of “system” used for compilation of each individual industries. This key maintains the borderline between the accounts statistics and the statistics based on accounts data from the Danish tax authorities. It has been adjusted every time accounts statistics has been extended to cover service industries that previously were based on statistics based on accounts data from the Danish tax authorities.

To avoid delimitation problems, as described in the previous section, units which are calculated in full in the accounts statistics and, wherever possible, units included in OIMA or calculated on the basis of industry-specific accounts statistics or accounts statistics for industries where public corporations predominate are removed from the General enterprise statistics before it is used as the basis for grossing up in the statistics based on accounts data from the Danish tax authorities.

The FBRUDE data are separated out, as previously described, in such a way that the accounting figures which come from them are removed from the firm branch figures before the remainder is divided into kind-of-activity industries outside the scope of the industrial accounts statistics. This also means that total wages and salaries and employment relating to producer units within the scope of the questionnaire-based statistics are subtracted from the firm branch figures for distribution by kind-of-activity industry outside the scope of these statistics. As already mentioned, FBRUDE data are not allowed to remove more than the item's original value from any accounting item which should be positive. Otherwise, a good many cases of invalid negative items would occur.

The remaining part of firm branches are broken down into other kind-of-activity industries - for example, a wholesaling firm with combined wholesaling activity and engineering consultancy activity is divided up - in two stages. First of all, initial values are calculated for what has to be transferred to each kind-of-activity industry which receives something from the firm branch, on the basis of the breakdowns of the corresponding firm branches into accounting items. For example, the accounting items in a producer unit classified as engineering consultancy activity and which is to be transferred from the wholesale trade *firm* branch to the engineering consultancy kind-of-activity industry is initially estimated on the basis of the accounts observed in the engineering consultancy *firm* branch. The norms for these breakdowns of firms on the basis of the producer units which make up the firms are normally, and as the default, defined as the accounting item per krone (DKK) of wages/salaries. Information on total wages and salaries is available with a cross-distribution by firm branches and kind-of-activity industries and is therefore a generally useable and economically extremely meaningful basis for the split. These initial distributions are summed, and for each item the distribution is adjusted so that the contributions to the different kind-of-activity branches total the amount which is to be distributed. Account is thus taken of the ratios in both the industries which have values added to them and the firm branch which gives up value.

Account statistics for industries predominated by public corporations

Delimitation of the (sub)sector

Sector S.11001, "Public non-financial corporations", along with national private and foreign-controlled enterprises carrying out activities in the same branches as the public corporations, has a special status. Industries dominated by public corporations are normally covered by special ‘Accounts statistics for industries predominated by public corporations’ produced by Statistics Denmark’s Public Finances Division. The explanation is that it is particularly useful to cover public corporations, if only because they account for a large share of capital formation and the stock of fixed capital goods. The statistics in question are called "statistics for public enterprises", but in fact the statistics cover all producer units in the industries concerned. These are industries which have traditionally included a certain share - in many cases a dominant share - of public corporations and quasi-corporations.

The starting point is a sector delimitation of S.11001, where the units in that sector are grouped by industry in accordance with the main activity of the corporations in question. The resulting industries in which public corporations predominate are then covered in their entirety, regardless of ownership, and that coverage will not be reduced by any subsequent privatisations.

In 2012, the following industries in the national accounts' 117 grouping were included in whole or in part in the special treatment of industries where units belonging to S.11001 predominate:

350010 Production and distribution of electricity
350020 Manufacture and distribution of gas
350030 Steam and hot water supply
360000 Water collection, purification etc.
370000 Sewerage
383900 Waste and materials

490010 Passenger rail transport etc.
490020 Transport by suburban trains etc.
520000 Support activities for transp. (market)
600000 Radio, television, broadcasting
920000 Gambling and betting

Statistical sources

For the above industries, the source for the national accounts estimate is "statistics for public enterprises", extended to cover all units in the industries in question. It is produced by the Public Finances Division in connection with general government statistics. One of the reasons is the desire to be able to produce (and publish) a national accounts estimate of the "public sector", which is a combination of general government (S.13) and public corporations (S.11001). The public sector contains all producer units in the economy under public control.

The population of units comes from the business register, and all public units have complete coverage in the statistics. All large national private and foreign-controlled units also have complete coverage but small non-public units are covered via grossing up. The accounting figures used are:

a) Central and local government accounts;
b) Questionnaires with accounting information;
c) Official annual accounts;
d) Accounting figures from branch organisations.

Re. a): If public quasi-corporations are included in central and local government accounts, these accounts are used as the source.

Re. b): For public corporations and quasi-corporations not included in central and local government accounts, Statistics Denmark collects accounting information on a questionnaire. The same questionnaire is used for national private and foreign-controlled units in the industries in question.

Re. c): Official annual accounts are used in a few cases.

Re. d): For the electricity sector, the vast majority of electricity corporations report accounting information to the branch organisation *Dansk Energi*. These figures are used as the basis for the statistics instead of the usual questionnaire, since the figures provide information on purchases and sales from one electricity corporation to another, information which is crucial if we are to be able to calculate the value of electricity sold outside the electricity sector.

The statistical unit in these statistics is the economic unit, which in practice is defined as the legal unit, the firm. As part of the processing of the data, secondary activity - principally construction and civil engineering and trading - is removed from the units in which it is carried out and transferred to the relevant national accounts industries.

For a good many industries, the "statistics for public enterprises" are exhaustive, i.e. they are based on accounts for all units in the industries in question according to the business register. In other industries with a large number of small units, total activity in the industry is covered via grossing up on the basis of the industry's VAT sales. Table 3.13 lists the detailed DK-NACE industries where the statistics are used as the source for the national accounts estimate, showing whether the estimate is based on all producers' accounts or whether the figures are grossed up, together with the percentage of any grossing up.

Table 3.13 Coverage in the accounts statistics for industries predominated by public corporations

DK-NACE Industry	Text	National accounts industry	Grossed up
			pct.
351100	Production of electricity	350010	4.0
351200	Transmission of electricity	350010	0.0
351300	Distribution of electricity	350010	2.0
351400	Trade in electricity	350010	5.0
352100	Manufacture of gas	350020	24.0
352200	Distribution of gas	350020	0.0
353200	Trade of gas via pipelines	350020	0.0
353000	Steam and hot water supply	350030	30.0
360000	Water collection, purification etc.	360000	30.0
370000	Sewerage	370000	6.0
381100	Collection of waste, not dangerous	383900	5.0
381200	Collection of waste, dangerous	383900	8.0
382110	Treatment of waste, not dangerous	383900	11.0
382120	Treatment of waste, energy	383900	1.0
382200	Treatment of waste, dangerous	383900	8.0
390000	Cleaning of soil, water and other pollution	383900	48.0
491000	Rail transport, passengers	490010	0.0
492000	Rail transport, cargo	490010	3.0
493110	Bus transport	490020	17.0
493120	S-trains, metro etc.	490020	0.0
493910	Bus transport, long distance	490020	21.0
522130	Toll bar stations for roads, bridges and tunnels	520000	0.0
552210	Harbours (traffic and fishing harbours)	520000	3.0
522300	Services related to air transport	520000	1.0
601000	Radio activities	600000	26.0
602000	Television activities	600000	2..0
920000	Gambling and betting	920000	27.0

In industries with no total count, those enterprises which have the largest VAT sales are extracted until appropriate coverage of the branch's total VAT sales is obtained in the sample. This form of sampling is considered to be the most efficient, especially when it is possible to gross the sample up to the total population using VAT sales instead of employment, for example. The sample is grossed up to total VAT sales in the industry.

3.1.4.3 Accounts for Other financial intermediaries, except insurance corporations and pension funds (S.125), Financial auxiliaries (S.126) and Captive financial institutions and money lenders (S.127)

These subsectors are calculated using accounts that are grossed up using total balances. For a description please refer to chapter 3.17 Financial and insurance activities (K).

3.1.4.4 Account statistics for Non-profit institutions serving households (NPISH) (S.15)

As part of the ESA 2010 based national accounts, published for the first time in September 2014, the NPISH sector is shown separately. In the previous national accounts S.15 NPISH was shown together with S.14 households. In order to have data of a sufficient quality to publish full sector accounts an account statitistics was established for S.15. At the same time, the delimitation between S.13 General Government and S.15 NPISH was changed. As more emphasis is put on control, some units in education (mainly private schools) and some welfare organisations were reclassified from S.13 to S.15. The result is, that the NPISH sector increased by as compared to before the major revision – value added was doubled (2008). The largest part was due to the reclassification of units from S.13. The following gives a short description of the new account statistics.

The account statistics cover a variety of units: Employee Unions, Religious institutions, political parties, welfare organisations, sports clubs and other. It is based on a sample of accounts from units in 25 detailed industries

(DB07) which is grossed up based on wages and salaries. For a more detailed description please refer to chapter 5.8 NPISH final consumption expenditure.

3.1.5 Sectors with a combination of physical and economic accounts (group 3)

Agriculture and horticulture

Delimitation and consistency vis-à-vis other industries

Agriculture, horticulture and the raising of fur animals covers national accounts industry 010000 Agriculture and horticulture. In agriculture, to which the raising of fur animals belongs, there is only market activity. Horticulture consists of market and non-market activity, the non-market being landscape gardeners in the general government sector. For this share of output and value added, reference should be made to table 3.2.

The following description refers to the market activity in agriculture. In the national accounts, this is defined by activity, i.e. "agriculture", for example, is the single activity of producing agricultural products. In practice, secondary activity in agriculture is predominantly the letting of dwellings (including holiday homes) and non-residential premises. These activities are instead accounted for in the outputs of the relevant industries, which are also defined by activity. The statistical producer units for agriculture, horticulture and the raising of fur animals are thus units of homogeneous production as defined in the ESA 2010, paragraph 2.154. If a given agricultural enterprise produces both agricultural and horticultural products, the enterprise is divided into an agricultural share and a horticulture share and output and value added are calculated separately for these two shares. The two shares are each units of homogeneous production whose output value is calculated as the sum of the value of the products in question.

A detailed description of Nace rev. 2 A, Agriculture, forestry and fishing can be found in chapter 3.7

Dwellings

Delimitation and consistency vis-à-vis other industries

Industries 680023 Renting of residential buildings and 680024 Owner-occupied dwellings (National accounts 117 groups) are activity-defined. The statistical units are units of homogeneous production which have no activity other than the letting of dwellings/own-account production of dwelling services.

The letting of dwellings is an important secondary activity for institutional units whose main activity is in other industries, especially banks, insurance corporations and pension funds. In the national accounts, this activity is in every case separated out into quasi-corporations in the non-financial corporations sector. In the calculations for the financial corporations, the return on their housing investments is recorded as property income (dividends).

Conversely, the letting of non-residential premises is an important secondary activity for many producer units which are primarily concerned with the letting of dwellings. A considerable proportion of housing in towns includes retail premises, and similarly there may be offices, workshops etc. in property which is primarily residential. The activity of letting non-residential premises is separated out from the output of dwelling services and transferred to industry.

In practice, the output value in the "dwellings" industries 680023 and 680024 is estimated from a price times volume calculation, where the stratified stock of dwellings is multiplied by appropriate average rentals, whilst the output value of industry 680030 Renting, non-residential buildings, is estimated from the expenditure side. For a detailed description please refer to chapter 3.18 Real estate activities (L)

3.2 The border line cases

The borderline cases are treated in the same process as the transition from private accounting and administrative concepts to ESA2010 national accounting concepts. The borderline cases are therefore described in section 3.4.

3.3 Valuation

According to ESA 2010, output has to be valued at basic price, and this concept is also used in the Danish national accounts.

Danish accounting and product statistics asks for turnover at basic prices, partly for national accounts purposes but also because Statistics Denmark has always considered that this was the price concept which firms could relate to best, since it corresponds to the income which goes into the firm's own till rather than to government coffers. The concept of "net sales" in the Danish legislation on the submission of annual accounts (the Annual Accounts Act) corresponds to the basic price concept, since it covers the sales value after deduction of discounts and VAT and other excise duties (and, conversely, additions for subsidies on products). In Denmark's case, therefore, there is generally no need for any procedure to switch from observed prices such as producer prices to the ESA2010 concept of basic prices. The sales observed in the sources are sales at basic prices.

The intermediate consumption observed in the sources is generally recorded and valued at purchasers' price when the goods or service enter the production. There is generally no need for any procedure that switches from observed prices in the business accounts to the ESA 2010 concepts for valuing of intermediate consumption.

Price correction of changes in inventories

Price corrections of changes to inventories are done on the supply side for finished goods, work in progress and goods for resale and on the use side to changes in inventories of raw material. The price correction of changes in inventories is described below, a further description of inventories can be found in section 5.11.

The price correction for changes in inventories is made separately for the following five inventory categories:

1. Finished goods and work-in-progress
2. Inventories of raw materials
3. Wholesale inventories
4. Retail inventories
5. Special inventories.

The starting point is the accounting statistics information on final stocks in the last year (= opening stocks in the present year) and final stocks in the present year. These inventory estimates use the firms'/producer units' own valuation, which in the majority of cases is based on historic cost. Changes in inventories in business accounts which are calculated as closing minus opening stocks will therefore, with inflation (or deflation), generally include an element of revaluation. When prices are rising, output (sales plus changes in inventories of finished goods) will be overvalued and the intermediate consumption of goods will be undervalued. Together these will lead to an overvaluation of value added if the changes in inventories as they appear in business accounts are not price-corrected. For trading industries, where output value is defined as gross margin (sales of goods for resale minus consumption of goods for resale), output and value added will be overvalued if prices rise and inventories of goods for resale are not price-corrected.

The national accounts use the best possible approximation of the theoretically correct estimate of the national accounts changes in inventories and the price correction that goes with them according to the PIM. Owing to a lack of information on daily movements in inventories, the PIM can only be used in exceptional cases, in Denmark as in other countries. The Perpetual Inventory Method consists in compiling initial stocks and then monitoring all movements into and out of them.

Where information is available on physical quantities of goods in stock at the beginning and the end of the accounting period, the best possible approximation is obtained by multiplying the physical change in the inventory for the individual goods over the period in question by the mean prices for the year and then summing over all goods in the inventory in question. In Denmark, this information on physical quantities is available for agricultural and energy goods.

In all other cases, the only available information is the value of the enterprises' stocks at the end of the period in their annual accounts (quarterly accounts) and in the accounting statistics. Opening stocks are the same as the closing stocks of the previous accounting period. To calculate the national accounts changes in inventories, we make an assumption about the prices at which stocks are estimated at the end of the period and on this basis

inflate the opening stocks to the year's average price level, likewise deflating closing stocks to the year's average price level. The national accounts change in inventories in current prices can then be calculated as the difference between opening stocks and closing stocks calculated at average prices for the year in question.

The price correction to the business accounts' changes in inventories, output and intermediate consumption is worked out as the difference between the change in inventories in business accounts and the change as estimated according to national accounts principles. In the Danish national accounts, closing stocks are assumed to be compiled at the latest noted end-of-year acquisition prices, which are assumed to be the mid-December prices. This method of estimating stocks is compatible with the Annual Accounts Act and is known to be used by many producer units because it is simple and practicable. Given this assumption, the figures are inflated from the price level in December t-1 to the mean price level for year t and deflated from the price level in the December of year t to the mean level in year t. The calculation is made at product level, with opening and closing stocks divided by product on the basis of a distribution key specific to each industry. For inventories of finished products, including work-in-progress, the distribution key is the distribution by product of sales in the latest final year (t-1). For inventories of goods for resale, a key is used which provides the link between wholesale and retail trade industries and the products in which they trade. Finally, the distribution key for stocks of raw materials is determined by the breakdown of intermediate consumption by product according to the balanced supply and use tables for the latest final year.

The following formulae show the calculation process for the change in inventories of individual products. The change for a given industry is then worked out by summing over products:

$$C = B - A$$

$$D = \frac{B}{p(t(12))}\,p(t) - \frac{A}{p(t-1(12))}\,p(t)$$

$$E = D - C$$

where A = value of opening stocks in line with business accounting principles
B = value of closing stocks in line with business accounting principles
C = value of change in inventories in line with business accounting principles
D = value of change in inventories in line with national accounts principles
E = price correction to change in inventories and output/intermediate consumption
p(t-1(12)) = price index for December year t-1
p(t) = mean price index for year t
p(t (12)) = price index for December year t.

The national accounts change in inventories, i.e. the product transaction P.52, is then obtained as P.52 = C + E. E is item K.11 in the revaluation account for asset category AN.12, inventories, apart from the price change between mid-December in year t and the end of December in the same year. When inflation is low and there is little fluctuation in the relative prices, this last figure can be ignored for practical purposes, so E can be considered as the revaluation or holding gain on the inventory during the year.

It is important to be aware of the risk of omissions and double counting when two methods of calculating inventories are used at the same time, one based on physical quantities of certain goods and another based on business accounts. For example, the calculated inventories of energy goods are posted in the accounts for producers of energy products (stocks of finished goods), distributors of energy products (stocks of goods for resale in wholesaling enterprises) and, finally, as stocks of raw materials.

The Danish national accounts calculation system for inventories includes a key which allocates those agricultural and energy products which are covered by the physical calculation to certain industries, from which they are subtracted in the calculation based on the value of inventories according to accounting statistics. This ensures consistency, i.e. all inventories and movements in inventories in the economy are included once and once only.

Finally, it may be noted in parentheses that the theoretical and practical problems which arise in the non-financial national accounts in connection with estimating changes in inventories and revaluing inventories have

their counterpart in the financial national accounts, where the problem is how to split the change between opening and closing stocks of financial assets into a financial transactions share and a revaluation share, plus "other volume changes", i.e. bankruptcies etc.

3.4 Transition from private accounting and administrative concepts to ESA2010 national accounting concepts and borderline cases

After processing, all the accounting statistics underlying the national accounts calculation of value added, are transferred to a common accounting plan in the *Intermediate System* as shown in Table 3.17 at the end of this section. The first version of the intermediate system is simply a file that contains the data from the four main systems after they are transformed to the common codes. In this file firms (institutional units) are broken down wherever necessary into producer units, so that the statistical unit for the calculation of value added, as required in ESA2010, is the producer unit or a constructed unit of homogeneous production. Despite the detailed level of information in the intermediate system, various accounting items still do not correspond to national accounts concepts because information from accounts alone is insufficient to perform the full transition. These corrections include corrections for borderline cases on the supply and use side. The adjustments made for the transition to ESA2010 national accounting concepts and borderline cases are described in the following.

Transition to common accounting plan – The intermediate system, version 1

The industry classification used in the intermediate system follows the most detailed six-digit code in the Danish version of the NACE Rev. 2 classification of activities (DK-NACE) for market production covered by the accounts statistics system and the tax-accounting system. A number of less detailed industries are used to include the results from other sources. The intermediate system contains the sector classification, thus a cross-classification by industry and sector is possible.

The item “other external expenditure”, EKUD, from the account statistics for the non-agricultural private sector has already at this stage been split between various items of which some should be included in intermediate consumption while others e.g. losses on bad debts or other taxes on production should be excluded (see also chapter 3.1.4.1).

It should also be noted that estimates for units under threshold value have already been included as part of the national accounts processing of the non-agricultural private sector

The various accounting items in the intermediate system, version 1, do not correspond to national accounts concepts because information from accounts alone is insufficient to perform the full transition. Further adjustments are needed, which are introduced in the transition to the intermediate system version 2.

The intermediate system version 2

A second – and final – version of the intermediate system is the result of a number of corrections to the first version of the system that transfers the data from business accounts to ESA 2010 principles. These corrections are made to production and to intermediate consumption.

For production:

The following corrections are made to the production estimate:

1. Own-account gross fixed capital formation
2. Production, storage and processing of agriculture products for own-account by households
3. Dwelling services produced by owner-occupiers
4. Household services produced by employing paid domestic staff
5. Products used for payments in kind
6. Products added to the inventories of finished goods and work-in-progress
7. Revenue from licenses and royalties

Volunteer activities that result in goods and products bartered are considered insignificant in the Danish economy and there is no corrections made to the production for this in the national accounts. The account statistics for non-agricultural private sector is on local KAU cf. 3.1. After the transformation of accounting

statistics to the intermediate system are there no specific corrections made for products supplied by one local KAU to another within the same institutional unit to be used as intermediate input or for final use.

Price corrections to changes in inventories are made on the production for finished goods, work in progress and goods for resale. On the expenditure side price corrections are made to changes in inventories of raw material. The price corrections are described in section 3.3 and chapter 5.11.

For intermediate consumption (inclusion)

The following corrections are made to intermediate consumption for the transition to ESA2010 and the inclusion of borderline cases:

1. Inexpensive tools used for common operations and small devices
2. Non-life insurance service charges
3. FISIM purchased by resident producers
4. Financial intermediation services paid for directly
5. Expenditure on licenses and royalties

The following borderline cases are assumed to be a part of intermediate consumption in the business accounts, and further corrections for theses borderline cases are therefore not needed:

1. Costs of using rented fixed assets
2. Subscriptions, contributions or dues paid to non-profit business associations
3. Goods and services received from another local KAU of the same institutional unit that comply with the definition of IC
4. Goods and services used as inputs to ancillary activities
5. Expenditure by employees, reimbursed by the employer, in items necessary for the employers' production
6. R&D acquired to be used solely in the creation of further products of R&D

For intermediate consumption (exclusion)

The following corrections are made to intermediate consumption for the transition to ESA2010 and the exclusion of borderline cases:

1. Research and development
2. Expenditure by employers to be treated as wages and salaries in kind
3. Payments for government licences and fees that are to be treated as other taxes on production

The Following borderline cases are assumed to be excluded from the intermediate consumption the business accounts, and further corrections for these borderline cases are therefore not needed:

1. Items to be treated as GFCF (except R&D)
2. Expenditure to be treated as the purchase of non-produced assets
3. Use by market or own-account producers units of collective services provided by government units
4. Goods and services produced and consumed within the same accounting period and within the same local KAU
5. Payments for licenses for using natural resources (e.g. land) that is to be treated as rents, i.e. a payment of property income
6. Decommissioning for large capital assets

For taxes and subsidies on products

A detailed description of taxes and subsidies on products, including the transition to ESA2010 national accounting concepts and possible borderline cases, can be found in section 3.28 and 3.29.

Adjustments made to production

Ad 1) Own-account gross fixed capital formation

i. Mineral exploration

Mineral exploration is added to the industries output and treated as GFCF as described in chapter 3.8.

ii. Construction or extensions to dwellings by households

Construction and extensions to dwellings by households is output in NACE section F Construction, cf. section 3.12.

iii. Entertainment, literary and artistic originals

In the business accounts of authors, artists etc, the value of the originals they create will usually not be counted as output of capital goods. To bring the accounts for theses producers in line with the ESA 2010 rules, own output of originals is estimated separately and added to the business accounts output. Similarly, the amount calculated has to be added to GFCF on the expenditure side.

iv. Software produced on own account

In Danish business accounts, own-produced software is not normally capitalised but is considered as current operating expenditure (wages and salaries and the consumption of goods and services). If it is capitalized, "industrial accounts statistics" will usually show it as part of "intangible assets" where it cannot be distinguished from other kinds of intangible assets (some of which are not part of fixed capital). An allowance therefore has to be added to the business accounts' value of the output of capital goods for own use, to include the value of software (and large databases) produced on own account and for own use.

In the national accounts, own-produced software is calculated in a subsystem which, inter alia, includes a breakdown by industry. The calculation is based on total wages and salaries for highly-qualified IT staff, divided by industry. The values for own-produced software are input into the intermediate system and are thus included in the Target Total Module (MTM). The calculation is performed for the industries used in the Danish supply and use tables. In the intermediate system the correction is blown up to the detailed industries used here. The estimated value of software produced at own-account is also coded as GFCF on the expenditure side.

v. Research and development produced on own account

Own produced research and development is added to the production and GFCF, cf. section 5.10.

Ad 2) Production, storage and processing of agriculture products for own-account by households

As described in section 3.7, there is an addition to the production value for production for own use by households within the agricultural industry. Production of agricultural products for own-account by households outside the agricultural industry and the industry for production of meat is considered insignificant in the Danish economy.

Ad 3) Dwelling services produced by owner-occupiers

Dwelling services produced by own-occupiers is calculated as output in the national account industry 680024 Owner-occupied dwellings that is a part of NACE section L real estate activities, cf. section 3.18.

Ad 4) Household services produced by employing paid domestic staff

Household service produced by employing paid domestic staff is output in national account industry 970000 Households as employers, cf. section 3.26.

Ad 5) Products used for payments in kind

A description of the calculation of the value of fringe benefits can be found in chapter 7. The correction on the supply side is done to take into account that fringe benefits that are produced inside the unit itself will not be recorded in the value of output according to the business accounts. An estimated value of the missing production will have to be added to the production value in these cases. It should be emphasized that this correction is irrelevant in the cases where fringe benefits consist of goods or services purchased from other units.

Ad 6) Products added to the inventories of finished goods and work-in-progress
The production value is corrected for output to the inventories of finished goods and work-in-progress, cf. section 3.4 and 5.11.

Ad 7) Revenue from licences and royalties
According to ESA 2010, payments for licences and royalties on patents etc. are payments for the provision of services which have to be included in the estimate of output and intermediate consumption. In business accounts, they will in many cases be counted differently, as acquisitions of intangible assets, for example, even though all that has been acquired is permission to use an intangible asset for a given period and not the asset itself. In the national accounts, therefore, allowances are added in for licence and royalty payments as regards both intangible non-produced assets (patents etc.) and intangible produced assets (entertainment, literary and artistic originals, etc.). Licence payments for software are already covered elsewhere. These values are recorded in intermediate system 2 and included in output and intermediate consumption when the MTM is compiled.

Experience shows that accounting practises vary from firm to firm. Many enterprises show revenue from royalties as part of their output value. In these cases estimated values of the revenues already included are subtracted from the total revenue from royalties when the correction is made.

Adjustments made to intermediate consumption (inclusion)
Ad 1) Inexpensive tools used for common operations and small devices
Acquisitions of equipment etc. that in business accounts is treated as current expenses or written off in the same accounting year will to a large extent consist of durable equipment that should be included in GFCF unless they are inexpensive tools used for common operations or small devices.

The tax legislation includes an equivalent rule on consumables which may be posted as operating expenditure, i.e. written off immediately. It has been assumed for national accounts purposes that the accounting statistics information on expenditure on small tools and the like has usually been reported according to the tax rules in business accounts. (It must, however, be admitted that business accounts show numerous examples of expenses that are delimited in ways that do not at all follow the tax rules). Since tax rules are different from the ESA rules, the accounting item has to be split into that part which, according to the ESA rules, is small tools, and has to be counted as intermediate consumption, and the remaining share which goes to capital formation. In the Danish national accounts, a method has been developed for making this split on the basis of the tax rules and assumptions about the division of purchases by amount.

The limits for tax purposes on amounts spent on consumables which can be written off immediately were adjusted upwards several times. This meant that that share of the "acquisition of equipment, expensed" item which had to be counted as intermediate consumption in the national accounts had to be reduced and the capital formation share had to be increased.

Ad 2) Non-life insurance service charges
There is, with good reason, a difference between the accounting principles in business accounts and in national accounts for non-life insurance service charges. In national accounts terminology, the insurance premium actually paid on a policy is called the "gross insurance premium". That share of the gross premium which goes to cover risks, i.e. the payment of claims and allocations to provisions, which are the policyholders' property, is referred to as the "net insurance premium". The difference consists of the actual payment for the services of the insurance corporation, a share known as the "services element in the gross premium". In addition to the premium actually paid, there is, however, a further component of the total premium, namely the returns which the insurance corporations earn from insurance technical reserves, which, as already stated, are money belonging to policyholders. These returns are known as "supplementary premiums". In the national accounts, the amount is counted as a flow of property income (D.44) to the insurance policyholders, who use the amount in question to buy insurance services in addition to those paid for via the actual insurance premium. The economic argument is that this is the way insurance corporations operate. One essential aspect of insurance

business is that the corporations should have clients' funds at their disposal in the insurance technical reserves. The supplementary premiums are therefore included in the insurance corporations' output value.

The calculations for insurance corporations and pension funds are discussed in detail in Section 3.17. Here, therefore, we discuss only those corrections which are needed to work out intermediate consumption in those enterprises which are part of the population of policyholders.

In business accounts, the gross insurance premium is included in the accounting item "other external expenditure" (other overheads). To enable this to be used as the basis for an estimate of intermediate consumption, the net insurance premium has to be deducted and the supplementary premiums added.

In the national accounts insurance calculation system, gross premiums, claims paid out, net insurance premiums and supplementary premiums are estimated for each main type of insurance. After these have been aggregated by type of insurance, they are available in a breakdown over the national accounts 117 industries, plus households as consumers and the rest of the world. The net insurance premiums calculated plus the additions for supplementary premiums are input into intermediate system 2, and thus the treatment of insurance transactions is brought into line with the ESA 2010 rules with the compilation of intermediate consumption.

Ad 3) FISIM purchased by resident producers

Intermediate consumption of FISIM is an imputation that does not exist in business accounts. The method used for distribution of input of FISIM by industry is explained in section 3.17.

Ad 4) Financial intermediation services paid for directly

In business accounts, fees, including commitment fees etc. paid to financial institutions, are normally counted under financing expenditure, along with interest expenditure etc. In the main, financing expenditure covers distributive transactions and should not be included in the estimate of intermediate consumption, which is a product transaction (P.2). In the national accounts, the financial expenditure item therefore has to be screened for purchases of services consisting of bank fees etc. and those purchases transferred to an accounting item which goes into the estimate of intermediate consumption.

In the national accounts calculation system for financial institutions, an estimate is made of financial intermediation services which are paid for directly, in a breakdown by certain types corresponding to the financial institutions involved. In this calculation system, the total is divided up among users on the basis of the available information, including the size of borrowing and lending from/to industry groups and households as consumers plus the rest of the world.

The values calculated for payments for bank services etc. are input into intermediate system 2, thus ensuring that they are included in the estimate of intermediate consumption when the target total module is calculated.

Ad 5) Expenditure on licenses and royalties

According to ESA 2010, payments for licences and royalties on patents etc. are payments for the provision of services which have to be included the estimate of output and intermediate consumption. In business accounts, they will in many cases be counted differently, as acquisitions of intangible assets, for example, even though all that has been acquired is permission to use an intangible asset for a given period and not the asset itself. In the national accounts, therefore, allowances are added in for licence and royalty payments as regards both intangible non-produced assets (patents etc.) and intangible produced assets (entertainment, literary and artistic originals, etc.). Licence payments for software are covered above. These values are recorded in intermediate system 2 and included in output and intermediate consumption when the MTM is compiled.

Adjustments made to intermediate consumption (exclusion)

Ad 1) Research and development

Research and development that is purchased for investment (and not used to create further products of R&D) should be treated as gross fixed capital formation and not as intermediate consumption. Intermediate consumption in the “intermediate system” is corrected for this, see chapter 5.10 for a further description of R&D.

Ad 2) Expenditure by employers to be treated as wages and salaries in kind

The description of the calculation of the value of fringe benefits can be found in chapter 7. Where the value of fringe benefits consists of outlays for telecommunications services, subscriptions for newspapers and the like that are purchased in the market, business accounts will include this expenditure in the purchases of goods and services. This expenditure are removed from the value of inputs and added to compensation of employees.

Ad 3) Payments for government licences and fees that are to be treated as other taxes on production

According to the ESA2010, paragraph 4.23 e), government fees and payments connected with checks carried out by government are to be considered as purchases of services unless the amount charged is out of all proportion to the costs of the check. In business accounts, they will normally be considered as direct taxes rather than purchases of services, and will thus not be included in intermediate consumption unless a correction is made. Information on government fees, taxes paid for checks etc. is obtained from tax statistics. In a special calculation system, the figures are then broken down by industry, with the result being input into the intermediate system and included in intermediate consumption for the estimate of the MTM.

Table 3.14 Accounting plan in the intermediate system

	Text		Industrial accounts statistics
	Resources		
0.1	Output of originals	1003	----
	Output of the hidden economy	1005	----
	Fringe benefits, output	1007	----
	FISIM, imputed financial services	1008	////
1.3	Manuf. of plant and machinery for own final use	1012	AUER
1.9	*Other net sales of own products*	*1013*	*OMS-HOMS (part of)*
2.	Output for own final consumption	1014	----
	Own-produced software	1015	----
3.1	Sales of goods for resale	1016	HOMS
3.2	Income from licences and royalties	1017	OMS-HOMS (part of)
3.9	*Other and unspecified net sales*	*1018*	----
4.1	Other, secondary operating income	1019	ADR
	Other (services) sales (excl. 1017)	1059	OMS-HOMS (part of)
4.2	Extraordinary income	1060	EOI
4.3	Miscellaneous capital income	1061	----
	Uses (inputs)		
	Intermediate consumption, government non-market activity	2010	----
5.1	Purchases (consumption) of fuel and power	2013	KENE
5.2	Purchases of processing-to-order work and subcontracts	2014	KLOE
5.9	*Other consumption (purchases) of raw materials*	*2015*	*KRH – (URHB – PRHB) –HKOB*
6.	Consumption of goods for resale	7019	HKOB – (HLUL – HLPR)
7.	Expenditure on rentals, excluding heating	7020	UDHL
8.1	Expenditure on the rental and leasing of machinery	7021	ULOL (part of)
8.2	Expenditure on the rental and leasing of motor vehicles	7022	ULOL (part of)
8.3	Expenditure on the rental and leasing of computer equipment	7023	ULOL (part of)
8.9	*Expenditure on other rental and leasing*	*7024*	*ULOL (part of)*
9.	Acquisitions of equipment etc., expensed	7025	UASI
10.	Ordinary losses, irrecoverable debts	7026	OTDE
11.1	Repair and maintenance of buildings	7027	EKUD (part of)
11.2	Repair and maintenance of structures	7028	EKUD (part of)
11.3	Repair and maintenance of transport equipment	7029	EKUD (part of)
11.4	Repair and maintenance of machinery	7030	EKUD (part of)
	Repair and maintenance of buildings and structures	7031	EKUD (part of)
	Repair and maintenance of machinery and transport equipment	7032	EKUD (part of)
11.9	*Repair and maintenance unspecified or n.e.c.*	*7035*	----
12.1	Contributions to professional organisations allocated to inputs	7040	EKUD (part of)
12.2	Expenditure on licences and royalties	7041	EKUD (part of)
12.3	Other external expenditure included in inputs	7042	EKUD (part of)

Table 3.14 Accounting plan in the intermediate system, cont.

	Text	Industrial accounts statistics

12.9	*Other external expenditure*	*7043*	---
	Government fees as purchases of services	7044	EKUD (part of)
13.	Financial intermediation services paid for directly	7050	RUDG (part of)
	Insurance premiums (negative) correction	7055	----
	Correction for gross taxes on leasing	7057	RSUF
	Fringe benefits, IPC correction	7059	----
14.1	Other operating expenditure	7060	SEUD
14.2	Extraordinary expenditure	7061	EOU
14.2	Miscellaneous capital expenditure	7062	----
	Indirect taxes		
17.1	Property taxes	3112	EKUD (part of)
17.2	Motor vehicle taxes	3113	EKUD (part of)
17.3	Other taxes on production not linked to products	3114	EKUD (part of)
17.4	Subsidies not linked to products	3115	---
	Inventories		
20.1	Raw materials, opening stocks	5060	PRHB
20.2	Raw materials, closing stocks	6060	URHB
21.1	Goods for resale, wholesale, opening stocks	5061	////
21.2	Goods for resale, wholesale, closing stocks	6061	////
22.1	Goods for resale, retail, opening stocks	5062	HLPR
22.2	Goods for resale, retail, closing stocks	6062	HLUL
23.1	Other goods, opening stocks	5063	////
23.2	Other goods, closing stocks	6063	////
24.1	Finished goods, opening stocks	5065	PVUF + ELPR
24.2	Finished goods, closing stocks	6065	UVUF + ELUL
25.1	Goods for resale, opening stocks	5066	HLPR
25.2	Goods for resale, closing stocks	6066	HLUL
	Changes in inventories (price-adjusted)		
20.3	Stocks of raw materials	2060	DEFL
21.3	Goods for resale, wholesale	2061	DEFL
22.3	Goods for resale, retail	2062	DEFL
23.3	Other goods	2063	DEFL
24.3	Stocks of finished goods	2065	DEFL
25.3	Goods for resale (manufacturing)	2066	DEFL
26.1	Total price adjustment, stocks of raw materials	2098	From MLS 1 to MLS 2
26.2	Total price adjustment, goods for resale	2099	From MLS 1 to MLS 2
	Distributive transactions (and tax figures)		
	Compensation of employees, government non-market activity	4010	////
	Fringe benefits as wages/salaries	4013	----
30.1	Wages and employer contributions	4015	LGAG
31.2	Pensions expenditure	4016	PUDG
31.9	*Other staffing costs*	4017	AUDG
33.1	Income from holdings	4030	INKI
33.2	Interest etc. on current assets	4031	RIOM
33.9	*Other income in the form of interest or dividends*	4032	RIFA + UDFA
34.	Interest expenditure	4040	RUDG
35.1	Corporation tax (for corporations only, of course)	4041	SSAR
35.1	Corporation tax SLS-E	4042	----
36.	Profit/loss for tax purposes	4043	AARE
37.	Distributed income (dividends)	4044	UDBY
38.	Tax adjustments	4045	----
39.1	Net insurance premiums	4046	EKUD (part of)
39.2	Contributions to fighting funds	4047	EKUD (part of)
	Writing off and writing down		
	Consumption of fixed capital, government non-market activity	5000	////
40.	Writing off and writing down of non-financial fixed assets	5100	ANMI
41.	Writing down of non-financial current assets	5200	NOAK
42.	Writing down of financial assets	5300	NFAO

Table 3.14 Accounting plan in the intermediate system, cont.

	Text	Industrial accounts statistics

	Capital formation, RESOURCES, purchases of		
	Own-produced software (= output: 1015)	6101	----
	Purchased software	6102	TIAA (part of)
	Exploratory drilling	6104	----
50.	Intangible assets	6110	TIAA (part of)
51.1	Real estate, existing buildings (including land value)	6121	KEB
51.2	Real estate, unbuilt land	6122	KUBG
51.3	Real estate, expenditure on construction, new buildings (excluding land value)	6123	OPNY
51.4	Real estate, rebuilding, improvement of buildings and installations	6124	OFBB
51.5	Real estate, new layout and rebuilding of roads, harbours, etc.	6125	VHPK
51.6	Breeding stock	6127	////
51.9	*Other real estate*	*6126*	////
52.1	Operating resources, plant and machinery	6131	----
53.1	Operating resources, transport equipment, vehicles	6132	----
53.2	*Operating resources, other transport equipment*	*6133*	----
54.1	*Other operating resources*	*6134*	*DTAM + TAAD*
55.	Net acquisitions of valuables	2055	----
	Capital formation, USES, sales of		
	Disposals of software	6202	AIAA (part of)
60.	Intangible assets	6210	AIAA (part of)
61.1	Real estate, existing buildings (including land value)	6221	SABY
61.2	Real estate, unbuilt land	6222	SUBG
61.3	Real estate, roads, harbours, squares, etc.	6223	SVHP
61.4	Breeding stock	6227	////
61.9	*Other real estate*	*6226*	----
62.1	Operating resources, plant and machinery	6231	----
63.1	Operating resources, transport equipment, vehicles	6232	----
63.2	*Operating resources, other transport equipment*	*6233*	----
64.1	*Other operating resources*	*6234*	*STAM + SADI*
	Balancing items (including inventories) ASSETS		
70.	Intangible fixed assets	8110	IAAT
71.1	Land and buildings	8120	GRBY
71.2	Technical plant and machinery	8121	ATAM
71.3	Other structures, working plant and equipment	8122	AADI
71.9	*Other tangible fixed assets (e.g. advance payments)*	*8129*	*FMAA*
72.	Financial fixed assets	8130	ABAE + ABOA + FAAT + TILG
73.1	Opening stocks	8141	PVBT
73.2	Closing stocks	8142	UVBT
	Balancing items, LIABILITIES		
81.	Own funds	8210	EGUL
82.	Provisions	8220	HENS
83.	Long-term debt	8230	ALG + LGL
84.	Short-term liabilities	8240	AKG + KGL
73.9	*Other current assets*	*8149*	*ANTI + LIBE + OBAE + OBAV + OMAT + TGT + TSVT + UFKV + VKT + UIAF*

Key:

//// indicates that the item is not relevant or that it is fully covered in the other items included in the main group.

---- indicates that no breakdown is possible.

Sources:

- AUER, OMS, HOMS etc. are the variable names in the industrial accounts statistics, which for the year 2003 covers DK-NACE industries 140000-370000, 450000-550000, 602223-640000, 701109 and 710000-740000.
- EKUD = other external expenditure divided by ANVID [identity code for use] on the basis of the survey of costs.
- DEFL = Deflation division.

3.5 The role of direct and indirect estimation methods and of benchmarks and extrapolations

The role of direct and indirect estimation methods

A direct estimate of value added in a given industry is understood to mean that, on the basis of exhaustive accounting statistics for the industry in question, output and intermediate consumption, and thus value added, can be obtained via the statistical processing of the underlying business accounts.

The main industry for which an indirect estimate of value added is used is for the national account industry 680030, Renting, non-residential buildings. Here the output is calculated from the expenditure side as the sum of the rental expenditure of all other industries and the intermediate consumption is calculated using the input percentage (intermediate consumption/output value) for the letting of dwellings (i.e. actual letting) in dwellings, for want of satisfactory accounting information on the letting of non-residential buildings. Since the two activities are closely related, the uncertainty regarding the calculation of value added is assumed to be minor.

The roles of benchmarks and extrapolations

Projections are taken to be estimates where output and intermediate consumption are calculated directly as levels for a benchmark year, whilst estimates for the current years are obtained by projecting output and intermediate consumption from the benchmark year using appropriate indicators. A more uncertain method of projection consists in assuming a constant ratio (input percentage) of intermediate consumption to output in either current or (better) constant prices and projecting output, intermediate consumption and implicitly value added using a single indicator.

In the final Danish national accounts, virtually all value added is based on current-year estimates produced directly as levels. In the final calculations, projections are mainly used in the allowance for underreporting and for hidden activity (“black” activity). Denmark, like other countries, has neither the statistical sources nor resources to produce a new estimate of the hidden economy every year. In most cases, it has been decided to use a benchmark which is then projected. In Denmark's case, the benchmark year for the estimate of the hidden economy is 2004. The method then is to project output and value added linked to the black economy by assuming for each "product" in that economy that the changes run in parallel with domestic output in the corresponding "legitimate" product balance.

Table 3.15 Estimation method used for output by NACE section

	National account industry	Survey censuses	Adm. records	Combined data	Benchm. extrapol.	Commodity Flow Model	CFC (PIM)	Dwellings Stratific. Method	FISIM	Other E&M	Other	Total
		DKK mill.										
A	Agriculture, forestry and fishing	87 621	705	0	0	0	44	0	0	0	0	88 371
B	Mining and quarrying	0	0	62 417	0	0	0	0	0	0	0	62 417
C	Manufacturing	0	0	667 475	0	0	0	0	0	0	0	667 475
D	Electricity, gas, steam and air conditioning supply	49 223	7 282	0	0	0	0	0	0	0	0	56 505
E	Water supply; sewerage, waste manage. and remediation activity	24 595	5 871	5 420	0	0	0	0	0	0	0	35 886
F	Construction	5 268	62 150	0	0	14 137	167	0	0	118 675	0	200 397
G	Wholesale and retail trade; repair of vehicles and motorcycles	0	0	363 495	9 378	0	0	0	0	0	0	372 873
H	Transportation and storage	35 197	4 633	339 414	0	0	1 101	0	0	95	0	380 440
I	Accommodation and food services activities	0	0	48 712	0	0	0	0	0	0	0	48 712
J	Information and communication	5 970	3 453	143 708	0	0	263	0	0	0	0	153 394
K	Financial and insurance activities	58 366	56 955	0	0	0	0	0	46 502	0	0	161 822
L	Real estate activities	0	1 080	16 403	0	0	809	173 048	0	56 539	0	247 879
M	Professional, scientific and technical activities	0	1 563	162 527	0	0	2 218	0	0	14	0	166 322
N	Administrative and support service activities	0	13 106	98 665	0	0	128	0	0	56	0	111 955
O	Public administration and defence; compuls. social security	1 593	114 707	0	0	0	20 840	0	0	2 813	0	139 954
P	Education	3 363	92 930	15 360	0	0	17 800	0	0	787	0	130 240
Q	Human health and social work activities	26 222	207 779	7 660	0	0	9 691	0	0	718	0	252 071
R	Arts, entertainment and recreation	12 438	10 885	7 659	0	0	2 958	0	0	1 099	0	35 040
S	Other service activities	9 611	6 950	16 623	0	0	700	0	0	5 317	0	39 202
T	Activities of households as employers; etc.	0	0	0	0	0	0	0	0	3 521	0	3 521
	Total	319 469	590 049	1 955 539	9 378	14 137	56 719	173 048	46 502	189 634	0	3 354 474

3.6 The main approaches taken with respect to exhaustiveness

The main initiative aimed at ensuring that coverage is exhaustive consists primarily of the very important work being carried out to ensure that the business register is updated to include new producer units. This work is made easier by the fact that the threshold values in the VAT and tax systems are extremely low, so that all regular economic activity, apart from that which counts as a hobby and is insignificant, currently has to be registered in a public administrative register which feeds into the business register. It is difficult to overstate the importance of this rapid register updating for the quality and degree of coverage of the national accounts. It is estimated that all regular economic activity, apart from that which is in the form of a hobby and is insignificant, is captured via use of the business register. As regards employees in private households, who, by their very nature, are very seldom included in the business register, by far the largest share of this activity is in the hidden economy, and all such activity is estimated via a special calculation not based on the business register.

Fringe benefits and irregular economic activity such as underreporting and hidden activity (“black” and illegal activity) are covered by corrections which are explicit wherever possible. A more detailed description to the methods used to ensure exhaustiveness can be found in chapter 7. Table 3.16 shows the different types of non-exhaustiveness that are made for each NACE section.

Table 3.16 Exhaustiveness adjustments (value added) by NACE section, 2012

	National account industry	N1	N2	N3	N4	N5	N6	N7
		DKK mill.						
A	Agriculture, forestry and fishing	13	0	33	0	0	0	31
B	Mining and quarrying	0	0	0	0	0	0	32
C	Manufacturing	104	0	45	0	136	0	3 913
D	Electricity, gas, steam and air conditioning supply	0	0	0	0	0	0	160
E	Water supply; sewerage, waste management and remediation activity	0	0	0	0	1	0	28
F	Construction	2 989	0	0	0	166	0	1 037
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	977	1 930	0	0	569	0	2 377
H	Transportation and storage	174	0	0	0	74	0	562
I	Accommodation and food services activities	1 454	0	0	0	65	0	5 571
J	Information and communication	314	0	0	0	181	0	1 736
K	Financial and insurance activities	0	0	0	0	0	0	0
L	Real estate activities	0	0	0	0	52	0	161
M	Professional, scientific and technical activities	27	0	0	0	393	0	3 711
N	Administrative and support service activities	15	0	0	0	214	0	269
O	Public administration ad defence; compulsory social security	0	0	0	0	0	0	14
P	Education	39	0	0	0	0	0	12
Q	Human health and social work activities	56	0	0	0	0	0	63
R	Arts, entertainment and recreation	355	0	0	0	0	0	39
S	Other service activities	1 901	928	0	0	18	0	55
T	Activities of households as employers; etc.	1 103	0	0	0	0	0	0
	Total	9 522	2 859	78	0	1 868	0	19 773

3.7 Agriculture, forestry and fishing (NACE rev. 2 Section A)

NACE Section A is partly defined by function namely the agriculture and forestry part and partly by group of producer units namely the fishing part. It comprises three of the national accounts' 117 industries, these in turn covers 41 industries at the most detailed DK-NACE level. In 2012, this NACE Section accounted for 1.9% of total value added of the Danish economy - cf. Table 3.17.

Table 3.17 NACE Section A's contribution to gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
010000	Agriculture and horticulture	79 896	52 427	27 468
020000	Forestry	4 710	2 761	1 948
030000	Fishing	4 307	2 367	1 940
	Total NACE B	88 912	57 555	31 357
		pct.		
	Percentage of the economy	2.6	3.3	1.9

Statistical sources

The primary statistical sources underlying the estimate of value added can be seen in the table 3.18.

Table 3.18 Statistical sources underlying the calculation of value added for NACE A

	National account industry	Source
010000	Agriculture and horticulture	Specific industry statistics: agricultural statistics and tax account statistics
020000	Forestry	Specific industry statistics and tax account statistics
030000	Fishing	Tax account statistics

The statistical source for agriculture, horticulture and the raising of fur animals (national accounts industry 010000) is Statistics Denmark's agricultural statistics. This statistics follows the guidelines for compiling accounts for agriculture and forestry laid down in regulation 138/2004 and 212/2008. This implies that the compilations are made at the level of local KAUs, which means that products for own use and internal sales

within agriculture are included. The national accounts uses the so-called "national farm" method, which implies that only sales from the agricultural sector, lumped together, and purchases which go to the agricultural sector are included in the estimate. Internal sales and purchases between agricultural enterprises are not included. Therefore corrections are made for internal use in the national accounts. This has no effect on value added. A bridge table illustrating the transition from Economic Accounts for Agriculture to national accounts can be seen in table 3.19

According to paragraph 3.54 of ESA 2010, the output of crop products should be estimated not at harvest time but continuously over the entire period of growth. In Denmark, the vast majority of crops are harvested in the year in which the crop grows. The exception is winter cereals (winter wheat and barley), which are sown the year before the harvest. However, plant growth up to the year end is so minimal that for practical purposes it can be ignored. In the annual accounts, there is therefore no need to correct stocks as estimated after the harvest.

The estimates in the agricultural statistics regarding machine pools, are excluded when the statistics is used in the national accounts as in the national accounts agricultural services including machine pools are calculated on the basis of the tax account statistics. There is no need for excluding secondary activities when using the tax account statistics, as this statistics is used at the kind-of-activity level. No secondary output of agricultural goods in other industries is identified. Furthermore no illegal activity is identified in the agricultural industry whereas the calculation methods implicitly covers fraudulent activities such as VAT fraud and the likes.

Table 3.19 Bridgetable from Economic Agricultural Accounts (EAA) to National Accounts (NA), 2012

	DKK mill.
EAA Gross production value	87 091
Less sales within the agricultural industry	9 985
Less value of agricultural services acc. to EAA	2 793
Less secondary activity in EAA	907
Plus value of agricultural services acc. to NA	6 296
Plus other corrections and additions	193
NA Production value	79 896
EAA intermediate consumption	59 306
Less sales within the agricultural industry	9 985
Less IC associated with agricultural services acc. to EAA	1 535
Plus IC associated with agricultural services acc. to NA	3 707
Plus other corrections and additions	933
NA intermediate consumption	52 427

Other corrections and additions consists of a lot of minor corrections e.g. the value of eggs sold at the farm itself ("door sales") and the production value of dog kennels. On the input side the corrections consists of e.g. differences in the value of FISIM and energy consumption according to the EAA and the NA.

For forestry (020000) the statistical sources for calculating output are the forest census and a sample-based national forest inventory undertaken by Statistics Denmark and the Danish Forest and Nature Agency. For intermediate consumption, the input structure from the previously available SLS-E statistics is used. No secondary output of forest goods in other industries is identified.

No correction is made for output of agricultural and forestry goods in other branches than agriculture and forestry.

The primary statistical source underlying the estimate of value added for fishing (030000) can be seen in Table 3.17.

Method of calculation

In agriculture and horticulture output is normally calculated using a price times volume method. For the largest crop product, namely cereals, the harvest yield of the individual kinds of cereal is calculated first of all, and this is then multiplied by the average selling prices collected from all the larger cereal merchants. For animal products, sales value is calculated in a similar way by multiplying the quantities sold by the average selling

prices obtained by the producers. The value of changes in inventories and livestock numbers, as well as output for own use and “door-sales”, is added. Farm tourism is implicitly recorded under dwellings, as output for dwellings are calculated as the number of square metres times a rent per square metre (see chapter 3.18). As all square metres are included, farm tourism is also included.

Expenditure on intermediate consumption in agriculture and horticulture is total expenditure on the raw and auxiliary materials used in production, including purchases from dealers and the like, expenditure on the repair and maintenance of the production apparatus and various expenditures on services from other industries. If information is available on the quantities and prices of the raw and auxiliary materials used, the expenditure is calculated on the basis of total purchases and average prices paid for the individual raw and auxiliary materials, whilst for the other expenditure items, information from the available accounting estimates and various special estimates is used. Input to non-farming activities are thus excluded from the calculations.

In forestry, output is also calculated using a price times quantity method. The value of production of timber is the value of annual rise in volume of standing timber, i.e. in addition to the felling, we also account for the net natural growth in the volume of standing timber. In forestry, intermediate consumption is calculated using the input structure from the previously available SLS-E statistics.

In fishing value added is calculated by the standard method for industries covered by the tax account statistics.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

Since agriculture, horticulture and the rearing of fur animals are activity-defined on the basis of the products produced and the estimate of output value using a price times volume method, the product breakdown is self-evident. Output in agriculture and horticulture, is divided into 53 product balances in the national accounts supply and use tables.

For forestry, the breakdown by product follows the calculation of the annual rise in volume of standing timber and is therefore based on the breakdown in the sample-based forest inventory.

The output value calculated for fishing is broken down by type of fish on the basis of the Fisheries Ministry's catch statistics, which cover landings in both Danish and foreign ports. The output value according to the national accounts calculations is much higher than the value of the quantities of fish landed. The difference can be explained partly by internal deliveries of fish in the fishing industry (in fact, a trading activity) and partly, perhaps, by avoidance of the fish quotas by means of unofficial landings. Estimated internal deliveries are posted as inputs for the fishing industry itself when the supply and use tables are compiled.

Breakdown of intermediate consumption by product

In the agricultural statistics, the vast majority of intermediate consumption is allocated directly by product, in most cases on the basis of information on quantities of the products used (e.g. fodder cereals) multiplied by average prices or information on sales to agricultural holdings (feeding stuffs, fertilisers and pesticides).
There are no regular costs structure statistics for fishing other than energy statistics. The input structure in fishing is based on the structure costs of which can be found in the previously available SLS-E accounting statistics – for example rentals and repair and maintenance. The breakdown into individual products is to a certain extent based on estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.8 Mining and quarrying (B)

Introduction

NACE Section B is defined by grouping of producer units and covers three of the national accounts’ 117 industries. These in turn cover 15 industries at the most detailed DK-NACE level. In 2012, this section accounted for 3.5% of value added of the Danish economy – cf. Table 3.20

Table 3.20 NACE Section B's contribution to gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
060000	Extraction of oil and gas	57 721	4 648	53 073
080090	Extraction of gravel and stone	2 917	1 913	1 004
090000	Mining support service	5 146	2 578	2 568
	Total NACE B	65 784	9 139	56 646
		pct.		
	Percentage of the economy	1.9	0.5	3.5

Statistical sources

Industry 060000, extraction of oil and gas, covers all activity relating to the production of crude petroleum and natural gas, which is concentrated in the Danish sector of the North Sea. The output of petroleum and gas is estimated ex-North Sea, i.e. the value of pipeline transport is included in the output value. Pipeline transport is operated by a single publicly owned and controlled corporation, DONG Oil Pipe A/S, which is part of national accounts industry 490030, Road and pipeline transport. No further distribution or processing is included in the output value. The output value of DONG Oil Pipe A/S is posted as intermediate consumption in the "extraction of oil and gas" industry.
The industry covers Dansk Undergrunds Consortium (DUC) and other licence holders and Statistics Denmark collects very detailed accounting information from them. In addition, the industry covers technical service activity related to the extraction of crude petroleum. This activity is covered by industrial accounts statistics.

Industry 090090, the extraction of gravel and stone and industry 090000, mining support service, are covered by industrial accounts statistics.

Table 3.21 Statistical sources underlying the calculation of value added for NACE B

	National account industry	Source
060000	Extraction of oil and gas	Accounts statistics for non-agricultural private sector
080090	Extraction of gravel and stone	Accounts statistics for non-agricultural private sector
090000	Mining support service	Accounts statistics for non-agricultural private sector

Method of calculation

The output value of 060000, i.e. the value of the volume of oil and gas produced, is taken directly from the accounts divided into these two products. Exploratory drilling for own account is also taken from the accounts.

Exploratory drilling by the units in the industry on their own account is included in the industry's output value. Exploratory drilling etc. which is purchased comes either from domestic suppliers in the construction industry or is imported. All exploratory drilling is capitalised, i.e. is treated as gross fixed capital formation in the national accounts.

The output value of 080090 and 090000 is taken directly from the accounts statistics, which is grossed up to cover all producer units in the industry. Intermediate consumption is calculated by the standard method for the transition from the accounting statistics accounting plan to the target total module via the intermediate system.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of the extraction of oil and gas is broken down directly into three products: crude petroleum, unprocessed natural gas and exploratory drilling. The extraction of gravel and stone industry is covered by product statistics for manufacturing. The output calculated is divided by product on the basis of the breakdown in the industrial commodity statistics. The output of mining support service is broken down by two products

that are defined on the basis of the most detailed industries in the DK_NACE. In addition, the industries produces fringe benefits and own account software.

Breakdown of intermediate consumption by product

In the extraction of oil and gas, operating expenditure is divided in the accounts into input of pipeline transport services (DORAS + oil pipeline tax), repair and maintenance and other operating expenditure. These first two together cover by far the greater share of intermediate consumption. In the national accounts supply and use tables, the remainder is broken down by product, using rough figures in some cases.

3.9 Manufacturing (C)

Introduction

NACE section C is defined by group of producer units and covers 35 of the national accounts' 117 industries – cf. Table 3.25. In the detailed DK-NACE, manufacturing consists of 237 industries, each of which is calculated separately when the primary statistics are processed.

In 2012, this section accounted for 13.3% of value added of the Danish economy – cf. Table 3.22.

Table 3.22 NACE section C's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mil.		
	National account industry			
100010	Production of meat	40 796	34 930	5 867
100020	Processing of fish	11 522	9 548	1 974
100030	Manufacture of dairy products	33 362	28 399	4 963
100040	Manufacture of bakery products	11 931	7 640	4 292
100050	Other manufacture of food	32 778	27 046	5 732
110000	Manufacture of beverages	9 844	6 704	3 140
120000	Manufacture of tobacco products	1 314	772	542
130000	Manufacture of textiles	5 432	3 818	1 613
140000	Manufacture of wearing apparel	2 311	1 750	562
150000	Manufacture of footwear etc.	751	697	54
160000	Manufacture of wood etc.	11 499	7 505	3 994
170000	Manufacture of paper etc.	8 978	6 153	2 824
180000	Printing etc.	9 641	6 308	3 333
190000	Oil refinery etc.	44 049	43 254	795
200010	Manufacture of basic chemicals	15 270	8 111	7 159
200020	Manufacture of paints, soap etc.	18 144	11 158	6 986
210000	Pharmaceuticals	75 657	28 983	46 674
220000	Manufacture of rubber etc.	21 051	13 868	7 183
230010	Manufacture of glass etc.	2 462	1 573	889
230020	Manufacture of concrete etc.	16 658	10 359	6 299
240000	Manufacture of basic metals	8 673	6 493	2 179
250000	Manufacture of fabricated metal	43 251	27 958	15 293
260010	Manufacture of computers, etc.	10 142	6 456	3 685
260020	Manufacture of other electronics	20 773	8 834	11 938
270010	Manufacture of motors, etc.	9 330	5 794	3 536
270020	Manufacture of wires, cables	3 144	1 992	1 152
270030	Manufacture of household appl. etc.	5 882	3 885	1 997
280010	Manufacture of engines etc.	92 300	68 535	23 765
280020	Manufacture of other machinery	43 945	28 459	15 486
290000	Manufacture of motor vehicles etc.	7 060	4 627	2 432
300000	Manufacture of ships, transport equip.	3 989	2 602	1 387
310000	Manufacture of furniture	13 415	8 459	4 956
320010	Manufacture of med. Instruments	5 678	2 876	2 802
320020	Manufacture of toys, etc.	6 665	3 064	3 602
330000	Repair, inst. of machinery etc.	15 255	9 031	6 224
	Total NACE C	662 952	447 643	215 309
		pct.		
	Percentage of the economy	19.4	25.0	13.3

NACE Section C covers a much greater share of the national accounts' 117 industries than its share of value added of the economy because the input percentage, i.e. the ratio of the intermediate consumption to output, is greater in manufacturing than in most other industries. This is due largely to specialisation, i.e. in many cases manufacturing enterprises buy semi-finished products from other manufacturing enterprises and concentrate on those parts of the total process where they have comparative advantages. Manufacturing thus accounts for a greater share of output (gross), of intermediate consumption and thus of the product flows in the economy than is the case if value added is the criterion.

For an optimum description of product flows in the economy in the supply and use tables and in the symmetrical input-output tables, manufacturing should be allocated a share of the number of industries covered by the calculation system which is greater than its share of value added.

Statistical sources

By far the most important primary statistics source underlying the estimate of value added is the Account Statistics (for Non-Agricultural Private Sector), the use of which in the national accounts was described in Section 3.1.4.1. Below, therefore, we discuss only statistical sources and the corresponding calculations which are not connected with the accounts statistics. Table 3.23 gives an overview of manufacturing industries where the accounts statistics are supplemented by other information for the national accounts' estimate of value added.

Table 3.23 Statistical sources underlying the calculation of value added for NACE C

	National Account Industry	Source
100010	Production of meat (part: home slaughtering)	Agricultural statistics
100010	Production of meat (part: back payments)	Agricultural statistics
100030	Manufacture of dairy products (part: back payments)	Agricultural statistics
	Other NACE industries	Accounts statistics for non-agricultural private sector

Method of calculation

The method of calculation for by far the largest share of manufacturing is the standard method for use of the accounts statistics for non-agricultural private sector described in section 3.1.4. Below is therefore only discussed the methods used for the sources listed in table 3.23.

In 100010 Production of meat, a correction is made for home slaughtering. Where value added is concerned, this correction is extremely modest, since the value added consists only of the cost of the actual slaughtering. A further description of exhaustiveness can be found in chapter 7.

Many slaughterhouses in Denmark are organised on a cooperative basis, members of the cooperative being the farmers who supply to the slaughterhouses. When agriculture supplies animals to cooperative slaughterhouses, the farmers receive a payment on account based on the official prices for pigs, cattle, etc. When the slaughterhouses' accounting results are worked out, a substantial share of the surplus is distributed to the suppliers as back payment over and above the original settlement price paid on account. It is these price adjustments to the suppliers' settlement prices which are known as "back payments". In agricultural statistics, the amounts in question are considered as part of the basic price and are therefore included in the output value of slaughter animals from the agricultural industry. In the slaughterhouses' accounts and in the industrial accounts statistics, however, they are not counted as payment for goods, i.e. as intermediate consumption, but as profit, i.e. property income to the members of the cooperative. The national accounts' correction for back payments corrects for the inconsistent accounting in the two sets of primary statistics. The national accounts comply with the agricultural statistics accounting and consider back payments as part of agricultural selling prices. The value added which they represent is therefore included in the national accounts under agriculture and not under meat production. Without the correction, agricultural back payments would be counted twice in total value added. The correction consists of reclassifying back payments in the accounts for the slaughterhouses from profit to intermediate consumption.

The correction for back payments in 100030, the manufacture of dairy products, is made in exactly the same way. There are a large number of cooperatives in the dairy industry, too, operating with back payments to suppliers, in this case the milk producers. The correction for back payments in the manufacture of dairy products was DKK 1.688 million in 2012.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

For manufacturing, there are particularly comprehensive and detailed product statistics, namely the manufacturers' sales of goods statistics (VS). These cover all producer units within manufacturing which have at least 10 employees. However, certain new units above this threshold will in many cases not be included in the statistics during the first year of their existence. On the other hand, they are always included in accounting statistics, either directly in the sample or indirectly through the grossing up on the basis of employment. Their output value is covered in full, but the breakdown by product is not known in every case and therefore has to be estimated on the basis of the product distribution for other producer units in the same industry.

The product classification in the industrial commodity statistics is the Combined Nomenclature, which has some 10 000 headings. These are aggregated with the help of the national accounts' product file, which is a continuously updated key between the CN commodity codes and national accounts products (around 2 350 goods and services). From the national accounts products, there is a clear-cut link to the 4-digit level CPA.
For the vast majority of turnover in a given manufacturing industry, the breakdown by product is observed directly in the VS. For the remaining share up to total sales according to national accounts, two different methods are used for the product breakdown. In those cases where the enterprises not included in the VS must be assumed to produce the same kinds of goods as enterprises which are covered, the figures are simply grossed up on the basis of the VS product structure. In certain other cases, where the enterprises not covered are primarily small ones with less than 10 employees, a special product breakdown is used instead, which is more representative of small enterprises in the industry in question. These breakdowns are made at the most detailed level in the industry classification, i.e. corresponding to 237 manufacturing industries.

What turnover include

Code 0100 in the functional target total module, MTM, shows total turnover in each of the national accounts 117 industries. In manufacturing industries, total turnover consists of:

Net turnover according to account statistics for non-agricultural private sector
+ output of plant and machinery for own use
+ own account output of software
+ own account output of research and development
+ fringe benefits, output

Net turnover according to account statistics for non-agricultural private sector will be exclusive of sales of goods for resale, which are picked out and transferred to wholesale.

In the intermediate system, the different parts of sales are coded as follows:

MLS-code	MLS-code text
1007	Fringe benefits, output
1012	Manufacture of plant and machinery for own use
1015	"Own-produced" software
1017	Income from licenses and royalties (part of net sales)
1018	Other net sales, excluding 1017 and 1059 (part of net sales)
1059	Other (services) sales, excluding 1017 (part of net sales).

"Own-produced" research and development is added to the system after the intermediate system.

Product definitions

When the national accounts product balances are compiled, total sales are divided over detailed products, which in the case of goods are defined on the basis of HS (Harmonised System) groups and for services are based on the CPA (Central Production Classification by Activity).

Products are allocated codes consisting of an initial letter followed by 6 digits. The initial letter characterises the product as follows:

E Output for own consumption
F Fringe benefits
H "Hidden" output - black and illegal activity
K Plant and machinery (capital goods), plant for own use
L Processing to order
M Repairs and installation work on manufacturing
N Sales income in NPISH
Q Government non-market services for consumption
R NPISH non-market services for consumption
S Public sales income
T Services, market
U Non-HS goods
V HS goods

Breakdown of output by product:
Those parts of output which are coded in the intermediate system as 1007, 1012 or 1015 are allocated directly to F and K products. Licensing income and other (services) sales, which in the intermediates system are coded 1017 or 1059, are then calculated in special subsystems. These shares are allocated to two specific T products.

Remaining net sales (MLS code 1018) are divided up by product with the help of the industrial commodity statistics and a DK-NACE industry-specific key for minor manufacturing activity. An example of the breakdown and the basis for it can be seen in the following tables, 3.24 and 3.25 for National accounts industry 260010 Manufacturing of computers etc. For much the largest share of sales in this manufacturing industry, the products breakdown is directly observed, and for this reason there is very little uncertainty about the products composition. This is characteristic of virtually all national accounts industries within manufacturing.

Table 3.24 Extract from intermediate system for National accounts industry 260010, 2012

		Basic price
		DKK mill.
MLS code text	MLS code	
Fringe benefits, output	1007	21 793
Manufacturing of plant and machinery for own use	1012	15 429
Own account software	1015	60 415
Own account research and development	-	630 042
Income for licences and royalties	1017	66 637
Other and unspecified net sales	1018	8 351 732
"Other sales" excluding licenses and royalties	1059	736 373
Total turnover	1010	9 882 421
Inventories of finished goods	2065	259 236
Output value		10 141 657

Table 3.25 Breakdown of turnover in National accounts industry 260010, 2012

		Turnover of own products in the MLS (Other and unspecified net sales 1018)	Industrial commodity statistics, excluding goods for resale (VS)	Difference MLS and VS	Correction due to MLS<VS	Product breakdown with VS	Production breakdown with industry specific key
		DKK mill.					
National accounts industry	DK-NACE industry						
260010	261100	1 522 097	1 375 590	146 507	-48 284	1 375 590	98 223
260010	261200	1 071 729	870 214	201 515	-48 284	870 214	153 231
260010	262000	853 842	950 410	-96 568	96 568	950 410	0
260010	263000	2 381 210	2 156 193	225 017	0	2 156 193	225 017
260010	264000	3 209 200	2 938 747	270 453	0	2 938 747	270 453
Total		9 038 078	8 291 154	746 924	0	8 291 154	746 924

Breakdown of intermediate consumption by product

For that part of intermediate consumption of manufacturing which consists of goods, including energy and packing, there are particularly comprehensive and detailed costs structure statistics. Energy consumption is obtained from a special annual survey.

Information on the consumption of goods other than energy is obtained from annual cost structure surveys since 2000. The survey covers intermediate consumption of raw materials, semi-manufactured products, intermediary products, packing costs and purchase of services. These surveys of the structure of the consumption during the production process cover manufacturing only and, as a general rule, all manufacturing kind-of-activity units belonging to firms with 50 employees or more. Enterprises with more than 20 but under 50 fulltime-employees can be added to the population in industry groups with only a few firms with at least 50 employees. The cut-off sample covers app. 73 percent of total net turnover of all manufacturing Enterprises. The statistics is not enumerated to cover all manufacturing enterprises.
The commodity classification in the costs structure surveys is based on the CN classification and has six digits. The first four digits in the commodity coding system are identical in the external trade and the commodity statistics and in the raw materials statistics. Most important is, however, that the classification used in the raw material statistics corresponds to the product classification used in the supply and use matrices in the national accounts.

Annual surveys have been available since 2000. As the survey was renewed into its present form in 2000, the data from this year had a higher than normal uncertainty, and it was decided that data from this survey should not be allowed more or less automatically to replace the input structures based on the balanced supply and use matrices from the previous year. Instead a technique was developed where data form the raw material survey were added to the file used by the people who were working on the manual balancing of the system. The person who was balancing a specific product would always work on spreadsheet data, in which intermediate consumption by industry would be shown together with the input values that had actually been reported in the raw materials survey. It was the responsibility of the “balancer” as far as possible to incorporate the information from the survey in the balanced supply and use matrices. As a result the survey data could be incorporated where they seemed plausible without the loss of information based on experience from earlier years. From 2001 the quality of the survey data has improved, but the system used for entering the information into the initial version of the supply and use matrix -file has essentially been the same as in 2000, as it has proved to be an efficient way to incorporate the annual surveys without the need of an extra, labour intensive, first round of balancing every year. Hence the input structure in the national accounts and the input-output tables for 2012 is based on the cost structure survey for 2012 and information from the structure in the balanced supply and use matrices from 2011 inflated to 2012-prices.

For the costs structure surveys, it is vital to ensure that respondents comply with accounting stringency and discipline. If the questionnaire does not relate to well-defined items in the enterprises’ own accounts and in the accounting statistics questionnaire, there is a serious risk of low-quality replies owing to failure to observe the fundamental constraints on totals. This in turn is crucial for the supply and use tables and the symmetrical input-output tables in the Danish national accounts, and one of the factors contributing to their solid statistical foundation.

3.10 Electricity, gas, steam and air conditioning supply (D)

Introduction

NACE section D is defined by function and covers three of the national accounts’ 117 industries. These in turn covers 8 industries at the most detailed DK-NACE level. This section accounted for 1.5 % of value added of the Danish economy in 2012 – cf. Table 3.26.

Table 3.26 NACE D's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
350010	Prod., distrib. of electricity	28 310	14 272	14 038
350020	Manuf. And distribution of gas	15 556	13 202	2 354
350030	Steam and hot water supply	13 715	5 040	8 675
	Total NACE D	57 582	32 514	25 068
		pct.		
	Percentage of the economy	1.7	1.8	1.5

Statistical source

The statistical source underlying the estimate of value added in all three industries is accounting statistics for industries where publicly controlled corporations predominate, which for these industries are based partly on questionnaires and partly on local government accounts. The accounts from public units which are included in local government accounts are collected from these local government accounts statistics. The calculations for electricity and district heating works are based on accounting information collected and published by *Dansk Energi* and *Danske Fjernvarmeværkers Forening*.

Table 3.27 Statistical sources underlying the calculation of value added for NACE D

	National account industry	Source
350010	Prod., distrib. of electricity	Account statistics for industries predominated by public corporations
350020	Manuf. And distribution of gas	Account statistics for industries predominated by public corporations
350030	Steam and hot water supply	Account statistics for industries predominated by public corporations

Method of calculation

The output value in the national accounts is the output for supply outside the industry, i.e. it excludes internal deliveries. The figures are therefore recorded net, i.e. internal supplies of energy from one unit to another in the industry are netted out. In the case of electricity and district heating, there are very large deliveries between production companies and distribution companies. The national accounts' output values for electricity and district heating are therefore much below the sales values which occur in other statistics. The main argument for net treatment of supply activity is that the supply and use tables are much more useful as a basis for the compilation of provisional national accounts when output and intermediate consumption are not inflated by large internal deliveries, which may fluctuate markedly.

For *the production and distribution of electricity*, accounting statistics from *Dansk Energi* and municipal accounts cover all electricity utilities apart from some production units. These units are calculated from accounting statements from the corporations. The accounting statistics and municipal accounts do not cover the output of electricity other than from actual power stations, such as that produced by private windmills and small decentralised heat and power plants. This output (other than electricity for the producer's own use during production) is included on the basis of information on quantities of electricity produced and an average kilowatt-hour price. Some of the electricity produced by private windmills, for example, is used for the owners' own consumption and some is sold to power stations which are obliged to take the power and distribute it via the general grid. The production of electricity using renewable energy sources such as wind is subsidised. For the estimate of output value, this product subsidy is added to the sales income reported. In 2012, the subsidy was DKK 4.200 million.

For the *manufacture and distribution of gas*, accounting statistics are based on accounts from all units in the industry, which is dominated by the distribution of natural gas. The industry includes the cleaning and processing of the natural gas which comes to the mainland from the North Sea gas fields. In the product balance system, there are three types of natural gas: natural gas I is the raw gas from the North Sea which is an input for the supply of gas. Natural gas II is that share of output which goes to "general" natural gas customers, i.e. all

uses other than as an input in electricity power stations or district heating stations or as an export. Natural gas III is that share of output which goes to these last-named uses.

In *the supply of district heating*, the accounting statistics cover all units' accounts either via questionnaires or via local government accounts. No grossing up is therefore needed. In addition to the accounting information, annual information from *Danske Fjernvarmeværkers Forening* on total purchases of heat in district heating plants (internal deliveries) is used, along with information from energy statistics on the total expenditure on fuel for all production of district heating in the country. Thus the netting out discussed above is possible in this industry, and the link with the physical energy balances is retained.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

All output of electricity is included in a single product balance. Economic theory, however, considers the various supplies of electricity to be very different products, and this is reflected in large differences in electricity prices per kilowatt-hour at basic price level, i.e. pre-tax, from one use to another. Large manufacturing users, for example, pay a much lower price than private consumers. The fact that there is only one product balance for electricity does not cause any problems for national accounts at current prices or for supply and use tables, since energy statistics can be used to estimate each individual use of electricity separately. For the estimate of volume changes, however, it is important to deal correctly with changes in the composition of the uses of electricity. For the national accounts constant price calculations, the product balance for electricity, like that of all other energy products, is deflated from the uses side, taking into account the different economic values of the individual deliveries of electricity and individual deliveries of other energy products. The output of gasworks is, as already mentioned, divided into three products, namely gasworks gas, natural gas II and natural gas III. The output from district heating works and the collection and distribution of water are shown in separate product balances.

In addition to the primary products referred to above, NACE D produces fringe benefits for employees, own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

By far the largest input in the supply industries is, of course, energy, and this part of intermediate consumption is established directly. Another large input is repair and maintenance, information on which is available from accounts statistics. There are no costs structure surveys which provide information on the distribution by product of the remaining, minor share of intermediate consumption consisting, for example, of services which come under business services. In the supply and use tables, this residual input is divided over product balances in the light of the known cost structure in related manufacturing industries, together with common sense considerations.

3.11 Water supply; sewerage, waste management and remediation activity (E)

Introduction

NACE section E is defines by function and covers three of the national accounts' 117 industries. These in turn covers 9 industries at the most detailed DK-NACE level. This section accounted for 0.8 % of value added of the Danish economy in 2012 – cf. Table 3.28.

Table 3.28 NACE E's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
360000	Water collect. Purification etc.	4 611	1 997	2 614
370000	Sewerage	9 306	4 175	5 131
383900	Waste and materials	22 048	16 171	5 877
	Total NACE E	35 964	22 342	13 622
		pct.		
	Percentage of the economy	1.1	1.2	0.8

Statistical source

The statistical source underlying the estimate of value added in all three industries is accounting statistics for industries where publicly controlled units predominate, which for these industries are based partly on questionnaires and partly on local government accounts. The accounts from public units which are included in local government accounts are collected from these local government accounts statistics.

Table 3.29 Statistical sources underlying the calculation of value added for NACE E

	National account industry	Source
360000	Water collect. Purification etc.	Account statistics for industries predominated by public corporations
370000	Sewerage	Account statistics for industries predominated by public corporations
383900	Waste and materials	Account statistics for industries predominated by public corporations

Method of calculation

For all three industries the accounting figures collected for accounting statistics for industries predominated by public corporation do not cover all units and are therefore grossed up to the total population of producer units. In 2012 the raising factor was 1.46 for water collection, purification ect, 1.07 for sewerage and 1.04 for waste and materials.

The figures are grossed up on the basis of VAT sales. The great majority of accounting figures in the accounting statistics come from local government accounts.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of NACE E is divided into eight products. The basis for the production distribution is the breakdown of the sales of the three national accounts industries into the detailed DK-NACE industries. In addition are there also fringe benefits, own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for NACE E other than energy statistics and the summary costs structure in the accounts statistics for industries predominated by public corporations (for example rentals and repair and maintenance). The breakdown into individual products is to a certain extent based on estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.12 Construction (F)

Introduction

NACE section F is defined by function and covers four of the national accounts' 117 industries. This section accounted for 4.6 % of value added of the Danish economy in 2012 – cf. Table 3.30.

Table 3.30 NACE F's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
410009	Construction of new buildings	49 832	29 861	19 970
420000	Civil engineering	58 486	41 993	16 493
430003	Professional repair and maint.	70 900	32 833	38 067
430004	Own-account repair and maint.	26 395	26 395	0
	Total NACE F	205 612	131 082	74 530
		pct.		
	Percentage of the economy	6.0	7.3	4.6

The industry covers construction and civil engineering activity in the Danish economy. Foreign construction activity of Danish construction firms is included in output if it fulfils the criteria §2.09 in ESA2010, and accordingly is construction and civil engineering activity by foreign construction firms in Denmark measured as import. Figures for import and export of construction activity are gathered from the Balance of Payments.

NACE F covers 20 industries at the most detailed DK-NACE level. There is, however, no connection between the industries in the DK-NACE and the national accounts´ four construction industries. Whilst the breakdown into the 20 industries in the area of construction and civil engineering in the DK-NACE is based on *specialisation or trade*, e.g. bricklaying or carpentry, the national accounts breakdown is *functional*, i.e. based on the final product.

As for all other industries in the economy, the national accounts calculations of value added in construction are based on accounting data for the individual, detailed DK-NACE industries and subsequent aggregation. In the case of construction, however, this aggregation is not to the four sub-industries for construction activity in the national accounts' 117 grouping, but to the single division 41430, construction. Output, intermediate consumption and thus value added for all construction and civil engineering activity in the economy are then distributed over the four function-defined sub-branches: construction of new buildings, repair and maintenance of buildings, civil engineering and construction materials.

The national accounts for construction and civil engineering are the exception in running counter to Statistics Denmark's industry grouping, primarily because of the supply and use tables and hence the balancing of the product balance system. There is, of course, a much closer, technology-driven connection between the output of various types of construction and civil engineering and certain kinds of construction materials than there is between the output value of the various specialisations and the input of construction materials. Building and civil engineering contractors, who are the largest single specialisation, may, for example, carry out new building work, repair and maintenance and civil engineering work, and the shares of these three activities may vary considerably over time. It is clear that, for example, the input of cement per krone of output is very different in the three activities mentioned. By using a functional breakdown of construction and civil engineering activity into sub-branches instead of a breakdown by trade or specialisation, the national accounts make effective use of information on the technical connection between construction activity and construction materials in the balancing of supplies and uses of goods and services.

Industry 43004 is an "artificial" industry, created for reasons of calculation, through which construction materials for own account construction activity are channelled. For example, instead of being allocated directly to the two uses - intermediate consumption in the "dwellings" industry, or capital formation in construction of dwellings - purchases by owner-occupiers and tenants of construction materials for ordinary repairs and maintenance (excluding the part that is considered household final consumption[11]) or capital repairs (capital formation) count in the product balance system as inputs to an artificial industry, "construction materials", the output of which is by definition equal to the value of the industry's intermediate consumption at purchasers' prices[12]. This output is then distributed over the two categories of use referred to above.

Statistical source

As already mentioned the industry is defined by function and covers all construction and civil engineering activity in the economy. Materials used for own-account construction activity in producer units classified in industries other than construction are transferred to the construction industry with the possible exception of some small repairs, for which the expenses cannot be distinguished from expenses on other intermediate consumption. Hence if some own-account production of ordinary repairs to buildings and structures in other industries are not transferred to branch 41430 construction, it is due to the lack of information on the value. Obviously, the lack of any imputation for that share of the value of ordinary repair and maintenance activity which is in excess of the expenditure on materials does not affect GNI, since the same value, if there had been one, would simply have been allocated to output value and intermediate consumption for the economy as a whole. It would simply have been a question of a different distribution of value added by industry. As always

[11] Repair and maintenance of the type that in rented dwellings would typically be carried out by the tenants is treated as household final consumption in COICOP 4300, vb. ESA95 3.95.c,(1).

[12] There is no non-deductible VAT on inputs in the artificial industry. Non-deductible VAT is shown in the uses side of the supply and use matrices where output from the artificial industry is distributed by user. Hence, as in all other industries, the production value does not include VAT.

when branches are defined by function, the components transferred are output, intermediate consumption, compensation of employees, capital formation and employment.

A practical consequence of the introduction of a virtual industry for building materials used for own account construction is, that the inputs in this industry merge a large number of products used for input into a few output-products that can be distributed by industry based on information on the use of repair and maintenance. Alternatively each of these building materials would have had to be distributed by industry, an exercise that would have to be based merely on assumptions as statistical evidence is unavailable at this level of detail. For instance, agricultural consumption of paint and wood preservative for the maintenance of buildings on own account is treated in the national accounts as an input into a minor, secondary auxiliary activity in agriculture, which in practice cannot be separated out with any degree of statistical certainty. The paint is included as an input in the artificial materials branch 430004, and agriculture receives an input of building repairs that includes the expenditure on the paint. Own-account ordinary repairs and maintenance are of minor importance for all industries other than dwellings, where the values concerned are substantial and the same model is used as has just been described using agriculture as an example.
Substantial secondary construction output for capital formation occurs in a number of industries, particularly in the public utilities industries, transport and communications. There is in these cases an output of construction of buildings and civil engineering on own account, which is capitalised in the companies' accounts. The value of the materials used and expenditure on wages and salaries are reported in the annual reports of these companies. Imputations are made to cover the value of gross operation surplus to ensure that the value of GFCF corresponds to the basic value of similar construction purchased in the market. These imputations are shown separately in the supply and use matrices.

The statistical source for the estimate of value added in genuine construction and civil engineering enterprises is the accounts statistics for non-agricultural private sector. These statistics are grossed up from the outset to the total population when incorporated into the national accounts. As already mentioned, the figures are calculated separately for each of the 20 construction industries in the detailed DK-NACE.

Table 3.31 Statistical sources underlying the calculation of value added for NACE F

	National accounts industry	Sources
410009	Construction of new buildings	Account statistics for non-agricultural private sector + estimate for own account GFCF transferred to 410001
420000	Civil engineering	Account statistics for non-agricultural private sector + estimates for hidden economy and own account GFCF
430003	Repair and maintenance of buildings	Account statistics for non-agricultural private sector + estimate for own account GFCF transferred to 430003
430004	Construction materials	By definition no value added

For the national accounts estimate of construction, the secondary construction activity which takes place in other industries must, as described above, be estimated and transferred to the construction branch. Information on such activity is found in the accounts statistics, more particularly in statistics for industries where publicly controlled corporations predominate - the public utilities industries (electricity etc.), railways, harbours, airports etc. - and where there is substantial output of civil engineering work on own account.

Construction - more particularly, building repair work - is one of the areas in the economy where there is most "black" economic activity. In the Danish national accounts, there is a substantial allowance added in for building repairs in the black economy. The sources and methods are described in chapter 7. The whole of this black-economy activity is treated in the Danish national accounts as "work in the black economy" of the type "VAT evasion with the collusion of the buyer". The allowance for work in the black economy does not give rise to any allowance for "VAT fraud in connection with underreporting", as in the catering industry, for example. The rationale is that, in the case of construction, the buyers and sellers negotiate a price for each individual project and that it appears to have become the practice for purchasers to be offered work in either the legitimate (white) or the black economy, i.e. work either with or without an invoice. In every case, the allowance for work in the black economy is determined on the basis of the prices which the purchasers pay, so that the effect on GNI is the same whether the above assumption applies or not.

Method of calculation

Even though the value added of construction is basically calculated from accounting statistics in exactly the same way as for other industries, there is a crucial difference as regards output and intermediate consumption. In other industries, output, intermediate consumption and value added are calculated from the same source, namely the processed accounting statistics. In construction, value added is first calculated from the processed accounting statistics, output is subsequently calculated from other sources and finally intermediate consumption is calculated as a residual.

The other sources for the estimate of output are firstly those underlying the estimate of capital formation in construction – cf. the description in Chapter 5.

Supply of repair and maintenance of buildings

In principle the sources for that share of output which is professional non-black repairs to buildings for the account of others have been based on the quarterly employment censuses for the construction industry and estimated output values pr. employed person. In the employment censuses, employed workers and master craftsmen are divided up by activity on the census date, a distinction being made between new building, repair and maintenance and civil engineering. From these statistics, a list is compiled of firms engaged mainly in repair and maintenance work. When such a list has been available, their VAT sales have been extracted from VAT statistics. Next, turnover per person in employment in these firms is calculated and multiplied by total employment in construction. While this system worked well in times with low activity in the construction of new buildings, it has its limitations in periods, where it is almost impossible to find enough enterprises that specialise in repair and maintenance. In the recent years the initially estimated value pr. employee has mainly been based on extrapolation from the preceding year by means of a price index for repair of buildings.

Ordinary repair and maintenance of buildings

The total value for ordinary repair and maintenance of buildings is estimated from the use side. Cost regarding ordinary repair and maintenance is gathered for 3 different types of buildings; owner-occupied dwellings, rented residential buildings and non-residential buildings. The value of ordinary repair and maintenance for owner-occupied dwellings is gathered from the household budget survey (HBS). The value of ordinary repair and maintenance for rented residential buildings is based information from financial statements from the companies with rent the residential buildings. The value ordinary repair and maintenance for non-residential buildings is derived by combing cost surveys with values for intermediate consumption from structural business statistics.

Division between ordinary repairs and maintenance and capital repairs

Capital repair is estimated as the difference between total repair on buildings and ordinary repair and maintenance of buildings. In the balancing procedure for the supply- and use table, the split between ordinary repair and maintenance and capital repair could be slightly adjusted in order to reduce differences towards targets.

In this way, we obtain a figure for the total output of construction. Together with the estimated capital formation in buildings and structures, a figure is thus obtained for the actual output of construction and civil engineering. In addition, there is the artificial construction materials branch, which is included in output and intermediate consumption with the same value. An initial estimate prior to balancing for this is fixed on the basis of changes in the output of repairs and maintenance for the account of others – cf. above. The construction materials branch is included in the balancing process, and the values initially fixed will generally be amended as part of the balancing of supplies and uses in the product balance system.

The argument behind the calculation method described above is that, in the absence of exhaustive product statistics for construction, we have to estimate the output of the individual types of building, civil engineering and repair work from other sources. To ensure that value added is firmly anchored in accounting statistics, intermediate consumption has to be calculated as a residual.

The calculation also includes an allowance for self-built or partially self-built housing, i.e. the fairly common case in which the customer himself is responsible for some of the painting of a new house, for example. On the output side, the allowance is incorporated into the imputed value of the output of the black economy. The calculation provides for a self-built/partially self-built allowance to be added to intermediate consumption, over and above the figures in business accounts.

Value added and intermediate consumption for the construction industry is shown in table 3.32 below. As mentioned earlier, value added is first calculated from the processed accounting statistics, output is subsequently calculated from other sources and finally intermediate consumption is calculated as a residual.

Table 3.32 Determining value added and intermediate consumption

			DKK mill.
		Market output from MLS	204 914
1.	+	Correction of finish products	79
2.	-	Intermediate consumption from MLS	135 360
3.	=	Value added from MLS	69 634
		Own account production not in MLS:	
		[1] Government owned companies (market)	
4.		Own-accout production, (wages and materials)	1 918
5.	-	Intermediate comsumption (materials)	510
6.	=	Residual (wages)	1 408
7.	+	Inputed gross operationg surplus	106
8.	=	Total	1 515
		Own account production not in MLS:	
		[2] Do-it-yourself repair and maintenance	
9.		Inputed wages	1 220
		Other supplements	
10.		Initial adjustment	2 000
11.=3.+8.+9.+10.		Value added in construction industry before balancing	74 368
12.		Value added after balancing	74 530
13.		Output	205 612
14. = 13. - 12.		Intermediate consumption	131 082

Note: MLS = Intermediate System

As a general rule “output according to product balances” does not include subcontracting. Subcontracting between units inside the construction industry is usually left out from the measures of output and input. However a few intricacies should be kept in mind here. Subcontracting to units that are not part of the construction industry, for instance architects, engineers, consultants or producers of building materials are treated as inputs in construction as far as these activities are not considered construction activities, in which case they will already have been separated out and transferred to the (activity defined) construction industry. There is one important exception to the general rule: Construction units belonging to sector S13, General Government, have a considerable output of repair and maintenance of structures, mainly roads. In the supply and use tables such repairs are shown as production of a specific product-number for government non-market construction. In the use matrix this product is shown as part of collective consumption. However a considerable part of this production is actually bought from private construction firms that cannot, per definition, produce a non-market product. Hence the purchases of market-construction are shown as inputs in the non-market units that produce non-market repair and maintenance.

Construction and civil engineering is one of those industries where the initial estimate of intermediate consumption has traditionally been amended during the balancing process. One reason is that the industry includes many small enterprises, and thus the grossing up percentage is consequently greater than in manufacturing, for example. For these reasons, the input target total for construction and civil engineering is considered to be one of the initial estimates likely to be amended during the balancing process.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

As previously mentioned, there are at present no (direct) product statistics for construction corresponding to the industrial commodity statistics, for example. However, accounting statistics include information on purchases of subcontracting, extremely important information in this industry, where the subcontracting of parts of projects is particularly common. In the absence of any direct product statistics, indirect statistics have been compiled for national accounts calculations, based mainly on expenditure-side information on kinds of construction and civil engineering work other than repair and maintenance. Resources of repairs and maintenance are calculated using the method described earlier in this chapter.

For construction of buildings, the output side makes a distinction between housing, private non-residential construction, public construction for commercial purposes (to market producers) and government non-market construction (to non-market producers). Civil engineering is broken down into private structures, public commercial structures and public non-commercial structures. Each of these components (apart from repairs and maintenance) is estimated from the expenditure side as described in Section 5.10. The estimation of ordinary repair and maintenance (intermediate consumption) and capital repairs (gross fixed capital formation) is described earlier in this chapter.

In addition to the above genuine products from construction and civil engineering, the industry, in common with the other industries in the economy, produces fringe benefits and capital goods, including software for own use. Construction resources come from both industries 410009 New buildings and 430003 Repair and maintenance of buildings. This latter addition is capital repairs (major repairs) and improvements which in the national accounts are considered to be capital formation.

Breakdown of intermediate consumption by product

There are no regular costs structure surveys for intermediate consumption in construction. The information which has been possible to collect over the years from ad hoc surveys has gradually been incorporated into the input structure as expressed in the supply and use tables. The industry's consumption of energy is available annually from energy statistics.

For subcontracting and services, the input structure is based on information on certain kinds of costs such as subcontracting and rentals, which are found in accounting statistics. Subcontracting is netted out. Intermediate consumption which is counted under the accounting statistics item "other external expenditure" is divided up by product on the basis of the structure of costs in certain manufacturing industries and common sense considerations about the connection between the number of employees and services such as telephones and cleaning. The construction industry incurs considerable costs for the transport of the building materials used for its output. In the national accounts, this input of services will partly be a "transport margin", i.e. a margin lying between the basic price of the construction materials ex-producer and the purchase price including margins and taxes which the construction enterprise pays overall for the acquisition of the materials. In the Danish national accounts, transport margins are not shown explicitly, since this would overload the supply and use tables with a large number of empty cells. Instead, they are included in wholesale trade margins[13].

In the balanced supply and use tables for 2012, there is approximately DKK 20 328 million wholesale trade margins (including formal transport) and DKK 3 898 million retail trade margins on intermediate consumption in the construction industry, when the materials branch is included. Of this input in the material branch accounts for DKK 9 045 million wholesale and DKK 3 448 million retail trade margins. These figures illustrate the importance of distribution services in the total intermediate consumption of the construction industry. The retail trade margins on inputs, of which most is trade margins on inputs in the materials branch, reflects the considerable production value in retail trade in building materials.

[13] Transport paid by the purchasers of goods which is not separately invoiced is allocated in the national accounts first of all to inputs in the wholesaling industry. The output value of wholesaling is increased by the same amount, so that the total wholesaling margins are increased by the transport expenditure on goods which is defrayed by the purchasers. In this way, transport is channelled through the wholesaling industry, without affecting that industry's value added. This way of posting transport margins in the Danish national accounts has traditionally been referred to as "formal transport"

3.13 Wholesale and retail trade; repair of motor vehicles and motorcycles (G)

Introduction

NACE section G is defined by function and covers four of the national accounts' 117 industries. As Table 3.33 shows, NACE G accounted for 12.2% of the value added in the Danish economy in 2012.

Table 3.33 NACE G's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
450010	Sale of motor vehicles	21 529	6 932	14 597
450020	Repair etc. of motor veh. etc.	19 053	12 803	6 250
460000	Wholesale	238 762	116 124	122 638
470000	Retail sale	93 064	38 835	54 229
	Total NACE G	372 408	174 694	197 714
		pct.		
	Percentage of the economy	10.9	9.8	12.2

NACE G covers all trading activity in the Danish economic area. Secondary trading activity in producers units classified under other industries is separated and transferred to the relevant trade industry, normally 46000, wholesale. Secondary trading activity occurs particularly in manufacturing and transport. All motor vehicle repair activity is collected together under industry 450020. NACE G covers 129 industries at the most detailed DK-NACE level. As for all other industries in the economy, the national accounts' calculations of value added in trade and repair are based on accounting data for the individual detailed DK-NACE industries and subsequently aggregated.

Statistical source

NACE G is covered by the accounts statistics for non-agricultural private sector as shown in Table 3.34.

Table 3.34 Statistical sources underlying the calculation of value added for NACE G

	National account industry	Source
450010	Sale of motor vehicles	Accounts statistics for non-agricultural private sector
450020	Repair etc. of motor veh. etc.	Accounts statistics for non-agricultural private sector
460000	Wholesale	Accounts statistics for non-agricultural private sector
470000	Retail sale	Accounts statistics for non-agricultural private sector

Method of calculation

Since the whole of NACE G is covered by accounts statistics for non-agricultural private sector, the method of calculation is the standard method for use of these statistics as described in Section 3.1.4.1. In line with ESA 2010, the output of trade services in wholesale and retail trade is calculated as the sum of the trade margins obtained, i.e. the selling price of goods resold minus their acquisition prices. In practice, the consumption of goods for resale is calculated from purchases during the period in question plus changes in inventories of goods for resale between the start and the end of the period, with the national accounts price correction described in Section 3.3.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

NACE 45 (Wholesale and retail trade and repair of motor vehicles and motorcycles) includes both trade in and repairs to motor vehicles etc, in both the national accounts industries and at the most detailed DK-NACE industry level. For example, a very large share of the total motor vehicle repair activity in the economy is carried out not in producer units classified under NACE class 45.2, maintenance and repair of motor vehicles, but in

those classified under DK-NACE 45.1, sale of motor vehicles. The first stage in the breakdown of products is therefore to divide the output of NACE 45 into the three main components:

1) trade margins on vehicle-related products
2) trade margins on consumables sold at service stations
3) motor vehicle repairs.

The output of NACE 46 is divided up into trade margins on the one hand and motor vehicle repairs on the other.

The national accounts supply and use tables operate with two types of margin, namely wholesale and retail. The whole of the trade margin in NACE 46 is by definition a wholesale margin and, similarly, the whole margin in NACE 47 is a retail margin. NACE 45 covers both wholesale and retail trading activity, and in the national accounts the total trade margin in NACE 45 is divided up into wholesale and retail on the basis of information in the product statistics for the motor vehicles branches, "Distribution of sales in the motor vehicles branches," and information on margin percentages at product level.

For the compilation of the supply and use tables, the wholesale and retail totals calculated are divided up over the 2000 or more national accounts goods balances. The breakdown is based on the previous year's adjusted wholesale and retail margins. The margin total obtained using the previous year's percentages is compared in the current year with the margin totals by individual product group for the detailed trading industries which distribute the product groups in question, and the margins are adjusted to the given totals. This comparison of two independently calculated sets of margins for the individual product groups is in itself a valuable check on the margins calculated from product statistics which for the trade industries in most cases are identical with the accounting statistics at the most detailed level of the DK-NACE industry classification.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for the trade industries other than energy statistics. The input structure in these industries is established in the national accounts on the basis of the summary cost specifications in accounting statistics - rentals and repair and maintenance, for example - in conjunction with ad hoc information from branch organisations and the competition authorities. The breakdown into the individual products is to some extent based on estimates which are in turn based on common sense considerations. It should be stressed, however, that a good deal of the cost structure is determined very reliably from supply information in conjunction with information on manufacturing. Examples would be packaging and advertising agency services. Once the supply to the domestic market of the relevant products has been determined along with their use as inputs in manufacturing their use in the trading industries can be worked out via a residual calculation.

3.14 Transportation and storage (H)

Introduction

NACE section H is defined by function and covers seven of the national accounts' 117 industries. These in turn cover 31 industries at the most detailed DK-NACE level. As Table 3.35 shows, NACE H accounted for 5.0% of the value added in the Danish economy in 2012.

Table 3.35 NACE H's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
490010	Passenger rail transport etc.	8 655	5 167	3 488
490020	Transp. by suburban trains etc.	24 536	13 768	10 768
490030	Road and pipeline transport	42 908	26 392	16 516
500000	Water transport	191 882	176 660	15 222
510000	Air transport	21 795	16 533	5 262
520000	Support activities for transp.	45 425	22 763	22 662
530000	Postal and courier activities	18 526	10 553	7 973
	Total NACE H	353 726	271 836	81 890
		pct.		
	Percentage of the economy	10.4	15.2	5.0

Statistical sources

The three main sources for NACE H are account statistics for non-agricultural private sector, account statistics for industries predominated by public corporations and General government accounts (DIOR). DIOR – The database for integrated public accounts – covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13. The statistical sources can be seen in the table below:

Table 3.36 Statistical sources underlying the calculation of value added for NACE H

	National account industry	Source
490010	Passenger rail transport etc.	Account statistics for industries predominated by public corporations
490020	Transp. by suburban trains etc.	Accounts statistics for non-agricultural private sector, Account statistics for industries predominated by public corporations
490030	Road and pipeline transport	Accounts statistics for non-agricultural private sector
500000	Water transport (market)	Accounts statistics for non-agricultural private sector
500000	Water transport (non-market)	General government accounts (DIOR)
510000	Air transport	Accounts statistics for non-agricultural private sector
520000	Support activities for transp. (market)	Accounts statistics for non-agricultural private sector, Account statistics for industries predominated by public corporations
520000	Support activities for transp. (non-market)	General government accounts (DIOR)
530000	Postal and courier activities	Accounts statistics for non-agricultural private sector

Method of calculation

The market part of NACE H is covered by the industrial accounts statistics and accounts statistics for industries predominated by public corporations. The method of calculation here is the same as the standard method for the calculation of value added based on the account statistics for non-agricultural private sector via the intermediate system and the target total module as described in 3.1.4 above. The non-market part of NACE H is calculated using the standard methods for general, transversal sources in the form of DIOR – the database for integrated public accounts.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

In addition to the products for “fringe benefits”, “own-produced software” and “own-produced research and development” output is divided into 38 products. The basis for the product distribution is the breakdown of the sales of the seven national accounts industries into the detailed DK-NACE industries. The output of government non-market service is broken down by product on the basis of the various uses of the products. For each national accounts industry grouping, a distinction is made at least between the output of non-market producers’ services for consumption and for sales income. The explicit allowances for underreporting associated with them are shown in separate product balances, so that there is always a complete overview of these explicit allowances, in both national accounts calculation systems and directly in the supply and use tables.

Breakdown of intermediate consumption by product

There are no regular cost structure statistics for the transport industries, but a very large share of input is covered by the information found in annual energy statistics on the industries’ consumption of energy. By far the largest input in water transport is the expenditure of Danish vessels in ports in the rest of the world, expenditure on time charters and on energy. The primary statistics give annual information on these major expenditure items.

The breakdown by product of the remaining share of intermediate consumption, on which there is no annual information in primary statistics, is based to some extent on estimates, the starting point being the technical coefficients in the supply and use tables from previous years.

3.15 Accommodation and food services activities (I)

Introduction

NACE Section I is defined by function and covers two of the national accounts' 117 industries. Theses in turn covers 10 industries at the most detailed DK-NACE level. As Table 3.37 shows, NACE I accounted for 1.5% of the value added of the Danish economy in 2012.

Table 3.37 NACE I's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
550000	Hotels, similar accommodation	13 010	7 861	5 149
560000	Restaurants	42 775	24 186	18 589
	Total NACE I	55 785	32 047	23 738
		pct.		
	Percentage of the economy	1.3	1.8	1.5

NACE I covers all hotel and restaurant activity in the Danish economic area with the exception of restaurant activities connected with passenger vessels and aircraft which are not outsourced to another enterprise. This last activity is an inseparable part of transport activity. The running of canteens in other industries is separated out and transferred to 560000 restaurants, as are employers' subsidies to canteens, an important fringe benefit for employees which is considered to have been produced in the restaurant industry and included in that industry's value added. In 2012 the amount was DKK 5 324 million.

Statistical sources

Coverage is provided by industrial accounts statistics, which are the statistical source for all primary activity. Secondary canteen activity is compiled as the sum of employees own payments and employers' subsidy. The source for employees' own payments is the household budget survey. Employers' subsidy is equal to the compiled fringe benefits related to canteens calculated from the labour costs surveys. The statistical sources can be seen in the table below:

Table 3.38 Statistical sources underlying the calculation of value added for NACE I

	National account industry	Source
550000	Hotels, similar accommodation	Accounts statistics for non-agricultural private sector
560000	Restaurants	Accounts statistics for non-agricultural private sector

Method of calculation

Since the whole of this section is covered by the accounts statistics, the method of calculation is the standard method for the calculation of value added from the accounts statistics via the intermediate system and the target total module, as described in Section 3.1.4.1 and 3.4.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

In addition to the fringe benefits, "own-produced software" and own-produced research and development, output is divided into 10 products. The basis for the product distribution is the breakdown of the sales of the two national accounts industries into the detailed DK-NACE industries. The explicit allowances for underreporting and gratuities plus the VAT fraud associated with them are shown in separate product balances, so that there is always a complete overview of these explicit allowances, in both national accounts calculation systems and directly in the supply and use tables.

In connection with the breakdown by product, a minor share of sales in units classified as hotels is transferred to restaurant services to take account of the fact that hotels may run their own restaurants.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for the hotels and restaurants industries other than energy statistics. The input structure in these industries is established in the national accounts on the basis of the summary cost specifications in accounting statistics - rentals and repair and maintenance, for example - in conjunction with ad hoc information from branch organisations and the competition authorities. The breakdown into the individual products is to some extent based on estimates which are in turn based on common sense considerations concerning inputs of cleaning and laundry services, for example. The input of food and beverages, which is, of course, by far the largest input, is calculated as a residual.

3.16 Information and communication (J)

Introduction

NACE J is defined on the basis of a grouping of producer units and covers seven of the national accounts' 117 industries and these in turn cover 28 industries at the most detailed DK-NACE level. As for all other industries in the economy, the national accounts' calculations of value added of information and communications are based on accounting data for the individual detailed DK-NACE industries and subsequent aggregation. NACE J accounted for 4.5% of the value added in the Danish economy in 2012, as is also shown in Table 3.39.

Table 3.39 NACE J's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
580010	Publishing	16 627	9 773	6 854
580020	Publishing, computer games etc.	4 714	838	3 876
590000	Motion picture, TV and sound	13 665	6 344	7 321
600000	Radio, television broadcasting	9 801	6 613	3 188
610000	Telecommunications	44 679	24 922	19 757
620000	Information technology service	59 085	30 374	28 711
630000	Information service activities	7 307	3 821	3 486
	Total NACE J	155 878	82 685	73 193
		pct.		
	Percentage of the economy	4.6	4.6	4.5

Statistical source

The market part of NACE J is covered by the accounts statistics for non-agricultural private sector and account statistics for industries predominated by public corporations. The source for the non-market output of NACE J is the general government accounts DIOR - the database for integrated public accounts. The statistical sources to NACE J are shown in Table 3.40.

Table 3.40 Statistical sources underlying the calculation of value added for NACE J

	National account industry	Source
580010	Publishing	Accounts statistics for non-agricultural private sector
580020	Publishing, computer games etc.	Accounts statistics for non-agricultural private sector
590000	Motion picture, TV and sound (market)	Accounts statistics for non-agricultural private sector
590000	Motion picture, TV and sound (non-market)	General government accounts (DIOR)
600000	Radio, television broadcasting (market)	Account statistics for industries predominated by public corporations
600000	Radio, television broadcasting (non-market)	General government accounts (DIOR)
610000	Telecommunications	Accounts statistics for non-agricultural private sector
620000	Information technology service	Accounts statistics for non-agricultural private sector
630000	Information service activities	Accounts statistics for non-agricultural private sector

Method of calculation

The method of calculation for the market part is the standard method for the calculation of value added from the accounts statistics via the intermediate system and the target total module, as described in Section 3.1.4.1 and 3.4. The non-market part is calculated using the standard methods for general, transversal sources in the form of DIOR – the database for integrated public accounts.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

In addition to the products for "fringe benefits", "own-produced software" and "own-produced research and development", output is divided into 72 products. 68 of these products represent market activity and 4 government non-market output. The basis for the product distribution is the breakdown of the sales of the seven national accounts industries into the detailed DK-NACE industries. The explicit allowances for underreporting associated with them are shown in separate product balances, so that there is always a complete overview of these explicit allowances, in both national accounts calculation systems and directly in the supply and use tables.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for the hotels and restaurants industries other than energy statistics. The input structure in these industries is established in the national accounts on the basis of the summary cost specifications in accounting statistics - rentals and repair and maintenance, for example - in conjunction with ad hoc information from branch organisations and the competition authorities. The breakdown into the individual products is to some extent based on estimates which are in turn based on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.17 Financial and insurance activities (K)

Introduction

NACE K is defined on the basis of a grouping of producer units and covers four of the national accounts' 117 industries, as shown in Table 3.41, which also shows that this section accounted for 6.3% of the value added of the Danish economy in 2012.

Table 3.41 NACE K's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	value added at basic price
		DKK mill.		
	National account industry			
640010	Monetary intermediation	71 378	21 832	49 547
640020	Mortgage credit institutes etc	49 261	20 920	28 341
650000	Insurance and pension funding	29 818	14 871	14 947
660000	Other financial activities	16 657	7 073	9 584
	Total NACE K	167 115	64 696	102 419
		pct.		
	Percentage of the economy	4.9	3.6	6.3

The division covers 27 industries at the most detailed DK-NACE level. Where NACE 64 and 65 are concerned, the national accounts' calculation system does not exactly match the detailed industries in the DK-NACE, in that the calculations are based on the grouping in the available sources, primarily the annual reports of Finanstilsynet [the Danish Financial Supervisory Authority]. One example where the industry grouping in the calculation systems differs from DK-NACE is pension funds, where the national accounts' sources make a distinction between non-company-specific pension funds and company pension funds, whilst the DK-NACE does not have this distinction.

The calculations of value added for financial intermediation are made in terms of the individual detailed industries and subsequently aggregated to national accounts' industries.

Statistical sources

The great majority of financial institutions in NACE 64 and 65 are subject to extremely close public supervision out of concern for the security of the money belonging to depositors and policyholders. The Danish supervisory authority is Finanstilsynet, which comes under the Ministry of Business and Growth. Finanstilsynet's reports (based on the mandatory submission of standardised accounts) are normally the preferred source. An important exception is Denmark's mortgage credit institutes in DK-NACE 649210. In this case, the information in Finanstilsynet's report is much less detailed than it is for banks and insurance corporations etc. Since there were only 7 mortgage credit corporations in 2012, Danmarks Statistik decided to base the calculations directly on the 7 annual accounts, which include much more detailed information.

There are minor parts of NACE 64 which are not subject to Finanstilsynet control. One such is financial leasing, where the source is statistics for financial corporations. The same source is used for DK-NACE 64.92.30 - other credit companies. Finally, for NACE 64.99, Other financial intermediation n.e.c., the accounts of Arbejdsmarkedets Feriefond, Den Særlige Pensionsopsparing, Lønmodtagernes Dyrtidsfond Arbejdernes Kooperative Finansieringsfond, Grundejernes investeringsfond and supplementary occupational pensions for early pensioners are used.

NACE 66, Activities auxiliary to financial intermediation, is covered by company accounts grossed up on the basis of employment to cover the total population.

The following table gives an overview of the sources used for the national accounts' calculations for NACE K.

Table 3.42 Statistical sources underlying the calculation of value added for NACE J

	National account industry	Source
641000	Monetary intermediation	
641100	Danmarks Nationalbank	Nationalbank annual report and accounts
641900	Other monetary intermediation[1]	Report from Finanstilsynet, as well as ann. reports from Banks concerning foreign branches
649000	Other financial intermediation	
649100	Financial leasing	Statistics for large financial corporations
649210	Mortgage credit institutes	Annual accounts for all corporations
649220	Other credit institutes	Accounts
649230	Financing companies	Statistics for large financial corporations
649230	Other lending activities	Statistics for large financial corporations and acc. grossed up on the basis of total balance
643010	Unit trusts[2]	Report from Finanstilsynet
643030	Investment companies[3]	Accounts grossed up on the basis of total balance
649900	Security dealing activities	Accounts grossed up on the basis of total balance
642030	Financial holding companies	Accounts grossed up on the basis of total balance
649900	Other financial intermediation n.e.c.	Accounts grossed up on the basis of total balance
651100	Life insurance	Report from Finanstilsynet
653010	Pension funding	Report from Finanstilsynet, as well as annual report from ATP
651200	Non-life insurance	Report from Finanstilsynet
660000	Activities auxiliary to financial intermediation	Accounts grossed up on the basis of employment

[1]Literally: banks, savings banks and savings and loan associations.
[2]"Investeringsforeninger" translates "mutual funds" in the ESA 95.
[3]"Investeringsselskaber" translates "investment trusts" in the ESA 95.

Method of calculation

Monetary intermediation

The output of NACE 64 Monetary intermediation is calculated as the sum of financial intermediation services paid for directly (charges and fees, commissions, margins on the trading of securities and foreign exchange) and financial intermediation services paid for indirectly (FISIM) other than in a few cases where output is established from the costs point of view as the sum of production costs. These cases are Danmarks Nationalbank, unit trust, venture companies, financial holding companies, insurance and pension companies.

The method of calculation for NACE 64, as regards output, intermediate consumption and value added, and the breakdown of output into services which are directly/ indirectly paid for, is illustrated using the activity which is by far the most important, namely 641900, Other monetary intermediation:

Table 3.43 Calculation of the output value of NACE 64 monetary intermediation, 2012

		DKK mill.
	Financial intermediation services paid for indirectly (FISIM)	
	FISIM on deposits	2 549
	FISIM on loans	38 665
=	FISIM, monetary intermediation, total	41 214
	Financial intermediation services paid for directly	
	FPI: Fees and charges	29 363
+	FPI: Ordinary income	7 400
=	Services paid for directly, according to accounts	36 764
+	Mark-up for savings banks, and savings and loan associations under 250 million	137
+	ROW monetary intermediation, branches in Denmark	2 348
-	Greenland banks	282
-	Danish monetary intermediation, branches in the ROW	11 423
=	Monetary intermediation services paid for directly, total	27 542
	FISIM, monetary intermediation, total	41 214
+	Monetary intermediation services paid for directly, total	27 542
+	NB: Output from the costs side	544
+	Own-produced software in industry 651000	1 569
+	Other	449
=	Output of the *Nationalbank* and monetary intermediation, total	71 318

Nationalbank annual report

Table 3.44 Intermediate consumption, monetary intermediation

		DKK mill.
	FPI: Other administrative costs	16 610
+	FPI: Other operating expenditure	2 744
+	FPI: Fees etc. paid	6 266
+	Mark-up for savings banks and savings and loan associations under 250 million	53
+	ROW monetary intermediation, branches in Denmark	511
-	Greenland banks	67
-	Danish monetary intermediation, branches in the ROW	3 818
=	Intermediate cons. excl. *Nationalbank* before software	22 339
+	NB: Intermediate consumption, *Nationalbank*	168
-	Correction for software purchased by industry 651000	1 042
-	Other taxes on production	192
+	Other subsidies on production	559
+	FISIM	0
=	Int. cons., *Nationalbank* and monetary intermediation, total	21 832

FPI: Finanstilsynet's report – monetary intermediation

Life insurance and pension funding

For *life insurance and pension funding*, output value is calculated from the costs point of view, with the addition of a profit element for net operating surplus of 1.5% of own funds. This percentage is low because the total return on own funds in life insurance corporations, in addition to net operating surplus, consists of property income and holding gains etc. which are not allocated to insured persons and are not included in bonus equalisation provisions. Bonus equalisation provisions in life and pension insurance are the funds of the policyholders and not part of the corporation's own funds. In contrast to life insurance provisions, they are not broken down by policyholder but are owned by the policyholders jointly. Their function is to avoid major fluctuations in the corporations' "account interest", i.e. the percentage interest which the policyholders receive in a given year on the funds they have saved with the corporation.

The reason for choosing this method of calculation is that the insurance corporations achieve very large holding gains on the funds invested, which are largely allocated to the accounts of insured persons in the form of life

assurance provisions or to the policyholders jointly in the form of bonus equalisation provisions. Given that that share of the increase in provisions which comes from the allocation of holding gains cannot be identified and shown separately in the accounts, use of the formula in the ESA 10 paragraph 3.74 b would produce results which were economically meaningless, at least if the insurance corporations' portfolios included shares. Where shares are concerned, the major part of returns to investors often comes in the form of revaluation gains rather than dividends. Insurance corporations and pension funds take this into account when devising their policy for the allocation of earnings to their customers.

Table 3.45 illustrates the estimate for life insurance corporations. An identical estimate is made for pension funds, ATP, burial funds and other insurance.

Table 3.45 Output of life insurance, pension funding and other insurance

		DKK mill.
	Intermediate consumption, excl. FISIM	3551
+	FISIM	190
+	FLI: Wages and salaries	2 385
+	FLI: Depreciations	110
+	Taxes (lønsumsafgift)	251
+	Return on own capital	940
=	Output of Life insurance corporations, excl. FISIM	7 426
+	Corresponding calculation for general pension funds	1 981
+	Corresponding calculation for company pension funds	187
+	Corresponding calculation for burial funds	5
+	Other insurance	20 206
+	Other	11
=	Output of industry 65	29 818

FLI: Finanstilsynet's report – life insurance corporations

Table 3.46 estimates the intermediate consumption of life insurance corporations. For pension funds, ATP, burial funds and other insurance, the estimates are made in exactly the same way.

Table 3.46 Intermediate consumption of life insurance, pension funding and other insurance

		DKK mill.
	FLI: Administration fees	1 369
-	FLI: Other ordinary income	1 820
+	FLI: Rentals	160
+	FLI: Other staffing expenditure	2 329
+	FLI: Costs associated with investment activity	1 972
+	FLI: Other acquisition and administrative costs	616
+	FLI: Commissions to own sales staff	194
+	FLI: Other ordinary expenditure	664
-	FLI: Wages and salaries[1]	2 384
-	FLI: Contribution to dividends (R44) from wages and salaries and fees	15
-	Purchase of computer software	53
+	Purchase of research and development	465
+	Government fees which are sales of services	54
=	Intermediate consumption in life insurance corporations	3 551
+	Corresponding calculation for general pension funds	1 054
+	Corresponding calculation for company pension funds	21
+	Burial funds	3
+	Other insurance	9 452
+	FISIM in 65	425
=	Intermediate consumption in industry 65	14 871

FLI: Finanstilsynet's report – life insurance corporations

[1]The value for wages and salaries in this table is taken directly from the annual reports, whether the wages and salaries here represent D.11 more or less accurately. In table 47 wages and salaries are adjusted with an estimated measurement for D.39 so that the D.11 is recorded according to the regulations of national accounting.

Wages and salaries are deducted from the estimate of intermediate consumption because they are already included in certain other cost components. The rules for this are laid down unambiguously in *Finanstilsynet's* rules on reporting.

Non-life insurance

ESA2010 recommends calculating the output of non-life insurance as total premiums earned plus implicit premiums supplements less adjusted claims incurred. Two methods of calculating the adjusted claims incurred are provided: The expectation method and the ex post method. The first method uses accounting data, where changes in reserves set aside for unexpected large claims are added to the actual claims. If these reserves are not adequate, funds from the companies own funds can be used. However, an analysis made by Statistics Denmark has shown that adding the equalization reserve does not sufficiently remove the volatility of claims. It has not been possible to identify other suitable values in the annual report from FSA that could be used to calculate the adjusted claims. The second method, the ex post method, is an attempt to remove the volatility by using a moving average. However, neither using a 3 year moving average or a 5 year moving average has given the necessary smoothing of the claims.

ESA2010, chapter 16, suggests calculating non-life insurance output as the sum of costs (including intermediate costs, labour and capital costs) plus an allowance for 'normal' profit, if the neither the expectation method or the ex post method are not sufficient to allow reasonable estimates for output.

Due to the issues raised *other insurance* (non-life), output is calculated from the cost point of view, with the addition of a profit element for net operating surplus of 1.5% of own funds. This percentage is low because the total return on own funds in non-life insurance corporations, in addition to net operating surplus, consists of property income and holding gains etc. which are not allocated to insured persons and are not included in claims provisions. Claims provisions in non-life insurance are the funds of the policyholders and not part of the corporation's own funds. Realised and unrealised holding gains and losses are not included in the measurement of the output of insurance service.

Reinsurance commissions are treated the same way as other insurance and thus calculated from the cost point of view. The reinsurance commissions are treated as negative reinsurance premiums, but do not enter into the calculation of output.

Where the calculation for life insurance and pension funding is a pro rata calculation based on the assumption that the policyholders' funds and the corporation's own funds are invested in the same portfolio of securities, this is not the case with the calculation for other insurance. Here, it is assumed that the insurance technical reserves are invested in (safe) bonds, whereas more risky investments in shares are considered to be financed by the corporations' own funds. There is therefore a different link between financial assets and insurance technical reserves on the one hand and own funds on the other. The reason is that the investment of insurance technical reserves has a much shorter time horizon for non-life than for life insurance.

Expenditures on claims are based on actual paid claims adjusted with the change in reserves.

The calculation of output for large life insurance corporations is illustrated in Table 3.48. Output for other non-life insurance corporations is measured the same way.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

In the supply and use tables, the output of NACE K is divided into 22 products. In addition, there are for each national account industry fringe benefits, own-produced software and own-produced research and development. The product breakdown is based on the breakdown of the financial corporations sector into sub-sectors and of the producer units which belong to them into industries.

Intermediate consumption by product

There are no regular costs structure statistics for the financial industries other than the summary costs structure included in the accounting plan in *Finanstilsynet's* Order on Accounting. The input structure in the financial industries has been based on this. The breakdown into individual products is to a certain extent based on

estimates which in turn are based on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

Breakdown of impact on the allocation of insurance on GDP and GNI

Table 3.47 illustrates the supply and use of insurance and pensions in two matrices. The supply of insurance is broken down to insurance type, as well as supply type, production or import. The use of insurance is broken down to insurance type, as well as type of use, intermediate consumption, type of intermediate consumption and export.

Table 3.47 Supply and use of insurance and pensions

	Life insurance	Non-life insurance	Auto insurance	Pension funds
	DKK mill.			
Total supply				
Production	7 124 042	17 984 280	1 642 800	1 883 128
Import	2 416	1 806 697		
Total supply	7 126 458	19 790 977	1 642 800	1 883 128
Total use				
Intermediate consumption		9 906 946	1 358 025	
Household consumption	7 047 265	8 200 991	1 935 131	1 883 128
NPISH consumption		60 655	6 548	
Public consumption		485 202	75 395	
Export	79 193	1 137 183		
Total use	7 126 458	19 790 977	3 375 099	1 883 128

FISIM

FISIM is exclusively produced by financial corporations, which engage in financial intermediation of loans and deposits for which the rate of interest is controlled by the financial corporations (and thus the interest margin and the earnings that they want to achieve in this way). A majority of the FISIM production takes place in banks, which continuously account for a dominant share of Danish loans and deposits. In addition to the more conventional dissemination of loans and deposits by banks and saving banks, FISIM is produced by financial corporations intermediating consumer credit and financial leasing. Mortgage banks that are part of deposit-taking corporations except the central bank (S.122) are not treated as producers of FISIM.

FISIM is calculated according to ESA 2010. FISIM on the loans granted to the resident institutional sector is equal to interest receivable on loans minus (loan stocks * internal reference rate) and FISIM on the deposits of the resident institutional sector is equal to (deposit stocks * internal reference rate) minus interest payable on deposits FISIM is calculated using three types of currencies: Danish kroner, Euro and other currencies.
The internal reference rate is calculated as the ratio of interest receivable on loans between (and within) S122 and other financial intermediaries, except insurance corporations and pension funds (S125) to stocks of loans between (and within) S122 and S125, and the external reference rate is calculated as the ratio of interest on loans plus interest on deposits between resident FIs and non-resident FIs, to the stock of loans plus the stock of deposits between resident FIs and non-resident FIs.

The exported FISIM is calculated as the sum of FISIM on loans granted to non-residents and FISIM on the deposits of non-residents. FISIM on loans granted to non-residents is equal to interest receivable - (loan stock * external reference rate) and FISIM on the deposits of non-residents is equal to (deposit stocks * external reference rate) - interest payable.

FISIM imported by each institutional sector is calculated as the sum of FISIM imported for loans and FISIM imported for deposits. FISIM imported for loans is equal to interest receivable by non-resident financial intermediaries - (loan stocks * external reference rate) and FISIM imported for deposits is equal to (deposit stocks * external reference rate) - interest payable by non-resident financial intermediaries.

One of the sources for calculation FISIM is the Central Bank, which collects average stocks of loans and deposits and the accrued interest rates from S.122. This data is split on user sector (including the split on households and unincorporated enterprises), currencies and whether the purpose of the loan is dwelling or not. This way FISIM can be allocated to households broken down into intermediate consumption and final consumption. Before 2014

the counterpart sectors are on ESA95 level, which is split into ESA2010 level using interest flows. Non-financial holding companies that is by far the biggest part which is not possible to just split, because it moves from S.11 to S.12 is one of the 117 industries that FISIM is calculated for, so it is moved separately.

To calculate the internal reference rates this data is also used, but since the consumption is only on a sector level, S.122 and S.125, a split between FISIM producers and non-FISIM producers is necessary. The internal interest reference rate is therefore calculated on the basis of financial institutions' outstanding amounts with other financial institutions and outstanding amounts with financial leasing. The split takes place using the industry breakdown of financial institutions' loans and deposits from money and capital market statistics. Financial institutions' outstanding amounts with possible FISIM producers in other credit institutes and other lending activities are not included in the calculations, since it is assumed that these units are primarily not FISIM producers. Financial institutions are clearly the most important FISIM producing institutions, which is the reason behind the assumption that interbank outstanding amounts are satisfactorily covered in the calculation of the internal interest rate.

All the calculations are done on a quarterly level. The results of the calculation of reference rates are shown in the following table:

Table 3.48 Calculation of reference rates, 2012

		Q1	Q2	Q3	Q4
		pct.			
Currency	Reference rate				
Danish kroner, DKK	Internal	0.27	0.27	0.18	0.13
	External	0.15	0.13	0.06	0.03
Euro, EUR	Internal	0.26	0.21	0.16	0.11
	External	0.18	0.13	0.07	0.04
Others, Z07	Internal	0.39	0.31	0.29	0.26
	External	0.30	0.28	0.30	0.24
All	Internal	0.28	0.27	0.18	0.13
	External	0.22	0.19	0.15	0.11

Table 3.49 Calculations for the FISIM producing part of S.122, 2012

Loans/ deposits	Consuming industry/ sector	Q1	Q2	Q3	Q4
		DKK mill.			
Deposits	S.11				
	STOCK_DKK	212 353	212 986	217 375	221 146
		pct.			
*	INT_REF.RATE_DKK	0.27	0.27	0.18	0.13
		DKK mill.			
-	INTERESTFLOW_DKK	312	261	222	204
=	FISIM_DKK	267	309	161	76
	STOCK_EUR	23 910	19 828	20 059	20 516
		pct.			
*	INT_REF.RATE_EUR	0.26	0.21	0.16	0.11
		DKK mill.			
-	INTERESTFLOW_EUR	22	9	5	5
=	= FISIM_EUR	39	34	28	17
	STOCK_Z07	14 987	22 634	36 570	44 307
		pct.			
*	INT_REF.RATE_Z07	0.39	0.31	0.29	0.26
		DKK mill.			
-	INTERESTFLOW_DKK	27	25	22	20
=	= FISIM_Z07	31	46	85	94

Furthermore data collected by Statistics Denmark for the Statistics for large financial corporations is used for calculating FISIM produced by S.125. Both stocks and accrued interest is collected. The stocks from this statistics are not average data, so a simple calculation using two periods and dividing by two is done. An assumption is made, that all loans and deposits from S.125 is in Danish kroner.

For the imported FISIM data from the Central bank is also used. Only data for the balances are available, which is already split on user sectors. The flows are calculated using the interest rates from S.122 as producer of FISIM with the same user sector and in foreign currency. There is also no split on currency on this data, so a reference rate calculated without a split on the currency is used in this case.

The central bank is excluded from the FISIM calculation, and the FISIM producing industries have no consumption of FISIM by definition.

For the allocation of FISIM on industries the money and capital market statistics for loans and deposits from the Central bank is used to split the sector level into 27 industries. Hereafter production values from an industry/sector matrix are used to further split the use of FISIM into 117 industries.

A distribution key for intermediate consumption is used for allocation of FISIM at the most detailed level (843 industries) for general government sectors: S.1311 (general government), S.1313 (local government), and S. 1314 (social security). The distribution key is produced as part of the compilation of general government.

The FISIM corrections in the sector accounts and the balance of payments are always made at both interests and on either production, consumption, export or import, so there is no net effect from the correction of FISIM.
The results of the Danish calculations for 2012 in 1 000 DKK and the impact on GDP and GNI are shown in the following table:

Table 3.50 FISIM effect on GDP and GNI by sector

	Financial leasing	Other S.125	Import	S.122	All FISIM
	DKK 1 000				
Fisim production					
Danish production	2 503 680	2 783 780		41 214 071	46 501 531
Import			2 511 124		2 511 124
All production	2 503 680	2 783 780	2 511 124	41 214 071	49 012 655
Fisim consumption					
Intermediate consumption	2 503 671	939 593	2 481 542	31 619 181	37 543 987
Household consumption		1 844 181	29 580	7 422 586	9 296 347
NPISH consumption				304 628	304 628
Gen. govern. Consumption				207 170	207 170
Export				1 660 507	1 660 507
All consumption	2 503 671	2 783 774	2 511 122	41 214 072	49 012 639
FISIM effect on GDP					8 957 528
FISIM effect on GNI					9 808 145

The allocation of FISIM affects GDP by 8,96 bill. DKK and GNI by 9,81 bill. DKK. The two effects are different because the effect of import and export of FISIM are offset by the effect on interest income and interest expenditure to/from the Rest of the World when calculating GNI. Hence, the effect on GNI is only from domestic final uses.

3.18 Real estate activities (L)

NACE L covers four of the national accounts' 117 industries. The industries 680023, Renting of residential buildings, 680024, Owner-occupied dwellings, and 680030, Renting, non-residential buildings, are defined by function and combine all letting of real estate, i.e. dwellings or non-residential premises, regardless of the legal or producer units in which the activity takes place. This includes all secondary activity regarding dwellings and renting of non-residential buildings. The problem of double counting is handled as part of the general treatment

of the general accounting statistics. In this treatment as a general rule all income and expenditure from secondary activities is discarded. For those secondary activities we need to keep in order to avoid underestimation, we have other systems and sources to establish the particular secondary activities' volume and intermediate consumption.

The remaining industry, 680010, Buying, selling of real estate, is defined on the basis of a grouping of producer units. As shown in Table 3.51, in 2012 NACE L accounted for 10.2 % of value added in the Danish economy.

Table 3.51 NACE L's contribution to the gross value added of the economy

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
680010	Buying, selling of real estate	9 367	7 073	4 668
680023	Renting of residential buildings	66 939	4 699	45 901
680024	Owner-occupied dwellings	108 363	21 038	78 878
680030	Renting, non-residential buildings	58 522	29 485	35 440
	Total NACE M	243 191	78 304	164 887
		pct.		
	Percentage of the economy	7.2	4.5	10.2

The section covers 9 industries at the most detailed DK-NACE level. In the two industries not covering dwellings the calculations are made at that detailed level whereas in the two industries covering dwellings the national accounts calculation system lumps three detailed DK-NACE industries together and combines the calculation with the calculation of the imputed rental value of owner-occupied housing.

Statistical sources

The primary statistics source for the industry 680010, Buying, selling of real estate, is the tax account statistics. In the remaining three industries special sources and methods are used as explained below. Table 3.52 shows the primary statistics used.

Table 3.52 NACE L's contribution to the gross value added of the economy

	National account industry	Source
680010	Buying, selling of real estate	Tax account statistics
680023	Renting of residential buildings	Housing censuses, rent data, the accounts of housing associations, consumer surveys
680024	Owner-occupied dwellings	Housing censuses, rent data, the accounts of housing associations, consumer surveys
680030	Renting, non-residential buildings	Calculated from the expenditure side: the sources underlying the calculations for all other industries

Method of calculation

In the case where the statistical source is the tax account statistics, the standard method for this source is followed for the estimate of output, intermediate consumption and value added. Below, we therefore describe only the two special, but exceptionally important, calculations for dwellings and the letting of non-residential buildings.

The calculations for *dwellings* comply with the method set out in Commission Regulation 1722/2005. From Table 3.51 one can deduce the share of GDP of the two dwellings industries, in 2012 the two industries accounted for 7.7% of the total value added of the Danish economy. It is therefore clear that the reliability of the estimate of value added in this industry is crucial for the overall accuracy of the GNI estimate.

The most important principle in the Commission Regulation is that the countries have to use the stratification method to calculate the imputed rental value of owner-occupied dwellings. Denmark has always used this method. In short, it means that the total housing stock is divided into a number of strata on the basis of various stratification criteria. The criteria which are mandatory under the above Regulation are size and location. First of all, the average actual rental rate (yearly payment per square meter) is calculated for rented dwellings in each

stratum and this average stratum rental rate is then used for owner-occupied dwellings within the same stratum to estimate the imputed rental value of owner-occupied housing.

The Regulation requires countries to operate with a minimum of 30 strata generated by at least three size classes and two types of location. In Denmark's case, the sources enable a much more detailed calculation to be made. In fact the Danish stratification involves 6 400 strata, some of these strata are empty though.

The Danish estimate for 2012 uses the following stratification criteria:

Table 3.53 Stratification criteria for the calculation of levels, 2012

Factors	Factor levels
Location: degree of urbanisation	1. HT- area 1 2. HT- area 2 3. HT- area 3 4. Århus 5. Other towns with at least 100 000 inhabitants 6. Towns with 10 000-99 999 inhabitants 7. Towns with 1 000-9 999 inhabitants 8. Other areas
Type	1. Farmhouses and detached houses 2. Terraced, linked and semi-detached houses 3. Dwellings in blocks of flats 4. Dormitories, etc. 5. Other
Quality	1. Group 1 2. Group 2 3. Not known
Size	1. –49 m^2 2. 50-59 m^2 3. 60-79 m^2 4. 80-99 m^2 5. 100-119 m^2 6. 120-139 m^2 7. 140-159 m^2 8. 160-179 m^2 9. 180-199 m^2 10. 200 m^2 and [over] 11. Not known
Year of construction	1. –1939 2. 1940-1959 3. 1960-1969 4. 1970-1974 5. 1975-1979 6. 1980-1984 7. 1985-1989 8. 1990-1994 9. 1995-1999 10. 2000- 11. Not known

The following should be noted as regards the individual stratification criteria:

Where the ***location factor*** is concerned, special attention should be paid to the HT [Copenhagen Transport Corporation] area. Around one-third of the population of Denmark lives in the region around Copenhagen, which for practical reasons is delimited as the geographical area formerly covered by HT, which serves the actual city, the suburbs and other municipalities with a large number of commuters to and from the capital. This HT area consists of the Copenhagen municipality [*Københavns Kommune*], the Frederiksberg municipality and all municipalities within Copenhagen county [*Københavns Amt*], Frederiksborg county and Roskilde county. For

stratification, the area is divided into three sub-areas, HT-1, HT-2 and HT-3, since it was assumed that there was a significant difference in the average level of rents, HT-1 being the most expensive and HT-3 the least expensive. The breakdown is based on the breakdown used by the country's leading estate agents and newspapers for the marketing of owner-occupied housing. There is no doubt that this breakdown is significant for the prices at which owner-occupied dwellings change hands, and it is assumed that the same applies to the levels of rent in rented housing. HT-1 consists of the following municipalities: Dragør, Furesø, Gentofte, Hørsholm, Lyngby-Tårbæk and Rudersdal. HT-2 consists of: Allerød, Ballerup, Brøndby, Egedal, Fredensborg, Frederiksberg, Gladsaxe, Glostrup, Greve, Helsingør, Herlev, Hillerød, Hvidovre, København, Lejre, Roskilde, Rødovre, Solrød, Tårnby and Vallensbæk. HT-3 comprises: Albertslund, Frederikssund, Gribskov, Halsnæs, Høje-Taastrup, Ishøj and Køge.

The calculation confirms that there is a significant difference in the levels of rents in these three sub-areas in and around Copenhagen.

Århus, the country's second largest city, is a factor level on its own, because rent levels in the city and its suburbs are noticeably different from the level in the other provincial towns in Denmark and are more or less on a par with rents in the Copenhagen area.

As regards the ***quality factor***, quality group 1 comprises dwellings with water, drainage, own toilet, own bath, district heating or central heating from their own system and, for single family houses, with electric stoves or electric panel heating. Quality group 2 comprises dwellings which lack one or more of the above facilities.

As regards the ***year of construction***, the smaller intervals during the period 1960-1979 are due to the fact that there was a great deal of new housing built during that period, which, in view of the relatively high inflation at that time, had very different nominal construction costs. Since there is significant inertia in the establishment of rents, in which the nominal construction costs play a part, it is appropriate to work with smaller intervals of time during that period. For later years we have continued to use the five-year intervals.

In the housing census, there are a small number of dwellings where the rental status, type and quality group are not known. For all dwellings without an estimated rent from the stratified model, the average rental rate was used to compute their annual rents.

We then have the following theoretical number of strata: 8 x 4 x 2 x 10 x 10 = 6 400. However, the actual number of significant strata used is perhaps only a sixth of this figure, roughly speaking a thousand strata. This of course is still vastly in excess of the 30 required by the Decision.

Due to the very limited number of rent observations for detached houses and the rather few strata which were covered by a reasonable number of observations each it was decided that a larger number of observations would be necessary to obtain reliable results. This was the reason behind the decision to establish a factor (by estimation) to be multiplied by the rent for a similar apartment. For 2012 figures we continued to use rents from apartments multiplied by 1.02 for farmhouses and detached houses (see also the 2002 GNP-inventory).

To estimate the output of both rented dwellings and owner-occupied dwellings in the Danish national accounts, a very thorough and detailed calculation of levels is made every year. Thanks to the unique *Bygnings- og Boligregister* (BBR) annual information is available on the total housing stock divided according to numerous criteria. For the price component annual information is available for approximately 500 000 rent observations from the so-called Register of housing-related social benefits (in Danish "Boligstøtteregister"). The rent observations in the register primarily cover rented housing in blocks of flats and of terraced, linked and semi-detached houses, whereas the degree of coverage for detached, single-family houses which are let is much lower as can be seen from Table 3.54. The rents in the Register of housing related social benefits are rents for unfurnished dwellings (though refrigerator and the like are included). The price data must be assumed to be of very good quality because the information is used to grant rent subsidies and thus the data are heavily scrutinized.

Table 3.54 Observed rents by dwelling type, 2012

	Square meters	Rents	Observed rents
	1000 m2	DKK mill.	No.
Dwelling type			
Farmhouses and detached houses	178 373	78 842	25 289
Terraced, linked and semi-detached houses	36 264	26 189	120 593
Blocks of flats	81 982	58 658	344 158
Dormitories	1 276	1 178	6 161
Other	17 098	11 749	1 000

Table 3.55 Total rents by dwelling type, 2012

	Rents
	DKK mill.
Dwelling type	
Farmhouses and detached houses	78 842
Terraced, linked and semi-detached houses	26 189
Blocks of flats	58 658
Dormitories	1 178
Other	11 749

When calculating rentals the stratified buildings register is combined with observations on rents from the ministry of social affairs. Each entry on rent in the register has a code identifying the dwelling it relates to. This code is also available in the buildings register (BBR) and so the data on rents from the "boligstøtteregister" can be matched to the exact dwelling they relate to in the buildings register. For all dwellings that have a match, the observed rent is used. The average rent per square meter within each stratum is then calculated and used for all dwellings within the stratum that do not have an observed rent, given that there are five or more observed rents in the stratum. At the same time a regression is made at a more aggregate level using considerable fewer strata (instead of 6 400 approximately 208 strata are used) in order to estimate rents for these more aggregate strata.
If less than five observations are available within one of the 6 400 strata, rents are calculated as a weighted average of the observed rents and the estimated rent (from the regression) for the stratum, where the weight given to the observed rents is n/5, where n is the number of observed rents in the stratum (0<=n<5) and the weight given to the estimated rents is 1-n/5.

Finally, to ensure that all dwellings are given a rent all remaining dwellings are assigned the average rent per square meter for all dwellings.

This also applies to cooperative dwellings, which are assigned market rents in accordance with the recommendations of the GNI Committee in cooperative dwellings (GNIC/231).

This calculation is supplemented by a calculation of total rents for holiday homes etc., which was carried out in exactly the same way as for all-year-round dwellings, but on the assumption that the rent for a holiday home in a given stratum was half of the rent for an all-year-round dwelling in the same stratum. The basis of only assigning half a year of rents to the "Holiday homes" is legislation (LBK nr 587 of 27/05/2013) stating that nobody is allowed to live in buildings in "Holiday home" areas after October 1 and before March 31 of any year. This was the basis for the decision to use the factor 0,5. Most of the vacation houses are expected to never be let outside of the family owning it, so a higher price for vacation houses from professional agencies is not expected to be a widespread phenomenon. On the other hand the rent paid to the professional intermediary includes two parts, the rent for the owner as well as the service charge for the intermediation services rendered by these professional intermediary agencies. The latter service charges are covered in the production value of the National Accounts Product number T683120 from the DB07 industry 683120, "Letting of holiday homes". Thus taken together the rent for vacation houses is automatically higher than for dwellings used all-year.

Finally, a calculation was made for garages, carports, etc., covering garages which were not part of the actual dwelling and therefore included in the area of the dwelling. This latter (minor) share of garages is already

covered by the calculation of rents for all-year-round dwellings. The calculation is based on a benchmark from 2000 which is brought forward with the growth in the rents of owner occupied dwellings.

The calculation is done for the beginning of each year and we then calculate the average rent for a specific year by using the average of the output calculated at the beginning of the year in question and the output calculated at the beginning of the next year.

After the corrections referred to above, we have total rents for 2012 for all dwellings in the economy, based on the average level of rents for the period and the average stock of dwellings. To obtain the national accounts estimate of total rents, however, there has to be various additional corrections for items included in the observed rents from the rent survey, items which are not to be considered as rents. The following items are excluded from the observed rents:

1. payments for cold water delivery (fixed and variable fees)
2. drainage charges
3. refuse collection
4. insurance (the part not related to the building)

These amounts are instead counted as household consumption expenditure under the relevant consumption expenditure categories. Concerning insurance, only the service element in the gross premiums is included. The sources for these corrections are taken from the relevant product balances of our commodity-flow system covering the same year. This ensures consistency with the supply and other uses, and that e.g. changes in the level of green taxes are correctly taken account of.

There is also a correction for ***vacant dwellings***. In accordance with the principles in the Commission Regulation on dwellings, no output value is assigned to dwellings which are vacant.

The rental value of owner-occupied dwellings abroad and owner-occupied dwellings owned by non-residents are negligible as documented in conjunction with transversal reservation I 2012, and therefore no value is assigned.

The *intermediate consumption* of dwellings is calculated separately for owner-occupied and rented dwellings. The calculation uses four sub-groups:

1. (ordinary) repair and maintenance expenditure
2. other intermediate consumption apart from stamp taxes and financial intermediation services paid for directly
3. stamp taxes
4. financial intermediation services paid for directly
5. FISIM

Expenditure on *ordinary repair and maintenance* in dwellings which are let refers solely to the expenditure defrayed by landlords. The tenants' expenditure on repairs and maintenance is counted as private consumption expenditure in consumption group 4300, and is normally limited to certain internal maintenance work such as painting and floor polishing when there are changes of tenants. The source for the calculation of landlords' repair and maintenance expenditure is accounts from the non-profit (social) housing associations, which represent in total around half a million rented dwellings and can reasonably be considered to be representative of the rental sector as a whole.

For owner-occupied housing, expenditure on minor, routine repairs and maintenance is counted as private consumption in the households under group 4300, by analogy with the treatment of the corresponding expenditure of tenants. Major expenditure items, which in the case of rented dwellings should normally be defrayed by the landlord, are considered to be intermediate consumption when the dwellings are owner-occupied. Major repair and improvement work is not included in the estimate of intermediate consumption but counts as capital formation in housing construction. For owner-occupied dwellings, the source for the estimate of repair and maintenance expenditure is the household budget survey (FU). A further element of the total repair and maintenance expenditure is that paid for by insurance companies. Half of the claims due, received by the housing industry, are assumed to relate to repair and maintenance expenditure.

For *other intermediate consumption apart from stamp taxes and financial intermediation services paid for directly,* the sources are accounts from non-profit housing associations, covering more than 95 pct. of all non-profit housing associations, and accounts from two housing associations. In the nature of things, this item is a minor one in the case of owner-occupied dwellings, where it must include, for example, administrative expenditure relating to owners' associations in owner-occupied flats. These accounts also include building insurance which are part of intermediate consumption whereas all other insurance e.g. home insurance is counted as private consumption. The accounts from non-profit housing associations and private housing associations are used for both vacant and non-vacant dwellings implicitly assuming that intermediate consumption in vacant dwellings are the same as in non-vacant dwellings.

Expenditure on refuse collection etc. will normally be included in the observed rent. For the national accounts calculations for dwellings, the calculated total rental is reduced by the amount of these items, which are transferred to private household consumption of the services in question, instead of being considered as the private consumption of rents. Consequently, the expenditure in question is not included in the estimate of intermediate consumption for dwellings. Counting the figures this way in accordance with the international classification of the consumption of households, COICOP, does not, of course, affect the estimate of GNI, but relates solely to the breakdown of private consumption into consumption groups.

Stamp taxes, which count as intermediate consumption in dwellings, relate to loans for the financing of investments in housing and thus the output of dwelling services. Like other transaction costs connected with the transfer of real estate, stamp taxes on the transfer of property rights (deeds etc.) are treated - in line with ESA 95 paragraph 4.20 b) - as gross fixed capital formation. Stamp taxes on loans for the financing of investments in housing are estimated on the basis of the stamp tax rates laid down in the legislation, statistics for monetary financial institutions and the total revenue from stamp taxes taken from general government statistics.

The *financial intermediation services paid for directly* which are included in intermediate consumption in dwellings are fees etc. connected with mortgages taken out to finance purchases of dwellings. In Denmark, the vast majority of housing loans are "*realkreditlån*" [mortgage loans] granted by a special type of monetary financial institution known as a "*realkreditselskab*" [mortgage corporation]. These monetary financial institutions are funded almost entirely by the issue of bonds and take mortgages on the property for which they issue loans. The institutions demand "contributions" from borrowers, typically a percentage of the remaining debt. These contributions, which are invoiced to the borrowers, are treated as financial intermediation services paid for directly. In addition, there are financial intermediation services on the bank loans customarily taken out to partly finance housing purchases. The amount allocated to intermediate consumption in the "dwellings" industry is calculated on the basis of the total contributions to mortgage credit institutions and the total amount paid for bank services in the light of the outstanding debt on dwellings. *Financial intermediation services paid for indirectly (FISIM)* allocated to the dwellings industry is relatively low for reasons described above. The calculation and allocation of FISIM is described in section 3.17.

The figures for industry *680030, the letting of non-residential buildings*, are calculated as described from the expenditure point of view. The industry's output is estimated as the sum of non-residential rent expenditure in all other industries in the economy. These figures are estimated separately in the intermediate system at the most detailed DK-NACE level and are available separately in the target total module under code 2020, cf. the table of the functional target total module.

This ensures that the output of non-residential rentals and rentals which are posted as inputs in other industries are consistent. It is difficult to ensure this if output is calculated from the supply side, owing to the widespread *secondary* activity connected with the letting of non-residential premises, on which there is no direct information available in the detailed accounting information from the corporations involved.

Intermediate consumption is calculated from the ratio of intermediate consumption to output in the "letting of dwellings" industry. The reasoning is that the aggregate accounting figures underlying the calculations for the letting of dwellings are on the whole more representative of the letting of non-residential premises than the available accounts from corporations whose primary activity is non-residential letting. But since the letting of dwellings and of non-residential buildings are related activities, the input percentage, i.e. the ratio of intermediate consumption to output, may be considered to have been determined with a good degree of certainty.

Since 1999 the industry has been covered by industrial accounting statistics. However, on the output side the industrial accounting statistics gives rather unstable results and a lower turnover compared to the compilation from the expenditure point of view. This is a rather strong indication that a compilation from the expenditure side is preferable. On the input side, a comparison of the input percentage from the letting of dwellings, which is used, has been made with the input percentage from the industrial accounts statistics for the years 1999-2001. It was concluded at the time, that it was not necessary to make any corrections to the input percentage used.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

For the industry 680010, Buying, selling of real estate, output is primarily broken down by product in such a way that products are defined on the basis of the most detailed industries in the DK-NACE so that the total output value in one of these detailed industries is allocated to a product with the same name as the industry.

The output of the "dwellings" industry in 2012 was divided by product as shown in Table 3.56.

Table 3.56 Breakdown of output in the “dwellings” industries by product, 2012

	Dwellings	
		DKK mill.
F680020	Fringe benefits, free housing	458
F711000	Fringe benefits, free car	18
F713310	Fringe benefits, free pc	14
K620101	Own-produced software	34
T680021	Letting of dwellings	66 416
T680022	Imputed rental value of owner-occupied dwellings	103 009
T680023	Garages etc. not an integral part of the dwellings	5 354
	Total dwellings	175 302

The output of the "letting of non-residential buildings" industry covers five products. All non-residential letting is one product and there are also small amounts of output of the fringe benefits "free car" and “free pc” as well as of Royalties, ex. software, own-account software and own-account R&D in the relevant product balance.

Breakdown of intermediate consumption by product

Industries other than dwellings and the letting of non-residential buildings

There are no regular costs structure statistics for 680010, Buying, selling of real estate, other than the summary costs structure included in the previously available SLS-E accounting plan. The input structure is based on this. The breakdown into individual products is to a certain extent based on estimates which in turn are based on common sense considerations. For the current year, an initial estimate of input structure is worked out from the technical coefficients in the supply and use tables from previous years.

Dwellings

The breakdown by product is self-evident in three of the four expenditure categories referred to above. The fourth – other intermediate consumption apart from stamp taxes and financial intermediation services paid for directly – is broken down by product on the basis of information in the accounts of non-profit housing corporations and, if this is not sufficiently detailed, on the basis of common sense considerations concerning, for example, the input of cleaning services in blocks of flats.

Letting of non-residential buildings

The same applies to this industry as to dwellings.

3.19 Professional, scientific and technical activities (M)

Introduction

NACE M is defined on the basis of a grouping of producers units. It covers nine of the national accounts' 117 industries and these in turn cover 30 industries at the most detail DK-NACE level. As shown in Table 3.57, NACE M accounted for 5.1 % of value added in the Danish economy.

Table 3.57 NACE M's contribution to the gross value added of the economy

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
690010	Legal activities	13 213	3 076	10 138
690020	Accounting and bookkeeping	15 314	4 275	11 039
700000	Business consultancy	26 769	10 189	16 579
710000	Architecture and engineering	51 440	26 878	24 562
720001	Research and developm. (market)	16 408	11 255	5 154
720002	Research and developm. (non.market)	3 812	835	2 977
730000	Advertising, market research	18 972	13 210	5 763
740000	Other technical business serv.	13 366	7 768	5 598
750000	Veterinary activities	2 359	1 162	1 197
	Total NACE M	161 653	78 648	83 005
		pct.		
	Percentage of the economy	4.7	4.4	5.1

Statistical source

The primary statistical source for the market production is the accounts statistics for non-agricultural private sector. The statistical source for the non-market production is the General government accounts (DIOR). DIOR – The database for integrated public accounts – covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13. Industry 702010, Activities of financial head offices, in National account industry 700000, Business consultancy, is a part of the financial sector (S.12) and is covered by the account statistics for financial sector – cf. 3.17. The statistical sources can be seen in the table below:

Table 3.58 Statistical sources underlying the calculation of value added for NACE M

	National account industry	Source
690010	Legal activities	Accounts statistics for non-agricultural private sector
690020	Accounting and bookkeeping	Accounts statistics for non-agricultural private sector
700000	Business consultancy (S.11)	Accounts statistics for non-agricultural private sector
700000	Business consultancy (S.12)	Account statistics for financial sector (S.12)
710000	Architecture and engineering (market)	Accounts statistics for non-agricultural private sector
710000	Architecture and engineering (non-market)	General government accounts (DIOR)
720001	Research and developm. (market)	Accounts statistics for non-agricultural private sector
720002	Research and developm. (non-market)	General government accounts (DIOR)
730000	Advertising, market research	Accounts statistics for non-agricultural private sector
740000	Other technical business serv.	Accounts statistics for non-agricultural private sector
750000	Veterinary activities	Accounts statistics for non-agricultural private sector

Method of calculation

The method of calculation for the market part is the standard method for the calculation of value added from the accounts statistics via the intermediate system and the target total module, as described in Section 3.1.4.1 and 3.4. The non-market part is calculated using the standard methods for general, transversal sources in the form of DIOR – the database for integrated public accounts. For a more detailed description of research and development, research and development for use within the same enterprise and the capitalization of research and development see section 5.10

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

Output in NACE M is primarily broken down by product in such a way that products are defined on the basis of the most detailed industries in the DK-NACE. The total output value in one of these detailed industries is allocated to a product with the same name as the industry. A distinction is made between market and non-market production and "black" activity. For the non-market production, a distinction is also made between output of non-market services for government consumption and external sales income. In addition, there are for each national account industry fringe benefits, own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for NACE M other than the summary costs structure in the account statistics. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. There is also irregular costs structure statistics for the market part that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.20 Administrative and support service activities (N)

Introduction

NACE N is defined on the basis of a grouping of producers units. It covers six of the national accounts' 117 industries and these in turn cover 35 industries at the most detailed DK-NACE level. As shown in Table 3.59, NACE N accounted for 2.8 % of value added in the Danish economy.

Table 3.59 NACE N's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
770000	Rental and leasing activities	21 648	13 360	8 288
780000	Employment activities	21 671	9 363	12 308
790000	Travel agent activities	15 936	13 217	2 719
800000	Security and investigation	3 550	1 310	2 239
810000	Services to building, cleaning	20 513	7 964	12 549
820000	Other business services	18 437	11 252	7 186
	Total NACE N	101 754	56 466	45 288
		pct.		
	Percentage of the economy	3.0	3.2	2.8

Statistical source

The primary statistical source for the market production is the accounts statistics for non-agricultural private sector. The statistical source for the non-market production is the General government accounts (DIOR). DIOR – The database for integrated public accounts – covers central government, local government and social security fund accounts. The statistical sources can be seen in the table below:

Table 3.60 Statistical sources underlying the calculation of value added for NACE N

	National account industry	Source
770000	Rental and leasing activities	Accounts statistics for non-agricultural private sector
780000	Employment activities (market)	Accounts statistics for non-agricultural private sector
780000	Employment activities (non-market)	General government accounts (DIOR)
790000	Travel agent activities	Accounts statistics for non-agricultural private sector
800000	Security and investigation	Accounts statistics for non-agricultural private sector
810000	Services to building, cleaning (market)	Accounts statistics for non-agricultural private sector
810000	Services to building, cleaning (non-market)	General government accounts (DIOR)
820000	Other business services	Accounts statistics for non-agricultural private sector

Method of calculation

The method of calculation for the market part is the standard method for the calculation of value added from the accounts statistics via the intermediate system and the target total module, as described in Section 3.1.4.1 and 3.4. The non-market part is calculated using the standard methods for general, transversal sources in the form of DIOR – the database for integrated public accounts.

Revenue from operational leasing is measured as the value of the rental paid and is treated as an output of services. The expenditure of operational leasing is treated as intermediate consumption or household final consumption.

The output of travel agencies is measured as the value of fees and commissions charged. But the output of tour operaters is measured by the full expenditure by travellers and includes everything in the tour operators price like transportation, food, entertainments etc.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

Output in NACE N is primarily broken down by product in such a way that products are defined on the basis of the most detailed industries in the DK-NACE. The total output value in one of these detailed industries is allocated to a product with the same name as the industry. A distinction is made between market and non-market production and “black” activity. For the non-market production, a distinction is also made between output of non-market services for government consumption and external sales income. In addition, are there for each national account industry fringe benefits, own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for NACE N other than the summary costs structure in the account statistics. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. There is also irregular costs structure statistics for the market part that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.21 Public administration and defense; compulsory social security (O)

Introduction

NACE O is defined on the basis of a grouping of producers units. It covers three of the national accounts’ 117 industries and these in turn cover 9 industries at the most detailed DK-NACE level. In 2012 two of the three national accounts’ industries consisted of government non-market output. As shown in Table 3.61, NACE O accounted for 5.7 % of value added in the Danish economy.

Table 3.61 NACE O's contribution to the gross value added of the economy, 2012

	Output	Intermediate consumption	Value added at basic price
	DKK mill.		
National account industry			
840010 Public administration	90 300	30 422	59 878
840021 Rescue service etc. (market)	5 115	1 477	3 638
840022 Defence, publ.order (non-market)	49 198	20 413	28 785
Total NACE O	144 613	52 312	92 301
	pct.		
Percentage of the economy	4.2	2.9	5.7

Statistical sources

In all cases other than the market output of 840021 rescue services etc. (market), the source is the accounts in Databasen for Integrerede Offentlige Regnskaber (DIOR) [the database for integrated public accounts]. This database covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13 (extra budgetary units). The source for the calculations of 840021 rescue s ervice etc. (market) is the tax account statistics – cf. Section 3.1.4.1. The sources can be seen in the table below:

Table 3.62 Statistical sources underlying the calculation of value added for NACE O

	National account industry	Source
840010	Public administration	General government accounts (DIOR)
840021	Rescue service etc. (market)	Tax account statistics
840022	Defence, publ.order (non-market)	General government accounts (DIOR)

Method of calculation

The calculations use the standard methods for general, transversal sources in the form of the Database for Integrated public accounts (DIOR) and the tax account statistics.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of government non-market services is divided by product on the basis of the various uses of the products. For each national accounts branch, a distinction is made at least between the output of government non-market services for government consumption, for external sales income other than from canteen sales, sales income relating to canteens and sales income relating to internal supplies between public institutions. In addition, there is own-produced software and own-produced research and development. The market output in 840021 Rescue services is for a single product, namely rescue services.

Breakdown of intermediate consumption by product

There are no regular cost structure statistics for the Public administration. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.22 Education (P)

Introduction

NACE P is defined on the basis of a grouping of producers units. It covers five of the national accounts' 117 industries. These in turn cover 13 industries at the most detailed DK-NACE level. In Denmark 2012, virtually the whole group consisted of non-market output, the exception being 850041 Adult-, other education (market). In

Denmark production schools, upper secondary schools and universities are part of S.13 (extra budgetary units), and are thus government non-market producers due to the fact that public authorities to a large extent control these institutions.

Table 3.63 NACE P's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
850010	Primary education	57 007	10 514	46 493
850020	Secondary education	34 445	11 605	22 840
850030	Higher education	42 150	11 285	30 865
850041	Adult-, other educ. (market)	3 498	1 469	2 029
850042	Adult-, other educ. (non-market)	6 670	3 279	3 391
	Total NACE P	143 771	38 152	105 619
		pct.		
	Percentage of the economy	4.2	2.1	6.5

Statistical sources

In all cases other than market output in industry 804001 Adult and other education (market), the source is the accounts in *Databasen for Integrerede Offentlige Regnskaber (DIOR)*. This database covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13. For the market output in industry 804001 Adult and other education (market), the source is the tax account statistics – cf. Section 3.1.4.1. For NPISH the statistical source is primarily the Ministry of Education, supplemented by annual reports for schools not covered by the ministry. The sources can be seen in the table below:

Table 3.64 Statistical sources underlying the calculation of the value added for NACE P

	National account industry	Source
850010	Primary education - Government non-market	General government accounts (DIOR)
850010	Primary education - NPISH non-market	Undervisningsministeriet (Ministry of Education)
850020	Secondary education - Government non-market	General government accounts (DIOR)
850020	Secondary education - NPISH non-market	Undervisningsministeriet (Ministry of Education)
850030	Higher education - Government non-market	General government accounts (DIOR)
850030	Higher education - NPISH non-market	Undervisningsministeriet (Ministry of Education)
850041	Adult-, other educ. (market)	Tax account statistics
850042	Adult-, other educ. (non-market) - Government non-market	General government accounts (DIOR)
850042	Adult-, other educ. (non-market) - NPISH non-market	Undervisningsministeriet (Ministry of Education)

Method of calculation

The calculations use the standard methods for general, transversal sources in the form of *Databasen for Integrerede Offentlige Regnskaber (DIOR)* and the tax account statistics. The calculations for NPISH primarily use data from the Ministry of Education which only includes non-market producers. The data is supplemented by sample of annual reports from non-market producers, which are not covered by the Ministry of Education. Considering the annual reports and using the distinction between market- and non-market producers specified in ESA 2010, section 3.23 ensures that only non-market producers are covered. See chapter 5.8 for further description of the method of calculation for NPISH.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of government and NPISH non-market service is broken down by product on the basis of the various uses of the products. For each national accounts industry grouping, a distinction is made at least between the

output of non-market producers' services for consumption and for sales income. For the output of government non-market services, there is an additional distinction between sales income relating to canteens and sales income relating to internal supplies between public institutions. The market output in 840041 covers tree products, namely driving schools etc., other market education and "black" education. In addition, is there for each of the five national accounts' industries and institutional sectors (S11-S15) own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular cost structure statistics for Education. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.23 Human health and social work activities (Q)

Introduction

NACE Q, which is defined on the basis of a grouping of producers units, consists of four of the national accounts' 117 industries. These in turn cover 30 industries at the most detailed DK-NACE level. As Table 3.65 shows, it accounted for 11.1% of the value added in the Danish economy in 2012.

Table 3.65 NACE Q's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
860010	Hospital activities	89 437	34 621	54 815
860020	Medical and dental practice	37 995	8 050	29 945
870000	Residential care activities	31 189	12 431	18 757
880000	Social work without accomond.	97 868	20 432	77 436
	Total NACE P	256 488	75 534	180 954
		pct.		
	Percentage of the economy	7.5	4.2	11.1

Statistical source

For government, non-market output, the source is the accounts in *Databasen for Integrerede Offentlige Regnskaber (DIOR),* which covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13. For market output, the source is tax account statistics. For NPISH non-market output, the source is a sample of annual reports from day-care centers, asylum centres, funds and scholarships. The sample is grossed up by using data on wages for the entire industry. The sources can be seen in the table below.

Table 3.66 Statistical sources underlying the calculation of the value added for NACE Q

	National account industry	Source
860010	Hospital activities - Market production	Tax account statistics
850010	Hospital activities - Government non-market	General government accounts (DIOR)
860020	Medical and dental practice - Market production	Tax account statistics
860020	Medical and dental practice - Government non-market	General government accounts (DIOR)
870000	Residential care activities	General government accounts (DIOR)
880000	Social work without accomond. - Government non-market	General government accounts (DIOR)
880000	Social work without accomond. - NPISH non-market	Annual reports, data on wages

Method of calculation

The calculations use the standard methods for general transversal sources in the form of Databasen for Integrerede Offentlige Regnskaber (DIOR) and the tax account statistics. By using annual reports and adhering to the distinction between market- and non-market producers specified in ESA 2010, section 3.23 ensures that only non-market producers are covered for NPISH. See chapter 5.8 for further description of the method of calculation for NPISH.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of government and NPISH non-market service is broken down by product on the basis of the various uses of the products. For each national accounts industry grouping, a distinction is made at least between the output of non-market producers' services for consumption and for sales income. For the output of government non-market services, there is an additional distinction between sales income relating to canteens and sales income relating to internal supplies between public institutions. The output of market producers in NACE Q is divided into four products and fringe benefits. In addition, there is for each of the four national accounts' industries and institutional sectors (S11-S15) own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular cost structure statistics for Human health and social work activities. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.24 Arts, entertainment and recreation (R)

Introduction

NACE R is defined on the basis of a grouping of producer units and consists of seven of the national accounts' 117 industries. These in turn cover 18 industries at the most detailed DK-NACE level. As Table 3.67 shows, it accounted for 1.5 % of value added of the Danish economy in 2012.

Table 3.67 NACE R's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
900000	Theatres, concerts and arts	11 351	2 778	8 574
910001	Libraries, museums (market)	1 019	577	442
910002	Libraries, museums (non-market)	10 681	3 881	6 799
920000	Gambling and betting	5 045	3 135	1 910
930011	Sport activities (market)	4 247	1 938	2 309
930012	Sport activities (non-market)	5 249	2 458	2 791
930020	Amusement and recreation	4 260	2 077	2 184
	Total NACE R	41 852	16 844	25 008
		pct.		
	Percentage of the economy	1.2	0.9	1.5

Statistical sources

For market output, the source is tax account statistics, statistics on culture and statistics on wages, salaries and number of artists. The source for the non-market output of NACE R in sector S.13 is DIOR – the database for integrated public accounts. For non-market output in sector S.15 (NPISH) is the source surveys and administrative records. The statistical sources can be seen in the table below:

Table 3.68 Statistical sources underlying the calculation of the value added for NACE R

	National Account Industry	Source
900000	Theatres, concerts and arts (market)	Statistics on wages and salaries, numbers of artists, statistics on culture, tax account statistics
900000	Theatres, concerts and arts (non-market)	General government accounts (DIOR)
910001	Libraries, museums (market)	Tax account statistics
910002	Libraries, museums (non-market)	General government accounts (DIOR), annual reports (for NPISH)
920000	Gambling and betting	Accounts statistics for industries predominated by public corporations
930011	Sport activities (market)	Tax account statistics
930012	Sport activities (non-market)	General government accounts (DIOR), annual reports for NPISH
930020	Amusement and recreation (market)	Tax account statistics, account statistics for industries predominated by public corporatio.
930020	Amusement and recreation (non-market)	General government accounts (DIOR)

Method of calculation

The calculation for all DK-NACE other than 900120 Activities of individual artists, 90220 Support activities to performing arts and 900300 Artistic operation is the standard methods for general transversal sources in the form of General government accounts (DIOR), Tax account statistics, Accounts statistics for industries predominated by public corporations and statistics for NPISH. For industry 900120 Activities of individual artists, 90220 Support activities to performing arts and 900300 Artistic operations, the calculation is divided in two. First of all, the output of paintings, lithographs and sculptures etc. is calculated using a price x quantity calculation. Next, the much greater value of royalties and artistic originals is calculated from the information on royalties in statistics on culture.

The calculation of the output value of paintings, lithographs and sculptures etc. is based on average earnings per employee in the whole of the national accounts industry 900000 taken together, as found in the ERE statistics. This figure is multiplied by the total number of members of Billedkunstnernes Forening [the Pictorial Artists Association], the association of Danish designers and the association of Danish craftsmen-designers. It is thus assumed that the artists' average sales correspond to the earnings of an employee in the same field.

For the output of royalties (services output) information from statistics on culture which refers to royalty payments for art and culture is used directly (information from KODA, NCB (Nordic Copyright Bureau), COPY DAN and Gramex). In the absence of statistics on the value of original works produced, in each period this is considered to be equal to the royalty income for the period.

Intermediate consumption is calculated using an input percentage derived from tax account statistics. Creative artists constitute a field which, by its very nature, will almost always have scant coverage in the form of accounts. In Denmark's case, many fall below the turnover threshold of DKK 500 000 for the tax account returns. There is not considered to be any intermediate consumption corresponding to royalties and the output of artistic originals in branch 900300. The intermediate consumption connected to those product transactions is assumed to be included as expenditure in publishers, music publishers, recording companies, film and video production companies etc. which have made facilities available to the artists with whom they are working.

For the NPISH part, which consists of museums and sports associations, the output is calculated in accordance with ESA 2010 section 3.49. The distinction between market- and non-market output is made in accordance with ESA 2010 section 3.23.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product

The output of NACE R is divided into 51 products, 33 of which represent market activity and 18 governments or NPISHs output. For each national accounts industry grouping, a distinction is made at least between the output of non-market producers' services for consumption and for sales income. For the output of government non-market services, there is an additional distinction between sales income relating to canteens and sales income relating to internal supplies between public institutions. In addition is there fringe benefits, and there is for each national accounts' industry and institutional sector own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for NACE R other than the summary costs structure in the account statistics. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.25 Other service activities (S)

Introduction

NACE S is defined on the basis of a grouping of producer units and consists of three of the national accounts' 117 industries. These in turn cover 21 industries at the most detailed DK-NACE level. As Table 3.69 shows, it accounted for 1.6 % of value added of the Danish economy in 2012.

Table 3.69 NACE S's contribution to the gross value added of the economy, 2012

		Output	Intermediate consumption	Value added at basic price
		DKK mill.		
	National account industry			
940000	Activities of membership org.	26 225	10 414	15 811
950000	Repair of personal goods	5 020	2 398	2 622
960000	Other personal services	11 512	3 409	8 103
	Total NACE S	42 757	16 221	26 536
		pct.		
	Percentage of the economy	1.3	0.9	1.6

Statistical sources

The source for the non-market output of NACE S in sector S.13 is the general government accounts DIOR - the database for integrated public accounts. For non-market output in sector S.15 (NPISH) the source is surveys and administrative records. The source for the market output in national account industry 940000 Activities of membership organizations is statistics on wage, salaries and employment. The source for national account industry 950000 Repair of personal goods is the account statistics for non-agricultural private sector and for the market output in 960000 Other personal services the source is the tax account statistics. For "black" activity the source is a benchmark and for illegal activity – prostitution – is the source information on prices and number and types of prostituted – cf. Section 7. The statistical source can be seen in the table below:

Table 3.70 Statistical sources underlying the calculation of the value added for NACE S

	National Account Industry	Source
940000	Activities of membership org. (non-market)	General government accounts (DIOR) Surveys and administrative records
940000	Activities of membership org. (market)	Statistics on wage, salaries and employment
950000	Repair of personal goods	Accounts statistics for non-agricultural private sector
960000	Other personal services (non-market)	General government accounts (DIOR)
960000	Other personal services (market)	Tax account statistics

Method of calculation

The calculations for all national account industries other than DK-NACE 941100 Activities of business and employers membership organizations, comply with the standard methods for general transversal sources in the form of DIOR – database for integrated public accounts, tax account statistics and account statistics for the non-agricultural private sector. DK-NACE 941100 Activities of business and employers membership organizations, is calculated from the expenditure side using information on wage and employment and assumptions on intermediate consumption based on accounts.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by products

The output of NACE S is divided into 35 products, 16 of which represent market activity and 19 representing governments or NPISHs output. For each national accounts industry grouping, a distinction is made at least between the output of non-market producers' services for consumption and for sales income. For the output of government non-market services, there is an additional distinction between sales income relating to canteens and sales income relating to internal supplies between public institutions. In addition are there also fringe benefits, and there is for each national accounts' industry and institution sector (S.11-S.15) own-produced software and own-produced research and development.

Breakdown of intermediate consumption by product

There are no regular costs structure statistics for NACE S other than the summary costs structure in the account statistics. But Statistics Denmark has in the period of 2001-2015 undertaken cost structure surveys for general government that are used as benchmarks. The breakdown into individual products is to a certain extent based on this benchmark, estimates and on common sense considerations. For the current year, an initial estimate is worked out for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

3.26 Activities of households as employers; etc. (T)

Introduction

NACE T, which is defined on the basis of a grouping of producer units, consists of only one of the national accounts' 117 industries. As Table 3.71 shows, it accounted for 0.3% of the value added of the Danish economy in 2012.

Table 3.71 NACE T's contribution to the gross value added of the economy

	Industry	Output	Intermediate consumption	Value added at basic price
		DKK mill.		
970000	Households as employers	4 624	0	4 624
	Total NACE T	4 624	0	4 624
		pct.		
	Percentage of the economy	0.1	0.0	0.3

Statistical sources

The majority of the activity in this industry is linked to tax-free income either in the form of genuine work in the black economy or because the persons involved have income which falls below the income tax limit and who therefore do not report any income to the tax authorities. Regular "legitimate" economic activity in this industry consists mainly of home help for disabled people employed by households, treated as a social transfer in kind purchased by general government and made available to households. These values are taken directly from government accounts. The remaining "legitimate" activity is small and of minor importance and is projected with the same percentages as the black activity.

The level is calculated on the basis of EU-harmonised labour force survey (LFS), which in Denmark is now called *Arbejdskraftundersøgelsen* (AKU), extended to include various questions on activity in the black economy. The questions covered information on both the number of hours worked and the relevant income. One-third of the LFS respondents (some 6 000) took part in the ad hoc survey, which was partly financed by the EU. The survey was grossed up to the total population.

Table 3.72 Statistical sources underlying the calculation of the value added for NACE T

	National account industries	Source
970000	Households as employers	periodically surveys, net price index, government accounts, labour force survey

Method of calculation
A benchmark was established in 2004 with the extended *Arbejdskraftundersøgelsen* (AKU) that included several questions on activity in the black economy. From 2004-2010 was the value projected in the current years using changes in the net price index (consumer price index excluding taxes on products and subsidies) for cleaning. This means assuming that hours of work remain constant. The price index reflects changes in cleaning rates charged by professional firms.

A question on number of hours worked within the black economy in industry 970000 Households as employers has been included in *Arbejdskraftsundersøgelsen* (AKU) since 2010. This is now used in the calculation and the hours worked are now longer assumed to be constant. A new benchmark will be established when resources can be made available to extend the labour force surveys to include special questions on work in the black economy.

The process tables in Annex 7 shows the values derived from individual sources and values of conceptual, exhaustiveness and balancing adjustments for output and intermediate consumption for all industries.

Breakdown of output by product
The output value is allocated to two different products. One product covers the black activity and one product covers the regular economic activity.

Intermediate consumption by product
By definition, there is no intermediate consumption in this industry.

3.27 Activities of extraterritorial organisations and bodies (U)

Foreign embassies and other international organisations within the borders of the Kingdom of Denmark are not part of Denmark's economic territory. The output of these organisations is not included in Danish GDP. The wages and salaries which they pay to Danish residents are included in Denmark's GNI via the balance-of-payments items for wages and salaries from the rest of the world. Danish embassies on foreign territory are included in Denmark's economic territory.

3.28 Taxes on products, including VAT

Table 3.73 shows total taxes on products excluding VAT which amounts to 4.8 percent of GDP. Of total taxes excluding VAT of 91 300 mill. DKK, 2 995 mill. DKK go to the EU (duties and import taxes). Table 3.74 shows taxes on products excluding VAT by type of tax. All large taxes are shown by type while minor taxes are lumped together in *other*.

Table 3.73 Total taxes on products excl. VAT, 2012

	To general government	To the EU	Taxes on products excluding VAT, total
	DKK mill.		
Taxes on products	88 305	2 995	91 300
	pct.		
Percentage of GDP			4,8

Table 3.74 Taxes on products excluding VAT. By type of tax, 2012

	DKK mill.
Taxes on products excl. VAT, total	91 300
of which:	
Car registration	13 075
Electricity	11 167
Certain oil products	9 231
Cigarettes and tobacco	8 163
Petrol	7 392
Carbon dioxide (CO2)	5 709
Public Service Obligations (on electricity)	5 121
Stamp duties	4 883
Natural gas	4 033
Custom duties	2 962
Coal	2 583
Chocolate	1 735
Third party liability insurance on cars	1 732
Wine	1 519
Piped water	1 516
Profits from national gambling monopoly	1 413
Saturated fats	1 223
Alcoholic beverages	1 074
Beer	1 037
Car registration	13 075
Other	5 732

For each type of tax on products it is decided whether it is a tax on products or the purchase of a service. The main criterion for the classification is whether the "price" paid is in proportion to the cost related to the service. Examples of borderline cases are passports and drivers licences, which both are classified as purchases of services.

As required by ESA 2010 paragraphs 4.26-4.27, taxes on products including VAT are recorded when the activities etc. occur as the amount which the general government sector or the EU has a *claim on*, i.e. tax liability or tax assessed. Tax assessments are recorded by the tax authorities, *Skat*, with an indication of the period of the transactions to which they relate. Taxes on products excluding VAT are therefore recorded on an accrual basis. Denmark thus bases its figures for taxes on products excluding VAT on tax assessments and does not need to have recourse to corrections for "cash data", i.e. figures for taxes actually paid compiled on the date of payment.

Table 3.75 shows total VAT revenue in 2012 which amounts to 182 billion DKK and 9.6 percent of GDP.

Table 3.75 VAT, 2012

	To general government	To the EU	VAT, total
	DKK mill.		
VAT	181 618	0	181 618
	pct.		
Percentage of GDP			9.6

Compared with some countries, the Danish VAT system is very simple in that there are only two rates, a standard rate of 25 % in 2012 and a 0% rate for certain product groups such as passenger transport and newspapers. In addition, some activities (producer units) do not have to register for VAT, i.e. they do not collect outgoing VAT on their sales and conversely cannot deduct incoming VAT from their purchases. The only significant case of this for market output is financial services and property administration. In practice, all non-financial market activity except a few service activities, of which passenger transport is far the most important, has to register for VAT in Denmark.

One standard way of validating the degree of coverage in the national accounts is to compare the theoretical VAT resources as established in the national accounts with actual VAT revenue. This check works particularly well when there is a simple VAT structure as there is in Denmark, where the uncertainty resulting from the use of differential rates is virtually absent[14]. Theoretical VAT resources are defined as the VAT revenue which would be produced if all actors in the economy paid VAT according to the legislation. The calculation is as follows: The rate for non-deductible VAT which would apply if everybody complied in full with the VAT legislation is linked to each individual use of each of the 2 350 or so products in the (supply and) use tables. Actual VAT revenue is equal to VAT assessed on an accrual basis, as described above. VAT in the Danish national accounts is adjusted to this amount. The total VAT actually in the cells of the supply and use tables with around 2 350 product balances is equal to actual VAT resources.

When theoretical VAT resources are estimated, it is often the case that the statutory rate is used as the theoretical rate. This is not, however, the actual theoretical rate if, for the estimate of VAT liability, VAT is deductible in the case of bad debts. The Sixth VAT Directive allows such deductions, which apply in Denmark. The deduction is as follows: an enterprise which is registered for VAT may, for the estimate of outgoing VAT, deduct the outgoing VAT imputed during previous periods but which has never been paid to the enterprise by its debtors as a result of bankruptcy, for example. The actual theoretical rate is therefore lower than the statutory rate.

The tax authorities do not collect information on the size of the deduction for outgoing VAT connected with bad debts. Based on, *inter alia*, banks' provisions and losses, Statistics Denmark has cautiously estimated those bad debts at just under 2 % of VAT revenue. Due to lack of more precise information, this percentage has remained unchanged year after year for the calculation of theoretical VAT resources. For product groups with the statutory standard rate of 25 %, a rate of 24.54% is used, a cautious estimate about which there is a substantial degree of uncertainty. Actual deductions may well be considerably greater, in which case the theoretical rate in the calculation should be lower. The central government credit risk involves not only VAT revenue but the gross amount of outgoing VAT, which is much greater. Bad debts may arise anywhere in the chain from the original producer to the final purchaser.

To make the following comparison of theoretical and actual VAT comparable with the results in other countries, the comparison has been made using the theoretical rate calculated both as the statutory rate and as the estimated actual theoretical rate following legal deductions for bad debts. In the following table, the first calculation of the percentage discrepancy is marked I and the second as II.

Table 3.76 Comparison of theoretical and actual VAT revenue

Year	Theoretical VAT I revenue, with statutory rate)	Theoretical VAT II revenue, with deduction for bad debtors	Actual VAT revenue (VAT assessments)	Percentage difference between theoretical VAT I and actual VAT	Percentage difference between theoretical VAT II and actual VAT
	(1)	(2)	(3)	((1)-(3))/(3) x 100	((2)-(3))/(3) x 100
	DKK 1.000			pct.	
2005	161 727 923	159 599 780	154 653 854	4.57	3.20
2006	176 171 193	173 860 634	166 936 447	5.53	4.15
2007	181 005 416	178 647 492	174 638 672	3.65	2.30
2008	182 091 170	179 821 190	173 871 787	4.73	3.42
2009	173 319 798	171 196 271	167 529 461	3.46	2.19
2010	175 921 745	173 792 947	171 582 673	2.53	1.29
2011	182 734 868	180 548 461	176 447 770	3.56	2.32
2012	186 869 048	184 639 007	181 618 530	2.89	1.66

Note: VAT I: The statutory rate of 25%
VAT II: The statutory rate with deductions for bad debts (24.54%)

[14] Even with 2 350 product balances some product classifications will cover services with both 25% and 0% VAT-rates. The choice of average VAT-rate for such product groups relies on assumptions that may be more or less correct. In specific circumstances certain uses are VAT-exempt. Identification of these circumstances will also to some degree rely on assumptions. A VAT-system with differentiated rates will of course add to this kind of problems. However the estimated VAT must be assumed to be more accurate when it can be based on a high level of detail compared to a calculation based on less detail.

The table shows that the percentage difference between theoretical and actual VAT has remained reasonably low and constant over the period 2005-2012.

The Commission Decision (98/527/EC, Euratom) on the treatment for national accounts purposes of VAT fraud (discrepancies between theoretical VAT receipts and actual VAT receipts) obliges Member States to *compare* theoretical and actual VAT and to *analyse* the difference to ensure that the effect which the treatment of VAT fraud has on GNP is correct. In all cases where an enterprise registered for VAT has collected VAT from the customer but does not remit it to the tax authorities (for example, when sales do not pass through the cash register), with output-based GDP there has to be an allowance for this fraudulently retained VAT to ensure that the estimate includes all value added. The expenditure-based estimate in principle records the purchaser's actual payment and thus in principle automatically includes the VAT withheld (the evasion). The problem here, of course, is to observe such purchases in practice. In the Commission Decision, VAT which is not remitted is referred to as "evasion without complicity". The opposite is "evasion with complicity", e.g. work done in the black economy and not invoiced. In this latter case, of course, there should be no allowance for VAT not remitted, since the price the purchaser has paid does not include any VAT.

The total difference between theoretical VAT when the rates required by law are applied, ignoring deductions for VAT connected with bad debts, and actual VAT revenue was DKK 5 251 million in 2012. The national accounts estimate of deductions for bad debts of just under 2% may account for DKK 2 230 million of this difference. In addition, VAT corresponding to the explicit allowances for work in the black economy, underreporting and illegal activity etc. account for DKK 1 791 million. Of these DKK 1 791 million, DKK 581 million is explicit allowances for VAT fraud connected with underreporting - what the Commission Decision refers to as "evasion without complicity". In such cases, the Danish national accounts add an allowance to value added in the industries in question (including the imputed underreporting) to take account of further underreporting by producers who fraudulently collect VAT and fail to remit it.

After deduction of the above amounts, there was a difference of DKK 439 million in 2012, which is very low.

There are several reasons that the calculation of theoretical VAT is connected with some uncertainty. Some possible reasons are:

1. Larger deductions for bad debts than estimated
2. Inaccuracies in estimation of the black economy and underreporting
3. VAT evasion in industries where hidden activity is covered indirectly by a price x quantity calculation
4. Inaccuracies in the national accounts supply and use tables
5. Inaccuracies in the national accounts interpretation of VAT legislation

In the following, the possible reasons for these uncertainties are described in more general terms:

1) As already stated, we cannot rule out the possibility that the deductions for bad debts can deviate from the estimated just under 2%, in particular in years when the economy is depressed. In general, the response rates for the underlying economic statistical sources and the VAT assessments made by the tax authorities will also be affected in these years. In fact, 2009 and 2010 are likely to be more affected by these phenominae than other years.

2) There is a considerable statistical uncertainty in the estimates of the black economy. It is most likely that the benchmarks that have been based on surveys of black labour conducted as telephone interviews (and the current estimates based on telephone interviews), will be related with a relatively high degree of uncertainty.

3) In a few industries, underreporting and work in the black economy are not covered via explicit allowances but are implicitly included in that the output is estimated as price times quantity. The most important example is agriculture.

4) Inaccuracies in the national accounts supply and use tables may be another reason for the residual difference. This may happen if, for example, the values for the most important private uses on which VAT is payable, namely household final consumption and the construction of dwellings, are too high, so that the theoretical VAT

imputed is too high as well. There is, however, no other indication that the two demand components have been over-estimated.

5) The national accounts supply and use matrices include separate VAT matrices which are thoroughly analysed and balanced every year. When these matrices, which are used as a basis for the calculation of theoretical VAT revenue, are worked out, care is taken to ensure that the calculation reflects VAT legislation right down to the smallest detail. In doubtful cases, Statistics Denmark has consulted the Ministry of Taxation about the interpretation of special rules in the legislation. But the possibility cannot be ruled out, that subtleties in the VAT legislation have created difficulties for the modelling of the calculation of VAT that is the basis for estimation of the theoretical VAT revenue. However, the special rules in the VAT legislation relating to expenditure on the acquisition, running and maintenance of passenger cars, non-deductibility of accommodation cost, reduced deductibility of costs in connection with representation and a number of other exceptions from the general rules are as far as possible implemented at the most detailed level in the national accounts.

3.29 Subsidies on products

Tables 3.77 and 3.78 show total subsidies on products and subsidies on products by scheme. Subsidies on products amount to 14.0 bill. DKK and 0.7 percent of GDP in 2012.

Table 3.77 Subsidies on products, 2012

DKK million	From general government	From the EU	Subsidies on products, total
	DKK mill.		
Subsidies on products	13 856	147	14 003
	pct.		
Percentage of GDP			0.7

Table 3.78 Subsidies on products, 2012, by scheme

Subsidy scheme	DKK mill.
EU-schemes, total	**147**
Export subsidy schemes	12
Subsidy on the production of skimmed milk, etc.	135
Danish schemes, total	**13 856**
Municipal housing for pensioners, etc.	91
Refuse disposal and incineration	249
DSB (*De Danske Statsbaner)* [Danish State Railways]	4 205
Municipal buses and other transport	3 139
Price reductions in public transportation	130
Municipal estates	499
Central government subsidies to regional theatres	186
Subsidies on magazines and newspapers	399
Subsidies on cultural events	405
Collection of tires, cars and batteries	50
Subsidies on production of electricity	87
Subsidies on wind mills and other sustainable energy production	4 200
Other subsidies on products to private enterprises	218
Subsidies on products, total	**14 003**

Subsidies on products are recorded as required by the ESA 2010 paragraph 4.39 on an accrual basis, i.e. when the product transaction which gives rise to the subsidy occurs.

4. The Income Approach

4.0 GDP according to the income approach

For 2012, the calculation of income based GDP can be summarised as in table 4.1 below:

Table 4.1 GDP, income approach, 2012

	Value	% of GDP
	DKK mill.	pct.
Compensation of employees	977 516	51.9
+ Gross operating surplus and mixed income	640 958	34.0
+ Taxes on production and imports	312 445	16.6
- Subsidies	48 293	2.6
= GDP	1 882 625	100.0

All components of GDP from the income side (GDP(I)) are compiled at the 117 national accounts industry level. Compensation of employees and taxes and subsidies on production are compiled directly using independent sources. Compensation of employees is based on the Working time accounts (see section 4.7), and taxes and subsidies are based on government accounts (see sections 4.8 and 4.9). Gross operating surplus and mixed income is compiled as a residual using value added after the balancing of GDP(P) and GDP(E).

Table 4.2 and 4.3 shows value added and GDP from the income side by industry (Nace section) and by institutional sector. Taxes and subsidies on products are only applicable for the whole economy and GDP at market prices can only be compiled for the whole economy.

Table 4.2 Value added/GDP by the income approach. Breakdown by industry, 2012

		Value added/GDP	Compensation of employees (D.1)	Taxes on products (D.21)	Other taxes on production and imports (D.29)	Subsidies on products (D.31)	Other subsidies on production (D.39)	Gross operating surplus and mixed income
		DKK mill.						
A	Agriculture, forestry and fishing	31 356	9 048		1 322		8 201	29 188
B	Mining and quarrying	56 645	4 089		32		95	52 620
C	Manufacturing	215 309	123 977		2 424		2 238	91 148
D	Electricity, gas, steam and air conditioning supply	25 067	5 841		165		307	8 947
E	Water supply, sewerage etc.	13 622	4 483		289		96	8 947
F	Construction	74 530	56 315		1 132		1 080	18 165
G	Wholesale and retail trade	197 714	139 067		2 187		2 839	59 299
H	Transportation and storage	81 891	52 875		2 110		2 912	29 817
I	Accommodation and food service activities	23 738	17 581		428		774	6 503
J	Information and communication	73 193	46 021		445		782	27 508
K	Financial and insurance activities	102 419	49 763		4 899		598	48 356
L	Real estate activities	164 888	13 057		28 983		4 185	137 703
M	Professional, scientific and technical activities	83 007	62 650		504		1 192	21 044
N	Administration and support activities	45 289	35 013		723		842	10 393
O	Public administration	92 301	70 785		794		1 133	21 855
P	Education	105 618	87 964		663		1 358	18 351
Q	Human health	180 953	160 499		1 923		3 980	22 511
R	Arts, entertainment	25 009	14 721		499		1 500	11 288
S	Other service activities	26 536	19 145		767		268	6 894
T	Activities of households as employees	4 624	4 624		0		0	0
	Total	1 623 709	977 516		50 288		34 380	640 958
	GDP	1 882 625		272 919		14 003		

Manufacturing (Nace section C) and wholesale and retail trade (Nace section G) account for the largest part of total value added followed by human health (Nace section Q) and real estate activities (Nace section L). The largest shares of compensation of employees relative to value added are in education (Nace section P) and human health (Nace section Q), that are dominated by non-market activity. For industries dominated by market-activities the largest share of compensation of employees relative to value added are in construction (Nace section F), accommodation and food service industries (Nace section I) and professional, scientific and technical activities (Nace section M). Looking at gross operating surplus and mixed income, Real Estate Activities (Nace section L), that includes owner occupied dwellings, accounts for the by far largest share. Looking at industries other than Real estate activities, Manufacturing accounts for the largest share followed by Wholesale and retail trade, Mining and quarrying and Financial and insurance activities.

Table 4.3 Value added/GDP by the income approach. Breakdown by institutional sector, 2012

		Value added/GDP	Compensation of employees (D.1)	Taxes on products (D.21)	Other taxes on production and imports (D.29)	Subsidies on products (D.31)	Other subsidies on production (D.39)	Gross operating surplus and mixed income
		DKK mill.						
S11	Non-financial Corporations	933 171	553 514		15 976		18 081	381 761
S12	Financial Corporations	102 781	49 853		4 900		1 506	49 534
S13	General Government	366 912	314 639		2 990		6 643	55 926
S14	Households	197 033	36 660		15 472		8 061	152 962
S15	NPISH	23 813	22 850		188		0	775
S1	Total	1 623 709	977 516		39 526		34 290	640 958
	GDP	1 882 625		272 919		14 003		

Note: Taxes on products (D.21) and subsidies on products (D.31) are only applicable at the level of the total economy (GDP at market prices are only compiled for the whole economy)

Looking at institutional sectors, non-financial corporations (S.11) and general government (S.13) by far account for the largest share of compensation of employees while at the same time non-financial corporations (S.11) and households (S.14) account for by far the largest share of gross operating surplus and mixed income. When looking at households (S.14) it must be kept in mind, that gross operating surplus related to owner occupied dwellings (68.834 mill. DKK) is placed here.

4.1 The reference framework

The main sources used for compiling GDP from the income side are:

6. The annual working time accounts (WTA) (compensation of employees)
7. The system for compiling fixed capital in the national accounts (consumption of fixed capital, CFC)
8. Administrative data (accounting information) for compiling general government (other taxes on production and imports and other subsidies on production)
9. Value added at industry level as a result of balancing GDP(P) and GDP(E)
10. Gross operating surplus and mixed income are compiled as residuals.

All components and sources are collected – directly or indirectly - through regular enterprise surveys or administrative registers. Taxes and subsidies are available from general government accounts, compilation of CFC is based on annual estimates of capital stocks for various types of capital, compensation of employees is to a large extent based on administrative tax information and gross operating surplus and mixed income is compiled as a residual using value added after balancing GDP(P) and GDP(E).

The most important source to describe in this chapter is the annual working time accounts (WTA) which is used for the compilation of compensation of employees in the national accounts. The WTA is elaborated on in the following paragraph. The sources used for compiling other taxes on production and imports, other subsidies on production and consumption of fixed capital will be described in sections 4.8, 4.9 and 4.12 respectively.

The Working Time Accounts

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

In December 2012, the Working Time Accounts were adjusted, because a new data source, the Danish electronic, administrative register, eIncome (eIR) was introduced for the compilation. Subsequently, the WTA are compiled on the basis of eIR. As changes have been made to the population, concepts, sources as well as methods, this has resulted in revised levels and revised developments throughout the year.

The Working Time Accounts transmit quarterly data to the short term business statistics (STS). The variables transmitted to STS_Eurostat are: - Number of Persons Employed (Variable 210) – Hours Worked (Variable 220): Paid hours worked in the jobs. - Gross Wages and Salaries (Variable 230): Earned DKK earned as compensation for hours worked or for hours paid but not worked.

The WTA is now published regularly with annual figures once a year and quarterly figures four times a year.

The primary purpose of the Working Time Account (WTA) is to compile time series on hours worked. Furthermore, its object is to compile data on earnings and employment for the national accounts statistics, adopting the definitions of work, earnings and employment as applied in the national accounts. The current statistics includes data broken down by sex, industry, two sectors (general government, corporations and organizations) and socioeconomic status (self-employed, assisting spouses or employees).

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

The WTA is compiled in Statistics Denmark's division for labour market statistics. The annual WTA is used as benchmark and few adjustments are made in the national accounts. For a description of these adjustments please see section 4.4.

The WTA are based on a combination of census and survey data. The WTA are compiled on the basis of three primary data sources:

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

- The Register-based labour force statistics (RAS statistics)
- The Establishment-related Employment Statistics (ERE statistics)

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

The structural data incorporated in the 2013 WTA, which are made up by the Register of Employment Statistics (the basis for RAS statistics and the ERE statistics at the end of November 2013), are based on a special version exclusively for internal use in the Working Time Accounts, National Accounts and Industrial Accounts Statistics, where the former methods and sources are applied. This internal version is used for the purpose of avoiding breaks in the statistics mentioned.

- Employment Statistics for Employees (BfL)

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

The three above-mentioned statistics are compiled on the basis of eIncome (eIR).

2. The Structural Earning Statistics

The Statistics on Earnings are used in the WTA for converting paid hours of work into hours worked by employees during the year.

Where the above-mentioned structural statistics set the level for the statistics in the WTA, the short-term statistics are used for describing the development throughout the year.

3. The Labour Force Survey (LFS)

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

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

The LFS is also applied in undertaking projections of employment and jobs for self-employed and assisting spouses during the period, following the latest November-statistics of RAS statistics. Finally, the LFS is applied in describing how many hours of work were performed by self-employed and assisting spouses compared to hours worked by employees. The basis for calculating hours worked by self-employed persons and assisting spouses are hours worked per job for employees. These hours are enumerated by the number of jobs for self-employed persons and assisting spouses and adjustments are made on the basis of the number of more hours worked by self-employed persons and assisting spouses compared to hours worked by employees according to the LFS.

For self-employed and assisting spouses, the development in employment and jobs is calculated as a steady development from one structural statistics to another (employed persons in the RAS statistics and the number of jobs in the ERE statistics). However, moving averages from the LFS are used for projections in the period following the latest structural statistics.

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

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

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

In the WTA consistent time series on employment, jobs, hours worked and compensation of employees are compiled. The basics statistics used are adapted and adjusted to achieve agreement between the concepts and definitions used. Below these concepts and definitions are described.

There is an accounting, definitional relation between hours worked, jobs, employment and compensation of employees respectively:

Employment: Employment is an assessment of how many people (headcount) employed at any given time. Employed is, if one has an attachment to a workplace in the form of a job where you at least have one hour of paid work in the reference week. Persons who are temporarily absent due to leave, but who are connected to a workplace in the form of having a job to return to, are counted as being employed. In the WTA as well as the national accounts it is the average number of employed persons in the course of the reference period that are accounted for. For corrections made to employment when the WTA is integrated in the national accounts, please see section 4.7.

1. Employment = number of primary jobs + persons on leave

Job: Jobs shows the number of jobs that are active (excluding temporary absences in the form of eg. maternity or other leave) at any given time. The labour market statistics is a job actively, if there is a minimum of 1 paid hour per week. A job is defined as a person connected to a workplace. The same person can have several jobs at the same time. Explicit series on jobs are not part of the Danish national accounts.

2. Number of jobs = number of primary jobs + number of secondary (or more) jobs

Hours worked: The number of hours worked in the WTA is defined as hours paid by employers, including paid overtime and excluding paid hours of absence. Paid meal breaks are regarded as hours of availability and are included in hours worked. Paid hours of overtime are defined as the number of paid hours that are worked in excess of normal paid hours (i.e. contractual hours) and include extra hours of work for part-time employed without additional overtime pay. Hours worked include hours paid by employers, including the hours in jobs that are not part of the person's primary job. For corrections made to hours worked when the WTA is integrated in the national accounts, please see section 4.7.

3. Actual hours worked = Paid hours adjusted to hours worked using the statistics earnings

Compensation of employees: Compensation of employees in the WTA includes total wages and salaries in cash or in kind which the employer pays to an employee for work performed in an accounting period. Compensation of employees also includes employers' actual or calculated social contributions including contribution to pensions. The compensation of the self-employed and assisting spouses is not included in the WTA. For corrections made to compensation of employees when the WTA is integrated in the national accounts, please see section 4.7.

The margins of statistical uncertainty associated with the working time statistics are related to the statistical uncertainty of the individual primary statistical sources that are used. The conceptual consistency and the uniform adaptation of sources over time contribute to a reduction of the margins of statistical uncertainty in the WTA. Especially, the juxtaposition of information from the primary sources in a joint system of the WTA implies that the results will automatically be compared and thereby reveal, if any, errors and inherent problems of consistency in the basic concepts and data. These errors and inconsistencies are reported back to the primary sources. The work on integrating statistical systems will thus be instrumental in enhancing the general data quality of the primary statistical data.

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

4.2 Borderline cases

The primary source for compensation of employees is the WTA that to a large extent follow the principles of the current SNA/ESA. Wages and salaries in kind (fringe benefits) exclude expenditures that are necessary for the employer in the production process.

Gross operating surplus and mixed income is derived as a residual using value added from balancing GDP(P) and GDP(E). For a description of borderline cases relating to GDP(P) and GDP(E) please see chapters 3 and 5.

For borderline cases concerning taxes on production and imports and subsidies on production, please see sections 4.8 and 4.9

4.3 Valuation

Both compensation of employees and gross operating surplus and mixed income are estimated at factor cost, ie exclusive of other taxes on production and imports and other subsidies on production. Compensation of employees is recorded according to the accrual principle except for bonuses etc., which are recorded when they are due for payment. Gross operating surplus and mixed income are based on an estimate of value added at basic prices as calculated in the balancing of GDP(P) and GDP(E), which is already adjusted to ESA2010 concepts.

The valuation of wages and salaries in kind are described in chapter 7.

Other taxes on production and imports and other subsidies on production are recorded according to the accrual principle as described in section 4.8 and 4.9.

Consumption of fixed capital is estimated as part of the system for compiling fixed capital. Valuation is according to national accounts principles and not company accounts principles, which often use historical cost prices. See also section 4.12.

4.4 Transition from private accounting and administrative concepts to ESA2010 concepts

Table 4.4 is an extract from the process tables and shows the sources used for and the adjustments made to GDP from the income side. The source for compensation of employees is the working time account (WTA) described in section 4.7 which is put in the category “combined data”. Gross operating surplus is compiled as a residual and put in the category “other” except for households (S.14), where gross operating surplus by definition is gross operating surplus in owner occupied dwellings and the source therefore is “dwellings stratification”. Conceptual adjustments are adjustments made to the WTA in order to arrive at the national accounts estimate – they are described in more detail in section 4.7. Exhaustiveness adjustments relate to wages and salaries in kind, “black wages” and mixed income related to N1 producer should have registered, N2 illegal activity and N3 producer not obliged to register. Exhaustiveness adjustments are described in chapter 7.

Table 4.4 Estimation method used for components of GDP according to the income approach, 2012

	Component/institutional sector	Adm. Records	Combined data	Dwellings stratification	Other	Total sources	Conceptual adjustments	Exhaustiv. adjustments	Balancing	Total adjustments	Final estimate
		DKK mill.									
	Compensation of employees		954 386			954 386	9 482	14 622	-975	23 262	977 516
S.11	Non-Financial Corporations		543 027			543 027	3 954	7 508	-975	10 487	553 514
S.12	Financial Corporations		49 989			49 989	-1 355	1 218		-137	49 853
S.13	General government		303 602			303 602	9 278	1 759		11 037	314 639
S.14	Households		33 332			33 332	-728	4 056		3 328	36 660
S.15	NPISH		24 302			24 302	-1 534	82		-145	22 850
	Gross operating surplus			68 834	480 892	549 726		7 104		7 104	556 830
S.11	Non-financial corporations				374 657	374 657		7 104		7 104	381 761
S.12	Financial corporations				49 534	49 534					49 534
S.13	General government				55 926	55 926					55 926
S.14	Households			68 834		68 834					68 834
S.15	NPISH				775	775					775
	Mixed income				73 541	73 541		10 587		10 587	84 128
S.14	Households				73 541	73 541		10 587		10 587	84 128
	Other taxes on production	39 526				39 526					39 526
	Other subsidies on production	34 290				34 290					34 290
	Taxes on products	272 919				272 919					272 919
	Subsidies on products	14 003				14 003					14 003
	GDP										1 882 626

As gross operating surplus and mixed income are based on the estimate of value added from the production side, the adjustments made to ensure compliance with ESA 2010 are described in chapter 3.3.

4.5 The roles of direct and indirect estimation methods and of benchmarks and extrapolations

All income components other than that part of gross operating surplus for which figures are imputed (surplus on the imputed rental value of owner-occupied housing, consumption of fixed capital relating to non-market output, etc.) are in principle estimated directly as income created by the production process.

The estimates of compensation of employees and taxes and subsidies on production are direct estimates of levels based on total coverage of wages and salaries in the primary statistics.

4.6 The main approaches taken with respect to exhaustiveness

The most important explicit allowances for exhaustiveness related to GDP according to the expenditure approach are wages and salaries in kind and the black economy. For a detailed description please see chapter 7.

4.7 Compensation of employees

Compensation of employees includes all payments in cash and in kind that employers pay their employees for the work done. Compensation of employees consists of wages and salaries on the one side and employers social contributions on the other side.

Table 4.3 shows by Nace group how compensation of employees is broken down by wages and salaries in cash, wages and salaries in kind (fringe benefits), employers' actual social contributions and employers' imputed social contributions.

Total compensation of employees amounts to 977.516 mill. DKK. Wages and salaries in cash accounts for the largest part by far. Employers' imputed social contributions relate to civil servants in general government (S.13) and they are estimated using the so-called Freiburg Model.

Table 4.5 Compensation of employees, 2012

Nace		Wages and salaries in cash	Wages and salaries in kind	Employers' actual social contributions	Employers' imputed social contributions	Compensation of employees
		DKK mill.				
A	Agriculture, forestry and fishing	8 409	145	493	0	9 047
B	Mining and quarrying	3 770	127	192	0	4 089
C	Manufacturing	113 986	3 301	6 687	0	123 973
D	Electricity, gas, steam and air cond. supply	5 038	129	675	0	5 842
E	Water supply, sewerage etc.	4 074	83	325	0	4 482
F	Construction	52 634	844	2 833	3	56 314
G	Wholesale and retail trade	128 539	4 049	6 479	0	139 067
H	Transportation and storage	48 840	950	2 990	95	52 875
I	Accommodation and food service activities	16 710	297	574	0	17 582
J	Information and communication	42 293	1 496	2 232	0	46 021
K	Financial and insurance activities	40 603	1 215	7 944	0	49 762
L	Real estate activities	12 017	411	629	1	13 058
M	Professional, scientific and technical activities	58 001	1 628	3 006	14	62 650
N	Administration and support activities	32 517	573	1 868	56	35 014
O	Public administration	61 105	485	6 381	2 813	70 785
P	Education	76 924	492	9 720	787	87 964
Q	Human health	143 258	821	15 702	718	160 499
R	Arts, entertainment	13 412	157	1 093	60	14 722
S	Other service activities	17 187	237	1 440	281	19 145
T	Activities of households as employees	4 398	0	226	0	4 624
	Total	883 758	17 440	71 488	4 829	977 516

Table 4.6 Compensation of employees, 2012

Sector		Wages and salaries in cash	Wages and salaries in kind	Employers' actual social contributions	Employers' imputed social contributions	Compensation of employees
		DKK mill.				
S11	Non-financial corporations	511 856	13 804	24 854	0	553 514
S12	Financial corporations	40 687	1 218	7 947	0	49 853
S13	General government	276 045	1 759	32 006	4 829	314 639
S14	Households	34 686	578	1 396	0	36 660
S15	Non-profit institutions serving househ.	20 483	82	2 285	0	22 850
S1	Total domestic economy	883 757	17 441	71 488	4 829	977 516

4.7.1 Wages and salaries and employers' social contributions

Wages and salaries come in cash and in kind. Wages in cash consists of regular wages plus i.e. commissions, overtime payments, bonuses, payments on public holidays and payments on other holidays. Social contributions, income taxes etc. which fall on the employee are included even when they in practice are kept back for direct payment to relevant authorities by the employer.

Wages and salaries in kind – fringe benefits – consist of products which are provided freely or to reduced price by the employer to the employee as part of the conditions of employment. Wages and salaries in kind are not

necessary in the production process. If they were, they should be treated as intermediate consumption. They are described in more detail in chapter 7.

Employers social contributions consists of the employers payments to secure the employees against social risks and for fulfilments of social needs related to age, disablements and accidents and illness related to work. Employer's social contributions can be actual or imputed. Actual contributions are payments to funded schemes, such as autonomous pension funds or insurance enterprises. Imputed contributions are made in cases where the benefits are paid directly by the employer to the employees (or former employees). Imputed pension benefits relate to civil servants.

Compensation of employees is mainly based on the annual Working Time Accounts (WTA) as described in chapter 4.1.

In order to arrive at compensation of employees according to the national accounts, adjustments to the WTA are made. Table 4.4 shows at the aggregate level the relation between compensation of employees in the WTA and the national accounts.

Table 4.4 Compensation of employees in the WTA and the national accounts, 2012

	DKK mill.
Working Time Accounts	954 386
Alternative or additional sources	24 104
of this, national accounts population	-133
of this, employers' imputed pension contributions	4 829
of this, employers' actual non-pension contributions	2 018
of this, supplement for black wages	3 552
of this, supplements for wages and salaries in kind	11 071
Final harmonisation	-975
Final national accounts estimate	977 515

In the process table for GDP(I) "Alternative or additional sources" are put in the category "other conceptual adjustments" except the of which items "supplement for black wages" and "Supplements for wages and salaries in kind" which are classified according to the relevant N-type. Final harmonisation is put in the category "Balancing".

For certain industries, compensation of employees from the WTA is replaced by *alternative sources*. For example this is done for the financial sector and also for industries partly or fully covered by general government non-market activity.

The *national accounts population* adjustment is made because the WTA includes wages and salaries paid by non-residents.

The calculation of *imputed pension contributions* for civil servants is based on the actual number of active civil servants and the so-called "Freiburg model", which is used for estimating general government's pension obligations.

In addition to employers' actual, social contributions included in the WTA, *actual non-pension contributions* that are not a part of the WTA are accounted for in the national accounts. These adjustments regard industrial injury insurance and shipping company contributions to merchant marines' welfare on board.

In order to obtain the national accounts concept for compensation of employees, non-declared or "*black wages*" are also included. The estimate of black wages is described in chapter 7.

The national accounts estimate partly includes *wages and salaries in kind* (fringe benefits) via the WTA. However, fringe benefits in the WTA are not at valued at market prices as they are based on tax information. Also, certain fringe benefits are not included in the WTA. Therefore a supplement is made to arrive at the national accounts estimate, which is described in chapter 7.

Finally, occasional adjustments ("*final harmonisation*") between industries are made when considering the consistency between output, value added and compensation of employees.

When comparing compensation of employees in the national accounts with compensation of employees in the WTA (and also employment and hours worked) for specific industries, it is important to be aware of the fact that the national accounts uses *activity defined industries* for trade, agriculture, construction, restaurants and auto repair. This means that all production, value added etc. and also compensation of employees and employment consequently are transferred to these industries. The transfers are based on accounting and product statistics.

4.7.2 Employment and actual hours worked

The employment figures in the Danish national accounts comprises number of persons employed and number of actual hours worked. Both the number of employed persons and number of hours worked are - like compensation of employees - based on the WTA.

The employment concept described is the domestic concept, i.e. persons employed by resident producers. This population is almost coherent with the WTA; nevertheless, the WTA includes a few extraterritorial organizations and bodies, which are not considered resident producers in the Danish national accounts (however, so few that rounded off they only show in table 4.4 and not in table 4.5 and 4.6).

Since the WTA only include lawful activity, a correction is made for "black" and "illegal" labour.

The number of employed persons (employees and self-employed) includes persons on maternity leave and other forms of labour market leave as defined in ESA2010. The number of hours worked in the WTA is compiled as the number of paid hours worked. In the national accounts, a supplement for unpaid overtime is made, so that the national accounts encompass all actual hours worked described in ESA2010.

Tables 4.5 and 4.6 shows the relation between employment and hours worked in the WTA and the national accounts.

When *alternative sources* on compensation of employees are used (please see section 4.7.1) the corresponding adjustments on employment and hours worked are made to ensure comparability to the WTA with regards to average earnings and working time per employee.

Final harmonization is national accounts adjustments related to the economic part of the national accounts and correspond to adjustments made to compensation of employees.

Table 4.5 Employment in the WTA and the national accounts, 2012

	1 000 persons
Working Time Accounts	2 695
Alternative or additional sources[1]	46
Of this, supplement for black and illegal activity	40
Final harmonisation[2]	-2
Final national accounts estimate	2 740

[1] WTA includes some non-resident units (primarily extraterritorial entities and bodies)
[2] Final harmonization with regards to production and value added in the remaining NA-system

Table 4.6 Hours worked in the WTA and the national accounts, 2012

	mill. hours worked
Working Time Accounts	3 727
Alternative or additional sources[1]	214
Of this, supplement for black and illegal activity	55
Of this, supplement for unpaid, actual hours worked	151
Final harmonization[2]	-3
Final national accounts estimate	3 939

[1] WTA includes some non-resident units (primarily extraterritorial entities and bodies)
[2] Final harmonization with regards to production and value added in the remaining NA-system

4.8 Taxes on production and imports

Table 4.7 summarises other taxes on production (ESA D.29) in the national accounts for 2012.

Table 4.7 Other taxes on production, 2012

Type of tax	DKK mill.
Employer contributions to *Arbejdsgivernes Elevrefusion* (AER)	5 547
Road charges for heavy trucks	378
Weight duty on vehicles used in production	2 651
Property taxes	24 821
Payroll taxes	5 831
Taxes on pollution	193
Duties paid to the working environment fund	106
Other taxes on production, total	39 526

The AER contribution, which finances apprenticeships and traineeships, does not give the individual employer or employee any rights and is therefore classified as a tax.

The road charges for heavy trucks are linked to input (weight), not products.

The share of total weight duty relating to vehicles used in production is calculated from a breakdown by owner of the total number of vehicles registered. In the national accounts, weight duty on consumers' vehicles is "direct taxes", i.e. taxes on income and wealth etc.

Property taxes are not linked to products.

Payroll taxes are a tax on the wages and salaries paid by financial institutions, to offset the fact that most financial services are exempt from VAT.

Taxes on pollution is tax on waste water (from 2013 and forward also tax on CO_2 emissions).

Duty paid to the working environment fund is a tax paid by relevant institutions to finance the Working Environment Council.

4.9 Subsidies

Subsidies on production which are not linked to products come under both EU and national schemes. Table 4.8 summarises these other subsidies:

Table 4.8 Other subsidies on production, 2012

Type of subsidy	DKK mill.
Other subsidies on production, total	34 290
EU-schemes, total	7 406
Single farm payment	6 635
Environmental subsidies	132
Subsidies for different agricultural products	69
Subsidies for agricultural arrangements	230
Subsidies for ecological production	78
Development and demonstration projects in farms	107
Subsidies related to forestry	47
Other EU-schemes, other subsidies on production	107
Danish schemes, total	26 885
Subsidies for pharmacists	49
Interest-guarentee and -contribution concerning housing conditions	2 477
Municipal subsidies for private sportscentres	361
Municipal subsidies for theatres, orchestras, cinemas etc.	228
Public subsidies for regional orchestras	144
Employers reimbursement system	4 960
Spending according to law on the counties land tax	214
Other municipal busservice and transport	1 486
Small service business support scheme	66
Subsidies for canteens	139
Subsidies for cultural purposes	445
Subsidy for replanting	217
Subsidy related to CO2	49
Flex and sheltered jobs	9 975
Activated recipients of social assistance benefits	801
Regional development	501
The fund for better working environment and labour retention	218
The inclusive labour market	52
Municipal grant for running costs for social housing estates	795
Municipal urban renewal	219
Business development	283
Development of competence and technology	1 162
Innovationsfonden	208
Wage subsidy for hiring insured unemployed	473
Other subsidies related to PSO	188
Other subsidies on production n.e.c	1 173
Other subsidies on production, total	34 290

The subsidy "*Employers reimbursement system"* has a counterpart in other taxes on production. All employers contribute to a pool which finances apprenticeship and trainee places in connection with vocational training. Those employers who employ apprentices and trainees receive a subsidy from the pool.

4.10 Gross operating surplus and 4.11 Mixed income

Gross operating surplus and mixed income is calculated as a residual using gross value added resulting from the balancing of GDP(P) and GDP(E), compensation of employees (described in section 4.7), other taxes on production and imports (described in section 4.8) and other subsidies on production (described in section 4.9).

For owner occupied dwellings (belonging to the household sector, S14) there is by definition only gross operating surplus. The total value for gross operating surplus in households (S14) is identical to gross operating surplus in owner occupied dwellings. The rest is mixed income.

For all sectors except the household sector, gross operating surplus and mixed income is gross operating surplus only.

4.11 Consumption of fixed capital

In general, the estimate of the consumption of fixed capital (CFC) is not relevant to GDP or GNI, since these concepts are, of course, *gross*, i.e. production or income aggregates before deduction of the fixed capital consumed.

There is, however, one very important exception to this main rule, namely non-market activity, where by convention output is calculated from the costs point of view, and where the consumption of fixed capital is one of the components of costs. Non-market activity occurs in Sector S.13, general government and Sector S.15, non-profit institutions serving households. The latter is private non-market output. The vast majority of non-market output comes from government.

As regards the minor share of output from non-market units in S.15, the consumption of fixed capital is calculated as 49.4% of total wages and salaries. This percentage is based on an estimate of capital stock in the sector carried out in 1995, where the latest final figures referred to 1992. This capital stock estimate consisted of a mixture of direct estimates of stocks and PIM (perpetual inventory method) calculations. Since the link between the consumption of fixed capital and total wages and salaries may be assumed to be relatively stable in this field, it was decided to project the 1992 total wages and salaries benchmark in the current calculations of this relatively modest amount.

The description below therefore refers solely to the consumption of fixed capital in S.13, general government.

The description below refers solely to the consumption of fixed capital in S.13, general government and S.15 Non-profit institutions severing households.

In order to make the compilation of the annual national account smoother, it has been decided that the final estimates for consumption of fixed capital for general government should be compiled one year in advance compared with other final figures. Since input to the compilation is not yet final at the compilation time, provisional data sources are used in the estimation. This implies that final figures for CFC are estimated by using provisional data for gross fixed capital formation. The experience has shown that the CFC estimation based on the provisional data sources do not vary significantly to the corresponding the GFCF figures based on final data sources.

General government and NPISH capital stock consists of buildings, structures such as roads, bridges etc., machinery, transport equipment and intangible fixed assets, which for this sector is in practice software. Prior to the introduction of ESA2010, Winfrey curves and straight line depreciation was applied. With the introduction of ESA2010 in September 2014 geometric depreciation method was incorporated into the calculations from the year 2008 and onwards, except from dwellings and non-residential buildings, where geometric depreciation was incorporated from 1995 and onwards. For the new types of capital, Research and Development and Military Weapon Systems, geometric depreciation was applied for the whole time series. The depreciation factor used for estimating consumption of fixed capital by the geometric depreciation approach was derived by using the old service lives and values for “declining balance rate” values used by BEA, if a reasonable corresponding value exist. However, the “declining balance rate” values were also subject to adjustment in order to minimize any break between the old levels and the new calculations with geometric depreciation.

One important strong point in Denmark's estimate is that for buildings and transport equipment the calculations are based on a *direct estimate of stocks* which in turn was based on register information for a benchmark year - in this case 1995 - for non-residential buildings, and every year for transport equipment. In contrast to PIM calculations, there is therefore absolutely no uncertainty as to how many square metres of buildings there actually were in S.13 in 1995. The only uncertainty concerns their lifetimes. For non-residential buildings, the PIM was used to project the 1995 benchmark back to 1966 and forward.

Table 4.9 shows the methods used for each type of capital formation:

Table 4.9 Methods for estimating capital stock in S.13 / S.15

Type	Period	Method	Assumed average service life	Products
Machinery	1966-2007	PIM, Winfrey curves and linaer depreciation	Varying	Approx. 350
Machinery	2008+	PIM, Geometric depreciation	Varying	Approx. 350
Transport equipment	1966-2007	Direct estimate of stocks, Winfrey curves and linaer depreciation	Varying	4
Transport equipment	2008+	Direct estimate of stocks, Geometric depreciation	Varying	4
Non-residential buildings	1966-1995	Direct estimate of stocks for 1995	Varying	2
Non-residential buildings	1995+	PIM, Geometric depreciation	Varying	2
Roads and bridges	1966-2007	PIM, Winfrey curves and linaer depreciation	40 years / 50 years	1
Roads and bridges	2008+	PIM, Geometric depreciation	50 years	1
Software	1966-2007	PIM, Winfrey curves and linaer depreciation	4-6 years	2
Software	2008+	PIM, Geometric depreciation	4-6 years	2
R&D	1966+	PIM, Geometric depreciation	8-12 years	6
Military weapons systems	1966+	PIM, Geometric depreciation	Varying	5

The GNI Committee's task force on consumption on fixed capital on roads, bridges etc. has made some recommendations on this subject. In the following, the Committee's recommendations and Statistics Denmark's practise are described:

- Recommendation 1: Proper distinction between market and non-market GFCF in PIM.
    - Statistics Denmark separates the results of the PIM estimations by institutional sector. CFC compiled by using *direct estimate of stocks* are based on register data which are match with information on institutional sector, which insure a proper distinction between sectors.

- Recommendation 2: Proper distinction of GFCF between activities.
    - This question is addressed in section 5.

- Recommendation 3: Separate GFCF on roads.
    - Statistics Denmark has a separate time series for GFCF on roads.

- Recommendation 4: Consistency of GFCF time series, also for the early years.
    - During the introduction of ESA95 in the Danish national account, a separate time series for gross fixed capital formation and consumption of fixed capital on roads was estimated. This insures a consistent time series for roads. Statistics Denmark publishes figures for capital stock and consumption of fixed capital back to 1966.

- Recommendation 5: Distinguish the main components of infrastructure assets (roads).
    - Statistics Denmark does not have detailed information on the components of roads. In the PIM-estimation on CFC on roads, only a single product is used in the estimation.

- Recommendation 6: Lifetime assumptions should be investigated at least every 5 to 10 years.
    - About 14 years ago Statistics Denmark has for a period of years compared the development in the gross stock on roads and the size of total road network. This investigation has resulted in an

increase in the service life for roads from 40 years to 50 years because the size of the total road network was increasing and but the gross stock was declining.

- Recommendation 7: A bell-shaped retirement function should be used.
    - Statistics Denmark uses a bell-shaped Winfrey L3 retirement function for roads until 2008. With the introduction of ESA2010 and geometric depreciation approach, no retirement function is applied in the calculation of CFC after 2008.

5. The expenditure approach

5.0 GDP according to the expenditure approach

For 2012, the calculation of expenditure-based GDP can be summarised as in table 5.1 below:

Table 5.1 GDP, expenditure approach, 2012

	DKK mill.	pct. of GDP
Total final consumption expenditure	1 410 337	74.9
Household final consumption expenditure	877 971	46.6
NPISH final consumption expenditure	30 731	1.6
General government final consump. expenditure	501 635	26.6
Gross capital formation	370 127	19.7
Gross fixed capital formation	356 786	19.0
Changes in inventories	9 851	0.5
Acquisitions less disposals of valuables	3 490	0.2
Exports of goods and services	1 008 578	53.6
Imports of goods and services	906 417	48.1
GDP	1 882 625	

The table shows that household final consumption expenditure in Denmark made up a little less than half of GDP in 2012, general government final consumption expenditure a good quarter, gross capital formation one-fifth and net exports the final 5.4%. Exports of goods and services accounted for 53.6% and imports 48.1%.

5.1 The reference framework

The most important sources for the estimate of the components of expenditure-based GDP are the following:

Household final consumption expenditure:
Retail trade statistics, DOI (level of retailable consumption)
The FU [household budget survey] (structure of retailable consumption, services)
VAT statistics
Register of housing-related social benefits (Boligstøtteregister)
Housing surveys (housing stock, stratified)
Energy statistics (electricity, gas, district heating)
Statistics on financial institutions (financial services)
Statistics on public finances (user payments to public institutions)
Tax statistics (quantities of goods on which excise duties are levied)
Supply side estimates
Motor vehicle statistics (households' acquisitions of new cars)
Balance of payments statistics (tourist revenue and expenditure)

Final consumption expenditure in NPISHs:
Financial statements from NPISH organisations
General Government Accounts (Private schools who were formerly part of general government)

Gross fixed capital formation:
Agricultural statistics
Public finance statistics
Accounts statistics for industries predominated by public corporations
Register of buildings and dwellings (BBR)
Index of construction costs
Product statistics for the IT industries
ICT expenditure
External trade statistics
Account statistics for non-agricultural private sector
Specific industry statistics

Media statistics
Register of motor vehicles
Register of vessels
Register of aircrafts

Research and Development
R&D statistics
External trade statistics

Acquisitions less disposals of valuables:
Industrial commodity statistics
External trade statistics
Household budget survey (FU)

Changes in inventories:
Account statistics for non-agricultural private sector
Tax accounts
Accounting statistics for industries where public corporations predominate
Specific industry statistics, including agricultural statistics
Energy statistics
Agricultural statistics

Imports and exports of goods and services:
External trade statistics (Intrastat and Extrastat)
Balance of payments statistics

For some consumption groups of household final consumption expenditure, more than one source is available. In these cases, an assessment of which source is the most reliable for estimating the variable (consumption group) has been made. The assessment mainly relates to whether the household budget survey (FU) should be replaced by another source.

It is widely known that information in the household budget survey is surrounded by a good deal of uncertainty when it comes to items based on households' own accounting, i.e. in general small items of expenditure, as opposed to those items where an interviewer notes expenditure as evidenced by supporting documents, which are typically the larger items. When the survey is processed, everything possible is done to eliminate any bias resulting from differential non-response. However, it must be admitted, that there is a good deal of uncertainty surrounding the figures which households themselves have recorded.

Against this background, the main rule in the Danish national accounts has been that wherever possible the FU has been replaced by other information to *determine levels*, but it is widely used to determine the structure of expenditure – for the breakdown of food consumption into individual foodstuffs, for example. In various important cases, the FU is the only available source, but in the vast majority of such cases the items concerned are consumption items where, firstly, an interviewer has recorded expenditure from the household's supporting documents and, secondly, the expenditure concerned is common to virtually all households. These two circumstances are characteristic of those items in the survey which can be determined with a good deal of certainty. The fact that an interviewer has seen the supporting documents – telephone bills, for example – rules out the risk of items being forgotten, and the fact that this is general, recurrent expenditure for almost all households means that the sampling uncertainty for the items in question is relatively low. In these cases, FU figures are quite justifiably used to determine levels in the national accounts.

For retailable consumption, i.e. that share of private final consumption which passes through retail trade, the FU figures are replaced by retail sales figures which must be considered a much better statistical source for determining levels of private consumption. But this source is not sufficiently detailed to enable it to be used as the basis for the breakdown of expenditure into the national accounts consumption groups. The FU figures are therefore used to divide the aggregate groups from retail sales statistics into the detailed consumption groups. For this breakdown, the FU figures for the consumption of alcohol and tobacco etc. are replaced by figures based on tax/duty-adjusted quantities. For these expenditure items, the FU figures are known to be very much underestimated.

For energy products and acquisitions of motor vehicles, there is special information available based on physical data. In these cases, the FU figures are replaced either when the initial estimates of private consumption of the expenditure components in question are made, or later during the balancing process. The FU figures for the consumption of hotel and restaurant services are also known to be seriously underestimated. For these groups, the initial household consumption estimate is therefore based on supply, i.e. sales in hotels and restaurants, the starting point being that share of the supply which was allocated to household consumption in the most recent final national accounts. A detailed description of sources and methods underlying the initial estimates for the individual consumption groups can be found in Section 5.7.

5.2 The border line cases

5.2.1 The borderline cases for HFCE

Household final consumption expenditures on dwelling services are covered by two consumption groups 04100 Rents and 04200 Imputed rents for owner-occupiers. Both these groups are based on supply side estimates. Thus the production value of industry 680023 Renting of residential buildings, is also the HFCE value for consumption group 04100, and the production value of industry 680024, Owner-occupied dwellings, is also the value of consumption group 04200, imputed rents for owner-occupiers.

Wages and salaries include all income received by employed persons including income in kind. The Danish tax authorities generally do not distinguish between income in cash and income in kind. In general the data on wages and salaries received from the tax authorities include salary in kind. There are some special cases where salaries in kind are not part of the taxable income and therefore not included in the data from the tax authorities, e.g. internet connections with access to the company network. In these cases a supplementary calculations is made to account for this. Also in some case the taxable value of a fringe benefit is lower than the market value. In these cases a mark-up is calculated to reflect the market value when calculating the value of the fringe benefit.

In the agriculture industry there are additions to the production of livestock, milk and eggs to account for the retained consumption of these products by members of the household. These mark-ups are then recorded as consumption in the relevant consumption groups.

Materials for minor repairs to and interior decoration of dwellings of are covered by the household budget survey (FU), where there are questions regarding a series of purchases related to these activities e.g. wallpaper, paints and other materials for maintenance work.

The value of any goods purchased under hire-purchase agreements is included in the estimate of HFCE as the source of the level of HFCE is based on the retail turn-over statistics, which record the sale of retail goods to households including sales that are made under hire-purchase agreements.

In the household budget survey there are specific questions regarding the purchase and sales of used/second hand goods for durable and semi-durable goods. This enables us to estimate correctly the net purchase of these types of goods. For non-durables the purchase and sales of second hand goods negligible and therefore these are not considered important.

For information regarding the calculation of FISIM, insurance services used for HFCE, the implicit service charge for pension funding services and direct payments from insurer to repairer please refer to chapters 5.7.3 and 3.4. All of these calculations are made in a special subsystem, where detailed information on e.g. insurance is available. This facilitates the distribution of insurance to household final consumption and intermediate consumption respectively thus ensuring that the part of insurance paid by the consumers (e.g. home insurance) is actually recorded as HFCE. The calculations are based on accounts from insurance and financial institutions which facilitate the calculation of the implicit service charge as detailed information on premiums and claims.

Car registration taxes are part of product taxes. The car registration tax is placed on a handful of goods in the SUT namely V870303 Passenger Cars, V870305 Used passenger cars, V870410 Trucks less than 5 tons and V871103 Motorcycles and mopeds. Apart from V870410 Trucks less than 5 tons these goods are for a big part

going to private household consumption and thus the car registration taxes are also being placed as household consumption.

From the public accounts division a data file is received with the public sector accounts coded according to national accounts definitions. This general government accounts statistics contains information on among other expenditures by type, i.e. transfers in kind e.g. have a special code in the accounts as does service charges etc. In the SUT the service charges are placed on special products labelled sales income (Salgsindtægter in Danish) and they are on the use side being recorded as intermediate consumption or HFCE. The expenditures labelled social transfers in kind are used to establish the totals for general government final consumption in the SUT. The detailed information thus available ensures the proper allocation of the items from the general government accounts. The detailed information also insures that taxes are not treated as HFCE.

In the SUT the production of NPISH is placed on separate product numbers. The production of these products is then recorded as NPISH final consumption thereby ensuring they are not recorded as HFCE.

5.2.2 The borderline cases for GFCF

Information on changes in livestock used in production year after year is available from the agricultural accounts produced within Statistics Denmark and these are used for GFCF for livestock.

Information in the changes in trees that are cultivated year after year is available from the publication Forest and plantations (in Danish Skove og plantager) from University of Copenhagen. Information on increments in growing stocks is only available every 4 to 5 years. When this information is not available the average increment in the last period is used.

For the borderline cases concerning please refer to chapters 3 and 5.10.

5.3 Valuation

When the final demand components are estimated directly from the point of view of the purchaser, the observed value level is purchasers' prices including non-refundable VAT, as required by the ESA2010. In these cases, there is no need to process primary data to obtain value levels. In all other cases, for example when a final demand component is estimated from the supply side, it is ensured that proper trade margins, product taxes and -subsidies and VAT are included. This is typically done as part of setting up product balances.

For own-produced products the value is calculated as the sales price of the product times the volume. For instance in the case of the consumption of own-produced eggs the value is calculated as the volume of own-produced eggs times the price the farmer receives when selling his eggs thus ensuring the price level being basic prices.

Data on gross fixed capital formation is taken form accounting statistics. Data is thus readily available in purchasers’ prices and there is no need for additional corrections. Regarding own account gross fixed capital formation the international recommendations in the Frascati manual is applied ensuring the correct valuation of these.

In the national accounts, exports of goods are based directly on Statistics Denmark’s estimates of external trade. The value levels in external trade statistics are f.o.b. for exports and c.i.f. for imports. Please refer to sections 5.13-5.16 and section 10.4 for further information

5.4 Transition from private accounting and administrative concepts to ESA2010 national accounting concepts

In household and business accounts, purchases of goods and services are recorded in terms of purchasers' prices including non-refundable VAT. Refundable VAT is not included in the acquisition prices, on which information is available, which is consistent with the ESA 2010 net VAT system.

Various acquisitions which the national accounts treat as gross fixed capital formation are included in business accounts as current operating expenditure in the form of intermediate consumption or wages and salaries which

are not capitalised. Examples would be consumables as well as purchased and own-produced software. The corrections which have to be made to bring business accounts into line with national accounts concepts were described in Chapter 3 as part of the description of the output-based estimate of GDP. The corrections on the expenditure side are a mirror image of the corrections to output value (e.g. own-produced software) and intermediate consumption (consumables and purchased software) in the output-based estimate. The logical corrections to the output, expenditure and income sides are made simultaneously for the intermediate system, as described in chapter 3.4. Regarding the valuation of inventories please refer to chapters 3.4 and 5.11.

5.5 The role of direct and indirect estimation methods and of benchmarks and extrapolations

By far the largest share of expenditure-based GDP is calculated using a direct estimate. The most important exceptions are household consumption of hotel and restaurant services, dwelling services, consumption in NPISH, which are all calculated indirectly from the supply side.

Other than for those areas of the economy (general government, owner-occupied dwellings, NPISH), where the output- and expenditure-based calculations cannot by definition be independent, GDP from the production side and GDP from the expenditure side are largely independent of one another prior to balancing.

Acquisitions less disposables can in principle be estimated in two ways, either directly using information on the expenditure (uses) side (purchaser's side) or indirectly on the basis of supplies of products to the domestic market, using estimated shares of supplies to the final demand components to calculate final uses from the resources side.

In the Danish national accounts, the initial estimates for the final demand components are compiled as direct estimates from the expenditure side.

Since the Danish national accounts are adjusted in a detailed product balance system, there is a systematic confrontation in connection with the balancing. One of the strongest cross-checks for the compilation of national accounts consists in comparing information from purchasers on their acquisitions less disposals of the individual products or groups of products with information on the sellers' side on supplies to the domestic market.

Regarding the estimation of black economy data are based on survey data obtained from supplementary questions asked once a year in connection with the LFS. Please refer to chapter 7 for more details.

Table 5.2 Estimation method used for GDP expenditure approach, 2012

	Survey censuses	Adm. Records	Combined data	Benchm. extrapol.	Commodity Flow Model	CFC (PIM)	Dwellings Stratific. Method	FISIM	Other E&M	Other	Total
	DKK mill.										
National account industry											
Househ. final consumpt. exp.	342 932	78 622	0	0	243 997	0	173 002	0	0	0	838 553
01 – Food and non-alc. bev.	79 301	19 186	0	0	0	0	0	0	0	0	98 487
02 – Alc. bev., tobacco and narc.	0	29 299	0	0	0	0	0	0	0	0	29 299
03 – Clothing and footwear	38 747	0	0	0	0	0	0	0	0	0	38 747
04 – Housing, water elect. etc.	4 636	0	0	0	79 651	0	173 002	0	0	0	257 290
05 – Furnishings etc.	39 314	0	0	0	1 727	0	0	0	0	0	41 042
06 - Health	22 114	0	0	0	3 962	0	0	0	0	0	26 075
07 – Transport	36 304	30 137	0	0	27 176	0	0	0	0	0	93 617
08 - Communication	17 971	0	0	0	0	0	0	0	0	0	17 971
09 – Recreation and culture	80 260	0	0	0	12 678	0	0	0	0	0	92 938
10 – Education	0	0	0	0	6 513	0	0	0	0	0	6 513
11 – Restaurants and hotels	0	0	0	0	42 761	0	0	0	0	0	42 761
12 – Misc. Goods and services	24 480	0	0	0	69 528	0	0	0	0	0	94 009
NPISH final consumpt. exp.	0	7 823	22 115	0	0	793	0	0	0	0	30 731
Gen. gov. final consumpt. exp.	0	423 777	0	0	0	55 926	0	0	0	0	479 703
Gross fixed capital formation	83 758	71 103	90 547	7 426	3 528	0	0	0	104 288	-714	359 936
111 Dwellings	0	0	0	0	0	0	0	0	76 578	0	76 578
112 Other buildings and struct.	25 118	37 496	24 525	118	0	0	0	0	0	-3051	84 206
113 Machinery and equipm.	20 141	11 714	66 022	7 308	0	0	0	0	0	0	105 185
114 Weapon systems	0	1 462	0	0	0	0	0	0	0	0	1 462
115 Cultivated biol. resources	-77	0	0	0	0	0	0	0	0	0	-77
117 Intell. property products	38 577	20 431	0	0	3 528	0	0	0	27 710	2 337	92 583
Changes in inventories	4 331	0	-3 663	0	0	0	0	0	126	-859	-66
- materials and supplies	1 382	0	-3 273	0	0	0	0	0	126	-859	- 2 624
- work-in-progress	1 189	0	0	0	0	0	0	0	0	0	1 189
- finished goods	0	0	-390	0	0	0	0	0	0	0	-390
- goods for resale	1 760	0	0	0	0	0	0	0	0	0	1 760
Acq. less disposals of valuables	0	0	0	0	3 490	0	0	0	0	0	3 490
Exports of goods and services	0	0	0	0	0	0	0	0	0		1 003 151
goods	0	0	0	0	0	0	0	0	0		613 324
services	0	0	0	0	0	0	0	0	0		389 827
Imports of goods and services	0	0	0	0	0	0	0	0	0		868 029
goods	0	0	0	0	0	0	0	0	0		528 678
services	0	0	0	0	0	0	0	0	0		339 351

5.6 The main approaches taken with respect to exhaustiveness

As regards the legitimate (as opposed to the black) economy excluding fringe benefits, the most important steps taken are corrections and supplements to the sources underlying the calculations of household consumption expenditure. Retail sales statistics do not cover all industries of retail trade. In the national accounts calculations, these statistics are therefore supplemented by VAT statistics to ensure that the whole of retail trade is covered, as described in section 5.7.

The calculations of fringe benefits, the black economy and illegal activities are discussed in chapter 7.

5.7 Household final consumption expenditure (HFCE)

5.7.1 Overview

Various sources are used to provide information on household final consumption expenditure. The two most important are:

- The retail index (Danish abbreviation DOI), which contains information on level of sales to private individuals, and
- The household budget survey (Danish abbreviation FU)

Section 5.7.2 describes in detail how the FU and DOI are combined and used to the three main groups of goods in DOI:

1. Food, beverages and tobacco and convenience goods
2. Clothing etc.
3. Other consumer goods.

For non-retail consumption, i.e. other goods and all services, the preferred source is in general the FU with a number of corrections. In cases where the FU is known to cause problems, supply statistics are used, i.e. supplies of certain product balances and the commodity flow method or alternatively, the balanced consumption group as in the early versions of the provisional national accounts.

Table 5.3 shows the main source, estimation method and value for each of the 74 consumption groups in the national accounts' most detailed consumption grouping. The estimation methods are described in section 5.7.2. The following abbreviations are used:

DOI:	Retail turnover index
FU:	Uncorrected household budget survey
FU corr.:	Household budget survey with certain – in most cases conceptual – corrections
FU + product:	Household budget survey plus a product balance
Supply:	Supply-side estimates using commodity flow method
FNR:	Balanced values for the latest provisional national accounts calculated in year t+1
BB:	Balance of payments statistics
Energy:	The energy sub-system which compiles supply and use of energy products

Table 5.3 Statistical sources for the national accounts estimates of household final consumption expenditure, 2012

		Source	Estimation method	Value
				DKK mill.
Consumption group				
01110	Bread and cereals	FU/DOI	Grossed up FU	13 354
01120	Meat	FU/DOI	Grossed up FU	21 265
01130	Fish	FU/DOI	Grossed up FU	3 753
01141	Eggs	FU/DOI	Grossed up FU	1 370
01142	Milk, cream, yoghurt etc.	FU/DOI	Grossed up FU	7 522
01143	Cheese	FU/DOI	Grossed up FU	5 076
01150	Oils and fats	FU/DOI	Grossed up FU	3 111
01167	Fruit and vegetables except potatoes	FU/DOI	Grossed up FU	14 373
01179	Potatoes etc.	FU/DOI	Grossed up FU	1 961
01181	Sugar	FU/DOI	Grossed up FU	601
01182	Ice cream, chocolate and confectionery	FNR	Balanced preliminary accounts	12 764
01190	Food products n.e.c.	FU/DOI	Grossed up FU	4 359
01210	Coffee, tea and cocoa	FU/DOI	Grossed up FU	3 864
01220	Mineral waters, soft drinks, fruit and vegetable juices	FNR	Balanced preliminary accounts	7 776
02112	Spirits and wine	FNR	Balanced preliminary accounts	9 941
02130	Beer	FNR	Balanced preliminary accounts	4 992
02900	Tobacco etc.	FNR	Balanced preliminary accounts	18 547
03113	Articles of clothing	FU/DOI	Grossed up FU	31 334
03140	Cleaning, repair and hire of clothing	FU corr	Corrected FU	457
03200	Footwear	FU/DOI	Grossed up FU	7 857
04100	Actual rentals for housing	Supply	Supply-side estimate	66 325
04200	Imputed rentals for housing	Supply	Supply-side estimate	108 821

Table 5.3 Statistical sources for the national accounts estimates of household final consumption expenditure, 2012, cont.

		Source	Estimation method	Value
				DKK mill.
04300	Maintenance and repair of the dwelling	FU	FU	7 447
04401	Water supply and sewerage services	FU	FU	13 994
04402	Refuse collection, other services n.e.c.	Supply	Supply-side estimate	6 546
04510	Electricity	Energy	Use in energy sub-system	22 709
04520	Gas	Energy	Use in energy sub-system	6 481
04530	Liquid fuels	Energy	Use in energy sub-system	4 780
04545	Hot water, steam etc.	Energy	Use in energy sub-system	22 645
05100	Furniture, furnishing, carpets etc.	FU/DOI	Grossed up FU	16 170
05200	Household textiles	FU/DOI	Grossed up FU	3 690
05312	Household appliances	FU/DOI	Grossed up FU	6 954
05330	Repair of major household appliances	FU	FU	440
05400	Glassware, tableware and household utensils	FU/DOI	Grossed up FU	4 601
05500	Tools and equipment for house and gardens	FU/DOI	Grossed up FU	4 192
05610	Non-durable household goods	FU/DOI	Grossed up FU	3 717
05620	Domestic services and home care services	Supply	Supply-side estimate	2 567
06112	Pharmaceutical products and other medical products	FU/DOI	Grossed up FU	7 780
06130	Therapeutic appliances and equipment	FU/DOI	Grossed up FU	3 463
06200	Out-patient services	FU		10 477
06300	Hospital services	Supply	Supply-side estimate	3 732
07100	Purchase of vehicles	FNR	Balanced preliminary accounts	29 910
07213	Maintenance and repair of vehicles	FU corr	Corrected FU	19 615
07220	Fuels and lubricants for personal transport equipment	Energy	Use in energy sub-system	26 794
07240	Other services in respect of personal transport equipment	FU corr	Corrected FU	11 396
07300	Transport services	FU corr	Corrected FU	12 436
08100	Postal services	FU corr	Corrected FU	317
08200	Telephone and data communication equipment	FU	FU	2 943
08300	Telephone and data communication services	FU	FU	15 301
09110	Radio and television sets etc.	FU/DOI	Grossed up FU	7 642
09120	Photographic equipment etc.	FU/DOI	Grossed up FU	1 398
09130	Data processing equipment	FU/DOI	Grossed up FU	7 056
09140	Recording media for pictures and sound	FU/DOI	Grossed up FU	2 247
09150	Repair of a/v and data processing equipment	FU	FU	823
09200	Other major durables for recreation and culture	FU/DOI	Grossed up FU	3 697
09300	Other recreational items and equipment, gardens and pets	FU/DOI	Grossed up FU	17 984
09400	Recreational and cultural services	FU corr	Corrected FU	31 626
09513	Books, newspapers, periodicals and misc. printed matter	FU/DOI	Grossed up FU	8 780
09530	Stationery and drawing materials etc.	FU/DOI	Grossed up FU	1 001
09600	Package holidays	Supply	Supply-side estimate	13 670
10000	Education	Supply	Supply-side estimate	6 571
11100	Catering services	FNR	Balanced preliminary accounts	41 789
11200	Accommodation services	FNR	Balanced preliminary accounts	7 001
12110	Hairdressing salons and personal grooming establishments	FU corr	Corrected FU	7 004
12123	Appliances, articles and products for personal care	FU/DOI	Grossed up FU	10 240
12310	Jewellery, clocks and watches	FU/DOI	Grossed up FU	1 677
12320	Other personal effects	FU/DOI	Grossed up FU	3 479
12401	Retirement homes, day-care centres etc.	Supply	Supply-side estimate	4 314
12402	Kindergartens, crèches etc.	Supply	Supply-side estimate	11 038
12500	Insurance	Supply	Supply-side estimate	19 789
12600	Financial services n.e.c.	Supply	Supply-side estimate	40 310
12700	Other services n.e.c.	FU + product	FU + product balance	8 289
99800	Final consumption of non-residents on the economic territory	BB	Balance of Payment data	-38 863
99900	Final consumption of residents in the ROW	BB	Balance of Payment data	38 894

5.7.2 Main data sources and their conversion to national accounts results

As stated in section 5.7.1, various sources are used to provide information on household final consumption expenditure, and the two most important are:

- The retail index (Danish abbreviation DOI), which contains information on level of sales to private individuals, and
- The household budget survey (Danish abbreviation FU)

Although the first of these sources is officially referred to as the "retail turnover index" (DOI), it is in fact a monthly estimate of the level of retail turnover. To calculate the index, turnover in the sample is grossed up to cover the total population of retail trade enterprises. The national account uses the DOI levels for compiling household consumption expenditure.

The DOI breaks down retail into three categories, namely:

- sales to private individuals
- sales to (market producers) enterprises
- sales to (non-market) public institutions

This breakdown is important, since only sales to private individuals are relevant to the estimate of household final consumption expenditure. If the only sales known were total sales in retail enterprises, the calculation would be less reliable. The minor share of sales reported as being to private individuals, but which are actually to sole proprietorships, and should therefore not be included are assumed for practical purposes to offset the minor share of sales from manufacturing and wholesale enterprises to private individuals, which also should be included in the estimate of household final consumption expenditure.

The main idea behind the calculation system is a breakdown of household consumption expenditure into groups by purpose/products, each group being calculated on the basis of the most reliable of the available sources, but in a way which seeks to make optimum use of all available information. The basic breakdown of household consumption expenditure is into retail and non-retail consumption expenditure. The former is the share of final consumption expenditure of goods which involves retail trade. In this context, retail trade excludes motor vehicles etc. and energy goods, which are not covered by the DOI.

Sales to private individuals as taken from the DOI are normally considered the best source of information on household final consumption expenditure. In particular, this source is not subject to the same sampling uncertainty and problems with the treatment of tourist expenditure and other possible skewness as the FU. The enterprises are sampled on the basis of yearly turnover, based on VAT-declarations to the Tax administrations. In the sample all enterprises with a turnover of more than 20 million DKK/year (ex VAT) are included. The remaining sample is based on stratified random selection. The total sample size was approximately 3.500 enterprises on 1 January 2014. The sample is renewed by 1/4 to 1/3 every year. The breakdown of goods in DOI is not very detailed. DOI breaks down sales into three main groups of goods:

1. food, beverages, tobacco and convenience goods (FD)
2. clothing etc (B)
3. other consumer goods (A)

For the national accounts, target totals have to be worked out at a much more detailed level. The next stage is therefore to use the FU to split the main groups of goods into subgroups. The view taken here is that the FU is essentially more reliable as a distribution key than as an estimate of levels. There are exceptions, however, where the FU is known to give a misleading picture of consumption expenditure.

Both the DOI and the FU is in purchasers' prices including VAT, i.e. the value relevant to household final consumption expenditure. Consequently, no valuation correction is needed.

The calculation for the national accounts consumption groups based on DOI and FU can be broken down in following steps:

Step 1: Link between the three main groups in DOI and the national accounts consumption groups

It is necessary to create a link between the three main groups from the DOI and the national accounts consumption groups. The following links were adopted between the national accounts consumption groups defined by purpose - c.f. Section 9.1, table 9.2 - and main groups of goods in the DOI:

FD - Food, beverages and tobacco, convenience goods:

01110 Bread and cereals
01120 Meat

01130 Fish
01141 Eggs
01142 Milk, cream, yoghurt etc.
01143 Cheese
01150 Oils and fats
01167 Fruit and vegetables except potatoes
01181 Sugar
01182 Ice cream, chocolate and confectionery
01190 Food products n.e.c.
01210 Coffee, tea and cocoa
01220 Mineral water, soft drinks, fruit and vegetable juices
02112 Spirits and wine
02130 Beer
02900 Tobacco etc.
05610 Non-durable household goods
12123 Appliances, articles and products for personal care

B - Clothing:
03113 Articles of clothing
03200 Footwear

A - Other consumer goods
05100 Furniture, furnishing, carpets etc.
05200 Household textiles
05312 Household appliances
05400 Glass, tableware and household utensils
05500 Tools and equipment for house and garden
06112 Pharmaceutical products and other medical products
06130 Therapeutic appliances and equipment
09110 Radio and television sets etc.
09120 Photographic equipment etc.
09130 Data processing equipment
09140 Recording media for pictures and sound
09200 Other major durables for recreation and culture
09300 Other recreational items and equipment, gardens and pets
09514 Books, newspapers, periodicals and misc. printed matter
09530 Stationery and drawing materials etc.
12310 Jewellery, clocks and watches
12320 Other personal effects

Step 2: Adding retail trade industries not covered by DOI and deducting goods used as input in construction

The DOI does not cover all retail trade industries (outside the motor vehicle group and energy). As a first step, the missing DK-NACE retail trade industries are identified and their VAT sales are used instead. VAT sales multiplied by one plus the VAT rate is as a general rule assumed to be equivalent to DOI sales to private consumers. The following detailed NACE industries are used:

43.21.00 Electrical installation
47.41.00 Retail sale of computers, peripheral units and software in specialized stores
47.42.00 Retail sale of telecommunications equipment in specialized stores
47.52.10 Retail sales of paints, varnishes and lacquers
47.52.20 DIY centres and tool stores
47.59.40 Retail sale of musical instrument
47.59.90 Retail sale of furniture, lighting equipment and household articles n.e.c. in specialized stores
47.65.00 Retail sale of games and toys in specialized stores
47.73.00 Dispensing chemist in specialized stores
47.74.00 Retail sale of medical and orthopaedic goods in specialized stores
47.76.30 Retail sale of pet animals and pet food

47.78.40 Activities of commercial art galleries
47.78.90 Retail sale of other goods n.e.c.
47.81.00 Retail sale via stalls and markets of foods, beverages and tobacco products
47.82.00 Retail sale via stalls and markets of textiles, clothing and footwear
47.89.00 Retail sale via stalls and markets of other goods

The major part of these industries are used in full, however there are some exceptions as described below:

For the very large industry 47.41.00 Retail sale of computers, peripheral units and software in specialized stores, it is assumed that only 85% of VAT sales are to private consumers. This percentage is based on the high level of household consumption of PCs which emerged from the FU over a number of years, an item which is subject to a great deal of sampling uncertainty in any given year.

The DOI covers “do-it-yourself centres” (DIY centres) and paint and wallpaper shops. Most sales in these units, however, are goods used for input in construction and not household consumption expenditure. Only 5% of sales are assumed to be household consumption expenditure and the remaining 95% to be input in construction. The latter share, including VAT, is deducted from sales to households as consumers according to DOI on the basis of VAT sales in 47.52.10 Retail sales of paints, varnishes and lacquers and 47.52.20 DIY centres and tool stores. However, with these percentages it should be remembered that all materials for repair and maintenance of buildings in the Danish national accounts are channelled through the special materials industry 430004, as described in chapter 3.12. The shares of expenditure on materials, which goes to ordinary minor repair and maintenance of dwellings, and which is normally the responsibility of tenants, and the corresponding share for owner-occupiers, are lumped together under consumption in households under the product balance "building repairs".

Step 3: Grossing up the household budget survey

For any given year, the FU is grossed up by the national accounts division using the method recommended by the primary statistics division. The Danish FU includes a correction for differential non-response in the individual strata. The reason is that in Denmark it is possible to use income information from register data relating to households in the sample, thus ensuring that all income groups are correctly represented in the grossing up.

Step 4: National accounts coding of the FU and extra grossing up

A key is established to convert from the FU product codes to the national accounts consumption groups and the grossed up FU is aggregated to consumption groups. A correction is also made for definitional differences between the national accounts and the FU (insurance, gambling, etc.). There is then an extra grossing up to correct for any skewness in the FU's average household size and persons not living in households. The correction factor is calculated as the average number of persons in the country in the reference year divided by the number of persons covered by the FU.

The “extra grossed up FU” is used as the only source and without any further adjustments for consumption groups:

04300 Maintenance and repair of dwelling
04401 Water supply and sewerage services
05330 Repair of major household appliances
08200 Telephone and data communication equipment
08300 Telephone and data communication services
09150 Repair of a/v and data processing equipment

Step 5: Creating a distribution for the DOI, supplemented and corrected for, and for the FU

For each of the three main groups of goods in DOI, the initial estimate is equal to the value of retail sales to private consumers taken from the DOI as supplemented and corrected. Within each of the main groups of goods, the totals are distributed over the individual consumption groups as shown in step 1 in proportion to the FU distribution (the extra grossed up FU from step 4. The FU figures are grossed up/down so that the totals match the supplemented and corrected DOI. But five groups where the FU figures are systematically skew are not included. These are 01182 Ice cream, chocolate and confectionary, 01220 Mineral waters, soft drinks, fruits and vegetable juices, 02112 Spirits and wine, 02130 Beer and 02900 Tobacco etc.

Figures are added for farmers' consumption of own products and direct sales to private consumers in consumption groups 01120 Meat, 01141 Eggs and 01142 Milk, cream, yoghurt, etc. The source is agricultural statistics. The consumption of own products by other economic operators, as assessed for tax purposes, is considered to be covered via the DOI's VAT-based grossing up. During a subsequent step, there is an allowance for fringe benefits, black and illegal activity.

Step 6: Initial values based on the provisional national accounts

The following consumption groups initial value is based on the provisional accounts calculated in year t+1:

01182 Ice cream, chocolate and confectionary
01220 Mineral waters, soft drinks, fruit and vegetable juices
02112 Spirits and wine
02130 Beer
02900 Tobacco etc.
07100 Purchase of vehicles

The goods covered by these consumption groups are all imposed by product taxes, and information about the taxed quantities combined by the tax rules are the basis for the estimates of household consumption. When the provisional accounts are less detailed, they are broken down to the detailed final accounts consumption groups using the latest final year.

Step 7: Allocation of consumption of non-resident (tourist income)

When the target totals are calculated on the basis of the FU, purchases by foreign tourists in Denmark is not included in the consumption expenditure on the economic territory. In order to incorporate this expenditure in the relevant consumption groups a correction is made on the basis of input/output multipliers. The following consumption groups based on the FU are corrected for tourist expenditure:

03140 Cleaning, repair and hire of clothing.
06200 Out-patient services
07213 Maintenance and repairs of mother vehicles
07240 Other services in respect of personal transport equipment
07300 Transport services
08100 Postal services
09400 Recreational and cultural services

Step 8: Consumption groups estimated from the supply side

For various consumption groups, the best initial estimate is obtained by using supply values either directly or as a supplement to the FU. In some of these groups household final consumption is the only - or at least the dominant - domestic use of the products in question; within insurance and financial services, household final consumption is determined in the subsystems in which the entire balances of supply and use are compiled for each product. The following consumption groups are covered by supply side estimates:

04100 Actual rentals for housing
04200 Imputed rentals for housing
05620 Domestic services and home care services
06300 Hospital services
09600 Package holidays
10000 Education
12401 Retirement homes, day-care centres etc.
12402 Kindergartens, crèches etc.
12500 Insurance
12600 Financial services n.e.c.

Step 9: Water and energy

Initial estimates for the consumption groups are obtained from the products balances for energy products compiled in the special “energy sub system”:

04510 Electricity
04520 Gas
04530 Liquid fuels
04545 Hot water, steam etc.
07220 Fuels and lubricants for personal transport equipment

Step 10: Tourist expenditure and –income

Consumption groups 99800 (P34) Final consumption of non-residents on the economic territory and 99900 (P33) Final consumption of residents in the ROW, which is the same as tourist income and –expenditure, are given from the balance of payment import and export of services, that are described in sections 5.14 and 5.16.

Step 11: Inclusion of fringe benefits, black and illegal activity

After the above described calculations, fringe benefits and expenditure on black and illegal activities are added to relevant consumption groups. There is no explicit adjustment made to exclude items used as intermediate consumption of producers of illegal activities, since this is assumed to be a minor issue. The calculation of fringe benefits, black and illegal activities is described in section 7.

Step 12: Balancing correction based on experience

Finally, the values for the individual consumption groups are multiplied by a set of factors which are determined by experience with the balancing of the national accounts during previous year (t-1). When the initial estimates are made, account is taken of any known bias in the estimate of the individual consumption groups based on sources from the expenditure (uses) side. If, for example, the first of the consumption groups, 01110, bread and cereals, was adjusted in the latest final national accounts to a value which was two percent above the initial estimate, the level obtained from Step 9 is multiplied by a factor of 1.02 when the final initial estimate is worked out for household consumption of group 01110.

Step 13: Balancing in the framework of the national accounts product balance system

The target totals as described in step 1-12 for household consumption expenditure are included with the other estimates for the supply and use components in the balancing of the national accounts. In Denmark's case, supply and use or, equivalently, GDP as compiled from the output and expenditure angles – are balanced in a very detailed product balance system covering around 2.530 products. The product balance system is further described in section 6.1.

Table 5.4 shows the grossed up household budget survey (step 4), the target totals (step 10), adjustment to exhaustiveness (step 11) and the balanced final value (step 13).

Table 5.4 Initial estimates and final balanced value for the household consumption by COICOP, and the grossed up household budget survey, 2012

		FU	Target totals	Exhaustiveness	Final balanced value
		DKK mill.			
Consumption group					
01110	Bread and cereals	14 277	13 361	26	13 354
01120	Meat	21 881	20 893	45	21 265
01130	Fish	4 780	3 763	13	3 753
01141	Eggs	1 477	1 295	22	1 370
01142	Milk, cream, yoghurt etc.	6 659	7 588	12	7 522
01143	Cheese	5 090	4 925	0	5 076
01150	Oils and fats	2 424	2 967	0	3 111
01167	Fruit and vegetables except potatoes	16 808	14 031	160	14 373
01179	Potatoes etc.	1 950	1 897	0	1 961
01181	Sugar	443	596	0	601
01182	Ice cream, chocolate and confectionery	9 276	12 049	246	12 764
01190	Food products n.e.c.	3 489	4 404	0	4 359
01210	Coffee, tea and cocoa	3 364	3 859	0	3 864
01220	Mineral waters, soft drinks, fruit and vegetable juices	4 633	7 638	256	7 776
02112	Spirits and wine	8 957	10 065	56	9 941
02130	Beer	3 221	4 969	264	4 992
02900	Tobacco etc.	7 347	17 933	3 347	18 547
03113	Articles of clothing	31 022	30 622	10	31 334

Table 5.4 Initial estimates and final balanced value for the household consumption by COICOP, and the grossed up household budget survey, 2012, cont.

		FU	Target totals	Exhaustiveness	Final balanced value
		DKK mill.			
03140	Cleaning, repair and hire of clothing	447	452	0	457
03200	Footwear	7 843	7 683	0	7 857
04100	Actual rentals for housing	70 267	65 186	0	66 325
04200	Imputed rentals for housing	77 901	108 274	458	108 821
04300	Maintenance and repair of the dwelling	10 872	7 020	2 384	7 447
04401	Water supply and sewerage services	11 058	14 279	0	13 994
04402	Refuse collection, other services n.e.c.	12 094	6 108	0	6 546
04510	Electricity	21 453	23 413	0	22 709
04520	Gas	6 675	6 453	0	6 481
04530	Liquid fuels	3 490	5 272	0	4 780
04545	Hot water, steam etc.	32 317	24 125	0	22 645
05100	Furniture, furnishing, carpets etc.	15 703	16 038	10	16 170
05200	Household textiles	4 015	3 676	0	3 690
05312	Household appliances	7 905	7 037	0	6 954
05330	Repair of major household appliances	131	449	345	440
05400	Glassware, tableware and household utensils	6 254	4 527	0	4 601
05500	Tools and equipment for house and gardens	4 829	4 414	0	4 192
05610	Non-durable household goods	5 657	3 529	0	3 717
05620	Domestic services and home care services	5 929	2 831	1 104	2 567
06112	Pharmaceutical products and other medical products	6 475	7 811	0	7 780
06130	Therapeutic appliances and equipment	2 681	3 449	0	3 463
06200	Out-patient services	10 825	10 909	56	10 477
06300	Hospital services	201	3 962	0	3 732
07100	Purchase of vehicles	36 774	30 137	0	29 910
07213	Maintenance and repair of vehicles	15 548	18 817	337	19 615
07220	Fuels and lubricants for personal transport equipment	29 567	27 176	0	26 794
07240	Other services in respect of personal transport equipment	5 378	11 295	5 851	11 396
07300	Transport services	16 501	12 555	174	12 436
08100	Postal services	553	424	0	317
08200	Telephone and data communication equipment	3 394	2 136	0	2 943
08300	Telephone and data communication services	16 019	15 411	0	15 301
09110	Radio and television sets etc.	5 994	7 714	0	7 642
09120	Photographic equipment etc.	1 010	1 409	0	1 398
09130	Data processing equipment	6 902	6 954	853	7 056
09140	Recording media for pictures and sound	1 667	2 419	0	2 247
09150	Repair of a/v and data processing equipment	179	849	689	823
09200	Other major durables for recreation and culture	1 825	3 112	0	3 697
09300	Other recreational items and equipment, gardens and pets	17 298	18 021	5	17 984
09400	Recreational and cultural services	27 556	31 533	355	31 626
09513	Books, newspapers, periodicals and misc. printed matter	5 381	9 106	0	8 780
09530	Stationery and drawing materials etc.	917	1 057	10	1 001
09600	Package holidays	12 937	12 678	0	13 670
10000	Education	4 243	6 553	39	6 571
11100	Catering services	35 487	42 157	6 778	41 789
11200	Accommodation services	10 575	7 382	0	7 001
12110	Hairdressing salons and personal grooming establishments	5 671	7 107	868	7 004
12123	Appliances, articles and products for personal care	10 663	9 875	0	10 240
12310	Jewellery, clocks and watches	3 178	1 738	0	1 677
12320	Other personal effects	2 389	3 293	0	3 479
12401	Retirement homes, day-care centres etc.	727	4 270	0	4 314
12402	Kindergartens, crèches etc.	9 067	11 031	0	11 038
12500	Insurance	42 403	19 869	0	19 789
12600	Financial services n.e.c.	2 303	39 964	0	40 310
12700	Other services n.e.c.	2 195	8 197	1 170	8 289
99800	Final consumption of non-residents on the economic territory		-38 863	0	-38 863
99900	Final consumption of residents in the ROW		38 667	0	38 894
	Total	806 421	869 378	25 943	877 971

5.7.3 Detailed calculations by COICOP items

The detailed description of the method of calculation regarding HFCE can be found in chapter 5.7.2. In this section only a few special cases are described.

07100 Purchase of vehicles

The Danish car scrap scheme contains no requirement for buying a new car in order to qualify for the premium. The premium is in fact on the scrapping service and not on the condition of buying a new car. The aim of the Danish car scarp scheme is purely environmentally and is designed to encourage people to use environmentally sound scrapping services. Typically, the household gives the car to tan authorised car-scrapper who then in turn collects the premium. However, as recommended in GNIC/232, and implemented in the process of lifting the transversal reservations, Denmark treats the car scrap scheme as a subsidy on products.

09130 Data processing equipment

The target for expenditure on software, including games is based on the grossed up FU. But as described in step 13 in the previous section, the targets for household consumption are balanced with other estimates for supply and use in a product balance system. This means that the household consumption of software will be balanced to the total supply together with the rest of the use side.

12500 Insurance

Household final consumption of insurance is determined in a subsystem in which the entire balances of supply and use are compiled. A description of the calculation of output of insurance is found in section 3.17. The distributions between intermediate consumption by industries and household final consumption are calculated for detailed products. For instance “Other non-life insurance” covers a number of different types of insurance. The different types of insurance are allocated individually depending on their character. E.g. air transport insurance is allocated to air transport, house insurance is allocated to dwellings, and family insurance is allocated to household final consumption expenditure.

12600 Financial services n.e.c.

Household final consumption of financial services (both directly paid and FISIM) is determined in a subsystem in which the entire balances of supply and use are compiled. A description of the calculation of output of financial services is found in section 3.17. The distributions between intermediate consumption by industries and household final consumption are calculated for detailed products.

5.8 NPISH final consumption expenditure

NPISHs are included in the Business Register to an unknown extent. However, it is not unrealistic to assume, that the major part in terms of volume is covered. Statistics Denmark collects a sample of annual accounts for each industry, and then grosses up to the population using data on wages. The annual accounts contain useful information regarding market- and non-market production as well as current transfers to and from the industries. It is thus possible to determine whether a price is economically significant or not and thus distinguish between market and non-market production for a given good.

Output is calculated in accordance with ESA 2010 section 3.49:

Table 5.5 Calculation of NPISH output, 2012

	DKK mill.
Intermediate consumption	16 079
+ Wages	22 851
+ Depreciations	793
+ Other production taxes	188
- Other production subsidies	19
= Output	39 892

Table 5.6 Calculation of output and final use for different types of NPISH

DK-NACE	Industry	Sources	Output	NPISH Final Consumption Expenditure	Household Final Consumption Expenditure	Estimation method
			DKK mill.			
850010	Primary Education	Ministry of Education	7 239	5 300	1 940	Note 1.
850020	Secondary Education	Ministry of Education, Surveys censuses, data on wages	4 235	2 823	1 412	Note 2.
850042	Adult-, other educ. (non-market)	Surveys censuses, data on wages	4 181	2 808	1 373	Note 2.
880000	Social work without accomond.	Surveys censuses, data on wages	6 164	4 471	1 693	Note 2.
910002	Libraries, museums (non-market)	Surveys censuses, data on wages	1 870	1 377	493	Note 2.
930012	Sport activities (non-market)	Surveys censuses, data on wages,	2 966	2 696	270	Note 3.
940000	Activities of membership org.	Surveys censuses, data on wages,	13 237	11 256	1 981	Note 2.

Estimation method:
1. Covers entire population
2. Grossing to population by using data on wages
3. Grossing to population by using data on wages as well as industry survey

The data source for primary level education, industry 850010 comes from administrative records directly from the Ministry of Education. The records are detailed and classifying according to ESA 2010 is straightforward.

The data source for industry 850020, high school level education and business schools, are primarily administrative records, but supplemented by annual reports from schools for children with disabilities. The annual reports are then grossed up using data on wages reported by the entire industry.

The data source for industries 850042 (Adult education), 880000 (childcare and centres), 910002 (libraries and museums), 940000 (associations and organisations) are annual reports. The samples are then grossed up using data on wages reported by the entire industry.

The data source for industry 930012 (sports associations) is a combination of annual reports and a comprehensive questionnaire made in 2011. The income structure for the industry is a macro-estimation based on the questionnaire, as is the intermediate consumption. D.1 comes from data on wages reported by the entire industry.. A large sample of annual reports are then used to estimate the structure of the remaining variables, such as costs on loans, insurance premiums, current transfers made by the industry and depreciations.

The data sources for Religious associations, not included in the government sector, are a sample of annual, websites for the respective religious associations, Familiestyrelsen (the authority that approves the religious communities, Center for Religion at Aarhus University, Lektor Peter Birkelund Andersen from 'Institut for Tværkulturelle og Regionale Studier' at Copenhagen University regarding Scientology. The grossing up from sample to industry is made according to the number of members of the religious communities.

NPISH Final Consumption Expenditure is calculated in accordance with ESA 2010 section 3.97. As explained in chapter 3 sections 22 through 25 NPISH output is broken down by products on the basis of the various uses of the products. This includes a distinction between output of non-market producers' services for consumption and for sales income. NPISH final consumption expenditure is therefor given by the product that are output from non-market producers whereas products that are the result of sales income are being labelled household final consumption expenditures.

Subscriptions and contribution payments of households to NPISH are excluded from household final consumption expenditure, as these are treated as current transfers. Output of NPISH includes own account formation of software, and it is excluded from NPISH consumption expenditure. The estimates of NPISH consumption expenditure do not include social transfers in kind.
Distinction between market- and non-market producers is made in accordance with ESA 2010 section 3.30-3.36.

5.9 Government final consumption expenditure

Government final consumption expenditure can be split into:

1) Individual consumption expenditure
2) Collective consumption expenditure

1) Individual consumption expenditure

Individual consumption expenditure consists of:

- Social transfers in kind – general government and NPISHs non-market production (D.631) and
- Social transfers in kind – market production purchased by general government and NPISHs (D.632).

In this chapter only the part relating to general government is described. A description of the part relating to NPISH can be found in chapter 5.8.

Social transfers in kind – general government and NPISHs non-market production (D.631) consists of output of government, individual non-market services less sales income from these individual services less the value of own-produced software in those units. The sources and methods for estimating output were described in Section 3.1.3.1 as part of the description of the output-based estimate of GDP and Section 4.12 referring to the consumption of fixed capital. Reference should therefore be made to these sections. Information on sales income is taken directly from government accounts. The value of own-produced software is based on total wages and salaries for highly qualified computer staff assumed to be working on the development of software and large databases. A mark-up factor is applied to total wages and salaries to cover intermediate consumption and the consumption of fixed capital.

Social transfers in kind – market production purchased by general government and NPISHs (D.632) refers to goods and services which general government purchases on the market and makes available to households. According to ESA 2010, such purchases are not included in intermediate consumption or the output value of general government but are allocated directly to final uses as individual consumption of market goods and services paid for by government. This is logical, since the products purchased by government non-market producers are not processed further before being made available to households. In the vast majority of cases, they are supplied directly from the market producer - a general practitioner, for example - to the recipient households. In Denmark's case, almost all transfers in kind of market products are health insurance benefits. The values are taken directly from government accounts which have 100% coverage, and must be considered fully reliable.

2) Collective consumption expenditure

Collective consumption expenditure consists of output of government non-market services used for collective, i.e. non-individualisable, government consumption, minus sales income from these collective services minus the value of the research and development and software produced in those units. The sources and methods for estimating the output value were described in Section 3.1.3.1 as part of the description of the output-based estimate of GDP and Section 4.12 referring to the consumption of fixed capital. Reference should therefore be made to these sections. Information on sales income can be taken directly from government accounts. The value of own-produced software is based on total wages and salaries for highly qualified computer staff assumed to be working on the development of software and large databases. A mark-up factor is applied to total wages and salaries to cover intermediate consumption and the consumption of fixed capital.

The split between transfers of individual non-market goods or services and government collective consumption expenditure is based on the COFOG classification as defined in ESA 2010 Paragraph 3.104.

The relationship between government output and government final consumption expenditure by sub-sector is shown in table 5.4.

Table 5.7 Relationship between general government output and final consumption expenditure by sub-sector, 2012

	S.1311	S.1313	S.1314	S.13, total
	DKK mill.			
+ Compensation of employees	83 935	228 424	2 280	314 639
+ Consumption of fixed capital	26 863	29 063	-	55 926
+ Intermediate consumption	63 361	113 880	778	178 020
+ Other taxes on production and –subsidies, net	794	-4 448	1	-3 653
= Output	174 953	366 919	3 059	544 932
+ Social benefits in kind	442	29 530	-	29 972
+ Income from sales	-23 165	-31 837	-8	-55 010
+ Own account research and development and software	-16 295	-1 964	-	-18 260
= Consumption expenditure	135 936	362 649	3 051	501 635

Note. S.1311: Central government, S.1313 Local government, S.1314 Social security funds

5.10 Acquisitions less disposals of produced fixed assets

5.10.1 Overview

The components of final expenditure are estimated in the Danish national accounts by the following product breakdown:

Table 5.8 Gross fixed capital formation in assets, by type

	DDK mill.
Buildings and structures	160 590
Dwellings	77 186
Non-residential buildings	45 252
Structures	38 152
Transport equipment	28 834
ICT equip., other machinery and equipment and military equipment	74 778
Computer hardware	17 345
Telecommunication equipment	2 359
Other machinery and equipment and weapon systems	55 073
Cultivated biological resources	2
Intellectual property products	92 583
R&D	53 622
Mineral exploration and evaluation	2 032
Software	30 814
Originals	6 114
Total	356 785

5.10.2 Main data sources and their conversion to national accounts result

As far as possible all of these components are estimated using the expenditure approach. Since the account statistics for non-agricultural private sector in 1999 was extended to cover most industries with market producer units, it has been possible to estimate the capital formation in tangible fixed assets in most industries with a distribution by buildings, structures and a residual consisting of machinery, transport- and other equipment. The estimates from the uses side are confronted with the available information on the domestic supply of investment goods by product in an “investment matrix” framework similar to the framework used in supply and use matrices. A more comprehensive description of the methods used in the compilation of investment matrices can be found in section 0 below.

The estimates for the construction of new buildings are based on either the accounting statistics which provides a very detailed coverage of the actual observations, or a calculation based on the exhaustive register of buildings (the BBR), and prices per square meter for the different types of buildings.

In the statistical sources for agriculture, certain industries dominated by a few big units and government or government controlled units, can be assumed to contain very reliable estimates of GFCF. For all industries covered by the industrial accounts statistics, the same kind of information is available. It should, however, be taken into account that the GFCF-estimates are often less reliable than other estimates based on the industrial accounts statistics. Annual GFCF-figures tend to be more volatile than, for instance, the figures for intermediate consumption. Fluctuations in the reported figures will be reflected in the grossed up values, adding to uncertainties in the GFCF-estimates of industries for which the investment figures are only partially based on questionnaires or published annual reports. Furthermore the methods used in grossing up will tend to underestimate investment in newly started enterprises that have not yet supplied questionnaires or annual reports to the accounts statistics. During the start-up phase such enterprises will often have comparatively small sales and employment, but considerable capital formation can take place in the same period.

Even after the introduction of a direct estimate of capital formation in machinery and equipment which is expenditure-based, it seems likely that the estimate for this component will still to some degree need to be adjusted to take into account the supply of investment goods.

5.10.3 Detailed estimation methods used by an code

Transport equipment

The initial estimate prior to balancing for acquisitions less disposals of motor vehicles, is based on the Vehicle Statistics Register, which in turn is based on the Register of Motor Vehicles. Similarly, the estimate of capital formation in large ships and aircrafts is based on register information for each individual vessel and each individual aircraft. Capital formation in small ships, boats and aircraft, railway rolling stock, containers and other types of – less important types of – transport equipment is estimated from the supply side using the commodity flow method. In 2012, capital formation in transport equipment covered 53 products in the supply and use tables.

Dwellings

The construction of new dwellings is estimated from the number of square metres of activity in the exhaustive Register of Buildings and Dwellings (BBR). "Square metres of activity" means the number of square metres constructed on average in the calendar year (quarter). The capital formation is therefore counted as and when the building progresses and not on the completion date. The square metres of activity are calculated from information in the BBR on dates when the individual buildings are started and completed. There are four types of new housing construction in the calculation, each with an average price per square metre – a "standard square metre". The calculation is stratified into two geographical areas, the extended Copenhagen region (which also cover some major urban areas in Jutland (Århus and “Trekantsområdet”)) and the rest of the country. The square metre prices are noticeably higher in the Copenhagen region than elsewhere. The benchmark for these prices dates back to 2007, when a committee under Statistics Denmark, examined all available sources which provided information on housing construction costs.

The productivity correction factor is based on a comparison of the benchmark figures for years 1969, 1979 and 1993 with changes in the building costs index for housing construction in the intervening periods.

If normal procedure was followed the 2007 benchmark prices should be projected to the current year using changes in the index of construction costs for housing reduced by 1% for productivity increases which, by their very nature, will not be captured in an input-based building costs index.

However, the year 2007 was on the top of the business cycle, which was followed by some years with significant decline the GDP, and taking the benchmark forward by a cost index was not considered a reasonable procedure for the years 2008 and 2009. Instead, average price per square meter was significant reduced during the years 2008 and 2009 based on an estimate which fit with the balancing of the supply and use tables. The exogenously determined reduction in construction costs could be interpreted as a decline in the profit margins the constructer charge, forced by the large decline in construction activity in 2008 and 2009.

In addition to construction of new dwellings based on “Square metres of activity”, GFCF for dwellings consists of capital repair and costs of ownership transfer (real estate agents, lawyers, stamp duties, government sales income connected with court rulings). The estimation of capital repair is explained in chapter 3 and the estimation of costs of ownership transfer is explained in section 3.12.

Table 5.9 shows the calculation of the main components of capital formation in housing construction. It shows the value of new construction and capital repair (major repairs) and costs of ownership transfers. Capital repairs include hidden construction activity.

Table 5.9 Calculation of capital formation, dwellings, 2012

	Extended Copenhagen area	Rest of Denmark	Extended Copenhagen area	Rest of Denmark	Extended Copenhagen area	Rest of Denmark	Whole Country
	sq. m. of activity		const. cost per sq. m.		value of construction		
			DKK		DKK 1 000		
Basic prices							
Single family houses	789 844	636 345	9 643	8 766	6 228 017	4 561 769	10 789 787
Multi-family houses	398 065	209 630	11 994	11 549	3 903 239	1 979 461	5 882 700
Garages and carports	158 663	227 616	2 191	2 191	284 247	407 848	692 094
Weekend Cottages	75 488	94 600	8 328	8 328	514 015	644 070	1 158 085
Construction of new dwellings							18 522 666
Purchasers prices							
Construction of new dwellings							22 814 826
Capital repair							45 877 161
Costs of ownership transfers							8 494 115
GFCF at purchasers' prices							77 186 102

Non-residential construction

Private non-residential construction

This is calculated the same way as housing construction. The value of new construction is calculated by multiplying the standard square metre price according to the 2007 benchmark by square metres of activity. The prices for non-residential buildings have been adjusted the same way as the prices for dwellings for the years 2008 and 2009. Regarding private non-residential buildings, it must be taken into account that productivity increases when projecting square metre prices on the basis of the construction costs index.

Table 5.10 shows gross fixed capital formation for non-residential buildings, including the price multiplied with quantity estimation for construction of private non-residential buildings. Costs of ownership transfer and capital repair is also shown in the table.

Table 5.10 Calculation of capital formation, private non-residential construction, 2012

	Extended Copenhagen area	Rest of Denmark	Extended Copenhagen area	Rest of Denmark	Extended Copenhagen area	Rest of Denmark	Whole Country
	sq. m. of activity		const. cost per sq. m.		value of construction		
			DKK		DKK 1 000		
Basic prices							
Farm buildings	205 624	756 862	2 163	2 163	357 177	1 314 936	1 672 112
Factories, workshops	153 866	248 167	4 981	4 527	615 295	902 258	1 517 553
Offices, shops	448 745	372 048	10 534	9 374	3 794 172	2 799 630	6 593 802
Other private property	151 608	165 383	13 130	13 370	1 598 590	1 775 292	3 373 882
Construction of new non-residential buildings							13 157 349
Purchasers prices							
Construction of new non-residential buildings							13 547 483
Capital repair							5 047 217
Costs of ownership transfers							2 498 332
Public construction for commercial use							2 533 064
Public construction for non-commercial use							21 625 925
GFCF at purchasers' prices							45 252 021

Public construction for commercial use

This component of capital formation is calculated from the accounting statistics for industries, where public corporations predominate. In these statistics, the information on new capital formation is divided by type of investment using a breakdown by DK-NACE industry and subsector.

Public construction for non-commercial purposes

Capital formation in buildings by government non-market producer units, is estimated from the OIMA system (the calculation system for government non-market activity), which is in turn based on the national accounts estimate of the general government sector in the DIOR database. The information on new capital formation in the OIMA is broken down by type of investment using the breakdown of capital formation by DK-NACE industry and subsector. However, at this level of detail, no distribution of asset by type is available, and the distribution for the current year is estimated by using previous year's distribution together with common sense.

Table 5.11 GFCF non-residential buildings, 2012

	DKK mill.
Private non-residential construction	18 588
Public construction for commercial use	2 540
Public construction for non-commercial purposes	20 975

Table 5.11 shows investment in non-residential buildings. The costs of ownership transfers are excluded.

Structures

The estimation of GFCF for structures can be subdivided into 3 types of structures, Private structures, public commercial structures and public non-commercial structures, all of which has a different source. Table 5.12 shows the values for 2012.

Table 5.12 GFCF, structures, 2012

	DKK milll.
Private structures	4 431
Public commercial structures	19 714
Public non-commercial structures	14 006

Private structures

Capital formation is calculated from the expenditure side, as the total value of all new civil engineering structures, according to the available sources. In practice almost all investment in such structures are covered either by agricultural statistics, by surveys of investment in extraction of crude oil and gas or by the industrial accounts statistics. The calculation is the same as the one used to calculate target totals for capital formation by industry. It is assumed that there are no net product taxes and VAT levied on private structures.

Public commercial structures

Capital formation in structures in public corporations from accounting statistics for industries where public corporations predominate.

Public non-commercial structures

Capital formation in structures for general government sector comes from the DIOR database. Figures for general government sector are based on the DOIR database, which also contain figures for GFCF. The information on new capital formation in the OIMA is broken down by type of investment with the help of the breakdown of capital formation by DK-NACE industry and subsector. However, at this level of detail, no distribution of asset by type is available, and the distribution for the current year is estimated by using previous year's distribution together with common sense.

This capital formation for structures can be seen in Table 5.11.

Livestock

The relatively minor item "changes in agricultural livestock" is explained in the chapter 5.2.2.

Machinery and equipment

Machinery and equipment, which include Computer hardware, Telecommunication equipment, other machinery and equipment and weapon systems, are at the level of product derived by the commodity flow method. However, the target totals are derived from the account statistics but some adjustments take place using the information on supply at the product level.

Intellectual property products

Exploratory drilling

In Denmark's case, the only expenditure on mineral exploration at present is on exploratory drilling in the North Sea oil and gas-fields. All concession-holders have to supply accounts to the Danish supervisory authorities, containing information on expenditure on items such as exploratory drilling. The national accounts' estimate is based on this exhaustive accounting information.

Software and large databases

Purchased software and large databases

In the Danish national accounts, the total capital formation of purchased software is estimated from the supply side using the commodity flow method.

The current practice in the Danish business accounts seems to contain purchases of software under various headings: To the extent that the software is capitalized the correct solution should be to show it as an investment in intangible fixed assets, but some software will probably still be included as part of tangible fixed assets, especially when software and hardware are purchased together. Some GFCF in software can be found in business accounts among acquisitions of equipment etc. that are treated as current expenses or written down during the accounting year, and some software may even be included in other categories of intermediate consumption. A description of the conversion from business accounts data to the concepts used in the national accounts can be found in chapter 3.

Estimating investments in software from accounts statistics have not yet been feasible. In accounts statistics the information on acquisitions and disposals of intangible fixed assets cover licences, trademarks, sole agencies, software, goodwill and capitalised development, rationalisation and research etc., in other words a mixture of figures which have to be included in gross fixed capital formation and figures which should be excluded. In practice this information is useless without further specification.

Since 1996 the product statistics for the IT-industries gives a detailed breakdown by product of turnover in the IT-industries. The turnover in each of the industries is broken down into software and different types of IT-services. A considerable share of this turnover is in fact trade in hardware and standard software. The trade activity is separated out and treated as wholesale or retail trade and the production is converted into trade margins. On the other hand some production of software is by-product in wholesale trade, renting of machinery and equipment and in telecommunications and this production is included in the supply.

Estimates of imports and exports are based on information from foreign trade in services, based on information used in the compilation of balance of payments. Please refer to chapter 5.14 for a description of the treatment of foreign trade in services.

In the final national accounts for 2012, total capital formation in purchased software and large databases has been estimated from the commodity-flow as 14,632 million DKK. This figure includes standard software as well as some IT-services (planning, programming, adjustment, installation etc.) that should be included as a part of the GFCF in software. As illustration simplified product balances are shown for software excluding own account (but including value of recorded media) and the relevant IT-services that include production of customised software and tailoring of software to specific needs.

Table 5.13 Software excluding own account, 2012

Software

Supply	Basic price
	DKK mill.
Domestic production	6.729
Imports	8.063
Total supply	14.793

Use	Basic price	Wholesale trade margin	Retail trade margin	Net tax on products	VAT	Purchasers' price
	DKK mill.					
Intermediate consumption	2 801	1 602	529	0	139	5 071
Household final consumption	775	402	500	0	401	2 082
Investment in software	6 451	3 820	555	0	649	11 475
Change in inventories	14	2	0	0	0	15
Exports	4 751	16	0	0	0	4 767
Total use	14 793	5 846	1 584	0	1 188	17 646

Table 5.14 Software programming, consultancy etc., 2012

Software programming, consultancy etc.						
Supply	Basic price					
	DKK mill.					
Domestic production	48 251					
Imports	12 478					
Total supply	60 728					
Use	Basic price	Wholesale trade margin	Retail trade margin	Net tax on products	VAT	Purchasers' price
	DKK mill.					
Intermediate consumption	47 449	0	0	0	4 017	51 462
Household final consumption	0	0	0	0	0	0
Investment in software	2 909	0	0	0	275	3 183
Exports	10 375	0	0	0	0	10 375
Total use	60 728	0	0	0	4 292	65 020

Software and large databases produced at own account

Own-produced software etc. accounted for 16,181 million DKK or 53% of total GFCF in software and databases in 2012.

Own output is calculated from the supply side, more specifically from total wages and salaries which in each of the national accounts' 117 industries are considered to relate to own output of software.

Total wages and salaries are compiled from Statistics Denmark's salary statistics, i.e. the statistical system which provides information on wage and salary levels and changes by job category. This statistics cover all workplaces with ten or more employees. A new version of the system for compilation of own-account software was introduced with the data revision published in 2005. For all years starting in 1995 the information on wages and salaries was made available to the national accounts division on a more detailed level than before. In the new system the employment figures used for calculation of the value of own-account software are grossed up to cover the economy as a whole[15].

Since 1995 the starting point is total wages and salaries according to the statistics on employees in DISCO groups 251, Software and applications developers and analysts, and in 252, Database and network professionals. DISCO is the Danish implementation of ISCO, the international classification of occupations. It is thus assumed that wages and salaries in the category of 50% of DISO 2511 “systems analyst”, 100% of DISCO 2512, “Software developers”, 100% of DISCO 2513, “Web and multimedia developers”, 100% of DISCO 2514, “Applications programmers”, 20% of DISCO 2519, “Software and applications developers and analysts not elsewhere classified”, 50% of DISCO 2521, “Database designers and administrators”, 50% of DISCO 2522, “Systems administrators”, 50% of DISCO 2523, “Computer network professionals” and 20% of DISCO 2529, “Database and network professionals not elsewhere classified”. In this way it is taken into consideration, that some of the people with the highest education are usually working as executives or as consultants and analysts who are involved in decision making with respect to choice of software systems or even in research and development. The inclusion of ordinary application programmers in the calculation is an important improvement, as most of the coding of computer programs has actually been done by people in this group[16].

[15] Previously there was no grossing up for wages and salaries in small units with fewer than ten employees. Only the wages and salaries for ISCO-group 213 were used in the calculation, while the wages and salaries of the majority of applications programmers, who have for a long time been classified in a subgroup of ISCO 312 were excluded due to the fact that their education for many years did not have status as high level education in Denmark. On the other hand no deduction was made for other work than development of software for GFCF.

[16] It must be emphasised that groups DISCO 3122, IT-operators, or DISCO 3129, programming of industrial robots are not included in the calculations as these people are working with the operating of computers or computerized systems and they are usually not writing computer programs.

According to international recommendations only half of the work time of the selected people is considered production of software for GFCF, as no better estimate exist. It is furthermore as in the earlier calculations assumed that only 25% of this time is spent on production of own-account software in NBR industry 620000 is production of own-account software because the programmers of this industry produces most of the customised software sold to other units.

In 2012 the total wages and salaries of the people in question working in market production are multiplied by a mark-up factor of 2.356 or, to put it another way, total wages and salaries are grossed up by 135.6%. This factor is based on accounting ratios in the published industrial accounts statistics for industry 620000 adjusted for that part of the activity that is considered trade in hardware or software. It covers intermediate consumption (including overheads at firm level), the consumption of fixed capital, other taxes on production, net, and net operating surplus. For own-account production of software in non-market activities a reduced mark-up factor of 2.1713 is used, that is output is grossed up by 117,13% in 2012, as no mark-up for net operating surplus is applied for non-market activity.

Entertainment, literary or artistic originals

As might be expected, there are no statistical sources providing information on the value of original works produced in any given year. For *other than film and television* originals, it has therefore been necessary to base the national accounts calculation on the assumption that the value of the originals in question is equal to the discounted value of future royalty incomes which they will earn.

The problem is that the future royalties are not, of course, known. Denmark is in a favourable situation compared with other countries in that information on current income from royalties from culture and entertainment is available in annual statistics. In the national accounts the simple assumption is chosen, to use the value of royalties received by the artists in question in year t as a proxy for the value of originals created in year t. The reasoning behind this simple convention is as follows: Since there is no information on future royalty earnings, it is assumed that in the long term royalties actually increases somewhat faster than the economy as a whole, since leisure activities have income elasticity greater than one. More specifically, the future real growth rate is taken to be equal to the real rate of interest, which likewise is normally greater than the growth rate of the economy. With these assumptions, the equilibrium value of the originals created in any given year may be estimated as the income from royalties in the same year.

The value of GFCF *for film and television* is based on benchmark calculations from 2007-2009. GFCF for the subsequent years are calculated using the average ratio between GFCF and total production of the products in question in the three years prior to the year in question. The benchmark calculations are based on data on production and development funding from the Danish Film Institute (DFI). This is thought to cover all film production because close to all film production in Denmark is funded by the DFI. Television program data are based on the accounts of the Danish broadcasting stations.

The value thus calculated for 2012 was DKK 6 114 million.

Research and development (R&D)

Private R&D

The estimation of private R&D (R&D output produced by market producers) is compiled in a sub-system, which is mainly based on R&D statistics (Frascati Manual) and foreign trade statistics. Total output is measured by sum of costs, and the starting point is R&D expenditure estimated in accordance with the GERD definition (Gross Domestic Expenditure on Research and Development) which is adjusted to match national account definitions. The transformation of R&D expenditure in accordance with the Frascati Manual towards output and GFCF in accordance with ESA2010 follow the recommended procedure in the *Manual on measuring Research and Development in ESA2010*.

To estimate output in accordance with the definitions in the national accounts, it has, generally speaking, been necessary to conduct the following adjustments in R&D expenditure, estimated in accordance with the GERD definition:

1. Investments in buildings and equipment are removed from the GERD figures. The values for GFCF are directly distinguishable in the source statistics.
2. Overlapping investments in software is excluded. If the producers of R&D output report that some R&D expenditure is target towards a software output, this expenditure is excluded.
3. An estimate for subsidies is subtracted. This is a very small item; the government pay virtually no subsidises towards R&D. Figures from government accounting is used as source.
4. An estimate for gross operating surplus is added, it summarizes the input of capital services into production of R&D-services. Capital services consist of consumption of fixed capital and a return to capital. In practise is the estimate for gross operation surplus estimated as a mark-up on wages and intermediate consumption.
5. Other adjustments. Contain adjustments which can be attributed towards identified errors, balancing purposes and consistency across time etc.

Table 5.15 below shows the calculation of R&D output for the year 2012 for market R&D. In practise, the calculation is made at the level of industry, by the 117-classification.

Table 5.15 Calculation of market output of R&D, 2012

	DKK mill.
Frascati Output (GERD)	37 036
Investment included in Frascati output	-2 813
Overlap with software	-6 748
Subsidies	-2
Supplement of gross operation surplus	4 830
Other adjustments	1 000
Adjusted Frascati output	33 304
Of which: Own-account	25 369
Of which: Purchased	7 935

The item “Other adjustments” contains an adjustment of 1,000 million DKK. It can be sub-divided into two adjustments – both based on judgement by the compiler. The first is supplement deduction for overlap with software for the financial industries; it is believed that the combined value of software and R&D is too high prior to the adjustment, the deduction for software amount to 250 million dkk. The second adjustment is made to increase the level of R&D in the *720001 Research and development industry*, which was deemed too low compared with the size of output for the industry. In total, the R&D output was adjusted upward with 1,250 million DKK for the industry 720001 Research and development.

In the final balancing process of the supply and use tables, further adjustment could be made to the R&D figures.

The second part of the compilation is about GFCF in R&D. Table 5.16 shows the results. The source for import and export of R&D is foreign trade statistics and the source for purchased R&D is R&D statistics in accordance with the Frascati Manual. R&D statistics contain information on industries buying R&D products, but no information on industries selling the R&D, it is assumed that most of the R&D is sold by the industry *720001 Research and development*, but the*720001 Research and development* can only sell as much as they produce. Note the total output in table 5.16 is 34.504 million dkk which include purchase of 1.200 million dkk as intermediate, and explain the difference in relation to table 5.15. All R&D purchased by the industry *720001 Research and development* is treated as intermediate consumption.

Table 5.16 R&D (market), Gross fixed capital formation, 2012

	DKK mill.
Own account R&D	25 369
Purchased R&D	9 134
Domestic output	34 504
Import	8 422
Total supply (basic price)	42 926
Intermediate consumption	1 200
Gross fixed capital formation	35 984
Export	5 742
Total use (basic price)	42 926

Non-market R&D for General Government

R&D produced by the general government is compiled in the office for government statistics. Own-account production of R&D is identified by using the COFOG distribution of government expenditures.

The COFOG distribution has 10 main headings (first level); General public services, Defence, Public order and safety, Economic affairs, Environment protection, Housing and community amenities, Health, Recreation, culture and religion, Education and Social protection. At second level of the classification, it is possible to separate out R&D expenditure. The second level is a breakdown of first level headings into 6-9 subgroups, depending on the specific heading. Statistics Denmark has selected the following second level headings as R&D: 01.4 Basic Research, 01.5 R&D general public services, 02.4 R&D Defence, 03.5 R&D Public order and safety, 04.8 R&D Economic affairs, 05.5 R&D Environmental protection, 06.5 R&D Housing and community amenities, 07.5 R&D Health, 08.5 R&D Recreation, culture and religion, 09.7 R&D Education, 10.8 R&D Social protection.

All own-account expenditure classified as R&D in accordance with the COFOG classification is “transferred” to GFCF for R&D.

Breakdown of GFCF by industry and type (“Investment matrices”)

GFCF by industry

There is considerable user interest in the breakdown of gross fixed capital formation by industry, and we therefore describe below the sources and methods used for this breakdown, even though it may not always seem directly relevant to GNI. The methods used for estimation of GFCF from the uses side will, however, influence total output of a number of important products that are mainly used, and directly or indirectly they will affect the size of total gross value added.

Industries with general government non-market activity

OIMA (the calculation system for government non-market activity) based on the DIOR database determines the totals, divided by investment into "new capital formation" and "capital formation in existing buildings and structures". Figures are also received for capital formation in software, divided by industry. The OIMA capital formation is transferred to the intermediate system using MLS codes:

6100: New fixed capital formation
6321: Purchases minus sales of existing buildings and structures.
6105: Research and development

The worksheets with the detailed breakdown of capital formation into DK-NACE industries and subsectors (integrated county, municipal authority and central government, non-integrated county, municipal authority and central government, funds etc.) are received every year from the Public Finances Division. No detailed (or even provisional) breakdown of the individual subsectors' capital formation into buildings and structures, machinery and equipment etc. is produced annually, but such a breakdown was available for the year 1995. These breakdowns have been projected to the following years using series on most detailed level available from the division of government finances as basis for the extrapolation. The figures in a full breakdown are matched with the final OIMA system figures in the national accounts' 117-industry breakdown. Figures for purchases minus sales of existing buildings and structures in a breakdown by industry are included.

Industries covered by corporations controlled by government

A worksheet containing the results of statistics for industries where public corporations predominate is received from the Public Finances Division. This sheet supplies input data for various industry-specific calculations as well as capital formation figures for buildings and structures which are used to work out the value of new buildings and new structures in public enterprises in the construction system.

The worksheet includes capital formation in buildings, structures, machinery and equipment and transport equipment plus software, divided by DK-NACE industry. With the help of an extract from accounting statistics for industries where public corporations predominate, it is also possible to produce a separate estimate for that share of the capital formation which relates to purchases minus sales of existing buildings and structures.

In 2012 industries where public corporations predominate covers national accounts' 117 industries 350010-383900, 510000-530000, 600000-610000, 920000, 930020.

Industries covered by the industrial accounts statistics

In 2012 national accounts' 117 industries 080090-330000, 414300-470000, 490020-500000, 520000, 550000-590000, 620000-630000, 680010-720001, 730000-820000, 840021, 850010-850020,850041-910002 and 930011-96000, CFCF by industries is estimated by using industrial accounts statistics (SBS).

The statistics are now exhaustive in this field, i.e. they assign accounting figures to all units in the industries in question. The information is available as firm and/or workplace statistics. For national accounts purposes, the two sets are processed so that all the capital formation information used is allocated to workplaces, and it is this information which is used to compile capital formation by function. With the processing of accounting statistics, information on capital formation is transferred to the sub-system for compiling investment matrices, with the following sub-division:

MTRa: Purchases of tangible assets
MTRs: Sale of tangible assets
BYGn: Construction of new buildings
BYGe: Purchases of existing buildings
BYGs: Sale of existing buildings
ANLn: New layout and rebuilding of roads, harbours, etc.
ANLe: Purchase of existing roads, harbours, etc.
ANLs: Sales of existing roads, harbours, etc.

A problem in the industrial accounts statistics is that start-ups are seldom included in the statistics on the basis of reporting forms or accounts. In such cases, information on capital formation is normally compiled from employment or VAT information using standard ratios based on enterprises which have been operating normally throughout the period in question. As already mentioned, capital formation must be expected to be underestimated in respect of businesses which have just started up.

Attempts have been made to correct for this undervaluation with the help of statistics on start-ups. In the compilation of investment matrices, Business Demography statistics is used to estimate a supplement which covers the investment for start-ups.

Industries covered by other sources

There are independent sources of information on capital formation in a few other private industries. The industry *060000 Extraction of oil and gas* is covered by information gathered by the Danish Energy Agency (“Energistyrelsen”). GFCF for the industry *K Finance and Insurance* is compiled by using intermediate consumption as an indicator. Agricultural capital formation is taken from agricultural statistics.

GFCF by industry and type

Buildings and other structures

Capital formation in buildings in government non-market services, public corporations, agriculture and industries covered by the industrial accounts statistics is worked out in the systems which process the capital

formation in question - cf. above. Within these areas, capital formation is normally retained as calculated, with the estimated breakdown into new building and purchases less sales of existing buildings.

Total construction of buildings is estimated in the construction and civil engineering system, the basis for government commercial and non-commercial building being the information on capital formation compiled for the calculation system for capital formation in a breakdown by industry. The calculation of the output value of construction and civil engineering ignores, of course, that share of capital formation accounted for by purchases and sales of existing buildings. Capital formation in industry 680023-680024, dwellings, is fixed as the value calculated in the construction and civil engineering system.

The residual of private non-residential building is allocated to the (now relatively few) industries which do not have accounts-based target totals for capital formation in construction. The initial targets are here based on any kind of available information and if necessary on more or less well founded extrapolations from the values in previous years.

Net purchases and net sales of existing buildings on Danish territory should add up to the same total value. (At present, in line with the calculations of construction and civil engineering, all change of ownership costs are for practical reasons distributed together with construction of new buildings). Purchases or sales of existing buildings are as a general rule shown in those industries where the figures can be based on sources. However, it was decided to allocate the residual to industry 680030 Renting, non-residential buildings.

As was the case with buildings, capital formation in structures in government non-market services, public enterprises, agriculture and industries covered by accounting statistics is worked out in the systems which process the capital formation in question. We assume here that there is normally no capital formation in structures other than in industries for which it can be compiled from a specific source. One exception is branch 680030, Renting, non-residential buildings, to which is allocated the residual of investment/disinvestment in existing structures, since, as for buildings in the strict sense, we are constrained by the rule that used structures may not appear or disappear through purchases/sales between industries. The value of new structures is thus determined from the expenditure side, and it is the systems for the compilation of capital formation in a breakdown by industry which supply the final figures for capital formation in structures for the calculation of the output value of construction and civil engineering.

Initial estimates for capital formation in construction and civil engineering in a breakdown by industry are obtained as the sum of the initial estimates for buildings and structures.

Transport equipment

Motor vehicles

Briefly, the method is as follows: information is received from vehicle statistics on opening and closing stocks of motor vehicles recorded in the central register of motor vehicles, and these figures are then divided up by type of vehicle, size category and year of first registration. Next, by matching with the business register, the national accounts' 117 branch codes are added to the vehicles in the industries to give a division into the 117 industries/households, albeit with an undistributed remainder which the National Accounts Division itself has to divide up to ensure that the system tallies. The figures correspond to those used in the "vehicle distribution system". Vehicles by industries with year of registration which match the reference year is used as distribution key for the total investment in vehicles. Total CFCF for Vehicles are estimated from the supply side, and compiled as part of the setup of the supply and use tables. The figures for all capital formation in vehicles are then summed to give the contribution of vehicles to the capital formation target totals for transport equipment.

Other transport equipment

Supply of other transport equipment: railway rolling stock, containers, ships and aircraft.
For other types of transport equipment counted as capital formation, the supply is calculated by product number on the basis of the sources used for the compilation of the supply and use tables (SUTs). The SUT balances for ships and, over the last few years, railway rolling stock as well, plus larger aircraft, are compiled as predetermined values which are retained for the balancing of the SUT. Here, information on the individual deliveries is used, and in a few cases changes in inventories have been specifically calculated imputed (2064 changes in inventories) to produce a match between the supply and use information.

On the basis of a few relatively simple assumptions about which industries invest in the various types of transport equipment and parts etc., the contribution of these products to the target totals for capital formation in transport equipment can be worked out. When these figures are combined with the targets for capital formation in motor vehicles, we get the column showing the initial estimates for target total code 2052 capital formation, transport equipment.

Machinery and equipment

For government non-market services, public corporations, industries included in the industrial accounts statistics, agriculture, the extraction of oil and gas, financial services and insurance, once again capital formation in machinery and equipment and transport equipment - taken together - is calculated from accounting statistics information - cf. above. For each of these industries, targets can be set for the different types of capital formation:

5131 Transport equipment
5132 Computer hardware
5133 Telecommunication equipment
5139 Other Machinery and equipment

Software

The estimation of total investment in software is explained in chapter xxx. The total account of investment in purchased software is distributed by industries by using the survey on ICT-expenditure. Own-account software is investment in the same industry as it is produced.

The new survey of Danish ICT-expenditure from 2003

A new statistical source that shows outlays for IT related purposes by industry has become available for the first time in 2003. The questionnaire based statistic on Danish business ICT-expenditure examines ICT expenditure in enterprises and in the public sector (state and municipalities).

The results from the survey were grossed up to cover all units covered by the industrial accounts statistics and distributed by workplaces by methods like those used to distribute other accounts information that are only available on the enterprise level. The results were used to distribute purchased computer software industry in the investment matrix for machinery and equipment.

R&D

The calculation of R&D output and investment is done by the level of industries. Section xxx describe calculation of R&D output and investment.

5.11 Additions to the value of non-produced non-financial assets

There are two groups in this category of product transactions:

AN.1123 Land improvements
AN.116 Costs of ownership transfer for non-produced non-financial assets

AN.1123

In Denmark's case, this category covers only soil improvement work in agriculture (drainage etc.), information on which is available from agricultural statistics. This component of capital formation is calculated together with capital formation in structures, and is covered by capital formation in private structures as shown in Table 5.9.

AN.116

This heading covers the costs of transfers of ownership (estate agents, lawyers, stamp duties, public sales income relating to courts of law) of land and natural resources etc. Since the costs of transferring the ownership of land can seldom be estimated independently of the costs of transferring the ownership of the buildings and installations on that land, the aggregate costs of transferring the ownership of land and real estate are

considered to be part of gross fixed capital formation in buildings and structures as described in Section 5.10. The transfer of ownership costs for land and real estate included in the estimate of gross fixed capital formation in 2012 can be seen in Table 5.17.

Table 5.17 Transfer of ownership costs for land and real estate, 2012

	DKK mill.
Stams, Courts of law etc.	485 924
Lawyers	4 198 824
Real estate agents	6 958 836
Total	11 643 584

5.12 Changes in inventories

The principles underlying the national accounts' treatment of changes in inventories as compared with the estimates in business accounts were discussed in chapter 3. The section below is more technical and includes an example of the national accounts' calculations of inventories. As already mentioned, for a correct estimate of GDP, it has to be possible to split changes in inventories (reported at market prices on the respective dates) between the start and end of the period in question into product transactions in national accounts terms and revaluations (plus, in some cases, other volume changes). In the national accounts, changes in inventories (product transactions) are posted to the capital account whereas revaluations go to the revaluation account. It is also important to ensure that the estimate of changes in inventories at industry level is consistent with the estimate based on special information on the individual products.

The calculation of changes in inventories can be divided into:

- Changes calculated on the basis of the change in inventories during the year, according to accounts. These changes occur under MLS codes 2060 (raw materials), 2061 (wholesaling), 2062 (retailing) and 2065 (finished goods and work in progress);

- Changes which are calculated regularly on the basis of special information relating to changes in stocks of individual goods, mainly under MLS code 2063.

Changes which are calculated from special information on any given year or introduced at the time of the actual balancing are entered under MLS code 2064.

The table below shows information on the main source and estimation method for the different inventory types.

Table 5.18 Inventories by kind, 2012

Type of inventory	Main source	Change
		DKK mill.
Raw materials	Accounts statistics	- 3 305
Biological assets	Forestry data	1 189
finished goods and work in progress	Accounts statistics	- 390
Wholesaling	Accounts statistics	1 602
Retailing	Accounts statistics	283
Agricultural and energy (special treatment)	Industry specific Accounts statistics	649
Other inventory changes related to balancing etc.	Industry specific accounts statistics	9 823

5.12.1 Accounting figures underlying the calculation of inventories broken down by industry

Account statistics for non-agricultural private sector

From 1995, the old accounting statistics for manufacturing was replaced by the new industrial accounts statistics, whose coverage have be extended over time to more and more private urban industries. In 2012

Industrial accounts statistics covers DK-NACE industries 060000-330000, 383900, 450010-470000, 490020-590000, 610000-630000, 680010, 690010-720001, 730000-820000 and 950000.

In the industrial accounts statistics, all the firms and workplaces in the statistics are assigned the accounting figures which come from questionnaires, annual reports or the tax accounts for firms not covered by the sample. In cases where neither annual accounts, questionnaires nor tax accounts are collected, the missing accounting figures are calculated with the help of "standard ratios" compiled with reference to units for which the data are known. This therefore applies to a large number of small units which are known from VAT statistics only. By grossing up, therefore, the accounting statistics' inventories cover all firms and workplaces in the accounting statistics' industries and there should be no need for the figures to be grossed up any further. The connection between the inventory items in the industrial accounts statistics and the intermediate system codes can be seen in Table 5.18.

Table 5.19 Connection between the account statistics for non-agricultural private sector and the intermediate system (MLS)

		MLS-code	MLS-code
Items in industrial accounts statistics		Opening	Closing
44	Raw materials, ancillary materials, fuel and packaging	5060	6060
45	Work in progress	5065	6065
46	Finished goods	5065	6065
47	Goods for resale	5061/5062	6061/6062

The primary statistics processing throws up problems such as the lack of concordance between manufacturing/trading activity and the incidence of finished goods and inventories of goods for resale. For the national accounts calculations, there is a (computerised) reallocation of inventories in such units which appear to be incorrectly allocated. The inventories from the accounting statistics thus revised are then transferred to the intermediate system.

Tax account statistics

Changes in inventories in industries based on tax account statistics in 2012 have generally only comparatively small inventories of materials used for intermediate consumption. Since the input data for the tax accounting system include information on closing stocks only, opening stocks have to be based on the closing figures from the previous year. Some improbable changes in the inventories of the individual branches are thus unavoidable, most of them arising from a change in the delimitation or branch allocation of units from one year to the next. Since it is not possible in the tax accounting system to trace these changes back to the individual enterprises, a number of estimated corrections have to be made in the breakdowns of opening stocks, where possible in the form of switches from one industry to another or one sector to another within the same industry. The corrected inventories are supplied to the intermediate system in the usual form.

Industry-specific accounting statistics

To the extent that inventory data are collected in sub-systems using industry specific accounting statistics, the national accounts changes in inventories are calculated outside the central inventory calculation system. The resulting aggregate changes in inventories are transferred to the intermediate system under the codes for changes in inventories only, i.e. 206x, and no stocks are input into the system. In 2012, there were only 2063 changes in inventories in agriculture, 010000, which were transferred to the intermediate system file. Thus any changes in inventories in other industries, where the calculations are based on industry-specific accounting statistics, are ignored unless they come under 2063 or 2064 inventories.

5.12.2 Breakdown of inventories by product

The intermediate system collects data on the industries' inventories at the level of DK-NACE industry/sector and intermediate system codes. For the calculation of changes in inventories in the intermediate system, opening and closing stocks are needed at average prices for the year, and this in turn requires a complete breakdown of inventories by good. The system for the goods breakdown is therefore part of the system for producing the intermediate system, as well as being part of the system for the breakdown of accounting figures by product.

In the national accounts, there may in principle be inventories of raw materials in all industries, not only manufacturing but also in trade, even, or construction and civil engineering and service industries. Inventories

of finished products and work in progress occur in manufacturing and a few service industries, whilst inventories of goods for resale, as a result of the definition by activity of the trading industries, occur only in wholesale and retail trade industries. The intermediate system inventories are broken down by sector.

The breakdown by product of the industries' inventory totals is based on the product composition in the balanced supply and use tables for the previous year. The main rule is that for each of the intermediate system's inventory totals there is a column or a combination of columns from the previous year's supply and use matrix. From each of these columns, those products are selected which can go into the inventories in question, i.e. negative SUT values (scrap, disinvestment or negative consumption) are omitted and services, for example, or expenditure on advertising or electricity are not included in the basis for the distribution. The only records in the SUT columns which are extracted for the breakdown of wholesale and retail inventories are those which include wholesale or retail margins. Each inventory total at DK-NACE industry/sector level is then divided up by product in proportion to the selected values from an SUT column or with weighted values from more than one SUT column.

The breakdown by product of the intermediate system inventory totals is at MLS code/DK-NACE industry/sector level, whilst the supply and use matrices (SUTs) contain only breakdowns by commodity number/target total module code/industry. For the breakdown of inventories of raw materials and finished goods, the calculation is based on an SUT for the previous year, which is grossed up to include breakdowns for all DK-NACE industries, with the national accounts industry breakdown used for all sub-industries. For inventories of finished goods, raw materials and goods for resale, the same breakdown by product is used for each sector represented in the industry.

Totals for inventories of finished goods are broken down as the output of the industry at basic prices. The raw materials totals are broken down as the input of the industry at purchasers' prices excluding VAT. As a general rule, wholesale inventories are divided on the basis of the composition of inputs at basic prices for the types of industry which may be assumed to buy the goods in question. However, there are various branches whose inventories of goods for resale cannot be divided up in this way, and for most of these fixed breakdowns have been laid down. Inventories of retail goods are likewise divided using the composition of basic prices plus wholesale margins for consumption groups, with the individual groups weighted using a key corresponding to the key for the conversion from retail trade branch to consumption group used in the consumption and retail trade margin systems.

Table 5.20 Method for the breakdown of inventories by product

Type of inventory	MLS codes	Value level	National accounts industries	Broken down as previous year's SUT
Finished products	5065/6065	basic prices	All	National accounts industry output
Raw materials	5060/6060	purchasers' prices excl. VAT	All	National accounts industry intermediate consumption
Wholesale	5061/6061	basic prices	Main rule	Input in national accounts industry acc. key
		Included in manufacturing basic prices		Output in national accounts branch
		Included in construction and civil engineering basic prices		Input in national accounts branch(es) acc. key
	451110-451920			Fixed breakdowns by product number
	454000			Fixed breakdowns by product number
	461100			Fixed breakdowns by product number
	462100-463100			Fixed breakdowns by product number
	463600-463890			Fixed breakdowns by product number
	464330			Fixed breakdowns by product number
	464910			Fixed breakdowns by product number
	464990			Fixed breakdowns by product number
	465220			Fixed breakdowns by product number
	467100			Assumed covered by energy system
Retail	5062/6062	basic prices + wholesale margin	All except 477630	Consumption group(s) acc. key

For various industries such as agriculture and those which consist solely of general government, industry target totals are not used for inventories. For agriculture, changes in inventories are covered by the special calculation of agricultural inventories (2063 inventories) at product level.

5.12.3 Calculation of national accounts changes in inventories

For each type of inventory, changes in inventories in the business accounts are calculated as the value of closing stocks minus the value of opening stocks, estimated according to the enterprises' own accounting principles, which means that opening and closing stocks are calculated at different price levels. In the national accounts, changes in inventories should be estimated at the average prices for the year. Ideally, changes in inventories should be monitored throughout the year and all changes split into revaluations (holding gains) and national accounts changes in inventories. Normally, a reasonable approximation of the correct change can be produced by converting the value of both opening and closing stocks to the average prices for the year using the ratio of the year's average price to the price on the date of the inventory estimate. The national accounts change in inventories is then calculated as the difference between closing and opening stocks, at the average prices for the year (ignoring sporadic instances of inventory values being written up or down for reasons other than price changes).

The method used has been unchanged since the benchmark years 1988-92. The price indices used for the conversion of inventories to the average prices for the year are now in every case the "NF index" which can be found for all product numbers in the inventory calculations and is based predominantly on the producer price index. As the end-of-year index , 2/3 of the December index + 1/3 of the following January index is used. No different treatment is attempted for inventories estimated according to different accounting principles.

Opening and closing stocks are converted to average prices for the year for all combinations of product number/target total module code/DK-NACE industry/sector following the breakdown of inventory totals by product. The national accounts change in inventories is calculated as closing stocks minus opening stocks for each of these combinations.

Goods which appear in 2063-inventories and energy goods are also included in the breakdown by product of inventories of raw materials, since inventories in the accounts include such stocks. When the changes in inventories columns are worked out in the SUTs, it is assumed that these goods are covered in full by 2063 changes in inventories, and they are therefore omitted from the other changes in inventories, although they are, of course, included in the intermediate system figures for national accounts changes in inventories by MLS industry/sector.

The difference between the MLS industries' (i.e. the detailed DK-NACE industries') national accounts and business accounts changes in inventories is transferred to the intermediate system as a "price correction" under MLS codes 2098 referring to inventories of raw materials and 2099 for inventories of goods for resale. These items are used here to switch from business accounts to national accounts intermediate consumption and consumption of goods for resale.

Table 5.21 Comparison of changes in inventories in business accounts and national accounts, DK-NACE industries, 2012

MLS code	DK-NACE	Sector	Opening	Closing	Change	Increase in inventories	Price correction
			DKK 1 000				
2060	016100	S11	113 278	140 824	27 546	15 434	-12 112
2060	016100	S14	108 558	112 577	4.019	-7 088	-11 107
2060	016200	S11	39 663	44 063	4.400	279	-4 121
2060	016200	S14	31 258	49 676	18.418	14 843	-3 575
2060	016400	S11	268 910	223 505	-45.405	-71 660	-26 255
2060	031100	S11	19 021	33 779	14.758	15 002	244
2060	031100	S14	16 104	16 318	214	156	-58
2060	031200	S14	1 350	119	-1 231	-1 264	-33
2060	032100	S11	59 356	68 724	9 368	9 328	-40
2060	032100	S14	468	806	338	343	5
2060	032200	S11	147 323	139 579	-7 744	-8 513	-769
2060	032200	S14	41 600	48 947	7 347	7 333	-14
2060	061000	S11	600 332	572 775	-27 557	-37 662	-10 105
2060	081100	S11	13 791	12 655	-1 136	-1 043	93
2060	081100	S14	69	65	-4	-4	0
2060	081200	S11	55 629	55 401	-228	223	451
2060	081200	S14	4 667	4 711	44	76	32
2060	089100	S11	95	89	-6	1	7
2060	089200	S11	2 245	2 230	-15	10	25
2060	089200	S14	7	7	0	2	-2
2060	089300	S11	12 457	12 468	11	118	107
2060	089300	S14	190	178	-12	-12	0
2060	089900	S11	12 895	15 927	3 032	3 172	140
2060	089900	S14	36	33	-3	-1	2
2060	091000	S11	89 978	70 555	-19 423	-20 717	-1 294
2060	091000	S14	105	83	-22	-23	-1
2060	099000	S11	98	79	-19	-20	-1
2060	099000	S14	3	3	0	1	1
2060	101110	S11	95 045	116 446	21 401	17 851	-3 550
2060	101110	S14	148	159	11	8	-3
2060	101190	S11	57 334	106 642	49 308	46 725	-2 583
2060	101190	S14	1 476	1 579	103	59	-44
2060	101200	S11	36 552	36 691	139	-1 135	-1 274
2060	101200	S14	1	1	0	0	0

Table 5.22 Examples of the calculation of inventories.

Inventories of raw materials in DK-NACE industry 032200: freshwater fish farms, divided by sector, 2012

Product Nº	DK-NACE indust.	Opening Price 2012-pr. = 100	Closing Price 2012-pr. = 100	Opening stock	Closing stock	Change without price- corr.	Opening stock, 2012-prices	Closing stock, 2012-prices	Change in national accounts	Price corr.
		index		DKK 1 000						
V030100	S11	109.09	93.31	14 531	3 472	-11 059	13 320	3 761	-9 559	1 500
V050800	S11	95.24	118.18	3	1	-2	3	1	-2	0
V051103	S11	95.24	118.18	15 718	4 795	-10 923	16 503	4 057	-12 446	-1 523
V051105	S11	96.81	104.40	6 696	1 847	-4 849	6 917	1 769	-5 148	-299
V230903	S11	97.83	102.26	48 734	13 401	-35 333	49 813	13 104	-36 709	-1 376
V271005	S11	92.14	95.88	274	154	-120	297	161	-136	-16
V271007	S11	92.14	95.88	25	7	-18	27	7	-20	-2
V271013	S11	94.52	96.72	46 211	111 997	65 786	48 888	115 797	66 909	1 123
V271015	S11	96.02	98.11	4 169	901	-3 268	4 342	918	-3 424	-156
V271021	S11	98.48	99.22	1 157	306	-851	1 175	308	-867	-16
V271101	S11	96.72	98.29	306	173	-133	316	176	-140	-7
V391704	S11	97.45	101.10	533	143	-390	547	141	-406	-16
V391711	S11	98.41	100.51	74	20	-54	75	20	-55	-1
V391713	S11	98.41	100.51	16	4	-12	16	4	-12	0
V391900	S11	97.95	100.96	4	1	-3	4	1	-3	0
V392302	S11	101.89	98.26	3 699	959	-2 740	3 631	976	-2 655	85
V392304	S11	98.99	99.18	4	1	-3	4	1	-3	0
V560700	S11	99.86	102.45	1 437	390	-1 047	1 439	381	-1 058	-11
V560801	S11	98.16	99.11	12	3	-9	12	3	-9	0
V560805	S11	98.16	99.11	4	1	-3	4	1	-3	0
V560900	S11	98.16	99.11	91	24	-67	93	24	-69	-2
V611000	S11	99.60	99.93	204	54	-150	205	54	-151	-1
V950700	S11	98.88	100.94	3 423	924	-2 499	3 462	915	-2 547	-48
Total	S11			147 325	139 578	7 747	151 093	142 580	-8 513	-766
V030100	S14	109.09	93.31	4 103	1 217	-2 886	3 761	1 318	-2 443	443
V050800	S14	95.24	118.18	1	0	-1	1	0	-1	0
V051103	S14	95.24	118.18	4 438	1 681	-2 757	4 660	1 422	-3 238	-481
V051105	S14	96.81	104.40	1 891	648	-1 243	1 953	621	-1 332	-89
V230903	S14	97.83	102.26	13 761	4 699	-9 062	14 066	4 595	-9 471	-409
V271005	S14	92.14	95.88	77	54	-23	84	56	-28	-5
V271007	S14	92.14	95.88	7	2	-5	8	2	-6	-1
V271011	S14	94.52	96.72	13 049	39 275	26 226	13 805	40 608	26 803	577
V271012	S14	96.02	98.11	1 177	316	-861	1 226	322	-904	-43
V271019	S14	98.48	99.22	327	107	-220	332	108	-224	-4
V271021	S14	96.72	98.29	86	61	-25	89	62	-27	-2
V271101	S14	97.45	101.10	150	50	-100	154	49	-105	-5
V391704	S14	98.41	100.51	21	7	-14	21	7	-14	0
V391711	S14	98.41	100.51	5	2	-3	5	2	-3	0
V391713	S14	97.95	100.96	1	0	-1	1	0	-1	0
V391900	S14	101.89	98.26	1 044	336	-708	1 025	342	-683	25
V392302	S14	98.99	99.18	1	0	-1	1	0	-1	0
V392304	S14	99.86	102.45	406	137	-269	407	134	-273	-4
V560700	S14	98.16	99.11	4	1	-3	4	1	-3	0
V560801	S14	98.16	99.11	1	0	-1	1	0	-1	0
V560805	S14	98.16	99.11	26	8	-18	26	8	-18	0
V560900	S14	99.60	99.93	57	19	-38	57	19	-38	0
V611000	S14	98.88	100.94	966	324	-642	977	321	-656	-14
V950700	S14	109.09	93.31	4 103	1 217	-2 886	3 761	1 318	-2 443	443
V030100	S14	95.24	118.18	1	0	-1	1	0	-1	0
Total	S14			41 599	48 944	7 345	42 664	49 997	7 333	-12

Note: All Product Nº are placed in 117- Indust. Nº group: 030000

5.12.4 Calculation of changes in inventories using information on products

Special 2063 inventories are calculated for a small number of national accounts product numbers, all of them agricultural products and including a few pre-processed ones regularly calculated from information on the individual goods (excluding some specific changes in inventories which, by tradition, are entered under MLS code 2064).

Table 5.23 Increases in inventories calculated from information on products, 2012

CODE: 2063	PRODUCT-Nº	MLS CODE	Purchasers' prices incl. VAT
			DKK 1 000
Bovine animals, live, other than for breeding	V010203	2063	89 602
Pigs, live	V010300	2063	-48 956
Meat from bovine animals, fresh/refrigerated	V020100	2063	1 456
Butter and other fats from milk	V040500	2063	-11 724
Cheese	V040601	2063	-21 498
Wheat, wheat and rye mixed seed	V100100	2063	825 800
Rye	V100200	2063	46 900
Barley	V100300	2063	492 800
Oats	V100400	2063	11 500
Maize	V100500	2063	-3 841
Millet, other grain	V100800	2063	-187
Mink, beaver, fox and seal fur	V430101	2063	89 602
Increase in inventories, special products	Total	2063	-1 381 852

The calculation of 2063 changes in inventories is based on information on inventories in *physical units*, in contrast to the general method which is based on information on the *value* of inventories at industry level.

For those products included in the energy system, changes in inventories are calculated in the Environment and Energy Division in connection with the estimate of energy balances. The starting point here is information from *Energistyrelsen* [the Danish Energy Agency] on volumes and prices of the individual goods. Changes in inventories divided by product are received from the Environment and Energy Division, with no indication as to where in the inventories and industries the changes occur. As for the 2063 changes in inventories, the 2064 changes for energy are based on information on physical quantities.

Table 5.24 Increases in inventories from the energy system 2012

CODE: 2064	PRODUCT-Nº	MLS CODE	Purchasers' prices incl. VAT
			DKK 1 000
Hard coal and hard coal briquettes	V270100	2064	-216 481
Coke and semi-coke of coal	V270400	2064	28 679
Petroleum oils and crude oils	V270900	2064	-4 666 968
Kerosene-type jet fuel and medium oil	V271001	2064	5 137 300
Aviation spirit and motor spirit	V271005	2064	1 666 978
Light oil, special spirits	V271009	2064	-372 040
Medium oil, petroleum	V271011	2064	-308 114
Gas-oil, except for processing	V271012	2064	4 340 508
Automotive diesel	V271015	2064	-321 878
Fuel oils other than for further processing	V271019	2064	1 917 688
Fuel oils etc. for processing	V271023	2064	-5 177
Natural gas, propane, butane, etc.	V271101	2064	68 425
Petroleum coke	V271301	2064	-21 570
Increase in energy inventories	Total	2064	7 247 350

5.12.5

5.12.6 Special changes in inventories - other 2064 inventories

The other 2064 changes in inventories are also compiled for individual goods, but in principle should not be produced on a regular basis as results from national accounts subsystems. It is debatable whether this is the case with all products occurring here. The estimate of some 2064 changes in inventories for ships and railway rolling stock has gradually become an ongoing process. However, more often than not changes in inventories are either introduced with the balancing or their actual figure is not finally fixed until that point, and cannot be worked out from the accounting sources. Some of these changes may, however, occur within inventories covered by the accounts.

Table 5.25 Increases in inventories, other special inventories, 2012

CODE: 2064	PRODUCT-Nº	MLS CODE	Purchasers' prices incl. VAT
			DKK 1 000
Rapeseeds, incl. crushed seeds	V040107	2064	300 000
Fats and oils of fish	V220300	2064	350 000
Fireworks	V360400	2064	300 000
Raw hides and skins of bovine animals, horses	V410100	2064	100 000
Raw furskins	V430100	2064	-100 714
Dress, skirt trousers etc., female	V620400	2064	250 000
Stove, wash boiler, furnace not electric	V732102	2064	-20 000
Refrigerator and freezers	V841802	2064	-10 000
Dishwashers, household use	V842201	2064	-50 000
Washing machines maximum of 10 kg clothes	V845001	2064	-70 000
Dryers maximum of 10 kg clothes	V845103	2064	-15 000
Parts for electric motors	V850300	2064	1 646 852
Apparatus for room- and soil-heating	V851603	2064	-10 000
Ovens, stoves, cookers, etc.	V851613	2064	-25 000
Seating with wooden frames	V940103	2064	-150 000
Wooden kitchen furniture	V940307	2064	-60 000
Wooden furniture, not for business use	V940308	2064	-150 000
Constr. toys, toy animals, tricycles etc	V950300	2064	290 000
Increase in other special inventories	Total	2064	2 576 138

Initially, 2064 changes in inventories are worked out by linkage with the supply and use tables (SUTs) with no breakdown by sector or industry. As regards the institutional accounts, however, a breakdown by sector is necessary, and these changes in inventories are subsequently broken down (somewhat roughly) by industry and sector.

5.12.7 Relation between changes in inventories calculated based on inventory totals broken down by industry and information on individual products.

Table 5.26 outlines how national accounts changes in inventories are obtained. Since the purpose here is to show where there is a possible overlap between changes calculated from different sources, the aggregate inventory calculations are divided up into 2060-, 2061-, 2062- and 2065- inventories on the one hand and 2063- and 2064- inventories on the other.

Table 5.26 Relation between changes in inventories broken down by industry and information on individual products

Industries Products	Industries where changes in inventories are calculated on the basis of inventories in accounts	Industries where changes in inventories cannot be calculated from inventories in accounts	Changes in inventories by product
Products for which changes in inventories are worked out using a breakdown of changes in inventories in the accounts	These are obtained as the difference between opening and closing stocks as broken down in the accounts, calculated in average prices for the year. There may be 2064-changes in inventories here, in which case there are balancing corrections to the changes in inventories originally calculated.	Only 2063- or 2064- changes in inventories can occur here.	*Here, chan. in invent. broken down by product are obtained as the sum of the changes in invent divided over the individual industries + any 2063- and 2064- chang. in invent.*
Products for which the aggregate change in inventories is calculated in terms of goods (2063- and 2064- inventories)	These are calculated on the basis of the breakdown of inventories but at the same time are incl. in those changes in inv. which are calc. on the basis of information on goods. To avoid double counting, they are omitted when the aggr. change in invent. is worked out in a breakdown by product. They are, however, incl. in the calc. of the industries' national acco. changes in invent. and the change from business accoun. to national accounts consumption.	This area is covered in full by changes in inventories calculated on the basis of information on goods, even though these are not available in a breakdown by industry. It covers items such as stocks of energy in energy supply and transport industries, which are calculated in A-files.	Total changes in inventories for goods where changes are calculated on the basis of information by good.
Changes in inventories broken down by industry.	Total changes in inventories calculated from inventories in the business accounts plus any additions (2064).	*These changes in inventories are included in the totals compiled at goods level with no breakdown by industry.*	National accounts aggr. changes in invent..

The first column in the table shows the changes in inventories according to the intermediate system, broken down by good according to the "inventory breakdown system". The national accounts aggregate changes in inventories are obtained as the sum of these changes excluding those goods for which all changes are determined in terms of goods as 2063- or 2064-inventories. Implicitly, the value of the overlap between the two calculations is also estimated in the inventory breakdown system. It is the cells (row 4, column 2) and (row 3, column 4) for which information is available before the start of the balancing.

It is clear that the calculation of the overlap will be somewhat uncertain. The system used for distribution of accounts statistics' inventories by products has some built in "handles" that are used to adjust the changes inside the overlap to the changes that are calculated as 2063- or energy inventory changes while keeping the values of opening and closing stocks equal to their values from accounts statistics. There is, however, also a certain amount of uncertainty about the figures in the accounting statistics which refer to inventories. If the calculated inventory data conflict with other information when the product balances are balanced, it may still in some cases be reasonable to amend the aggregate changes in inventories[17].

5.13 Acquisitions less disposals valuables

Acquisitions less disposals of valuables are estimated from the supply side using the commodity flow method. Table 5.27 shows net acquisitions of valuables divided into those products which were included in this capital accumulation category in 2012.

[17] The balancing, however, normally complies with the principle that there has to be a counterpart entry to corrections to inventories in other changes in inventories which may reasonably be considered to have taken place within the same enterprise. There are only a few exceptions, most often the introduction of 2064 changes in inventories in the goods in question.

Table 5.27 Acquisitions less disposals of valuables, 2012

Product nº	Text	Category	DKK mill.
V570201	Kelem and similar hand-woven rugs	AN.133	211
V710206	Diamonds, unfitted	AN.131	58
V711301	Articles of jewellery of silver	AN.133	990
V711303	Articles of jewellery of precious metals	AN.133	769
V711401	Articles of silversmiths' wares	AN.133	26
V711403	Articles of goldsmiths'/silversmiths' wares of precious metals	AN.133	18
V711600	Goods of natural pearls/cultured pearls	AN.131	0
V711700	Imitation jewellery n.e.c.	AN.133	372
V711800	Coins	AN.133	65
V970100	Paintings, drawings and pastels, collages etc.	AN.132	467
V970200	Original engravings, prints or lithographs	AN.132	207
V970300	Original sculptures or statuary	AN.132	209
V970500	Collections and collectibles	AN.132	3
V970600	Antiques of an age exceeding 100 years	AN.132	12
Total			3 490

5.14 Exports of goods

For a more detailed description of the sources and methods used to compile the export of goods in the External Economy unit please refer to chapter 10.

Goods accounted for DKK 618 752 million, or 60%, of the DKK 1 035 249 million total exports of goods and services in 2012.

Table 5.28 Exports of goods, 2012

	DKK mill.
Exports of goods, Intrastat	380 579
Exports of goods, Extrastat	238 173
Exports of goods, Total	618 752

Note: The national accounts total is split between intra and extra stat trade using detailed data from the External Economy unit.

In the national accounts, exports of goods are based directly on Statistics Denmark's estimates of external trade. External trade statistics are described in greater detail in chapter 11. The estimates use one method for EU trade (Intrastat) and a different one for trade with non-EU countries (Extrastat).

The statistics have the same geographical coverage as the national accounts and are grossed up to cover all external trade in goods regardless of any administrative threshold values for the reporting of EU trade to the Intrastat system. EU trade not reported is estimated on the basis of the quarterly VAT returns on all EU trade. Therefore the primary statistics do not need to be grossed up for use in the national accounts. The value levels in external trade statistics are f.o.b. for exports and c.i.f. for imports.

The external trade statistics include all exports listed in §3.165 in ESA2010. The estimate for smuggled goods is calculated in the National Accounts unit whereas the other items are collected by the Externat Trade unit. The items listed in §3.166 in ESA2010 are excluded from the External Trade statistics except from for the items mentioned in the table below. For these items the National Accounts unit make corrections when implementing the data in the supply use tables. The items are treated as follows:

- Merchanting figures are received from export of services statistics and added to the export of goods. In the supply use table this is placed on the product number T460009
- Provisioning and bunkering is placed on three product numbers in the supply use table according to supplementary information from the external trade in goods statistics. Thus the entries 3 to 6 in the table below sum to zero reflecting that the total for provisioning and bunkering is unchanged.
- Goods sold abroad after processing abroad are based on data from the external trade in services statistics. The data from the trade statistics contain information on processing by firm. The data on each

firm's export of goods after processing abroad is combined with information from the industrial commodity statistics to determine what products are exported. In a few cases the exporting firms are not covered by the industrial commodity statistics. In these cases expert judgement is used for the distribution on products.

- Goods exported for use in construction abroad by Danish companies are marked with a special code in the external trade with goods statistics thus making it possible to remove them before use in the national accounts statistics.
- Goods sent abroad after processing in Denmark and goods sent abroad for processing are both marked with special codes in the external trade with goods statistics thus making it possible to remove them before use in the national accounts statistics.
- Exportation of household goods when moving like the items above can be identified in the external trade statistics and thus removed before use in the national accounts statistics.
- Finally goods returned are removed from the external trade with goods. Here detailed information from the external trade statistics is used to identify the original products involved.

Table 5.29 Corrections to external trade in goods statistics, exports, 2012

	DKK mill.
Exports according to external trade statistics	613 324
Merchanting	16 458
Provisioning incl. bunkering	-8 063
Bunkering regarding foreign ships	3 900
Bunkering regarding foreign air crafts	800
Provisioning excl. bunkering	3 363
Goods sold abroad after processing abroad	3 041
Goods exported for use in construction abroad by Danish companies, repairs	-2 591
Goods exported for use in construction abroad by Danish companies, maintenance	-332
Goods sent abroad after processing in Denmark	-1 600
Goods sent abroad for processing	-2 071
Exportation of household goods when moving 2)	-325
Goods returned	-1 883
Goods returned in import statistics 4)	-5 271
Export of goods in National Accounts	618 752

Export and import in the external trade statistics only include goods that cross the border. As the criteria in ESA2010 is change of ownership, a correction of the external trade figures regarding transactions involving changes of ownership of goods, which do not cross the border, is needed. This correction is based on detailed information from external trade statistics regarding e.g. goods returned and the balance of payments statistics regarding e.g. bunkering.

5.15 Exports of services

Exports of services accounted for DKK 416 497 million, or 40%, of the DKK 1 035 249 million total exports of goods and services in 2012.

Table 5.30 Exports of services, 2012

	DKK mill.
Exports of services, Intrastat	179 248
Exports of services, Extrastat	237 248
Exports of services, Total	416 496

Note: The national accounts total is split between intra and extra stat trade using detailed data from the External Economy unit.

The estimate of the services export is based on a survey conducted by the External Economy unit in Statistics Denmark. For a more detailed description of the sources and methods used to compile the export of services in the External Economy unit please refer to chapter 10. The survey includes questions regarding the export of construction services and processing services making it possible to estimate the processing fee.
The data from the External Economy unit contains information on the kind of activity of the exports and the industry of the exporter. This information is used to determine what products are exported. For each kind of activity export there is made a distribution on products. In some cases the entire kind of activity export is placed on one product. For instance the export labelled commissions regarding commodity trade is placed on the product for commissions in the supply use tables. This is the case for DKK 239 044 million, or 57% of the service exports.

DKK 73 195 million or 18% is distributed by products using the industry of the exporter. This is the case for amongst others the data on computer services and royalties and license fees. Thus the export labelled computer services in the service export data are assumed to be regarding software licenses if the exporting industry is the software producing industry.

The remaining DKK 104 258 million or 25% are distributed by products using fixed percentage distributions for each kind of activity export.

5.16 Imports of goods

Goods accounted for DKK 567 066 million, or 62%, of total imports of goods and services in 2012 (DKK 921 170 million).

Table 5.31 Imports of goods, 2012

	DKK mill.
Imports of goods, Intrastat	382 530
Imports of goods, Extrastat	184 537
Imports of goods, Total	567 067

Note: The national accounts total is split between intra and extra stat trade using detailed data from the External Economy unit.

Table 5.32 Corrections to external trade in goods statistics, imports, 2012

	DKK mill.
Exports according to external trade statistics	528 678
Bunkering regarding ships	40 285
Bunkering regarding air crafts	2 318
Bunkering not regarding ships and air crafts	3 499
Spare parts and other provisioning in conjunction with repairs of ships	2 575
Spare parts and other provisioning in conjunction with repairs of air crafts	245
Spare parts and other provisioning in conjunction with other repairs related to transportation	81
Goods bought abroad for processing abroad	974
Goods imported for use in construction in Denmark by foreign companies, repairs	-1 491
Goods imported for use in construction in Denmark by foreign companies, maintenance	-447
Goods received from abroad for processing in Denmark	-1 323
Goods returned after processing in Denmark	-2 828
Exportation of household goods when moving 2)	-216
Illegal imports of goods	1 871
Goods returned	-5 271
Goods returned in import statistics 4)	-1 883
Import of goods in National Accounts	567 066

Reference should be made to Section 5.14, since sources and methods are the same for imports as for exports of goods, except for procurements, for which the source is the account statistics for shipping.

5.17 Imports of services

Imports of services accounted for DKK 354 104 million, or 38%, of the total imports of goods and services in 2012 (DKK 921 170 million).

Table 5.33 Imports of services, 2012

	DKK mill.
Imports of services, Intrastat	194 650
Imports of services, Extrastat	159 454
Imports of services, Total	354 104

Note: The national accounts total is split between intra and extra stat trade using detailed data from the External Economy unit.

Reference should be made to Section 5.15, since the sources and methods are the same for imports as for exports of services.

6. The balancing or integration procedure and validating the estimates

6.0 GDP balancing procedure

6.0.1 Target total module

Before the balancing of GDP can take place in the supply and use tables, so-called target totals for supply and use are compiled. This is done by collecting the information from intermediate system 2 and other systems in the target total module. The codes in the target total module and how they are defined from the intermediate system 2 are shown in table 6.2. The TRANS codes correspond to transaction codes, and are those used in the supply use tables. The interpretation is:

Table 6.1 Codes in the target total module

0100	Production
0700	Imports
0900	Customs and duties on imports
2000	Intermediate consumption
3110	Household final consumption
3130	NPISH consumption
3141	Government individual consumption expenditure, market
3142	Government individual consumption expenditure, non-market
3200	Collective consumption
5110	GFCF in Residential Buildings
5121	GFCF in Non-residential Buildings
5122	GFCF in Structures
5131	GFCF in Transport equipment
5132	GFCF in IT equipment
5133	GFCF in Communication equipment
5139	GFCF in other machinery and equipment
5140	GFCF in Weapons systems
5150	GFCF in Changes in cultiv.assets
5171	GFCF in Research and development
5172	GFCF in Mineral exploration
5173	GFCF in Computer software
5179	GFCF in Entertainment, literary or artistic originals
5210	Changes in inventories, Materials
5221	Changes in inventories, work-in-progress on cultivated biological assets
5223	Changes in inventories, Finished goods
5251	Changes in inventories, Goods for Wholesale trade
5252	Changes in inventories, Goods for Retail trade
5263	Changes in inventories, specially compiled
5264	Changes in inventories,
5300	Acquisition less disposals of valuables
6001	Exports of goods and services, danish production
6007	Exports of goods and services, re-exports

Total supply is defined as: 0100+0700+0900
Total use is defined as: 2000+3110+3130+314x+3200+51xx+52xx+5300+600x

Rearranging the variables gives GDP:

0100-2000= GDP from the production side
3110+3130+314x+3200+51xx+52xx+5300+600x(net) = GDP from the expenditure side

After the balancing, which takes place at the product level (2350 products), the two expressions for GDP equal. It must be noted that 0100 and 2000 are compiled at the 117 industry level and 3110, 3130 and 314x at the level of 74 individual consumption groupsand 3200 is subdivided into 10 groups according to purpose.

Table 6.2 National accounts target totals - functional system

TRANS	Intermediate system code		Definition/comment
0100	Domestic production		
	=	1003	Output of originals
	+	1005	Hidden economy output
	+	1007	Fringe benefits, output
	+	{1008}	{FISIM (financial industries only)}
	+	1009	Work for processing
	+	1011	Repair and installation work for others
	+	1012	Manuf.e of plant and machi. for own use
	+	1013	Other net sales, own products
	+	1014	Output for own consumption
	+	1015	Own account software
	+	1016	Sales of goods for resale
	-	7019	Consumption of goods for resale
	+	1017	Income from licenses and royalties
	+	1018	Other operating income
	+	1059	Other turnover
	+	2065	Changes in inventories, finished goods
	+	2099	Total price correction, goods for resale
0700[1]	Imports of goods and services		
0900[1]	Customs and duties		
2000	Intermediate consumption		2011+2018
2011	Input, ex. R+M, IPC and FISIM		
	+	2009	Interm. cons., total gen. gov. (OIMA)
	+	2013	Purchases (consumpt.) of fuel and power
	+	2014	Purchases of work for processing
	+	2015	Other consumption of raw materials
	-	2098	Total price corr., stocks of raw materials
2018	Input; R+M, IPC and FISIM =		
	+	7020	Expenditure on rentals, excl. heating
	+	7021	Renting and leasing of machinery
	+	7022	Renting and leasing of transport equipm.
	+	7023	Rent. and leasing of computer equipm.
	+	7024	Other exp. on renting and leasing
	+	7025	Expendit. on consumables
	+	7027	Repair and maintenance; buildings
	+	7028	Repair and mainten.; other constructions
	+	7029	Repair and mainten.; transport equipm.
	+	7030	Repair and mainten.; machinery
	+	7031	Repair and mainten.; buildi. and constr.
	+	7032	Rep. and maint.; machi. and transp. equi.
	+	7035	Rep. and maint.; not specified.
	+	7040	Contributions to the trade
	+	7041	Expenditure on licences and royalties
	+	7042	Other external expenditure incl. in input
	+	7044	Public fees as purchases of services
	+	7050	Financial interme. services directly paid
	+	7051	FISIM
	+	7055	Insurance (negative) corr. from premiums to services
	+	7059	IPC corr. when transf. to/from other MLS-codes

Note: [1] Indicates that data are not derived from the intermediate system.

Table 6.2 National accounts target totals - functional system, cont.

ANVID	Intermediate system code	Definition/comment
3110[1]	Household final consumpti. expen.	
3130[1]	Consumption, NPISHs	
3141[1]	Gov. indiv. consum., market output	
3142[1]	Gov. indiv. consum., non-market output	
3200[1]	Government collective consumption	
5110[1]	Residential buildings	
512.	Capital formation, build. and struc.=	
	+ 6121 (part of)	Acquisitions, existing buildings
	+ 6123	Construction expenditure, new buildings
	+ 6124	Rebuilding, building improvements, etc.
	+ 6125	New construct. and rebuild. of roads etc.
	+ 6126 (part of)	Acquisitions of other real estate
	+ 6140 (part of)	Acquisitions, work in progress
	- 6221 (part of)	Disposals, existing buildings
	- 6223 (part of)	Disposals, roads harbours etc.
	+ 6321	Acqui. and disp. of exist. build. (gen. gov. (OIMA))
513.	GFCF, machin. and transp. equip.=	
	+ 6131	Purchases of machinery and equipment
	+ 6132	Purchase of cars
	+ 6133	Purchase of other transport equipment
	+ 6134	Purchase of other equipment
	+ 6140 (part of)	Acquisitions, work in progress
	- 6231	Disposals of equipment
	- 6232	Disposals of cars
	- 6233	Disposals of other transport equipment
	- 6234	Disposals of other equipment
5140[1]	GFCF in Weapons systems	
5150	Capital formation, breeding stock=	(relevant for agriculture only)
	+ 6127	Purchases of breeding stock
	– 6227	Sales of breeding stock
5300[1]	Net purchases of valuables=	
5171[1]	GFCF in Research and development	
5172	Mineral exploration=	
	+ 6104	Mineral exploration
5173	Purcha. and own account software=	
	+ 6101	Own account software
	+ 6102	Purchased software
	– 6202	Disposal of software
5179	Entertainment, cultural and artistic originals=	
	+ 6103	
	+ 6110 (part)	Originals, own account and purchased
	- 6203	Other acquisitions of intangible assets
		Disposals of artistic originals
5210	Changes in invento., raw materials=	
	+ 2060	Changes in inventories of raw materials
5221[1]	Changes in inventories, work-in-progress on cultivated biological assets	
5223	Chang. in invent., finished produc.=	
	+ 2065	Changes in inventories, Finished products
5251	Changes in inventories, wholesale=	
	+ 2061	Goods for resale, wholesale
5252	Changes in inventories, retail=	
	+ 2062	Goods for resale, retail 1)
5263[1]	Changes in inventories=	
	+ 2063	Changes in invent., sources other than account statis.
5264 [1]	Chang. in inventories=	
	+ 2064	Changes in inventories, based on product balancing
600. [1]	Exports of goods and services	2081 + 2082
6001[1]	Exports of goods and services, danish production	
6007[1]	Exports of goods and services, re-exports	

Note: [1] Indicates that data are not derived from the intermediate system.

When the target totals are compiled, they are subsequently distributed by 2350 products as described in section 6.0.2

6.0.2 Supply and use tables as a framework for balancing

Supply and use tables and the compilation of national accounts

The current system of Supply and Use Tables (SUT) for Denmark was established in the mid-seventies. Since then the calculation of annual SUTs has been a totally integrated part of the compilation of annual National Accounts in both current and constant prices.

The integration of SUT in the compilation of National Accounts implies that a number of NA aggregates are derived directly from the SUT. This in particular relates to all the NA aggregates in the "Goods and services account" and the "production account". The integrated procedure is in contrast to a procedure where SUT are compiled after the production of the NA figures implying a number of restrictions on the totals of the SUT.

In general terms the advantage of having the compilation of SUT as an integral part of the production of national accounts can be formulated as follows:

- It is the most efficient way to incorporate all basic data – aggregated or detailed – into the national accounts framework in a systematic way.

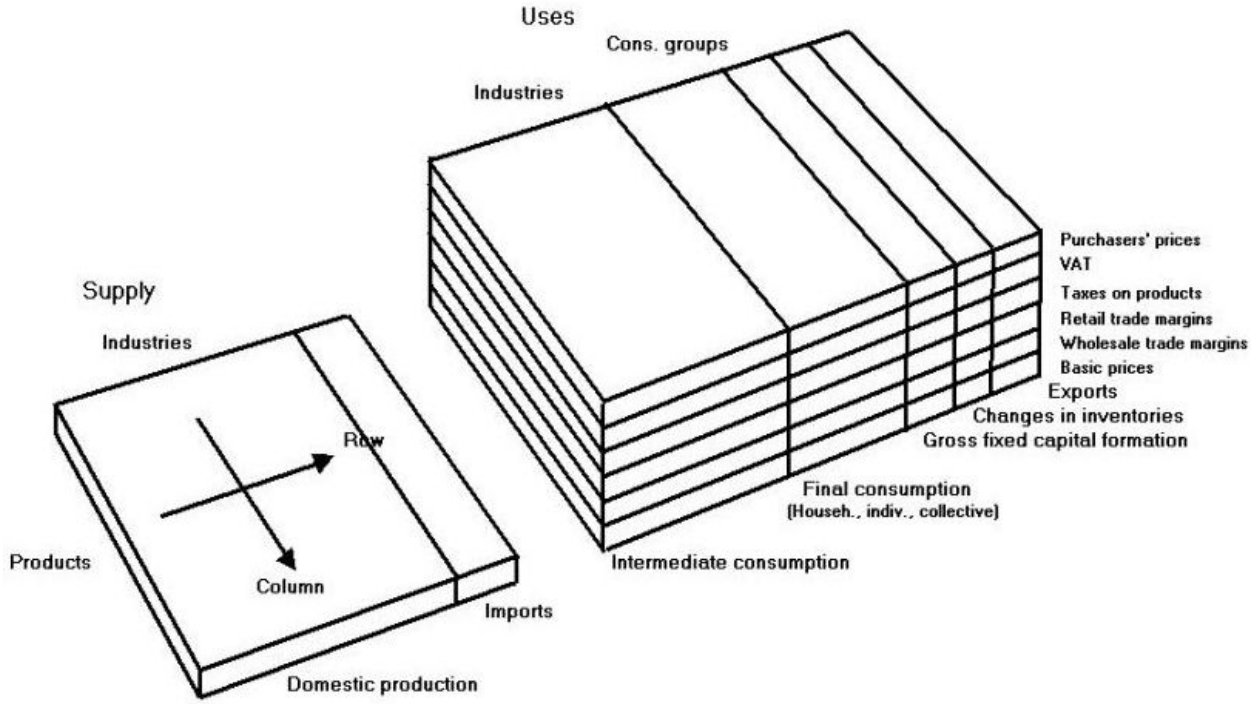
- It is an effective way to ensure consistency at a detailed level and thereby improve the overall quality of the national accounts.

The Danish SUT are compiled in connection with the final annual accounts, which are released with a delay of almost three years. The structural information entailed in the SUT for the latest final year is used in the compilation of preliminary annual and quarterly national accounts but no balanced preliminary or quarterly SUT are produced. The description in the following therefore refers to the compilation of the SUT as a part of the final annual national accounts.

The framework of Supply and use tables in Denmark

The principle of the Danish SUT-system is illustrated in figure 6.1. It shows the supply and use of all products and the treatment of the connection between the different value-levels (basic values, purchasers' values). The sub matrices for basic values, trade and transport margins, net taxes on products, non-deductible VAT and purchasers' values are stacked as "layers" to visualise the transformation from basic to purchasers prices for each cell of the system.

Figure 6.1



Products are shown as rows, categories of use (by industries, consumption groups etc. when relevant) are shown as columns. Notice that what is here referred to as rows and columns consist of the relevant parts of all the “layers” shown in the figure.

As a starting point supply is shown as a matrix of basic values in the left side of the figure. At the right side of the figure the use matrix at basic prices is shown as the bottom "layer". In the balanced commodity flow system total supply at basic prices must equal total uses at basic prices for each product. Trade- and transport margins are here a special case: At the supply side they are shown as output of trade services at basic prices from the industries in which they are produced but they are left out from the basic price level on the uses side. Here they are shown in the margin-matrices where they are distributed together with the basic values to which they are related. The wholesale trade matrix also includes transport margins.

Net taxes on products and non-deductible value added tax are also distributed as matrices uses side.

In the rows and the columns we distinguish between the following groups:

There are at this moment approximately 2350 products, which consist of approximately 1960 goods and 410 services. For goods the categories are defined as one or more 6-digit Harmonized System groups. There is at least one NA-good for each 4-digit HS-group. A key linking the NA-goods to CPA has been established. For services the categories are in principle based on 4-digit CPA. In some areas 4-digit CPA groups have been subdivided (e.g. in the area of business-services) in others a number of 4-digit CPA groups have been aggregated to the NA-categories (e.g. trade) The NA-categories for services are kept almost constant for a number of years. The key defining the NA-categories for goods are updated annually in order to take account of - normally relatively few - changes in the HS-groups.

The number of columns for domestic production is 117 reflecting that we distinguish between 117 activity groups. Those groups are based on the official Danish nomenclature for activities, which have direct links to NACE and ISIC. The classification in to activities is based on establishment units (Local-kind-of activity units). In a few cases we have found it important to have more homogeneous branches defined by activity. This applies to agricultural production, construction, trade and motor vehicle repair. Thus for example we combine all trading activity into the activity-defined trade-industries, regardless of the industry in which the activity is classified in the primary statistics.

The import column is a vector showing import by products. At a later stage we expand it into a matrix including a geographical dimension, but this is not a part of the core SUT-framework.

Intermediate consumption is broken down by the same 117 industries as domestic production. Until recently the uses side had an extra branch showing the intermediate consumption of FISIM; this branch has disappeared as FISIM is now distributed by uses.

Final consumption expenditure of households and NPISH is subdivided into 74 COICOP groups. The classification is based on COICOP.

Final consumption expenditure of general government is divided into three major groupings, collective consumption expenditure, individual consumption expenditure on services produced by general government and individual consumption expenditure on services produced by market producers but paid by general government and supplied to households - without any transformation – as social transfers in kind. The first group is further subdivided into 10 COFOG groups, whereas the other groups are further subdivided into the 74 COICOP groups.

Gross fixed capital formation is subdivided into thirteen groups according to type of investment good (transport equipment, new buildings etc.). In combination with the product-rows this leads to a diagonalistic structure with very few off-diagonal elements. The justification for this subdivision has to do with practical aspects of our systems for preliminary and quarterly accounts. A separate system distributes each type of GFCF by products and 69 industries.

Changes in inventories are classified into 7 groups depending on the kind of stocks (for example stocks of raw materials, inventories in wholesale trade etc.)

Exports are for reasons of deflation divided into two categories, ordinary exports and re-export. At a later stage we expand it into a matrix including a geographical dimension, but this is not a part of the core SUT-framework.

Overview of the balancing process

The process of constructing the SUT for a given year can be summarised into the following steps:

The first step is to gather all the available data on the actual year on target totals and other values that can be entered directly into the system as predetermined.

The next step is to create a complete initial version of the SUT. This version is compiled using automatic processes, but at this stage a number of unsolved problems will remain: For some products supply will not equal uses. For most categories of use the totals will usually differ from their targets. Total trade and transport margins and total VAT may also differ from their respective targets. This step will be referred to as "Automatic balancing".

Then follows a step, where the initial version of the product-balances is adjusted manually. The unsolved problems are examined closely. In many cases such problems will reveal errors in the calculations that produce data-input to the product-balances or in the primary statistics itself. Solutions to such problems may be found in co-operation with the relevant sections of the statistical bureau and may involve changes in supply, predetermined uses or target-totals. A number of products are redistributed between uses to bring the distance between totals and targets within an acceptable range for each category of use. Corrections to the initial balances are entered into the system to create a new - but not yet final - version. This step will be referred to as "Manual balancing"

In the last step the differences between totals and targets are removed except where such differences are considered acceptable. In this step trade and transport margins and VAT are finally adjusted to their targets. This step will be referred to as "Final balancing".

Incorporation of available data on the actual year

In a number of subsystems all available data are prepared by suitable corrections before they are incorporated into the SUT-framework. The available data for a given year is never complete in the sense that it enables us to fill out the full supply and use tables. However it offers – as briefly described below – a sufficiently restrictive frame for the values in the system in order to fill out the complete SUT in a reliable way.

In general terms a short description of the data that on an annual basis is incorporated directly into the SUT-framework would be:

On the supply-side (cf. fig. 1) the available data allows us to fill out the complete supply matrix annually. Data from the agricultural accounts, accounting statistics (from the Structural Business Statistics) and the General government accounts makes it possible to calculate total output in basic values (column totals for industries in fig.1) for almost all industries. Only for a few branches (financial intermediation) separate calculations have to be made.

The distribution of the total output of industries on products is for agriculture and general government derived directly from the primary statistics. For manufacturing the output-totals are combined with the Prodcom statistics to calculate the product distribution. Information on the product-distribution in the service area is somewhat scarcer. For some service industries we have annual information on the output by products, for example transport and IT-industries. For others we might rely on older ad-hoc information on the product distribution. In some cases where it seems reasonable and we have no other information we assume equality between output of a given service industry and the characteristic product. For example we assume that the output of architects consists of architectural services and the output of hairdressers consists of hairdressing. When this assumption is used it is done at the most detailed industry-level (in total 800 industries).

The total and product-distribution of the import column is directly available from the foreign trade (goods) and balance of payments (services) statistics.

On the uses side we have less abundant information, usually only for column totals. Except for final consumption expenditure of general government, exports and change in inventories we only have scattered and often irregular information about the use in a given category distributed by products.

For intermediate consumption by industry the total values in purchasers' prices are extracted from the same sources used for the calculation of total output.

The totals at purchasers' prices for each of the 74 groups of final consumption expenditure of households are estimated using a variety of sources, most important information on the value of retail turnover to households and the household budget surveys. Data on final consumption expenditure of general government are available directly from the statistics on general government accounts both for the totals and the distribution by products.

The subsystem for the estimation of the totals at purchasers' prices for the ten different groups of gross fixed capital formation is rather comprehensive. The accounting statistics together with information on new established firms gives us for each industry a grand total for gross fixed capital formation. Together with information on the total domestic supply of some investment goods (transport equipment, construction, breeding stocks a.o.) the totals at purchasers' values for each of the ten groups can be estimated.

Changes in inventories pose a special problem, first of all because it would be nonsense to assume a distribution by products proportional to the preceding year. Secondly a residual calculation of the change in inventories of each product using the definition that supply equals demand at basic prices is refused in part because we think we can make more reliable estimates but most importantly because this would eliminate the use of the identity between supply and use as a tool for evaluating all the other estimates.

In some cases we have available data on stocks of specific products, notably agricultural and energy products, but the usual data input is information on the value of opening and closing stocks in each industry. These stocks are then distributed by products based on particular assumptions. For example inventories of raw materials in a given industry will be distributed proportional to the intermediate consumption of goods in that branch. Stocks in a given trade branch will be distributed proportional to the supply of goods typically traded in that trade branch. The changes in inventories are then calculated for each product using the usual price-correction-

technique. The result is a column for changes in inventories distributed by products (at purchasers' values) that might be attached a reasonable amount of plausibility.

The total and product-distribution of the export columns (at purchasers' values) are directly available from the foreign trade (goods) and balance of payments (services) statistics.

As it has been seen most column totals will be calculated at the level of purchasers' prices. We have however some subsystems that calculate column totals for other value-levels as well. For example we make calculations for the column total of retail trade margins for some consumption groups. This implies that for those groups we have column totals for two (or more) value levels.

On the use side we also have some subsystems that annually determines parts of the use-matrices. For instance we have subsystems for repair and maintenance of buildings and other construction and a subsystem for energy products. These subsystems determine the complete rows for these products on the use side at all value levels.

Other subsystems determine individual cells or a number of cells on the use side. This includes gross fixed capital formation in construction, railroad rolling stock, ships and airplanes and a few other areas. For a given year there might be ad hoc information in certain areas that is considered suitable enough in order to enter as predetermined.

Furthermore we have subsystems that calculate the total (accrued) net taxes on each product (row totals in the matrix taxes on products) and the grand total of the (accrued) non-deductible VAT based on statistics for General Government.

The above description covers data that are considered to be reliable enough to be classified as predetermined. This means that it will not be changed in the process of automatic balancing but only can be changed later according to a manual decision. It follows from these considerations that there are other information – usually less reliable – that are used in the SUT-framework. This is described in the section on automatic balancing.

The calculations results in coverage of the following parts of the SUT-framework cf. figure 1:

1. A complete supply matrix
2. Target column totals for all uses at purchasers' values
3. Distribution on the use side by products of the columns for exports and changes in inventories at purchasers' values and of the columns for final consumption expenditure of general government at all value levels.
4. Full specification for certain products (rows) at all value levels on the use side.
5. Specification of certain cells or groups of cells on the use side.
6. Total value of net taxes on products by product (Row totals for the matrix "Taxes on products").
7. Grand total for the VAT-matrix.
8. Furthermore the logic of the framework offers the following general information:
9. Total use of products at basic values (row totals for the use part of the basic value matrix) being identical to the total supply of the product. Although this is a simple feature of the system it is probably the most important feature and highly useful in ensuring the overall quality of the national accounts.
10. Grand total for the wholesale trade matrix being equal to the output of the wholesale branch.
11. Grand total for the retail trade matrix being equal to the output of the retail branch.

Initial automatic balancing procedures.

Starting point

The data described in the previous section is directly incorporated in the SUT-framework. It is as mentioned treated as predetermined values which means that it will not be changed in the process of automatic balancing but only can be changed later according to a manual decision.

Before any balancing or distributive procedures can begin we have to have some plausible figures in all relevant cells on the use side. A standard default solution is here to use inflated values and relations from the balanced SUT of the preceding year. In the absence of better knowledge we assume that product structures at basic values and corrected for price movements are constant. This is the same as assuming that the product-structure in a given column at constant prices is unchanged. Further on we assume that trade margin percentages,

percentages of taxes on products and VAT are constant over time or at least are moving in the same direction in a proportional way.

However there are a number of cases were we feel we have better information about the product structure than the standard information from updated last-years-structures. This kind of information is not considered reliable enough or suitable to enter directly as predetermined values but still to have informative value.

An example on this kind of data is the survey on raw materials in manufacturing. Another is in gross fixed capital formation where a sub-system offers a first bid on the product-structure for those cells which are not predetermined. A third example is corrections to the matrices on taxes on products and VAT in order to take account of changes in tax rates and systems.

In addition information from numerous ad hoc investigations have over the years been incorporated in the SUT-framework in this way. This can for example be investigations by the Anti Trust Authorities on the cost structure in particular industries, investigations by Statistics Denmark on building cost structure in relation to a new index for building costs, output of advertising services distributed by customers etc. The list is very long.

As mentioned above all these kinds of data replace the standard information from updated previous-years-structures. Since, however, they are not deemed predetermined they will be changed during the automatically balancing procedures described below.

Column adjustments. "Vertical distribution"

The procedures described in the previous section give us a starting point for the automatic balancing procedures. The matrices will at this point be unbalanced in the sense that total use will not equal total supply at basic values for most products, and the sum of the values in a given column will not equal the calculated target column total.

A first step towards a balanced system is adjustment of the values in the columns so they add up to the target column totals. For most uses targets exist only for totals at purchasers' values, in the full system targets may exist for other levels as well. Trade margins used in certain consumption groups can be an example.

The adjustments are made simultaneously at all price levels without changing any predetermined values. To adjust the values in a column, all non-predetermined purchasers' values are multiplied by:

(target column total - sum of predetermined values)
divided by
(sum of starting values - sum of predetermined values).

In the simple case, with a target for purchasers' values only, the same correction-factor are be used for non-predetermined values in all levels. If targets exist for other levels, the situation is somewhat more complex and there is a need for general corrections to trade margin percentages and/or tax-percentages used in the column. All these problems are solved automatically.

Some restrictions are put on the automatic adjustments to avoid creation of strange values. Automatic changes of sign are not allowed. The appearance of negative basic and purchasers' values are restricted to certain products that may be negative private consumption or disinvestments (examples: scrap, ships, cars) and uses (example: changes in inventories) unless the negative values are entered as predetermined. When both positive and negative uses are present in the same column the results of proportional adjustments can be unpredictable. In such cases we enter all negative uses as predetermined values. The programming ensures that warnings are issued when problems of this kind are encountered.

It follows that automatic adjustment will in certain cases fail to equal column totals to targets. In these cases the columns are written to a list of unsolved problems.

After "vertical balancing" we have a set of columns that (with the exception of the problematic columns mentioned above) represent an initial breakdown of the target value for purchasers' values into products using the initial assumptions about product structure from the starting values. Since all levels are adjusted simultaneously we have also a breakdown of all purchasers' values into the levels from basic prices to VAT.

Total use at basic values of each product will only equal supply in special cases as a result of predetermined values or by pure coincidence. Likewise the sum of the values in the other value levels will usually differ from their target values.

Row adjustments. "Horizontal distribution"

The next step towards balanced system is an adjustment of the values in the rows on the use side to the target totals in the rows.

The procedure starts by adjusting the level of basic values, and the adjustments are again made without changing the predetermined values at basic prises. These include basic values in cells with predetermined purchasers' values to avoid either distortion to trade margin percentages or changes to the original predetermined purchasers' values of these cells. All the non-predetermined basic values in a row (product) are multiplied by

(supply at basic prices - sum of predetermined values)
divided by
(sum of basic values from the "vertical distr." - sum of predetermined values)

and in these uses non-predetermined margins and taxes on products are changed by the same factor.

In the matrix for net taxes on products the non-predetermined values are then adjusted to the target row totals and finally the non-deductible VAT is recalculated to reflect the adjustments in the other levels.

Like in the vertical balancing procedure the computer-program is able to trap adjustments that would lead to strange and incredible values. For the same reasons as mentioned above the automatic balancing will fail to equal supply and use for a number of products. Typically supply is insufficient to cover the predetermined uses of the product. The rows that are left unbalanced in one or more levels can - like the unbalanced columns - be written to a list of unsolved problems.

The use table that is the result of the horizontal balancing procedure will (except for the unbalanced products mentioned above) fulfil the requirement that for every product total use must equal total supply at basic values and that net taxes on products should equal their target row totals.

However the sum of the values in a given column will usually differ from the target column total. Further on the sum of all trade and transport margins on the uses side will be different from the output of the trade industries and the sum of VAT will differ from the calculated total.

Automatic balancing as a repeated process.

For illustrative purposes the description of vertical and horizontal balancing has here treated the automatic balancing as two separate processes. In reality the whole procedure is handled by a single job that uses a few minutes on a PC (with a master file of approximately 50.000 records. Preparation of the data-inputs for the process is far more time-consuming). Every time the job is run, new listings of unsolved problems and resulting totals are produced.

When run for the first time with data for a new year a number of serious problems in the data-inputs will usually be revealed. Often problems can be traced back to errors and inconsistencies in data from the statistical sources. Some of these will need to be corrected because they will otherwise cause major distortions in the initial balances.

Before the system is ready for manual balancing the totals of trade and transport margins and non-deductible VAT should be brought within acceptable distance from their respective targets. Adjustments to total trade and transport margins are done by proportional adjustments to all trade margin percentages of the starting file before the vertical/horizontal balancing except in cells with predetermined trade and transport margins. If total VAT cannot be brought within acceptable limits by small adjustments to rates and assumptions used in the calculations, VAT may be left unbalanced at this stage. A search for a specific explanation of the difference may be more appropriate in this case.

In principle the vertical-horizontal balancing procedure could be repeated in an iterative manner, where each new iteration would use the result from the preceding as the starting point. In this early stage, where many problems are unsolved, this could however be a dangerous method and is therefore not used. Repeating the automatic balancing procedure from the initial starting point with specific corrections to the data inputs should not be mixed up with the iterative RAS-procedure.

Manual balancing

The unbalanced SUT resulting from the automatic balancing procedures is now transferred to the process of manual balancing. This task is conducted by 4 to 6 persons (balancers) within a month. Each person is responsible for an area of the economy. Such areas consist of a complex of industries and categories of final use with a high degree of interaction and their common products on either the uses- or production side. On the other hand all products and categories of use must belong to a complex to ensure, that they all are looked after by a responsible person.

The tasks of each balancer are the following:

Eliminate still existing differences between supply and use of products at basic prices. These differences can have various explanations. As mentioned earlier, serious problems may reveal a need to correct data from primary statistics. However, many remaining differences may be explained by differences in the coding of the same kind of products between production- and foreign trade- statistics, and the problem can then be solved by moving output, im- or exports from one product to another.

To check the credibility of the results from the automatic balancing.

To redistribute products between uses until the sum of values in a column are inside an acceptable distance from their targets.

To evaluate whether the results indicates needs for adjustment of the target column totals. The target-values will usually not be equally well founded on statistical sources. The less well-founded target column totals might be reconsidered in the light of the additional information obtained from the SUT-framework.

To keep the system manageable certain rules are to be followed. One of these is that all products are kept balanced with total uses = supply during the balancing process. This also applies to net taxes on products other than VAT. Another rule is that even though balancers are allowed to make corrections outside their "own" area they must ensure that major changes outside one's own complex are always negotiated with the “owners” of the other complexes involved, and that information is passed between the relevant persons.

Yet another important aspect of the manual balancing procedures is the need for documentation. Many corrections entered by the “balancers” will be independently motivated with references to statistical and other available sources or with common-sense considerations. It is important that the considerations behind the solutions are visible to other “balancers” and that the solutions can be reproduced, when the same problems are encountered in following years. These comments are entered directly in the spreadsheets where the adjustments are made.

The "balancers" use spreadsheets as an interface to a master file containing the SUT-tables. The master file is placed on a network server and is shared by all “balancers”. Procedures for extracting data from master-file to spreadsheet and transferring corrections from spreadsheet to the updated master-file are available as macros called from toolbars in the spreadsheet environment.

When updating the shared master-file it is important, that no invalid data are allowed as corrections. All corrections are tested for errors before they are accepted. Corrections to the cells need not necessarily be specified for all levels from basic- to purchasers' prices by the “balancers”. The software used to update the master-file will carry out the calculation of the missing values from default assumptions such as preservation of the trade margin percentages and recalculation of VAT using the same rules as in the original master file.

In the process the “balancers” need access to updated information on the state of the system like remaining differences between supply and uses at basic prices by product and the actual distances between column-totals and their targets. This information is obtained via the macros in the spreadsheet environment. It is also possible to extract information from the master-files of previous years for comparison purposes and to merge data covering several years into spreadsheets as time series.

Final balancing

When all manual corrections have been made, the sum of values in a given column will usually still differ from (the final version of) the target column totals. However such differences will be small for uses whose targets are considered to be based on reliable statistics. Furthermore there will be small differences between the grand totals of the trade margin matrices and their respective target values as well as a difference between the VAT-total and its target.

The first step in the final balancing procedures is to adjust the trade margin matrices to their targets by proportional adjustments of non-predetermined margins and recalculate VAT based on the adjusted values.

This will result in new – but still small – differences between the sum of values in a given column and the corresponding target column total. We now divide the target column totals into two groups: Those that are binding and those where small deviations can be accepted. This division of course reflect to a large degree the statistical sources and the reliability thereof. In our case the target totals where small deviations can be accepted are usually to be found for a number of groups of private consumption expenditure, certain groups of gross fixed capital formation and a few groups of intermediate consumption.

The second step in the final balancing is then to distribute the differences between the sum of column values and their binding targets. The cells that can participate in these corrections without causing inconsistencies in the system can be isolated. The corrections are made at the basic values and create new (small) differences between supply and uses for many products.

These differences are removed in the third step by a new horizontal distribution among the uses without binding targets. In this process trade and transport margins by products are not allowed to change and changes to margin percentages should be kept to a minimum. If these calculations should result in significant distortions the program issues warnings. Some manual adjustments may still be needed where too little value can be moved without creating significant distortions.

The total of non-deductible VAT that is a result of the balancing procedure cannot be expected to exactly match the target that is based on government accounts. It may be preferred to proportionally adjust VAT in specific columns, where the exact share of VAT-liable use is uncertain. A final proportional adjustment of VAT on all private consumption is used to eliminate the remaining difference.

Further automation?

The use of automatic procedures in the balancing of the Danish SUTs has by tradition been limited almost to the minimum needed to manage the amount of detailed data in the system. We have been rather sceptical to proposals to replace manual balancing by an automatic algorithm of some kind. It was mentioned earlier that even though it is possible to proceed in a RAS-like manner when the initial version of the SUT is created, it has been considered dangerous to do so. The initial data inputs usually contain errors and inconsistencies that are revealed during the manual balancing. Further automatic balancing could introduce significant distortions in the system if performed at this early stage. In the final balancing the situation is of course different, as it must be assumed that errors and inconsistencies have been removed before it takes place.

Om the other hand, in some cases where information on the input structure of certain industries is very scarce, as they are not covered by surveys of the use of raw materials or services, t
o avoid unnecessarily time consuming manual balancing, the redistribution of inputs between industries can be performed by a technique similar to the RAS-like procedure mentioned above, with automatic corrections limited to relevant areas at the uses side, and course subject to the usual restrictions i.e. predetermined values, VAT-rules and the like. This seem often to result in more plausible figures than the results from a manual balancing where adjustments have to be kept within a limited number of products with significant values.

Software

Historically programs used in the Danish final national accounts have been written in 3.generation languages as Cobol, Fortran or Pascal as well as some in-house products used on a mainframe that is now being phased out. The programs used for preparation of data inputs to SUTs have now been rewritten in SAS. Programs that need to make many "intelligent" decisions are still written in 3.generation languages, mostly Pascal. Today the Pascal programs are compiled using a Delphi compiler. Such programs are used for setting up the initial version of the SUT and for any kind of automatic balancing used during the final balancing step.

As mentioned above the system used for manual balancing uses Excel as the user interface. Visual basic macros are here used to find the relevant filenames, to export and import data, to format imported data and to call the (very fast) Pascal (Delphi-) programs that do most of the calculation work. As a typical Danish SUT file has approximately 50.000 records, the speed of calculation is not without importance for programs that are executed hundreds of times a day.

6.0.3 Size of balancing adjustments

As described in the previous section, the balancing of GDP from the production side, GDP(P), and GDP from the expenditure side, GDP(E), takes place in an integrated supply-use framework.

Once the initial target totals are compiled and the balancing takes place one can in principle distinguish the balancing adjustments. However, in practice, it is necessary to draw the line between the different steps in the compilation process in order to delimit what exactly is balancing adjustments. This is because the compilation is a process of many minor steps, and sometimes it is necessary to make corrections that relate to earlier steps during the balancing procedure if errors are detected at this stage.

The process table is a tool, which aims at distinguishing between different elements in the compilation and balancing process. In particular, when compiling the process table, all adjustments should be allocated to the proper category regardless whether they are found during the balancing process. This implies that any errors found in the underlying data during the manual balancing process should be allocated to data validation and not balancing adjustment. Therefore, balancing adjustments in the process table in principle shows pure balancing, i.e. pure differences between GDP(P) and GDP(E).

Table 6.3 shows an extract from the process table for 2012. Annex 7 shows the full process table. Table 6.3 shows that the balancing accounts for -0,5% on GDP(P) and +0,9% on GDP(E).

Table 6.3 Compilation of GDP, extract from the process table, 2012

	Total sources	Data validation	National accounts adjustments	GDP before balancing	Balancing adjustments	Balanced GDP
			DKK mill.			
GDP(P)	1 840 308	13 407	38 426	1 892 141	-9 515	1 882 625
GDP(E)	1 847 469	-6 344	25 474	1 866 599	16 027	1 882 625
			pct. of GDP			
GDP(P)	97.8	0.7	2.0	100.5	-0.5	100.0
GDP(E)	98.1	-0.3	1.4	99.2	0.9	100.0

Note: The difference between balanced GDP(P) and GDP(E) is purely due to rounding errors in the process table

GDP from the income side. GDP(I). is not described in the process table. because it is not an integrated part of the balancing in the supply-use framework. It is therefore not relevant to show GDP(I) before balancing and balanced GDP(I) in this context.

6.1 Other approaches used to validate GDP

Apart from all the checks that take place as part of the balancing in the supply use framework, source data, which are generally received electronically and at a detailed level, are always compared at the aggregate level with published figures. If there are any differences, a clarification is made and the error is corrected. When and if new data sources occur they are always assessed before being introduced to the national accounts.

The balanced supply-use tables are also assessed in the process of compiling supply-use tables in previous years' prices. Another validation is the comparison of wages and salaries with value added at the industry level.

As described in chapter 3, a comparison of theoretical VAT revenue with actual VAT revenue is also made in order to assess the coverage of GDP.

Validation of compilation methods and compilation systems are usually made in connection with major revisions or, if necessary, if changes in source data necessitate changes.

7. Overview of the allowance for exhaustiveness

7.0 Introduction

7.0.1 Geographical coverage

In accordance with the Commission Regulation (EC) No 109/2005, the Danish national accounts cover the economic territory of the Kingdom of Denmark except for the Faeroe Islands and Greenland.

7.0.2 General approaches to exhaustiveness

GDP from the production side is generally considered the most reliable. Therefore, the exhaustiveness adjustments, as described below, have mainly been described from the production side in the tabular approach to exhaustiveness (TAE) and the process tables. However, some exhaustiveness adjustments are calculated from the demand side, for example Illegal activities relating to narcotics and areas in the black economy where the household budget survey (HBS) is considered more reliable; the so-called discrepancy method as described below).

In the Danish national accounts, there are two types of allowance for the black economy. First of all, there are estimates for the *work that is hidden* to the public authorities in order to avoid taxes. In these cases, both the seller and the buyer of a product will typically know that the production is not reported to the tax authorities, and the price will be below market price. Secondly, there are allowances for the *under-reporting and the associated VAT fraud* that companies take advantage of. In these cases, buyers do not necessarily know that the production is not declared. In any industry, there is only one type of allowance in order to avoid the risk of double counting. This would probably be the case if both types of allowance were introduced in a given industry since a significant part of the extra profits made by taking advantage of under-reporting will be spent on hiring black labour. The allowances for the black economy are additions to output and value added. There are no corrections to intermediate consumption.

The latest benchmark survey for the black economy was made in 2004 with reference to the year 2003, which was partly financed by the EU[18]. The values from the benchmark study are extrapolated using various methods, one important source being annual supplementary questions in the LFS regarding hours worked in the “black” economy. The methods are described in detail below.

As recommended in Commission Decision (98/527/EC, Euratom) Statistics Denmark has made calculations on the basis of the supply-use tables that compare theoretical and actual VAT revenue for the period 2005-2012. The results of the calculations are shown in chapter 3.28 and generally the difference between theoretical and actual VAT revenue were relatively low and constant over the period.

7.1 Allowance for exhaustiveness in the production approach

7.1.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

Comparison of employment data with demographic sources

The latest comparison between employment data and national accounts data was undertaken in 1994 with 1991 as reference year. The comparison was made in relation to the implementation of the Commission Decision (94/168/EC, Euratom) of 22 February 1994 on measures to be taken for the implementation of Council Directive 89/130/EEC, Euratom on the harmonization of the compilation of gross national product at market prices ("exhaustiveness decision").

Demand-side employment (point of view of the enterprises) is the employment underlying the estimate of GDP using the output approach, i.e. employment in those producer units which are covered by the estimate of the industries' gross value added. For 1991 the employment underlying the estimate of the industries' value added before the allowances for activity in the black economy was employment according to the ERE [establishment-related employment] statistics.

[18] The study is described in detail in the report ”Underground production in Denmark” by Statistics Denmark from 2004.

Supply-side employment is demographic employment figures reported by households in the form of population censuses and labour force surveys. Since Denmark has not carried out traditional population censuses since 1970 but has switched to register-based estimates, only one demographic source was available, namely the EU-harmonised Labour Force Survey (LFS).

Denmark validated the GNI estimate with the help of employment data by comparing the ERE and the LFS statistics. The report entitled "*Validering af den beskæftigelse, som ligger til grund for nuværende BNI-beregninger*", ["Validation of employment underlying the current GNP calculations"], which Denmark sent to the Commission in 1994 as required by the exhaustiveness decision, discusses the methods used, including conceptual corrections, for the comparison of the statistical sources in question.

Table 7.1 gives the main results of this comparison.

Table 7.1 Comparison of employment data from the demand side and from the supply side, 1991

	Self-employed etc.	Employees	Total
	pers.		
ERE			
Calculated man-years (annual FTEs)	239 000	1 946 000	2 185 000
+ employment< 10 hours	0	25 000	25 000
+ certain primary self-employment	30 000	0	30 000
+ secondary VAT payers	30 000	0	30 000
Corrected FTEs	299 000	1 971 000	2 270 000
LFS			
Calculated FTEs	288 000	2 038 000	2 326 000
LFS – ERE	-11 000	67 000	56 000
	pct.		
% of LFS	-3.8	3.3	2.4

Description of allowances according to types of non-exhaustiveness (N1-N7)

Allowances for exhaustiveness are made for the following N-types:

N1 Producer should have registered
N2 Illegal producer
N3 Producer not obliged to register
N5 Registered entrepreneur not included in statistics
N7 Not all required data are asked

N1 covers output in the “black economy” which includes both work that is hidden to the authorities in order to avoid taxes and under-reporting and associated VAT-fraud. There is no allowance for intermediate consumption associated with output in the “black economy” as this is assumed to be already accounted for.

N2 covers illegal activity relating to smuggling, drugs and prostitution. There is no allowance for intermediate consumption associated with illegal activity as this is assumed to be already accounted for.

N3 adjustments cover values for farmers’ output for own consumption etc. They are available from agricultural statistics and are assumed to cover farm-gate sales as well, most of which presumably come under the “black” economy (N1). The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by ESA2010. Table 7.1 shows the adjustments by industry. Total adjustments to value added amount to 78 mio. DKK.

N5 covers adjustments for value threshold in source statistics. There are adjustments to both output and intermediate consumption.

N7 covers adjustment for production for own final use by market producers and wages and salaries in kind (“fringe benefits”).

There are no adjustments for N4 Registered legal person is not included in statistics (they are included in N5). Adjustments for N6 Mis-reporting by the producer are included in N1.

Implicit adjustments

For agriculture etc. and dwellings, output is estimated, using a price times quantity calculation. This captures the value of underreporting and work in the black economy implicitly, since the method ensures that all output in these areas is covered. The same goes for letting of non-residential premises, where the output value is estimated from the expenditure side.

For dwellings work in the hidden economy is also implicitly captured. Based on assumptions, an "of which" estimate for the black economy has been made. Assuming that black letting of dwellings primarily relates to the letting of holiday homes and that this takes place on average one week per year, a value of 221.783 mio. DKK has been arrived at. Implicit adjustments are not shown in the TAE tables.

7.1.2 Adjustments made for the different types of non-exhaustiveness

The tabular approach exercise (TAE) has been carried out in order to document existing explicit exhaustiveness adjustments. Firstly, existing explicit adjustments have been identified. In that process, delimitation between exhaustiveness adjustments and other adjustments had to be made. To be consistent with the process tables, we carried out the two exercises in parallel. The result is that all adjustments to primary statistics are documented – whether as N-types in the TAE or other adjustments in the process tables.

Implicit adjustments are not shown in table 3a. The reason is that we would lose the consistency between the process tables and the TAE.

Table 7.2 shows the result of the TAE in the form of table 3A which summarises the N-type adjustments (value added by sector and nace rev.2 21 (groups)). For the full TAE exercise please refer to annex 6:

Table 7.2 Summary of TAE (table 3A), 2012

	N1	N2	N3	N4	N5	N6	N7	Total	Percent of GDP
	DKK mill.								pct.
S11	-	-	-	-	570	-	14 041	14 611	0.78
S12	-	-	-	-	-	-	-	-	-
S13	-	-	-	-	-	-	0	0	0.00
S14	9 522	2 859	78	-	1 298	-	382	14 139	0.75
S15	-	-	-	-	-	-	-	-	-
Nace A	13	-	33	-	-	-	31	77	0.00
Nace B	-	-	-	-	0	-	32	32	0.00
Nace C	104	-	45	-	136	-	3 913	4 198	0.22
Nace D	-	-	-	-	-	-	160	160	0.01
Nace E	-	-	-	-	1	-	28	29	0.00
Nace F	2 989	-	-	-	166	-	1 037	4 192	0.22
Nace G	977	1 930	-	-	569	-	2 377	5 854	0.31
Nace H	174	-	-	-	74	-	562	810	0.04
Nace I	1 454	-	-	-	65	-	221	1 740	0.09
Nace J	314	-	-	-	181	-	1 736	2 232	0.12
Nace K	-	-	-	-	-	-	-	-	-
Nace L	-	-	-	-	52	-	161	212	0.01
Nace M	27	-	-	-	393	-	3 711	4 131	0.22
Nace N	15	-	-	-	214	-	269	498	0.03
Nace O	-	-	-	-	-	-	14	14	0.00
Nace P	39	-	-	-	-	-	12	51	0.00
Nace Q	56	-	-	-	-	-	63	119	0.01
Nace R	355	-	-	-	-	-	39	395	0.02
Nace S	1 901	928	-	-	18	-	55	2 903	0.15
Nace T	1 104	-	-	-	-	-	-	1 104	0.06

The adjustments as presented in the table are mainly made at the detailed level using the supply use tables (SUT), which contain information at product level for explicit adjustments for the "black" economy (N1), illegal

activity (N2), production of output for own final use (N3) and fringe benefits and production of capital goods for own final use (N7). This makes it possible to extract the detailed information at industry level.

Adjustments for N5 cannot be identified in the SUT. These adjustments for the value threshold are made at the industry level and have no explicit product breakdown.

The sector dimension has been obtained in different ways depending on the N-type. N1, N2 and N3 adjustments are assumed to be carried out in the household sector (S14) only. For N5 information is used from the accounting statistics. For N7 information from the tax authorities is used.

7.1.3 Exhaustiveness methods

This section has a more detailed description of the explicit exhaustiveness adjustments by N-type. At the end of the section, there is a description including an estimate of the implicit adjustments.

Adjustments for N1 Producer should have registered

Adjustments for N1 cover output in the "black" economy. There are two types of allowance for the black economy. First of all, there are estimates for the *work that is hidden* to the public authorities in order to avoid taxes. In these cases, both the seller and the buyer of a product will typically know that the production is not reported to the tax authorities, and the price will be below market price. Secondly, there are allowances for the *under-reporting and the associated VAT fraud* that companies take advantage of. In these cases, buyers do not necessarily know that the production is not declared. In any industry, there is only one type of allowance in order to avoid the risk of double counting. This would probably be the case if both types of allowance were introduced in a given industry since a significant part of the extra profits made by taking advantage of under-reporting will be spent on hiring black labour. The allowances for the black economy are additions to output and value added. There are no corrections to intermediate consumption.

Table 7.3 shows all allowances for the black economy (N1), i.e. underreporting and associated VAT-fraud and hidden economy divided by industry and product. The basic price equals the purchasing price and the allowances for production equals the allowances for value added. The total adjustment for N1 is 9.522 mio. DKK or 0,51 percent of GDP in 2012.

Table 7.3 N1 Producers should have registered, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
A	Tel. interviews extrapolated	Fishing	13	-	18
C	Tel. interviews extrapolated	Building materials	42	-	42
C	Tel. interviews extrapolated	Toys and jewellery	5	-	5
C	Tel. interviews extrapolated	Bakeries	26	-	26
C	Tel. interviews extrapolated	Paper and stationary	10	-	10
C	Tel. interviews extrapolated	Furniture	10	-	10
C	Tel. interviews extrapolated	Clothing	10	-	10
F	Tel. interviews extrapolated	Construction	2 989	-	2 989
G	Tel. interviews extrapolated	Car repair	337	-	337
G	Indicator method	Under reporting and associated VAT-fraud	640	-	640
H	Tel. interviews extrapolated	Taxies etc.	10	-	10
H	Tel. interviews extrapolated	Freight transport	164	-	164
I	Indicator method	Under reporting and associa. VAT- and tips fraud	1 454	-	1 454
J	Tel. interviews extrapolated	Software services	314	-	314
M	Tel. interviews extrapolated	Accounting/bookkeeping	27	-	27
N	Tel. interviews extrapolated	Cleaning in companies	15	-	15
P	Tel. interviews extrapolated	Teaching	39	-	39
Q	Tel. interviews extrapolated	Health services	56	-	56
R	Tel. interviews extrapolated	Theater, concerts	355	-	355
S	Tel. interviews extrapolated	Repair of household machines	1 034	-	1 034
S	Discrepancy method extrapolated	Underreporting and ass. VAT fraud (hairdressers)	868	-	868
T	Tel./discrepancy extrapolated	Private households with employed persons	1 104	-	1 104
Total			9 522	-	9 522

The following describes the three different methods as indicated in table 7.3 used for the benchmark year 2004 and the extrapolation.

Telephone interviews

These adjustments are based on benchmark estimates from 2004 that are extrapolated using annual information from supplementary questions regarding *hours worked in the black economy* in the Danish Labour Force survey.

The main source behind the benchmark estimates of the *hidden work* was more than 10,000 telephone interviews, which have been carried out in connection with the Danish Labour Force Survey (LFS) in the first two quarters of 2004. As mentioned, the estimates stemming from the telephone interviews are primarily used in industries, where *hidden work* is believed to be the dominant underground activity.

The information from the telephone interviews is valued at "black" prices, which are the actual transaction prices and therefore the market values. The respondents were asked about the value of the black work. In cases when they did not give this information, the value has been imputed.

Industries where telephone interviews have been used are indicated in table 7.3

Discrepancy method

The idea behind the discrepancy methods is to confront information from the supply side with ditto from the demand side. It is assumed that income/production is not always registered whereas expenditure would usually be registered. When the figures on the demand side are higher than on the supply side, the discrepancy must be the production that is not registered on the supply side.

A well-known discrepancy method used for national accounts purposes is to confront registered production in a given industry with the expenditure estimates from the consumer surveys. The method is used to make an annual estimate of the allowance for under-reporting and the associated VAT fraud in *hairdressing salons and beauty parlours* and part of the *hidden production of cleaning services for private household*s as indicated in table 7.3.

Indicator method

The indicator method is used to estimate the value of under-reporting in the national accounts industries *retail trade of food* and *restaurants* because under-reporting is thought to be the dominant black activity in these industries. In addition, an allowance is made for *tips in restaurants* that are not declared to the tax authorities.

The adjustments are based on a set of indicators, which are estimated using information collected in the economy. These indicators are used to make annual estimates for the allowance to turnover for under declaration and to tips that are not declared.

The basic idea behind the indicator method is that information collected in the economy can be used directly to estimate the value of under-reporting. Naturally, the tax authorities get valuable pieces of information when carrying out their unannounced raids. In addition to this, personal interviews carried out by Rezaei (2003, 2004)[19] is used to identify in which industries the under-reporting takes place, and what the value of the under-reporting is. Rezaei's study focuses solely on immigrants who own a firm or who are employed. His sample is not representative for the whole population and must be used with caution. Based on these sources of information, a set of indicators that reveal the hidden share of turnover in different industries can be constructed.

Adjustments for N2 Illegal activity

Statistics Denmark includes three types of illegal activity (N2): Prostitution, drugs and smuggling of alcohol, tobacco, soft drinks and sweets. This is in line with the decision made by the GNI Committee, and the

[19] Rezaei, Shahamak (2003). Det dual arbejdsmarked i et velfærdsstatsligt perspektiv – et studie af dilemmaet mellem uformel økonomisk praksis og indvandreres socio-økonomiske integration.Delrapport 1. RUC, Roskilde.

Rezaei, Shahamak (2004). Det duale arbejdsmarked i et velfærdsstatsligt perspektiv – et studie af dilemmaet mellem uformel økonomisk praksis og indvandreres socioøkonomiske integration. Delrapport 2. RUC, Roskilde.

methodology used is also in line with the recommendations of the GNI Committee (GNIC230). Also in line with the GNI committee recommendations, there are no adjustments to the transition from GDP to GNI.

According to ESA2010, illegal activity is included in the production boundary. Illegal activity differs from the black economy in that the activity is illegal in itself. The black economy is illegal in the sense that the evasion of taxes etc. makes it illegal, but the activity is not illegal as such.

Table 7.4 below shows the amounts estimated for illegal activity. The total adjustment amounts to 2.859 mill. DKK or 0,15 percent of GDP

Table 7.4 Adjustments for N2 Illegal activity, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
G	Price times volume	Retail trade marg. (smuggling and drugs)	1 398	-	1 398
G	Price times volume	Whole sale trade marg. (smuggling and drugs)	532	-	532
S	Price times volume	Prostitution services	928	-	928
Total			2 859	-	2 859

No explicit corrections have been made for *double counting*. First of all only trade margins are included. This means, that there is no risk that values already included in imports are included again. Secondly, there is not sufficient information for corrections due to for example money laundering. It is not unlikely, that part of the income generated by illegal activities is laundered in other industries by routing the income to these industries and hereby increasing turnover. Thirdly, it is not unlikely that some expenses on prostitution are already included as expenses in bars and clubs. No corrections have been made for that, however the estimates for prostitution are expected to be on the lower side.

The three types of illegal activity will be described in more detail below.

Smuggling

Smuggling is defined as: *Imports of goods for reselling not subject to payment of Danish taxes and duties. The goods may have been imported subject to or not subject to duties paid abroad.* Smuggling includes smuggling of alcohol, tobacco, soft drinks and sweets, and the estimates are made as quantities times prices. The estimates are to a large extent based on information from the Ministry of Taxation, which regularly publishes reports on cross-border trade including smuggling[20]. It is assumed that any intermediate consumption or gross fixed capital formation related to the smuggling activity is already accounted for. Therefore, the trade margins, as described below, account for total value added related to smuggling.

Smuggling of alcohol includes beer and wine. The smuggled beer and wine is mainly sold at small groceries because it is difficult for them to obtain favourable prices at the whole-saler because they only purchase small amounts.

For *beer* it is assumed that the smuggled quantity is 5 per cent of the quantities subject to duties for 2012. Annual information on prices for a bargain box of beer south of the Danish border (Germany) is from German border shops' advertisements in Denmark. These prices are used for the import value. For the illegal sales price in Denmark, the price of a bargain box of beer in Denmark is used. The difference between the two is the trade margin.

For *wine* it is assumed that the smuggled quantity makes up 1 per cent of the quantities subject to duties. A benchmark price for a bargain box of 6 bottles of wine of standard quality south of the Danish border (Germany) in 2006 is used for the import value. The price is extrapolated using the German consumer price index for wine. For the illegal sales price in Denmark, the price of a bargain box of 6 bottles of wine in Denmark is used. The difference between the two is the trade margin.

[20] Reports have been published in 2000, 2001, 2004, 2006, 2007, 2010, 2012, 2014 and 2015. They are named "Rapport om grænsehandel".

For *tobacco* only very limited information is available. It is assumed that the quantity (number of cigarettes) of smuggled cigarettes is 1 per cent in 2012 of quantities subject to duties. It is also assumed that the majority of smuggled cigarettes come from Eastern Europe and are mainly sold at pubs and large workplaces. The import price is based on prices in Poland and the illegal sales price in Denmark is assumed to be well below the Danish legal price. The market for smuggled tobacco is declining as the Danish consumption of cigarettes is declining.

In Denmark there is an illegal market for *soft drinks*, as soft drinks are subject to product taxes (product taxes on soft drinks are abolished as from 2014) and prices therefore a higher than in fx Poland and Germany. The information on quantities is from the Ministry of Taxation. It is assumed that the major part of smuggled soft drinks comes from Poland and the Polish retail price is used for the import price. For the illegal sales price in Denmark, observed prices in small "kiosks" in Copenhagen extrapolated using the consumer price index are used.

Sweets and chocolates are also subject to duty in Denmark. It is assumed that the smuggled amounts in 2012 are a little less than 3 percent of total consumption. Smuggled sweets and chocolates are mainly from Germany. Therefore, import prices are based on prices in Germany and the illegal sales prices are based on bargain prices in Danish Supermarkets. Smuggled sweets and chocolates are sold in small kiosks or groceries.

Table 7.5 shows value added, household final consumption expenditure and imports of smuggled goods. The values shown for the different products are at retail prices and the value shown for tourist expenditure (part of private consumption expenditure) is the total value at import prices.

Table 7.5 The impact of smuggling on GDP and GNI, 2012

	Tobacco	Beer and wine	Sweets, soft drinks and chocolate
	DKK mll.		
Output	4 826	15 919	45 731
Intermediate consumption	0	0	0
Household consumpt. Expendit.	76 168	192 462	149 837
Imports	71 342	176 543	104 106
Gross operating surplus	4 826	15 919	45 731
VA/GDP	4 826	15 919	45 731
GNI	4 826	15 919	45 731

Prostitution

Prostitution is compiled from the supply side, but a demand side estimate has been made for a benchmark year. The supply side estimate is based on number of prostitutes, divided into 5 types of prostitution and multiplied by prices. The number of prostitutes is based on a report from the Danish Centre for research on social vulnerability. The number of prostitutes are divided between resident prostitutes (prostitutes that stay in the country for one year or more), who produce services as domestic production and prostitutes that stay less than one year on tourist visas, who produce imported services. Prices are based on adds from newspapers and the internet. The demand side estimate (which was only made for three benchmark years) is based on a study also from the Danish Centre for Research on Social Vulnerability, which has asked a number of men on the number of visits to prostitutes. The number of visits was then multiplied by an average price per visit estimated on the basis of adds. Comparing the supply and the demand side estimates revealed that the demand side estimates were about 500 mill. DKK higher than the supply side estimates for the benchmark years 2002-2004. However, all sources indicate, that the supply side information is more reliable than the demand side information.

It is assumed that expenses on intermediate consumption are already partly accounted for elsewhere in the system. Some of the expenses may be part of household consumption expenditure, and in principle should be reclassified to intermediate consumption, but this is most likely insignificant and within the margin of error of the estimates.

Table 7.6 below shows the impact of prostitution on GDP.

Table 7.6 The impact of prostitution on GDP and GNI, 2012

	Street	Clinic	Individuals working from home	Escort	Club	Total
	DKK mill.					
Output	33	636	65	167	27	928
Intermediate consumption	0	0	0	0	0	0
Household consumpt. Expendit.	66	766	78	201	33	1 144
Imports	33	129	13	34	6	215
Gross operating surplus	33	636	65	167	27	928
VA/GDP	33	636	65	167	27	928
GNI	33	636	65	167	27	928

Drugs

It is assumed that there is no production of *drugs* in Denmark, only trade in drugs. Value added from the sale of drugs is estimated from the demand side. Estimates from the supply side based on seizured amounts have also been made as a one-off exercise but are not used because they are too fluctuating. The demand side is estimated as the average quantities consumed per drug user multiplied by the number of drug users and again multiplied by import- and retail prices respectively. The difference between consumption valued by import and retail prices then makes the trade margin which is equal to value added. The total number of drug users is made up by the number of "hard" users and the number of recreational users. Information on the number of hard users is taken from a report from the National Board of Health and information on the number of recreational users is based on assumptions on seizures from a report by the police on organised crime in Denmark and assumptions on average consumption by recreational users. Information on the number of hard users is available on a regular basis from the above mentioned report – estimates are available for 2001, 2003, 2005 and 2009. Between those benchmark years the number is extrapolated. Prices are based on information from the above mentioned report from the police on organised crime in Denmark. For import prices (=basic prices), so called" whole-sale prices" are used and for retail-prices, so-called "street prices" are used. It is assumed that any intermediate consumption and gross fixed capital formation related to the trade of drugs is already accounted for elsewhere in the national accounts.

Table 7.7 shows the impact of trade in drugs on value added, household consumption expenditure and import. The values shown for the different drugs are at retail prices and the value shown for tourist expenditure (part of private consumption expenditure) is the total value at import prices.

Table 7.7 The Impact of illegal drug trafficking and production on GDP and GNI, 2012

	White heroin	Brown heroin	Cocaine	Amphe-tamine	Ecstasy	Cannabis	Total
	DKk mill.						
Output	510	264	676	265	9	140	1 864
Intermediate consumption	0	0	0	0	0	0	0
Household consumpt. Expendit.	852	511	1 235	416	15	242	3 271
Imports	343	247	558	151	6	102	1 407
Gross operating surplus	510	264	676	265	9	140	1 864
VA/GDP	510	264	676	265	9	140	1 864
GNI	510	264	676	265	9	140	1 864

Adjustments for N3 Producer not obliged to register

N3 adjustments cover values for farmers' output for own consumption etc. They are available from agricultural statistics and are assumed to cover farm-gate sales as well, most of which presumably come under the "black" economy (N1). The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by ESA2010. Table 7.8 shows the adjustments by industry. Total adjustments to value added amount to 78 mio. DKK.

Table 7.8 N3 Producer not obliged to register, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
A	Agricultural statistics	Own consumption of eggs and milk	33	0	33
C	Agricultural statistics	Own consumption cattle and pigs	45	0	45
Total			78	0	78

Adjustments for N5 Registered entrepreneur not included in statistics

Adjustments for N5 cover allowances for activity in enterprises below the value threshold of the Accounts Statistic. There are additions to output and intermediate consumption resulting in a total adjustment of value added of 1.869 mio. DKK or 0,1 percent of GDP. Table 7.9 shows the adjustments to output, intermediate consumption and value added by industry.

Table 7.9 N5 Registered entrepreneur not included in statistics, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKk mill.		
B	Grossing up using general enterprise statistics	Value threshold	1	1	0
C	Grossing up using general enterprise statistics	Value threshold	366	231	136
E	Grossing up using general enterprise statistics	Value threshold	3	2	1
F	Grossing up using general enterprise statistics	Value threshold	0	283	-283
G	Grossing up using general enterprise statistics	Value threshold	1 114	545	569
H	Grossing up using general enterprise statistics	Value threshold	196	122	74
I	Grossing up using general enterprise statistics	Value threshold	167	102	65
J	Grossing up using general enterprise statistics	Value threshold	468	287	181
K	Grossing up using general enterprise statistics	Value threshold	0	0	0
L	Grossing up using general enterprise statistics	Value threshold	107	56	52
M	Grossing up using general enterprise statistics	Value threshold	1 010	617	393
N	Grossing up using general enterprise statistics	Value threshold	494	279	214
S	Grossing up using general enterprise statistics	Value threshold	47	29	18
Total			4 421	2 553	1 869

The adjustments are made as part of the processing of the account statistics and are made at the industry level (not product level). Based on the general enterprise statistics that contains turnover figures for all enterprises and includes information on whether each enterprise is covered by the industrial accounts statistics a grossing-up factor is calculated for each combination of DK-Nace-industry/ESA2010-institutional sector. A more detailed description can be found in chapter 3.

Adjustments for N7 Not all required data are asked

Adjustments for N7 cover adjustments for wages and salaries in kind (fringe benefits) and the production of capital goods for own final use (excluding own-account software and own-account R&D).

Total adjustments to gross output and value added are 14.423 mio. DKK or 0,77 percent of GDP in 2012. Table 7.10 shows the adjustments by industry. Below there is a description of the adjustments for fringe benefits and production of capital goods for own final consumption.

Table 7.10 N7 Not all required data are asked, 2012

Industry	Adj. method	Adjustment for	Gross output	Intermediate consump.	Value added
			DKK mill.		
A		Fringe benefits (car and pc) + capital goods for own final use	31	0	31
B		Fringe benefits (car and pc) + capital goods for own final use	32	0	32
C		Fringe benefits (car and pc) + capital goods for own final use	3 913	0	3 913
D		Fringe benefits (car and pc)	160	0	160
E		Fringe benefits (car and pc)	28	0	28
F		Fringe benefits (car and pc) + capital goods for own final use + value added on construction materials	1 037	0	1 037
G		Fringe benefits (car and pc) + capital goods for own final use	2 377	0	2 377
H		Fringe benefits (car and pc) + capital goods for own final use	562	0	562
I		Fringe benefits (canteens, car and pc) + capital goods for own final use	221	0	221
J		Fringe benefits (news paper, telephone, car and pc) + capital goods for own final use	1 736	0	1 736
K		Fringe benefits (car and pc) + capital goods for own final use	0	0	0
L		Fringe benefits (car and pc) + capital goods for own final use	161	0	161
M		Fringe benefits (car and pc) + capital goods for own final use	3 711	0	3 711
N		Fringe benefits (car and pc) + capital goods for own final use	269	0	269
O		Fringe benefits (car and pc)	14	0	14
P		Fringe benefits (car and pc)	12	0	12
Q		Fringe benefits (car and pc)	63	0	63
R		Fringe benefits (car and pc) + capital goods for own final use	39	0	39
S		Fringe benefits (car and pc) + capital goods for own final use	55	0	55
Total			14 423	0	14 423

Capital goods for own final use

Capital goods for own final use are compiled using information from the industrial account statistics using the variable "Own-account work" at industry/sector level. In order to comply with ESA2010, a mark-up for gross-operating surplus is added to arrive at market-prices.

Wages and salaries in kind

Allowances to compensation of employees are imputed for payments in kind to employees covering the following eight products:

1) free car
2) free telephone
3) canteen subsidies
4) free housing
5) free health insurance
6) free newspaper
7) free pc
8) employee stock options

Except for employee stock options, the allowance for payments in kind affects either output or intermediate consumption:

- As an addition to output if it is produced by the enterprise
- As a reallocation from intermediate consumption to compensation of employees if it is purchased by the enterprise

The adjustment to output is made to take into account that fringe benefits produced by the unit itself are not included in output from account statistics. Therefore, an allowance for the missing output is added. This allowance is not relevant when the fringe benefits are purchased. In these cases, a reallocation is made from intermediate consumption to compensation of employees.

Table 7.11 shows how the seven types of fringe benefits affect compensation of employees and either output or intermediate consumption

Table 7.11 Allowances for benefits in kind on compensation of employees, output and intermediate consumption, 2012

	Compensation of employees	Output	Intermediate consumption
	DKK mill.		
Free car	6 261	5 851	409
Free telephone	1 803	0	1 803
Canteen subsidies	5 324	5 324	0
Free housing	458	458	0
Free health insurance	1 324	0	1 324
Free news paper	459	0	459
Free pc	842	610	231
Total excl. stock options	16 470	12 243	4 226
Employee stock options[1]	971		
Total incl. stock options	17 441		

[1] Value of stock options in the non-financial sector (S.11)

In 2012, the total amount of allowance to compensation of employees was DKK 17 441 million. Free cars and subsidies to canteens are by far the most important, accounting for DKK 6 260 million and 5 324 million respectively. The total amount of allowance to output was DKK 12.243 million or 0,65 percent of GDP in 2012 and the total adjustment to intermediate consumption was DKK 4.226 million.

The value of *free cars* is taxable and as from income year 1994 has been reported by employers on the salary information forms, together with wages and salaries in cash. The value is estimated in terms of standard rates which reflect realistic market prices, such as the rental payments for a similar car if it was leased with a service agreement plus fuel costs etc. The tax authorities calculate the taxable value as 25 % of the price of the car. In the national accounts we use instead 29 %. One might legitimately wonder how these rates can claim to be market rates when it is generally considered to be a great financial advantage for individuals to have a company car instead of a normal private car. The answer is simple. Earnings in the form of fringe benefits are taxed on the basis of the value of consumption, whereas earnings in cash are taxed on the basis of income and not the post-tax consumption potential which corresponds to that income – i.e. a much greater amount for the same consumption potential. Even with a realistic assessment of the value of fringe benefits, this asymmetry in the tax system means that, all other things being equal, there is a great advantage in receiving wages or salaries in kind rather than in cash if the goods in question are ones which would have been acquired anyway.

In the national accounts, the tax values are used for the value of free cars, as reported on the information forms to the tax authorities.

The value of *free telephones* is likewise reported on the information forms to the tax authorities in terms of standard rates which are a realistic reflection of market prices. In recent years, high speed internet has become more widespread. As these are a part of free telephones and because there is a limit (DKK 2 500) on the taxable value, we introduce a mark-up of 20 % on the values reported on the information forms in order to properly reflect the value of free telephones. In 2012, the total value of free telephones was DKK 1 803 million.

The value of *canteen subsidies* is not taxable income provided that the employees pay a minimum price for a meal which (more or less) covers the costs of the raw materials. The value of the employer subsidy for the running of canteens is consequently not reported to the tax authorities. The source for the national accounts estimate is a benchmark based on a survey from 1994. The 1994-values are inflated with the price index for the canteen industry as well as the growth in total employment.

The value of *free housing* is reported on the information forms in terms of standard rates which are a realistic reflection of market prices. As for cars, it is the values for tax purposes which are used in the national accounts. In 2012, the total value of free housing was DKK 458 million.

The value of *free newspapers* is based on a survey from 1998 indicating the number of employees who have newspapers paid for by their employer. The value of a free newspaper is calculated as the average price of a one year subscription of a major newspaper (9 newspapers are included). The total value of free newspapers was DKK 459 million in 2012.

The value of *free pc* is not reported on the information forms. Instead we use information on the rise in the number of households having access to a pc at home. We assume that half of the increase can be attributed to pc's paid for by the employer. For the year 2003 and forwards the tax authorities make their own assessment on the number of home pc's paid for by an employer. In 2003 and onward we therefore use the average of the two numbers as an estimate of the number of new home pc's paid for by an employer. The price of the pc's paid for is assumed to reflect the market price for a new pc. Furthermore we set the amortisation of a pc to three years. The total value of *free pc* in 2012 was DKK 842 million.

The value of *free private health insurance* (i.e. health insurance associated to the employees' free time and not to the production process) is based on data from a private nongovernmental organisation who publish records of privately held insurances paid by firms. The total value of *free private health insurance* in 2012 was DKK 1 324 million.

The value of *employee stock options* is principally based on data from the Danish tax authorities on values of stock option salaries that have been reported taxable in our calculation year. However, to impute the value at the accrual basis and not at the time of taxation, the national accounts value is imputed using information on quotation prices and various suppositions, e.g. the earliest date attainable for an employee to cash in his/her stock option coincides with the time of legal acquisition (which is based on a Danish Supreme Court ruling). The notion that a typical stock option programme lasts 7-8 years with a vesting period of 2-3 years is also utilized in the imputation. The value of *employee stock options* in Denmark's non-financial sector was DKK 971 million in 2012.

7.2 Allowance for exhaustiveness in the expenditure approach

All allowances for exhaustiveness are described in section 7.1 for the production approach. The allowances are made in the supply-use (SU) frame-work and in the SU-tables, there is a product for each allowance, which ensures, that supply equals use for that allowance. So if the allowance is compiled from the supply side, use is defined using that entity and vice versa.

7.2.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

See 7.1.1

7.2.2 Adjustments made for the different types of non-exhaustiveness

See 7.1.2

7.2.3 Exhaustiveness methods

See 7.1.3

7.3 Allowance for exhaustiveness in the income approach

Allowances for exhaustiveness in the income approach are made to wages and salaries (black wages and salaries and fringe benefits) and gross operating surplus (all remaining value added ends up in gross operating surplus and mixed income).

Fringe benefits are described in section 7.12 and black wages are described in chapter 4.

7.3.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

See 7.1.1

7.3.2 Adjustments made for the different types of non-exhaustiveness

See 7.1.2

7.3.3 Exhaustiveness methods

See 7.1.3

8. The transition from GDP to GNI

8.0 Introduction

The transition from GDP to GNI is conducted by applying information from the Danish balance of payments statistics (BOP). This information is applied directly, that is without any correction to the BOP figures being performed.

Table 8.1 Transition from GDP to GNI, 2012

		DKK mill.
	GDP	1 882 625
+	Compensation of employees from the ROW	6 845
-	Compensation of employees to the ROW	17 250
-	Taxes on production and imports to the ROW	2 995
+	Subsidies from the ROW	7 275
+	Property income from the ROW	138 050
+	Interest	65 370
+	Distributed income	81 440
+	Reinvested earnings	-9 769
+	Other investment income	1 009
-	Property income to the ROW	89 134
-	Interest	52 845
-	Distributed income	39 724
-	Reinvested earnings	-5 815
-	Other investment income	2 379
=	GNI for fourth own resource purposes	1 925 416

For BOP the competency is divided between Statistics Denmark and the Central Bank, *Danmarks Nationalbank*. The former conducts the compilation of the current account and the capital account and the latter the financial account and the international investment position. Danmarks Nationalbank also conducts the compilation of property income except for a minor item. Property income is the most important item in the GDP-GNI transition. The BOP compilation is compatible with IMF's Balance of Payments Manual, sixth version (BPM6). BOP is published by Statistics Denmark. The agreement between the two institutions on division of tasks in the statistical area has recently been updated.

Danmarks Nationalbank's system for collection of information on the international investment position and the financial account of the balance of payments is based on the following main sources:

- Reporting by enterprises.
- Statistics on balance sheets of banks and mortgage banks including flows and income
- Investment funds statistics
- General-government statistics
- Securities statistics including information from the ECB's centralised security data base (CSDB)

Information on instrument, counterpart country, sector (and a number of other dimensions) is an integrated part of the collection for all sources. Information on counterpart country is used to identify cross-border flows.

8.1 Compensation of employees

Compensation of employees to and from the rest of the world is to a large extent based on administrative tax information on income (from employment) from the Danish Tax Authority SKAT. These figures are presented gross including actual or calculated social contributions and contributions to pensions.

The tax information is supplemented by a number of smaller amounts. Examples are wages paid to foreign residents employed at Danish embassies in foreign countries, as reported by the Danish Ministry of Foreign

Affairs, as well as wages paid to Danish residents employed at foreign embassies and international organisations in Denmark, based on Statistics Denmark's special survey on the number of employees at embassies and international organisations in Denmark combined with roughly estimated wage rates. The tax information is also supplemented by wages paid to foreign construction workers employed by Danish enterprises on construction sites in foreign countries. The source for this information is the sample survey on international trade in services, which is a combination of monthly reports from approx. 400 firms and annual reports from approx. 1.300 firms conducted by Statistics Denmark since 2005.

8.2 Taxes on production and imports paid to the Institutions of the EU

Taxes on production and imports - Customs duties, Import and Export duties on agricultural produce, and Duty on production of sugar - paid to the Institutions of the EU are recorded directly in the government accounts in gross terms, before the payment of the 25 % of the customs revenues which the Member States receive as a payment for the administrative services. The source is The Danish Tax Authority SKAT and the numbers are recorded on an accrual basis.

Contributions to the EU's third and fourth own resources, which are based on VAT and GNI respectively, are recorded as current transfers to the EU in our government accounts.

8.3 Subsidies granted by the institutions of the EU

Subsidies from the EU institutions are recorded on a detailed level in central government accounts. The subsidies are related to the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD), The European Fisheries Fund (EFF), The European Regional Development Fund (ERDF), The European Social Fund (ESF), and The Cohesion Fund. The expenditure and revenue on the central government accounts related to these EU grants, where the beneficiaries are classified outside of general government, are not revenue and expenditure of general government in the national accounts.

The information is very reliable and is recorded on an accrual basis. Additional information on the different types of EU grants, which is used for the classification, is received from "NaturErhvervstyrelsen, Center for tilskud", which is the Danish authority designated to receiving grants from the EU.

8.4 Cross-border property income

8.4.1 Interest

Payments of interest income can be referred to two types of instruments: Loans and deposits and debt instruments. In Denmark the information for these two categories is as follows.

Loans and deposits: Main sources are the reporting by banks and mortgage banks and direct reporting by enterprises. Grossing up is used to estimate total figures for Denmark vis-à-vis the rest of the world.

Bills, bonds and other debt instruments: Main sources are security statistics and direct reporting by banks and mortgage banks and direct reporting by enterprises. Data from the CSDB for each individual security (by ISIN code) is used to calculating interest income. In accordance with BPM6 accrued interest on discounted and premium bonds is calculated, e.g. where the issuance price are either lower or higher than the amount to be repaid when the liability matures. The calculation used is based on the debtor approach, cf. BPM6 paragraph 11.52, and is applied on both Danish residents' holdings of bonds issued by non-residents and non-residents' holdings of bonds issued by Danish residents.

There is no correction for tax withheld at source of interest income received from and paid to the rest of the world. There is no such tax in Denmark and it is not common in other countries either. Also the information is not available from the CSDB.

The FISIM correction is applied according to BPM6. Full consistency to the FISIM correction of foreign trade in financial services is secured in the BOP production system, cf. 3 and 5.

8.4.2 Distributed income of corporations

Dividends

Information on distributed income of Danish corporations is obtained from two sources. For listed companies the information is received from the VP Securities (Danish Central Depository Custodian) and for non-listed companies the information is collected by direct reporting.

Distributed income paid to Danish investors holding securities issued by non-residents is calculated by using reported information on their holdings (stocks) and information from the CSDB about the distributed income for each security.

No correction is made for withholding tax on income distributed to or received from the rest of the world. It is implicitly assumed that these taxes are always refunded to the relevant dividend recipients in either Denmark or the rest of the world.

Withdrawals from the income of quasi-corporations

After thorough investigations following transversal reservation *I The treatment of cross border property income,* it was concluded, that withdrawals from the income of quasi-corporations was not significant in the case of Denmark and that no estimate was needed.

8.4.3 Reinvested earnings (RIE) of foreign direct investment (FDI)

Reinvested earnings on FDI are based on the direct reporting by Danish companies owned by non-residents (liabilities) or by Danish companies with foreign subsidiaries (assets). The population is updated by using information from an external data provider (Bureau van Dijk) on all transactions involving Danish companies and non-resident companies.

In the direct reporting an ownership share on 20 percent is being used even though BPM6 states that this should be 10 percent. The 20 percent threshold is in line with the Danish rules for a company's annual financial report. Very few investments between Denmark and the rest of the world are positioned between 10 and 20 percent.

Reinvested earnings are calculated as the reported total profit/loss less reported distributed dividend. In accordance with BPM6 a correction is made for net extraordinary revenue or expenditure to exclude holding gains/losses.

8.4.4 Other investment income

8.4.4.1 Investment income attributable to insurance policy holders

Investment income attributable to life- and pension-insurance policy holders is reported by Danish insurance companies in a quarterly survey. The distinction between resident and non-resident policy holders are reported in an annual survey. The information about the resident/non-resident dimension from the annual survey is used to distribute the quarterly data. Credit positions are assumed to be zero.

Investment income attributable to non-life-insurance policy holders is compiled by Statistics Denmark. Basic data is reported by the Danish supervisory authorities. To establish the distinction between resident and non-resident policy holders the reported premiums on direct as well as indirect insurance in the context of foreign trade in services is used.

8.4.4.2 Investment income payable on pension entitlements

All Danish collective pension schemes encountered are insurance-based and are therefore covered by the above.

8.4.4.3 Investment income attributable to collective investment fund shareholders

In accordance with BPM6 reinvested earnings are calculated for investment fund shares. Data reported by Danish investment funds can be used to calculate total investment income excluding holding gains and losses. The Danish investment funds also report distributed income, and so reinvested earnings can be calculated as total income less distributed income. Information on the resident/non-resident dimension is an integrated part of the reporting.

Regarding Danish residents' holdings of investment fund shares issued by non-residents no information on the total income generated by these investment funds is available. An estimation of reinvested income attributed to Danish residents' holdings of investment fund shares issued by non-residents is made based on data for Danish investment funds. It is assumed that the implicit rates of return for Danish and non-resident investment funds with the same investment profile are the same, and then the total income attributed to Danish residents from non-resident investment funds is calculated and distributed income subtracted in order to determine reinvested earnings.

8.4.4.4 Rent on land and sub-soil assets

According to the criteria in ESA2010, no transactions are registered for the moment. We follow the development in the area.

9. Main classifications used

9.0 Classifications used for the production approach

Table 9.1 shows the link between the national accounts' grouping by industry and the NACE Rev. 2. There are five levels for publication of the final national accounts, covering 117, 69, 36a2, 19a2 and 10 industries respectively.

Table 9.1 includes references to Statistics Denmark's standard grouping at 127-industry level – a level of aggregation not used in the national accounts. The connection between the 127 standard grouping and the most detailed six-digit DK-NACE industries is documented in the publication "*Dansk Branchekode 2007*" published by Statistics Denmark, annexes 1 and 2 of which include the aggregation key.

There are two reasons why the national accounts cannot use the 127 standard grouping as their most detailed level of publication. Firstly, it does not match the functional breakdown of construction activity in the national accounts, and secondly, within some of the 127 groups, the national accounts need to separate market activity and output for own use from (other) non-market activity.

Table 9.1 Industry groupings

Grupperinger					Dansk branchekode 2007 (DB07)		
10a3	19a2	36a2	69	117	127-standard grp.		
A	A	A			Landbrug, skovbrug og fiskeri		Agriculture, forestry, fishing
			01000	010000	Landbrug og gartneri	01000	Agriculture and horticulture
			02000	020000	Skovbrug	02000	Forestry
			03000	030000	Fiskeri	03000	Fishing
B	B	B	06090		Råstofindvinding		Mining and quarrying
				060000	Indvinding af olie og gas	06000	Extraction of oil and gas
				080090	Indvinding af grus og sten	08009	Extraction of gravel and stone
				090000	Service til råstofindvinding	09000	Mining support service
C	C				Industri		Manufacturing
		CA	10120		Føde-, drikke-, tobaksvare		Manufacture of food, tobacco
				100010	Slagterier	10001	Production of meat
				100020	Fiskeindustri	10002	Processing of fish
				100030	Mejerier	10003	Manufacture of dairy products
				100040	Bagerier, brødfabrikker mv.	10004	Manufacture of bakery products
				100050	Anden fødevareindustri	10005	Other manufacture of food
				110000	Drikkevareindustri	11000	Manufacture of beverages
				120000	Tobaksindustri	12000	Manufact. of tobacco products
		CB	13150		Tekstil- og læderindustri		Textiles and leather products
				130000	Tekstilindustri	13000	Manufacture of textiles
				140000	Beklædningsindustri	14000	Manufacture of wearing apparel
				150000	Læder- og fodtøjsindustri	15000	Manufacture of footwear etc.
		CC			Træ-, papirindustri, trykkeri		Wood and paper products
			16000	160000	Træindustri	16000	Manufacture of wood etc.
			17000	170000	Papirindustri	17000	Manufacture of paper etc.
			18000	180000	Trykkerier mv.	18000	Printing etc.
		CD	19000	190000	Olieraffinaderier mv.	19000	Oil refinery etc.
		CE	20000		Kemisk industri		Manufacture of chemicals
				200010	Fremst. af basiskemikalier	20001	Manufacture of basic chemicals
				200020	Fremst. af maling og sæbe mv.	20002	Manufact. of paints, soap etc.
		CF	21000	210000	Medicinalindustri	21000	Pharmaceuticals
		CG			Plast-, glas- og betonindustri		Manufacture of plastic, glass
			22000	220000	Plast- og gummiindustri	22000	Manufacture of rubber etc.
			23000		Glas- og betonindustri		Manuf.of glass, concrete etc.
				230010	Glas-, keramisk industri	23001	Manufacture of glass etc.
				230020	Betonindustri og teglværker	23002	Manufacture of concrete etc.
		CH			Metalindustri		Basic metals, metal products
			24000	240000	Fremst. af metal	24000	Manufacture of basic metals
			25000	250000	Metalvareindustri	25000	Manufact. of fabricated metal
		CI	26000		Elektronikindustri		Manufacture of electronics
				260010	Fremst. af it-udstyr	26001	Manufact. of computers, etc.
				260020	Fremst. af anden elektronik	26002	Manufact. of other electronics
		CJ	27000		Fremst. af elektrisk udstyr		Electrical equipment
				270010	Fremst. af el-motorer mv.	27001	Manufacture of motors, etc.
				270020	Fremst. af ledninger og kabler	27002	Manufacture of wires, cables
				270030	Fremst. af husholdningsapp.	27003	Manuf.of household appl. etc.
		CK	28000		Maskinindustri		Manufacture of machinery
				280010	Fremst. af motorer, vindmøller	28001	Manufacture of engines etc.
				280020	Fremst. af andre maskiner	28002	Manufacture of other machinery
		CL			Transportmiddelindustri		Transport equipment
			29000	290000	Fremst. af motorkøretøjer	29000	Manuf. of motor vehicles etc.
			30000	300000	Fremst. andre transportmidler	30000	Mf. of ships, transport equip.
		CM			Møbel og anden industri mv.		Manufacture of furniture etc.
			31320		Møbel og anden industri		Manuf.of furniture,other manuf
				310000	Møbelindustri	31000	Manufacture of furniture
				320010	Fremst. af medicinsk udstyr	32001	Manufact. of med. instruments
				320020	Fremst. af legetøj mv.	32002	Manufacture of toys, etc.
			33000	330000	Rep. og inst. af maskiner mv.	33000	Repair, inst. of machinery etc

Table 9.1 Industry groupings, cont.

Grupperinger					Dansk branchekode 2007 (DB07)		
10a3	19a2	36a2	69	117	127-standard grp.		
D-E					Forsyningsvirksomhed		Utility services
	D	D	35000		Energiforsyning		Electricity, gas and steam
				350010	Elforsyning	35001	Prod., distrib. of electricity
				350020	Gasforsyning	35002	Manuf.and distribution of gas
				350030	Varmeforsyning	35003	Steam and hot water supply
	E	E			Vandforsyning og renovation		Water, sewerage and waste
			36000	360000	Vandforsyning	36000	Water collect.purification etc
			37390		Renovation, affaldsbehandl.mv.		Sewerage,waste collection etc.
				370000	Kloak- og rensningsanlæg	37000	Sewerage
				383900	Renovation,genbrug,foruren.bek	38000 og 39000	Waste and materials
F	F	F	41430		Bygge og anlæg		Construction
				410009	Nybyggeri	NR-Definition	Construction of new buildings
				420000	Anlægsvirksomhed	NR-Definition	Civil engeneering
				430003	Professionel rep. og vedligeh.	NR-Definition	Professional repair and maint.
				430004	Gør-det-selv rep.og vedligeh.	NR-Definition	Own-account repair and maint.
G-I					Handel og transport mv.		Trade and transport etc.
	G	G			Handel		Wholesale and retail trade
			45000		Bilhandel og -værksteder mv.		Sale, repair of motor vehicles
				450010	Bilhandel	45001	Sale of motor vehicles
				450020	Bilværksteder mv.	45002	Repair etc. of motor veh. etc.
			46000	460000	Engroshandel	46xxx	Wholesale
			47000	470000	Detailhandel	47xxx	Retail sale
	H	H			Transport		Transportation
			49000		Landtransport		Land transport, pipelines
				490010	Regional- og fjerntog	49001	Passenger rail transport etc.
				490020	Lokaltog, bus og taxi mv.	49002	Transp.by suburban trains etc.
				490030	Fragtvognmænd og rørtransport	49003	Road and pipeline transport
			50000	500000	Skibsfart	50000	Water transport
			51000	510000	Luftfart	51000	Air transport
			52000	520000	Hjælpevirksomhed til transport	52000	Support activities for transp.
			53000	530000	Post og kurertjeneste	53000	Postal and courier activities
	I	I	55560		Hoteller og restauranter		Accommodation, food service
				550000	Hoteller mv.	55000	Hotels, similar accommodation
				560000	Restauranter	56000	Restaurants
J	J				Information og kommunikation		Information and communication
		JA			Forlag, tv og radio		Publishing, tv and radio
			58000		Udgivervirksomhed		Publishing activities
				580010	Forlag	58001	Publishing
				580020	Udgivelse af computerspil mv.	58002	Publishing,computer games etc.
			59600		Radio,TV,Film-,tv-,musik-prod.		Radio,TV.Movie,video,sound pub
				590000	Prod/uds., radio,tv,film,musik	59000	Motion picture, tv and sound
				600000	Radio- og tv-stationer	60000	Radio, television broadcasting
		JB	61000	610000	Telekommunikation	61000	Telecommunications
		JC	62630		It- og informationstjenester		IT and information service
				620000	It-konsulenter mv.	62000	Information technology service
				630000	Informationstjenester	63000	Information service activities
K	K	K			Finansiering og forsikring		Financial and insurance
			64000		Finansiel virksomhed		Financial service activities
				640010	Pengeinstitutter	64001	Monetary intermediation
				640020	Kreditforeninger mv.	64002	Mortgage credit institutes etc
			65000	650000	Forsikring og pension	65000	Insurance and pension funding
			66000	660000	Finansiel service	66000	Other financial activities
LA	LA	LA			Ejend.hand.,udl.af erhv.ejend.		Real estate;rent.of non-res.b.
			68100	680010	Ejendomsmæglere mv.	68001	Buying, selling of real estate
			68300	680030	Udlejning af erhvervsejendomme	68003	Renting, non-resid. buildings
LB	LB	LB			Boliger		Dwellings
			68203	680023	Boliger, husleje i lejebolig	68002, del	Renting of resident. buildings
			68204	680024	Boliger, ejerbolig mv.	68002, del	Owner-occupied dwellings

Table 9.1 Industry groupings, cont.

Grupperinger					Dansk branchekode 2007 (DB07)		
10a3	19a2	36a2	69	117	127-standard grp.		
M-N					Erhvervsservice		Other business services
	M				Videnservice		Knowledge-based services
		MA			Rådgivning mv.		Consultancy etc.
			69700		Advokat,revisor,virksomh-kons.		Legal, account.,cons.activit.
				690010	Advokatvirksomhed	69001	Legal activities
				690020	Revision og bogføring	69002	Accounting and bookkeeping
				700000	Virksomhedskonsulenter	70000	Business consultancy
			71000	710000	Arkitekter og rådg. ingeniører	71000	Architecture and engineering
		MB			Forskning og udvikling		Research and development
			72001	720001	Forskning og udv., markedsmæss	72000, del	Research and developm.(market)
			72002	720002	Forskning og udv., ikke-marked	72000, del	Research and dev. (non-market)
		MC			Reklame o.a. erhvervsservice		Advertising and other services
			73000	730000	Reklame- og analysebureauer	73000	Advertising, market research
			74750		Dyrlæger og anden videnservice		Oth.techn.serv.,veterinary act
				740000	Anden videnservice	74000	Other technical business serv.
				750000	Dyrlæger	75000	Veterinary activities
	N	N			Rejsebureauer, rengøring mv		Travel agent, cleaning, etc.
			77000	770000	Udlejn. og leasing af materiel	77000	Rental and leasing activities
			78000	780000	Arbejdsformid., vikarbureauer	78000	Employment activities
			79000	790000	Rejsebureauer	79000	Travel agent activities
			80820		Rengøring, anden forr.service		Cleaning, other business serv.
				800000	Vagt og sikkerhedstjeneste	80000	Security and investigation
				810000	Ejendomsservice mv.	81000	Services to buildings,cleaning
				820000	Anden operationel service	82000	Other business services
O-Q					Off. adm, undervisn., sundhed		Public adm., education, health
	O	O			Off. adm., forsvar, politi		Public adm., defence etc.
			84202		Offentlig administration mv.		Public administration ect.
				840010	Offentlig administration	84001	Public administration
				840022	Forsvar,politi,retsv.ikke-mark	84002, del	Defence,publ.order(non-market)
			84101	840021	Redningskorps mv., markedsm.	84002, del	Rescue service ect. (market)
	P	P			Undervisning		Education
			85202		Undervisning, ikke makedsm.		Education (non-market)
				850010	Grundskoler	85001	Primary education
				850020	Gymnasier, erhvervsskoler	85002	Secondary education
				850030	Videregående udd.institutioner	85003	Higher education
				850042	Voksenundervisn.,ikke-markeds	85004, del	Adult-,other educ.(non-market)
			85101	850041	Voksenundervisn.mv, markedsm.	85004, del	Adult-,other education(market)
	Q				Sundhed og socialvæsen		Human health; social work
		QA	86000		Sundhedsvæsen		Human health activities
				860010	Hospitaler	86001	Hospital activities
				860020	Læger, tandlæger mv.	86002	Medical and dental practice
		QB	87880		Sociale institutioner		Residential care
				870000	Plejehjem mv.	87000	Residential care activities
				880000	Daginstitutioner, -centre mv.	88000	Social work without accommod.
R-S					Kultur, fritid, anden service		Arts, entertainm. oth.service
	R	R			Kultur og fritid		Arts and entertainment etc.
			90920		Kunst, kultur og spil		Arts,entertainm.,other culture
				900000	Teater, musik og kunst	90000	Theatres, concerts, and arts
				910001	Biblioteker,museer, markedsm.	91000, del	Libraries, museums (market)
				910002	Biblioteker,museer,ikke-marked	91000, del	Libraries, museums(non-market)
				920000	Lotteri og andet spil	92000	Gambling and betting
			93000		Sport,forlystelser,fritidsakt.		Sports, amusement, recration
				930011	Sport, markedsmæssig	93001, del	Sports activities (market)
				930012	Sport, ikke- markedsmæssig	93001, del	Sports activities (non-market)
				930020	Forlystelsesparker mv.	93002	Amusement and recreation
	SA	SA			Andre serviceydelser		Other service activities
			94000	940000	Organisationer og foreninger	94000	Activities of membership org.
			95000	950000	Rep. af husholdningsudstyr	95000	Repair of personal goods
			96000	960000	Frisører, vaskerier mv.	96000	Other personal services
	SB	SB	97000	970000	Private husholdn. med ansatte	97000	Households as employers

9.1 Classifications used for the income approach

Classifications used for GDP compiled by the income approach are the same as classifications used for GDP compiled by the production approach.

Compensation of employees, other taxes on production and imports and other subsidies on production, are all compiled at the national accounts 117 industry level, cf. section 9.1. Therefore, gross operating surplus and mixed income are also compiled at this level.

Consumption of fixed capital is compiled at the national accounts 69 industry level, cf. section 9.1, as this is the most detailed breakdown of gross fixed capital formation.

9.2 Classifications used for the expenditure approach

The most important classifications used for GDP compiled by the expenditure approach are:

- Household final consumption expenditure (72 groups) according to COICOP (table 9.2)
- Gross Fixed Capital Formation by type of asset (table 9.3) (13 asset types)
- Government final consumption expenditure according to COFOG (10 groups) (table 9.4)

Tables 9.5 and 9.6 show the relationships between the national accounts consumption grouping and COICOP 2 and COICOP.

Table 9.2 Household Final Consumption Expenditure

Grupperinger					
11	41	72		Varighed	
A	011			Fødevarer	Food
		01110	IV	Brød og kornprodukter	Bread and cereals
		01120	IV	Kød	Meat
		01130	IV	Fisk	Fish
		01141	IV	Æg	Eggs
		01142	IV	Mælk, fløde, yoghurt mv.	Milk, cream, yoghurt etc.
		01143	IV	Ost	Cheese
		01150	IV	Olie og fedtstoffer	Oils and fats
		01167	IV	Frugt og grøntsager	Fruit and vegetables except potatoes
		01179	IV	Kartofler mv.	Potatoes etc.
		01181	IV	Sukker	Sugar
		01182	IV	Is, chokolade og sukkervarer	Ice cream, chocolate and confectionery
		01190	IV	Næringsmidler i.a.n.	Food products n.e.c.
B				Drikkevarer og tobak mv.	Beverages and tobacco
	012			Ikke-alkoholiske drikkevarer	Non-alcoholic beverages
		01210	IV	Kaffe, te og kakao	Coffee, tea and cocoa
		01220	IV	Mineralvand, sodavand, juice samt frugt- og grønsagssaft	Mineral waters, soft drinks, fruit and vegetable juices
	021			Alkoholiske drikkevarer	Alcoholic beverages
		02112	IV	Vin og spiritus	Spirits and wine
		02130	IV	Øl	Beer
	022	02900	IV	Tobak mv.	Tobacco etc.
C				Beklædning og fodtøj	Clothing and footwear
	031			Beklædning	Clothing
		03113	HV	Beklædningsartikler	Articles of clothing
		03140	T	Rensning, reparation og leje af beklædning	Cleaning, repair and hire of clothing
	032	03200	HV	Fodtøj	Footwear
D				Boligbenyttelse	Housing
	041	04100	T	Husleje	Actual rentals for housing
	042	04200	T	Beregnet husleje af egen bolig	Imputed rentals for housing
	043	04300	T	Reparation og vedligeholdelse af boligen	Maintenance and repair of the dwelling
	044			Vandforsyning og andre tjenesteydelser i relation til boligen	Water supply and miscellaneous services relating to the dwelling
		04401	T	Vand og vandafledningsafgift	Water supply and sewerage services
		04402	T	Renovation mv.	Refuse collection, other services n.e.c.
E	045			Elektricitet, gas og andet brændsel	Electricity, gas and other fuels
		04510	IV	Elektricitet	Electricity
		04520	IV	Gas	Gas
		04530	IV	Flydende brændsel	Liquid fuels
		04545	IV	Fjernvarme mv.	Hot water, steam etc.
F				Boligudstyr, husholdningsudstyr og vedl. heraf	Furn., househ. equipm.,routine househ. maint.
	051	05100	V	Møbler og gulvtæpper mv.	Furniture, furnishings, carpets etc.
	052	05200	HV	Boligtekstiler	Household textiles
	053			Husholdsapparater og vedligeholdelse heraf	Household appliances
		05312	V	Husholdningsapparater	Household appliances
		05330	T	Vedligeholdelse af husholdningsapparater	Repair of major household appliances
	054	05400	HV	Glas, service og husholdningsredskaber	Glassware, tableware and household utensils
	055	05500	HV	Værktøj og udstyr til hus og have	Tools and equipment for house and garden
	056			Andre varer og tjenester til husholdningen	Goods and services for routine household maintenance
		05610	IV	Rengøringsmidler mv.	Non-durable household goods
		05620	T	Hushjælp mv.	Domestic services and home care services
G				Medicin, lægeudgifter o.l.	Medical products, health services
	061			Medicinske produkter, apparater og medicinsk udstyr	Medical products, appliances and equipment
		06112	IV	Medicin, vitaminer mv.	Pharmaceutical products and other medical products
		06130	V	Briller, høreapparater mv.	Therapeutic appliances and equipment
	062	06200	T	Læge, tandlæge mv.	Out-patient services
	063	06300	T	Hospitalers tjenesteydelser	Hospital services
H	071	07100	V	Køb af køretøjer	Purchase of vehicles

Table 9.2 Household Final Consumption Expenditure, cont.

Grupperinger					
11	41	72		Varighed	
H	071	07100	V	Køb af køretøjer	Purchase of vehicles
I				Anden transport og kommunikation	Other transport and communication
	072			Drift af køretøjer	Operation of personal transport equipment
		07213	T	Vedligeholdelse af køretøjer	Maintenance and repair of vehicles
		07220	IV	Brændstof og smøremidler til køretøjer	Fuels and lubricants for personal transport equipment
		07240	T	Andre tjenesteydelser vedrørende køretøjer	Other services in respect of personal transport equipment
	073	07300	T	Transporttjenester	Transport services
	081	08100	T	Posttjenester	Postal services
	082	08200	T	Telefon- og datakommunikationsudstyr	Telephone and data communication equipment
	083	08300	T	Telefon- og datakommunikationstjenester	Telephone and data communication services
J				Fritidsudstyr, underholdning og rejser	Recreation and culture
	091			Elektronisk fritidsudstyr mv.	Audio-visual, photographic and inform. proc. equipment
		09110	V	Radio- og tv-apparater mv.	Radio and television sets etc.
		09120	V	Fotoudstyr, videokameraer mv.	Photographic equipment etc.
		09130	V	Pc'ere mv.	Data processing equipment
		09140	HV	Cd'ere, dvd'ere mv.	Recording media for pictures and sound
		09150	T	Reparation af radio, tv, pc mv.	Repair of a/v and data processing equipment
	092	09200	V	Andre større forbrugsgoder i forb. med fritid og kultur	Other major durables for recreation and culture
	093	09300	HV	Andet tilbehør og udstyr til fritid, haver og kæledyr	Other recreational items and equipment, gardens and pets
	094	09400	T	Forlystelser, tv-licens mv.	Recreational and cultural services
	095			Aviser, bøger og papirvarer	Newspapers, books and stationery
		09513	IV	Bøger, aviser, tidskrifter og blade	Books, newspapers, periodicals and misc. printed matter
		09530	HV	Papirvarer og tegnematerialer	Stationery and drawing materials etc.
	096	09600	T	Pakkede ferierejser	Package holidays
K				Andre varer og tjenester	Other goods and services
	100	10000	T	Undervisning	Education
	111	11100	T	Restauranter, caféer mv.	Catering services
	112	11200	T	Hoteller mv.	Accommodation services
	121			Personligt pleje	Personal care
		12110	T	Frisører mv.	Hairdressing salons and personal grooming establishments
		12123	HV	Toiletartikler, barbermaskiner mv.	Appliances, articles and products for personal care
	123			Personlige effekter i.a.n.	Personal effects n.e.c.
		12310	V	Smykker og ure mv.	Jewellery, clocks and watches
		12320	HV	Andre personlige effekter	Other personal effects
	124			Social beskyttelse	Social protection
		12401	T	Plejehjem, dagcentre mv.	Retirement homes, day-care centres etc.
		12402	T	Daginstitutioner for børn	Kindergartens, creches etc.
	125	12500	T	Forsikring	Insurance
	126	12600	T	Finansielle tjenester i.a.n.	Financial services n.e.c.
	127	12700	T	Advokater, andre tjenesteydelser i.a.n.	Other services n.e.c.
				Turistbalance	Balance of tourism, net
P33				Turistudgifter	Final consumption of residents in the ROW
P34				Turistindtægter	Final cons. of non-residents on the economic territory
			V	Varige	Durable
			HV	Halvvarige	Semi-durable
			IV	Ikke varige	Non-durable
			T	Tjenester	Services

Table 9.3 GFCF classified by type of asset

1	Dwellings
2	Buildings other than dwellings
3	Other structures and land improvements
4	Transport equipment
5	ICT equipment, other machinery and equipment and weapon systems
6	of which ICT equipment
7	of which Computer hardware
8	of which Telecommunication equipment
9	of which Other machinery and equipment and weapon systems
10	Cultivated biological resources
11	Intellectual property products
12	of which Research and development
13	of which Mineral exploration and evaluation
14	of which Computer software and databases
15	of which Entertainment, literary or artistic originals and other intellectual property products

Table 9.4 Government final consumption expenditure according to COFOG

01	General public services
02	Defence
03	Public order and safety
04	Economic affairs
05	Envirommental protection
06	Housing and community amenitis
07	Health
08	Recreation, culture and religion
09	Education
10	Social protection

Table 9.5 Link between consumption grouping and coicop 2

Main group	Consumption group	Durability	Text	4-digit coicop
G	06130		Therapeutic appliances and equipment	
G	06200		Out-patient services	
G	06300		Hospital services	
J	09400		Recreational and cultural services	
K	10000		Education	
K	12401		Retirement homes, day-care centres etc.	
K	12402		Kindergartens, creches etc.	

Table 9.6 Link between consumption grouping and coicop

Main group	Consumption group	Durability	Text	4-digit coicop
A	01110	(Non-durable)	Bread and cereals	01.1.1
A	01120	(Non-durable)	Meat	01.1.2
A	01130	(Non-durable – Seas. products)	Fish	01.1.3
A	01141	(Non-durable	Eggs	01.1.4
A	01142		Milk, cream, yoghurt etc.	
A	01143		Cheese	
A	01150	(Non-durable)	Butter, oils and fats	01.1.5
A	01167	(Non-durable – Seas. products)	Fruit and vegetables except potatoes	01.1.6
A	01179	(Non-durable – Seas. products)	Potatoes etc.	01.1.7
A	01181	(Non-durable)	Sugar	01.1.8
A	01182		Ice cream, chocolate and confectionery	
A	01190	(Non-durable)	Food products n.e.c.	01.1.9
B	01210	(Non-durable)	Coffee, tea and cocoa	01.2.1
B	01220	(Non-durable)	Mineral waters, soft drinks and juices	01.2.2
		(Non-durable)		02.1.1
B	02112	(Non-durable)	Wine and spirits	02.1.2
B	02130	(Non-durable)	Beer	02.1.3
B	02900	(Non-durable)	Tobacco	02.2.0
B	02900		Narcotics	02.3.0
C	03113	(Semi-durable)	Garments and clothing materials etc.	03.1.1
		(Semi-durable)		03.1.2
		(Semi-durable)		03.1.3
C	03140	(Services)	Laundering, dry cleaning etc.	03.1.4
C	03200	(Semi-durable)	Footwear	03.2.1
				03.2.2
D	04100	(Services)	Actual rentals for housing	04.1.1
				04.1.2
D	04200		Imputed rentals for housing	04.2.1
				04.2.2
D	04300	(Non-durable)	Reg. maint. and repair of the dwelling	04.3.1
		(Services)		04.3.2
D	04401	(Non-durable)	Water supply and sewerage services	04.4.1
D	04402	(Services)	Refuse collection, other services n.e.c.	04.4.2
		(Services)		04.4.3
		(Services)		04.4.4
E	04510	(Non-durable - Energy)	Electricity	04.5.1
E	04520	(Non-durable - Energy)	Gas	04.5.2
E	04530	(Non-durable - Energy)	Liquid fuels	04.5.3
		(Non-durable - Energy)		04.5.4
E	04545	(Non-durable - Energy)	Hot water, steam etc.	04.5.5
F	05100	(Durable)	Furniture, furnishings, carpets etc.	05.1.1
		(Durable)		05.1.2
		(Services)		05.1.3
F	05200	(Semi-durable)	Household textiles	05.2.0
F	05312	(Durable)	Major household appliances	05.3.1
		(Semi-durable)		05.3.2
F	05330	(Services)	Repair of major household appliances	05.3.3
F	05400	(Semi-durable)	Glass, tableware and household utensils	05.4.0
F	05500	(Durable)	Tools and equipment for house and garden	05.5.1
		(Semi-durable)		05.5.2
F	05610	(Non-durable)	Non-durable household goods	05.6.1
F	05620	(Services)	Domestic services and home care services	05.6.2
G	06112	(Non-durable)	Medical and pharmaceutical products	06.1.1
		(Non-durable)		06.1.2
G	06130	(Non-durable)	Therapeutic appliances and equipment	06.1.3
G	06200	(Services)	Out-patient services	06.2.1
		(Services)		06.2.2
		(Services)		06.2.3
G	06300	(Services)	Hospital services	06.3.0
H	07100	(Durable)	Purchase of vehicles	07.1.1

Table 9.6 Link between consumption grouping and coicop, cont.

Main group	Consumption group	Durability	Text	4-digit coicop
		(Durable)		07.1.2
		(Durable)		07.1.3
		(Durable)		07.1.4
I	07213	(Semi-durable)	Maintenance and repairs of motor vehicles	07.2.1
I	07220	(Non-durable - Energy)	Fuels and lubricants	07.2.2
		(Services)		07.2.3
I	07240	(Services)	Other serv. in respect of prs. trans. equip.	07.2.4
I	07300	(Services)	Transport services	07.3.1
		(Services)		07.3.2
		(Services)		07.3.3
		(Services)		07.3.4
		(Services)		07.3.5
		(Services)		07.3.6
I	08100	(Services)	Postal services	08.1.0
I	08200	(Services)	Telephone and telefax equipment	08.2.0
I	08300	(Services)	Telephone and telefax services	08.3.0
J	09110	(Durable)	Radio and television sets etc.	09.1.1
J	09120	(Durable)	Photographic equipment etc.	09.1.2
J	09130	(Durable)	Data processing equipment	09.1.3
J	09140	(Semi-durable)	Recording media for pictures and sound	09.1.4
J	09150	(Services)	Repair of a/v and data proces. equipment	09.1.5
J	09200	(Durable)	Other durables for recreation and culture	09.2.1
		(Durable)		09.2.2
		(Services)		09.2.3
J	09300	(Semi-durable)	Other recreational items and equipment	09.3.1
		(Semi-durable)		09.3.2
		(Non-durable)		09.3.3
		(Non-durable)		09.3.4
		(Non-durable) ????		09.3.5
J	09400	(Services)	Recreational and cultural services	09.4.1
		(Services)		09.4.2
		(Services)		09.4.3
J	09513	(Semi-durable)	Books, newspapers and periodicals	09.5.1
		(Non-durable)		09.5.2
		(Non-durable)		09.5.3
J	09540	(Non-durable)	Stationery and drawing materials etc.	09.5.4
J	09600	(Services)	Package holidays	09.6.0
K	10000	(Services)	Education	10.1.0
		(Services)		10.2.0
		(Services)		10.3.0
		(Services)		10.4.0
		(Services)		10.5.0
K	11100	(Services)	Catering	11.1.1
		(Services)		11.1.2
K	11200	(Services)	Accommodation services	11.2.0
K	12110	(Services)	Hairdressing salons etc.	12.1.1
K	12123	(Non-durable)	Appliances, articles for personal care	12.1.2
		(Non-durable)		12.1.3
K	12700	(Services)	Prostitution	12.2.0
K	12310	(Durable)	Jewellery, clocks and watches	12.3.1
K	12320	(Semi-durable)	Other personal effects	12.3.2
K	12401	(Services)	Retirement homes, day-care centres etc.	12.4.0
K	12402	(Services)	Kindergartens, creches etc.	
K	12500	(Services)	Insurance	12.5.1
		(Services)		12.5.2
		(Services)		12.5.3
		(Services)		12.5.4
		(Services)		12.5.5
K	12600	(Services)	Actual financial services n.e.c.	12.6.1
		(Services)		12.6.2
K	12700	(Services)	Other services n.e.c.	12.7.0

9.3 Classifications used in the transition from GDP to GNI

No other standard classifications than those given in ESA2010 are used for compiling the transition from GDP to GNI.

10. Main data sources used

10.0 Statistical surveys and other data sources used for the production approach

The sources used for the production approach are:

- Accounts Statistics for Non-Agricultural Private Sector
- General Government Finances
- Public Sector Finances
- Economic Accounts for Agriculture
- Industrial Accounts Statistics
- Accounting Statistics for public corporations
- Industry-specific accounts statistics
- SLS-E statistics

Below is a more detailed description based on Statistics Denmark's Quality declarations.
The most important sources are:

- Accounts Statistics for Non-Agricultural Private Sector
- General Government Finances
- Public Sector Finances

10.0.1 Quality Declaration for Accounts Statistics for Non-Agricultural Private Sector

10.0.1.1 Statistical presentation

The statistics are essentially aggregations of items of the annual accounts of business enterprises, notably items of the profit and loss account, the balance sheet and the statement of fixed assets.
Thus, a wide range of subjects are covered, e.g. turnover, purchases, expenses, profits, assets, liabilities and investment. Results are compiled and published at both enterprise and establishment level, including distributions according to kind of activity, form of ownership, size group and region.
The data collected from all sources are combined in such a way that a complete set of accounting items is computed for each business enterprise and its component units (establishments) in the survey population. The resulting survey files can easily yield alternative breakdowns and tabulations, in addition to those published.

10.0.1.2 Data description

The statistics are essentially aggregations of items of the annual accounts of business enterprises, notably items of the profit and loss account, the balance sheet and the statement of fixed assets.
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10.0.1.3 Classification system

The industry coding follows the Danish industrial classifications, Dansk Branchekode 2007 (DB07), which is the national version of NACE rev. 2. A complete overview can be found at the DB07 site.
Form of ownership: Enterprises may be distinguished according to legal types, such as sole traders, partnerships, limited-liability corporations, government bodies, etc.
Size groups: In publications the size groups mostly refer to employment in terms of full-time equivalent persons. The most frequently used categories are 0-9, 10-19, 20-99 and 100+ employed persons (including working proprietors).
Regions: The regions used when publishing the accounts statistics at establishment level are the Danish provinces ("landsdele").

10.0.1.4 Sector coverage

At enterprise level, comparable statistics (time series) are available from 1994 for construction and retail trade, from 1995 for manufacturing industries, from 1998 for wholesale trade, and from 1999 for the remaining part of the private secondary and tertiary industries.

At establishment level, comparable statistics are available from 1995 for construction, retail trade and manufacturing, from 1998 for wholesale trade, and from 1999 for the remaining part of the private secondary and tertiary industries.

10.0.1.5 Statistical concepts and definitions

Average: Is calculated for each industry (or size group etc.) using the accumulated figures for the relevant accounting items. The figures of large enterprises will weigh more than the figures of small enterprises.
Capital and Reserves: The owners part of the capital of the enterprise. It's calculated as Total assets minus (Provisions for liabilities and charges plus Debts).

Cost of Goods Consumed: Purchases of goods and energy plus/minus changes in stocks.
Current Assets: Stocks, debts receivable, cash.
Enterprise: Usually corresponding to the legal unit, e.g. limited-liability corporations, sole traders, partnerships, etc. In a few cases several legal units which are run as one entity are gathered into one enterprise.
Establishment: An enterprise or part of an enterprise that is situated in a single location and produces one -- or mainly one -- sort of goods and services.
Financial Expenses: Interest payable and similar charges, depreciation etc. on financial current or fixed assets.
Financial Receipts: Receipts from interest, dividends, income from participating interests, profit due to appreciation and on exchanges.
Fixed Assets: Part of the capital of the enterprise which are meant to be kept e.g. land, buildings, machinery, equipment, patent, shares, and bonds.
Gross Profit Ratio: Turnover minus Cost of goods consumed minus Cost of subcontractors and other work done by others on your firms materials measured in per cent of Turnover.
Investment: Increase and decrease of assets. Increase (acquisitions) is stated at book value before any adjustments. Assets acquired through financial leasing are included. Decrease (disposals) is stated at selling price (if not known then the written-down value).
Long-term Debts: Debts payable later than 1 year.
Median: The enterprises are sorted according to their size of the relevant figure or ratio. The median is the figure or ratio of the enterprise which are placed exactly in the middle of this sequence. The figures of large enterprise will not weigh more than the figures of small enterprises.
Net Profit Ratio: Profit or loss before financial and extraordinary items measured in per cent of Turnover and Other operating income.
Number of Employees: Persons on the payroll in full-time equivalent units.
Number of Persons Employed: For corporations equal to number of employees. For sole traders etc. are added an estimated number of owners namely +1 for single proprietors/self-employed and +2 for partnerships.
Other Operating Income: Secondary income.
Proprietary Ratio: Capital and reserves measured in per cent of Total liabilities.
Provisions for Liabilities and Charges: Obligations where the exact amount or due date is not known with certainty, e.g. deferred taxation.
Return on Equity: Profit or loss for the financial year after Corporation tax measured in per cent of the average of the Capital and reserves during the year.
Short-term Debts: Debts payable within 1 year.
Turnover: Turnover represents the net sales. Included are capitalized work performed by the firm for own purposes and all charges (transport, packaging, etc.) passed on to the customer. Excluded is reduction in prices, rebates, discounts, VAT and excise duties. Income classified as other operating income, financial income and extraordinary income in company accounts is also excluded from turnover.
Value Added: Turnover plus Other operating income minus consumption of goods and services.
Value Added (percent): Value added in per cent of Turnover and Other operating income.

10.0.1.6 Statistical unit

Enterprise: Usually corresponding to the legal unit, e.g. limited-liability corporations, sole traders, partnerships, etc. In a few cases several legal units which are run as one entity are gathered into one enterprise.
Establishment: An enterprise or part of an enterprise that is situated in a single location and produces one -- or mainly one -- sort of goods and services.

10.0.1.7 Statistical population

Usually corresponding to the legal unit, e.g. limited-liability corporations, sole traders, partnerships, etc. In a few cases several legal units which are run as one entity are gathered into one enterprise.

10.0.1.8 Reference area

Denmark.

10.0.1.9 Time coverage

The purpose of Accounts statistics is to analyze the activity level and of the structure of the Danish business sector. This means that the statistics should be seen as a primary source of financial data for analytical studies of Danish business enterprises, including data required for the evaluation and conception of Government policies and decisions affecting the business community. Moreover, the accounts statistics are an essential input to the Danish national accounts statistics, and they provide the bulk of Denmark's contribution to EUROSTAT's structural business statistics at European level.
Until the late 1980's, Statistics Denmark produced questionnaire-based accounts statistics covering manufacturing industries, construction and the distributive trades. Apart from manufacturing, these statistics were discontinued because it was introduced in 1986, that Danish business enterprises should submit to the tax authorities (SKAT) a standardized list of items from their accounts. These items were well suited for statistical purposes, but just a few years later the list of items was cut drastically and many firms were exempted from the system, so it became necessary to reintroduce statistical questionnaires and use the SKAT data as a supplement only. Otherwise it would not have been possible to satisfy national and Eurostat requirements in the field of structural business statistics.
From 2005 the following accounts data are available from SKAT: turnover, consumption of goods, depreciations, profit or loss before financial and extraordinary items and corporation tax, profit or loss before corporation tax, corporation tax, closing stocks, fixed assets, capital and reserves, total assets/liabilities, increase in investment, and decrease in investment. Furthermore are from SKAT received employers' reports on the wages and salaries to their employees. The new type of business accounts statistics started with the reference year 1994, covering construction and retail trade at the enterprise level.
Manufacturing was added from 1995, when the former type of statistics for that sector was discontinued. At the establishment (i.e. workplace) level, regional statistics have been published since the reference year 1995, covering manufacturing, construction and retail trade.
Wholesale trade was added from 1998 and the remaining part of the private secondary and tertiary industries from 1999. So results are published at the national level relating to enterprises (legal units) and from 1995 also at the regional level relating to workplaces.
The new statistics of business accounts cover construction and retail trade from the reference year 1994 at enterprise level (i.e. for legal units, such as corporations and sole traders) and from the reference year 1995 at establishment (workplace) level.
The coverage was extended to manufacturing industries from 1995, to wholesale trade from 1998, and to the remaining part (with a few exceptions) of the service industries from 1999 (air transport, post and telecommunications only from 2001).

10.0.1.10 Unit of measure

The unit of measure is number, millions kr., thousand millions and percent depending on variable where it is published.

10.0.1.11 Reference period

The accounts statistics for a given year t, relate to annual accounts ending in the period from 1 May of year t to 30 April of year t+1.

10.0.1.12 Frequency of dissemination

Annual statistics, both at enterprise level and at establishment level (regional data).

10.0.1.13 Legal acts and other agreements

The Act on Statistics Denmark (Act no. 599 of 22 June 2000), § 8 and 12.

Council Regulation no. 295/2008 on Structural Business Statistics (SBS) requires the EU countries to submit to Eurostat information regarding business revenues, expenditures, value added, employment, wages and salaries, investment, etc. In Denmark the bulk of this information is obtained from the accounts statistics.

10.0.1.14 Cost and burden

In 2012 the response burden imposed on business enterprises in reporting data for the accounts statistics was estimated to be 4.8 million DKK.

10.0.1.15 Comment

For more information (in Danish) regarding the questionnaire, accounting concepts, etc., see: www.dst.dk/regn

10.0.1.16 Statistical processing

Direct surveying: The most thorough coverage is extended to the firms that are selected for direct surveying. They are given the choice of either filling in a lengthy questionnaire or submitting their annual accounts plus detailed specifications. The questionnaire is modelled on the list of items set out in the Danish annual accounts legislation, so as to facilitate responding.

10.0.1.17 Source data

• Questionnaires
• The Central Customs and Tax Administration (SKAT data)
• The business register
• The Drugs Administration Agency (pharmacy accounts)

10.0.1.18 Frequency of data collection

The accounts statistics for a given year t, relate to annual accounts ending in the period from 1 May of year t to 30 April of year t+1.

10.0.1.19 Data collection

A) Direct surveying: The most thorough coverage is extended to the firms that are selected for direct surveying. They are given the choice of either filling in a lengthy questionnaire or submitting their annual accounts plus detailed specifications. The questionnaire is modelled on the list of items set out in the Danish annual accounts legislation, so as to facilitate responding. The data obtained by direct surveying are keyed into a data entry system which comprises error detection and verification procedures. Thus, the data are checked for accounting inconsistencies, and warning messages are written out if significant deviations are found when comparing with last year's data or with figures for firms in the same stratum (form of ownership / activity / size group). Frequently the respondents are contacted for clarification. The resulting data for the direct-surveyed firms are regarded as highly reliable. In terms of turnover these firms (including those of B below) accounted for 71 per cent of the total for 2012.
B) Pharmacies: All Danish pharmacies must submit a standardized set of accounts to the Drugs Administration, which sends a file containing the audited accounts to Statistics Denmark. On some points the pharmacy accounts differ from the items of Statistics Denmark's questionnaire, but it is possible to estimate the missing data, so the overall quality is high.
C) Accounts data: The data from the Danish tax authorities (SKAT) does not comprise so many items as Statistics Denmark's questionnaire, but the quality of the data is regarded as high, because they are used for individual tax assessment. By stratified imputation the data aggregates from SKAT are distributed among the more detailed items, and in the opinion of Statistics Denmark the resulting item values are reasonably reliable. The firms contributed from SKAT accounted for 17 per cent of total turnover in the 2012 survey.
D) The rest: Many (especially small) firms are not covered by the sources A to C, so the available information is limited. Stratified imputation based on employment size groups is used to fill the gaps, but this method yields results with large margins of error. However, the firms of the "rest" population accounted for only 12 per cent of turnover in the 2012 survey, so the negative effect on the overall quality of the accounts statistics is limited.

10.0.1.20 Data validation

The data obtained by direct surveying are keyed into a data entry system which comprises error detection and verification procedures. Thus, the data are checked for accounting inconsistencies, and warning messages are

written out if significant deviations are found when comparing with last year's data or with figures for firms in the same stratum (form of ownership / activity / size group).
Frequently the respondents are contacted for clarification. The resulting data for the direct-surveyed firms are regarded as highly reliable.

10.0.1.21 Data compilation

The Danish accounts statistics are produced in a three-stage process:
Questionnaires from the 7,500 business enterprises are received, validated and if necessary corrected and subsequently entered into a computerized system. Stratified results are calculated for this population of units. The 7,500 enterprises and the 230 pharmacies cover 71 percent of the total turnover.
Highlight results of some 92,500 business enterprises are added in the form of data from the Tax Register. The missing items are calculated by ratios based on the stratified results from the 7,500 enterprises. A new set of stratified results is calculated. The 92,500 enterprises cover 17 percent of the total turnover.
In this way all the "missing" variables from the "Tax Register" enterprises are filled in. The rest (about 108,000) of the business enterprises in the relevant sectors are added, in the form of information from the Danish Business Register. This information only covers turnover and employment (plus background information such as enterprise code number, kind of activity, name and address). So for most of "the rest" the accounting items are estimated by ratios with full-time equivalent employment based on the stratified results above. The 108,000 enterprises cover 12 percent of the total turnover.

10.0.1.22 Relevance

Applications: Studies of business economics, regional finance studies, primary data for the Danish national accounts and for Eurostat's structural business statistics.
Users: Public authorities, Eurostat, employers' and employees' federations, private firms, politicians, economists, scientist, journalists and students.

10.0.1.23 User Needs

Users: Public authorities, Eurostat, employers' and employees' federations, private firms, politicians, scientists, economists, journalists, students.
Applications: Studies of business economics, regional finance studies, primary data for the Danish national accounts and for Eurostat's structural business statistics.

10.0.1.24 User Satisfaction

Applications: Studies of business economics, regional finance studies, primary data for the Danish national accounts and for Eurostat's structural business statistics.
Users: Public authorities, Eurostat, employers' and employees' federations, private firms, politicians, economists, scientist, journalists and students.

10.0.1.25 Data completeness rate

For some industries no detailed figures are published due to confidentiality.

10.0.1.26 Accuracy and reliability

The accounts statistics are a reliable indicator of the activity level and of the structure of the Danish business sector. The highest data quality is achieved at the enterprise level, primarily because the firms prepare their annual accounts at that level. But also at the establishment level the published results for major activity groups and for counties are deemed to be reliable in spite of some elements of uncertainty.

10.0.1.27 Overall accuracy

The response rate for the sample population for reference year 2010 was 95 per cent. Some items of the statistical questionnaire go beyond the level of disclosure prescribed by the annual accounts legislation. A case in point is the question concerning expenditure on fuel and energy. In those cases it is more difficult or more trouble for the firms to provide the requested information, and it is likely that some underreporting occurs.
Investment is another subject which is not itemized in the annual accounts, but information on the subject can be deduced from a separate table in the notes to the accounts where acquisitions and disposals of fixed assets are specified. So investment too could be underreported to some extent by those respondents who fill in and return

the questionnaires. 2005 is the first year where investment information is available for the firms from SKAT, which means that the total investment estimates is assumed to be more reliable from this year.
The accounts statistics are less reliable at the establishment level than at the enterprise level because the allocation procedures are based on assumptions. But also at the establishment level the published results for major activity groups and for counties are deemed to be reliable.

10.0.1.28 Remarks on data sources

A) Direct surveying: The most thorough coverage is extended to the firms that are selected for direct surveying. They are given the choice of either filling in a lengthy questionnaire or submitting their annual accounts plus detailed specifications. The questionnaire is modelled on the list of items set out in the Danish annual accounts legislation, so as to facilitate responding. The data obtained by direct surveying are keyed into a data entry system which comprises error detection and verification procedures. Thus, the data are checked for accounting inconsistencies, and warning messages are written out if significant deviations are found when comparing with last year's data or with figures for firms in the same stratum (form of ownership / activity / size group). Frequently the respondents are contacted for clarification. The resulting data for the direct-surveyed firms are regarded as highly reliable. In terms of turnover these firms (including those of B below) accounted for 71 per cent of the total for 2012.
B) Pharmacies: All Danish pharmacies must submit a standardized set of accounts to the Drugs Administration, which sends a file containing the audited accounts to Statistics Denmark. On some points the pharmacy accounts differ from the items of Statistics Denmark's questionnaire, but it is possible to estimate the missing data, so the overall quality is high.
C) Accounts data: The data from the Danish tax authorities (SKAT): Does not comprise so many items as Statistics Denmark's questionnaire, but the quality of the data is regarded as high, because they are used for individual tax assessment. By stratified imputation the data aggregates from SKAT are distributed among the more detailed items, and in the opinion of Statistics Denmark the resulting item values are reasonably reliable. The firms contributed from SKAT accounted for 17 per cent of total turnover in the 2012 survey.
D) The rest: Many (especially small) firms are not covered by the sources A to C, so the available information is limited. Stratified imputation based on employment size groups is used to fill the gaps, but this method yields results with large margins of error. However, the firms of the "rest" population accounted for only 12 per cent of turnover in the 2012 survey, so the negative effect on the overall quality of the accounts statistics is limited.

10.0.1.29 Sampling error

Calculation of uncertainty and confidence intervals: The main basis of the figures (except number of enterprises, employees (in FTE) and persons employed (in FTE)) is questionnaire data collected for a sample of enterprises and information from TAX-authority. A sample cannot give an accurate picture of the population, and therefore the figures are subject to some sampling errors. In addition, the figures are subject to a measurement uncertainty. This measurement error is not included in the calculations of the uncertainty.
For the calculation of confidence intervals the spread is used, which can be observed among the reported data. The spread is a measure of the variation in the data from individual firms, the larger the spread, the greater the variation. The calculation is performed to calculate the spread and thus confidence interval, taking into account the sample and the additional information from the TAX-authority. This special combination of a sample and additional information from the TAX-authority means that one cannot use standard calculations and formulas when the spread is calculated. When you have information from two sources, it is not possible to calculate the spread exact - but only approximate. The method chosen to calculate approximate values for the spread is to take samples in the sample (Jackknife method).

10.0.1.30 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

The overall accuracy is affected by sampling error and non-sampling error combined. Non-sampling errors include measurement error and non-response error. Uncertainty due to the non-response is minimized by repeated twitching by incomplete reporting. Incorrect data reported and misunderstandings are minimized by checking the reported figures.

10.0.1.31 Timeliness and punctuality

The statistics are scheduled to appear within 12 months after the end of the reference year (30 April).
The publications usually have been available about 14 months after the end of the reference year.

10.0.1.32 Timeliness and time lag - final results

The statistics are scheduled to appear within 14 months after the end of the reference year (30 April).

10.0.1.33 Punctuality

The statistics are usually published without delay in relation to the scheduled date.

10.0.2 Quality Declaration for General Government Finances

10.0.2.1 Statistical presentation

The statistics monitor current and capital expenditure/revenue for the general government. Net lending / net borrowing of the general government are shown. Expenditure /revenue items are shown by type of transaction and by type of function. Taxes, subsidies and transfers to households are sub-divided by type.

10.0.2.2 Data description

The purpose of Budgets of General Government is to analyze the economic activities of general government and to analyze the distribution of tasks and burden between sub-sectors of general government and finally to show the interaction between this sector and the rest of the economy.

10.0.2.3 Classification system

The classification system is based on the European System of Account, ESA2010 and the System of National Accounts, SNA2008.

10.0.2.4 Sector coverage

The statistics covers the general government sector (S.13) which includes central government, municipalities, regions and social security funds.

10.0.2.5 Statistical concepts and definitions

Compensation of Employees: Includes all payments by producers of wages and salaries to their employees, in kind as well as in cash, and employees and employers contributions to social security schemes, including pension contributions.
Current Transfers: Current transfers have an effect on current disposable income. These transfers primarily consist of transfers to households and are divided into social transfers, e.g. old-age pension and early retirement pension, civil servants' earned pension, unemployment benefit and early retirement pay, social benefit, benefits during sickness or in connection with childbirth, family/young persons' allowances etc., housing benefit and rent subsidies. Furthermore, income transfers include, for example, education benefit. To this is added other transfer payments to private institutions, Faroe Islands and Greenland, the EU and rest of the world.
Other Current Transfers, Revenue: Other current transfers originate from other domestic sectors, the EU and rest of the world.
Other Taxes on Production: Other taxes on production (D.29) consist of all taxes that enterprises incur as a result of engaging in production, independent of the quantity or value of the goods and services produced or sold.
General Government Final Consumption Expenditure: Final consumption expenditure is obtained in the following way:
• Compensation of employees + consumption of fixed capital = Gross domestic product at factor cost
• Gross domestic product at factor cost + intermediate consumption + social transfers in kind = Output
• Output sales of goods and services = General government final consumption expenditure.
The general government final consumption expenditure or consumption comprises actual operation activities carried out for the general government sector. More than half of the general government final consumption expenditure can be broken down by specific persons. The remainder is government collective-consumption expenditure.
Gross Fixed Capital Formation: Gross fixed capital formation calculated as expenditure on construction of new buildings and civil engineering projects and purchases of transport equipment, machines, software, etc.
Consumption of Fixed Capital: Consumption of fixed capital is also called depreciations or reinvestments and is an estimate of the normal wear and tear of fixed capital goods (including roads, bridges, etc.) in the general government sector.

Intermediate Consumption: Is defined as purchases of goods and services for current consumption, including rentals for offices and buildings, etc., insurance premiums and indirect taxes and duties paid by the general government. Furthermore, some acquisitions of durable goods by the military authorities (weapon systems) will continue to be considered intermediate consumption.
Voluntary Social Security Contributions: Voluntary social security contributions entitle the depositor to public social security benefits. The voluntary scheme covers contributions to health and unemployment insurance.
Imputed Contributions to Social Security Schemes: Imputed contributions to social security schemes are estimated contributions paid by civil servants, etc. These contributions correspond to the value for earned entitlement to retirement, which is added to their wages and salaries.
Economic Rent, etc.: Economic rent, etc. comprises rentals, license fees, etc.
Non-Financial Capital Accumulation: Non-financial capital accumulation includes actual capital activities for the general government sector. Capital accumulation is calculated as follows:

	Acquisition of new fixed assets
+	Acquisition of existing buildings, net
=	Acquisition of gross investments
	Gross fixed capital formation
+	Changes in inventory
+	Acquisition of land and intangible assets, net
=	Non-financial capital accumulation

Capital Transfers: Capital transfers affect either the assets of the granter or recipient. Examples are plant and investment subsidies certain damages, loans written down and similar services, which are frequently non-recurrent.
Acquisition of Existing Buildings, net: Acquisition of existing buildings, net is defined as purchases of real property, where the existing buildings are considered the most important factor in terms of value, less corresponding sales.
Acquisition of Land and Intangible Assets, net: Acquisition of land and intangible assets, net comprises purchases of real property, where the land is considered the most important factor, less sales.
Changes in Inventory: Changes in inventory consist primarily of purchases of goods for intervention stocks and strategic stocks, less sales of these stocks.
Taxes and Duties: Taxes and duties are defined as compulsory transfers to the general government sector without any link between payment and acquisition of services. In the general statistics, taxes and duties are, for example, broken down by type of tax and national accounts group. The distribution of national accounts reflects the way different types of taxes and duties affect the economy as a whole. Taxes and duties are in national accounts divided into production and import taxes, current income and property taxes, capital taxes and compulsory social security contributions. In classifying taxes and duties according to type, only the tax base is taken into account.
Interest and Dividends: Interest and dividends also comprise dividends and realized capital gains less any losses, in addition to the nominal rate of interest.
Sales of Goods and Services: Sales of goods and services comprise sales of the total output of goods and services. To qualify as sales of goods and services, there must be a remuneration in return and a certain degree of free choice on the part of the buyer in connection with the purchase.
Social Benefits in Kind: Social benefits in kind denote, e.g. health insurance services and aids which the general government buys on the market and allocates to households in the form of full or part payment to producers for supplying specific products to households.
Subsidies: Subsidies are defined as unilateral transfers to public or private enterprises and cover a wide range of transfers. EU agricultural subsidies are an example of product subsidies. Other production subsidies are, e.g., grants for social housing, and enterprise and rehabilitation allowances, etc. Finally, subsidies to cover losses of public quasi corporations are classified as product subsidies.
Withdrawals of Income from Quasi Enterprises: Withdrawals of income from quasi -enterprises are calculated for the public quasi corporations, for example, The Danish State Railways. When calculating profits, depreciations are included as current expenditure. The share of the profit and loss account of Danmarks Nationalbank is also included.

10.0.2.6 Statistical unit

The statistics covers the general government sector and the subsectors: Central government, social security funds, municipalities and regions.

10.0.2.7 Statistical population

General government includes central government, municipalities, regions and social security funds.

10.0.2.8 Reference area

Denmark.

10.0.2.9 Time coverage

Data are available according to ESA2010-principles from 1971 and onward.

10.0.2.10 Unit of measure

Items in the statistics are in 1,000,000 DKK and shown in current prices.

10.0.2.11 Reference period

The statistics contain provisional accounts data for the previous financial year and already published data for the previous financial years, which have been subjected to additional processing. The statistics thus contain both provisional and final data.

10.0.2.12 Frequency of dissemination

Annual statistics publications twice a year.

10.0.2.13 Legal acts and other agreements

Section 6 of the Act on Statistics Denmark. Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013.

10.0.2.14 Cost and burden

There is no response burden as the data are collected via accounts of central government, counties, municipalities and social security funds.

10.0.2.15 Comment

Additional information is available by contacting Statistics Denmark.

10.0.2.16 Statistical processing

The data is collected continuously in the months before the publication from the public account systems and other supplementary sources. It is then compiled according to national accounts principles, where it may be necessary to contact the specific source to clarify certain characteristics of the entries. It may be necessary to make imputations in cases where the data isn't available at the time of publication. When a full dataset is compiled for all subsectors balancing is carried out to secure internal consistency.

10.0.2.17 Source data

Final accounts of central government, municipalities, counties and social security funds. Accounts data for public quasi institutions are still not available in June. In the November version Quasi accounts are available for year 20xx-2, while for year 20xx-1 the data are still enumerated.

10.0.2.18 Frequency of data collection

Data is collected annually. Supplementary information from the tax authorities is collected a couple of weeks before publication.

10.0.2.19 Data collection

Data is received electronically from the central government, the municipalities and the regions' financial management systems.

10.0.2.20 Data validation

The primary data is validated at arrival. The results of the classification process are validated on micro and macro level. On the micro level a lot of automatic processes are executed to secure internal consistency and time

consistency. On the macro level the time series is validated and checked for plausibility. Furthermore the results of the compilation are checked by Eurostat.

10.0.2.21 Data compilation

When the data is collected and loaded into the database the classification according to ESA2010 starts. This means that expenditure and revenue is classified into categories like e.g. salary, investments, income transfers and interest. The classification is carried out in three steps. In the first step the actual data is merged with datasets for previous years and all classifications on identical account numbers is copied to the new dataset. in the next step new entries on accounts which have a straight forward ESA2010 interpretation classified automatically. The remaining entries are classified manually. Furthermore all entries are classified by COFOG and branch. The COFOG classification is carried out according to the international COFOG manual (Classification of the Functions of Government). This classification classifies into categories like e.g. defense, health and education.
Primary data is classified on the most detailed level to obtain a nearly perfect link between all entries in the primary accounts and the government finance statistics.
When the classification process is finished the compilation starts. The compilation covers various calculations, imputations and time adjustments. This compilation is necessary for the conversion from primary accounts into national accounts. The calculation of use of fixed capital is an example of a calculation which is carried out for the construction of the government final consumption expenditure. Imputations are made for civil servants salaries to reflect the obtained right to pensions in the future. Time adjustments are heavily used in relation to tax revenue due to the fact that according to ESA2010 the tax revenue should be on an accrual basis.
As a final step all transactions between subsectors are balanced and consolidated.

10.0.2.22 Adjustment

There is no correction of data beyond what has already been described under data validation and data treatment except the balancing of transfers between subsectors before consolidation.

10.0.2.23 Relevance

Many users who monitor the public economy have interest in the published statistics of government finance statistics. The statistics is in demand from ministries, politicians, public and private institutions, researchers, enterprises, news media and Eurostat. The statistics provide input to national accounts statistics. The statistics often gets a lot of attention in the media and amongst other professional users.

10.0.2.24 User Needs

Ministries, political parties, non-governmental organizations, local government, public and private enterprises, and members of the general public.

10.0.2.25 User Satisfaction

Data regarding user satisfaction is not gathered at this time.

10.0.2.26 Data completeness rate

This statistics is affected by demands from EU. In terms of completeness all these demands are fully met.

10.0.2.27 Accuracy and reliability

Misclassification due to insufficient information about the contents of a given account. In provisional accounts, the government's value added tax expenses are divided at the level of accounting items. In both the June version and the November version provisional tax-estimates are used. Subsidy accounts can be classified with some inaccuracy because it is not always possible to define the recipient of the subsidy. Reserves and budgets adjustments: This extra paragraph covers both earmarked and widely defined reserves. The widely defined reserves are often considerable amounts and are difficult to define. Whenever possible, Statistics Denmark collects supplementary information on these reserves. An estimation of tax revenue charged by General Government is used.
The statistical uncertainty is not calculated.

10.0.2.28 Overall accuracy

The statistical accuracy is generally very high.

10.0.2.29 Sampling error

The sampling error is zero, as all municipalities and regions are included.

10.0.2.30 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

The statistic covers the entire target population. The central government account is received from Moderniseringsstyrelsen. All municipalities and regions must report their accounts, and missing accounts are thus not permitted. As the accounts are delivered directly from the municipalities and regions' own financial management systems and compared with data from prior years as well as the budget, it is assumed that no major measurement errors exist. If there are blank or invalid variables or dataset the municipality or region is contacted so new data may be sent.

10.0.2.31 Timeliness and punctuality

The June version is published three month after the publication of the central government accounts. The November version is published 8 months after the publication of the central government accounts. The statistic is usually published without delay in regards to the announced time.

10.0.2.32 Timeliness and time lag - final results

The statistics are published biannually, at the beginning of June and at the beginning of November one year after the end of the financial year in question.

10.0.2.33 Punctuality

The statistics are usually published without delay in relation to the scheduled date.

10.0.3 Quality Declaration for the Public Sector Finances

10.0.3.1 Statistical presentation

The statistics illustrate the institutional distribution of activities carried out by the public corporations, giving total figures as well as figures divided into industrial groups. Furthermore, the statistics contain figures for the public sector and all public corporations and quasi-corporations.
Specified figures for production, value added, gross operating surplus and gross domestic product at factor cost are included in the statistics.

10.0.3.2 Data description

The statistics gives an economic overview of the public activities in the Danish economy. That is, both general government but also the public corporations. The statistics follows the national account standard and is therefore consistent with other countries' national accounts statistics.

10.0.3.3 Classification system

The statistics are based on the European System of Accounts 2010 (ESA2010) and also the industrial classification DB07 (based on the European classification system NACE Rev. 2).

10.0.3.4 Sector coverage

The public sector, which is general government and public corporations.

10.0.3.5 Statistical concepts and definitions

ESA2010: The concepts in this statistics are described in the national account manual ESA2010.

10.0.3.6 Statistical unit

The entities included in this statistic are all entities in Statistics Denmark's business register which have a public sector sector code. The compilation of the statistics is based on both yearly accounts for institutional units and yearly accounts for central government, regions and municipalities.

10.0.3.7 Statistical population

Public sector.

10.0.3.8 Reference area

The public sector in Denmark.

10.0.3.9 Time coverage

1993-

10.0.3.10 Unit of measure

Million DKK.

10.0.3.11 Reference period

The figures relate to the financial year. If the financial year for a public corporation is different from the calendar year; the calendar year with the longest accounting period is selected as the financial year.

10.0.3.12 Frequency of dissemination

Yearly publication.

10.0.3.13 Legal acts and other agreements

Paragraph 8 of the Act on Statistics Denmark.
• EU: Rf2223/1996
• EU: Rf58/1997

10.0.3.14 Cost and burden

• Large accounting questionnaire: 180 minutes a year.
• Small accounting questionnaire: 90 minutes a year.

10.0.3.15 Statistical processing

There is full coverage.

10.0.3.16 Source data

Accounts of central and local governments. Annual accounting reports from approximately 500 public corporations.

10.0.3.17 Frequency of data collection

Yearly.

10.0.3.18 Data collection

Account information from central and local government are received by electronic transfers while information from the public corporations comes via questionnaires or submission of financial statements.

10.0.3.19 Data validation

The account information is checked for errors. The figures are compared with earlier account information.

10.0.3.20 Data compilation

Data covers the full population so enumeration is not necessary. If account information from a public corporation is delayed then key indicators are used together with last year information.

10.0.3.21 Adjustment

No corrections to data is made other than those already described.

10.0.3.22 Relevance

Some users' needs information on the total sector and the subsectors contribution to the public sector as a hole. Others needs detailed information on the public corporations.

10.0.3.23 User Needs

Ministries of economic affairs, organizations, politicians, educational institutions and members of the public. Some users' needs information on the total sector and the subsectors contribution to the public Sector as a hole. Others need detailed information on the public corporations.

10.0.3.24 Data completeness rate

The statistics satisfy the international guidelines and requirements.

10.0.3.25 Accuracy and reliability

Full coverage of all industries is obtained by conducting a yearly check of the population in relation to a variety of sources. Accounting information is obtained from central and local government accounts and furthermore from questionnaires. Some accounting information is adjusted to the terminology used in the national accounts system and therefore deviates from normal accounting conventions. Furthermore, public corporations may use different methods of accounting.
Accounting data entered wrongly are also a source of error, which is minimized by comparison with information from the previous year.

10.0.3.26 Overall accuracy

The overall accuracy is considered high since input data covers 100% of the population and since the data is revised by an independent institution.

10.0.3.27 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

The input data covers the whole population but some new public corporations of lesser economic importance are included with a year delay.

10.0.3.28 Timeliness and punctuality

The statistic is published in November the year after the latest accounting year and without delays.

10.0.3.29 Timeliness and time lag - final results

The statistics are published yearly at the end of the year, following the accounting period.

10.0.3.30 Punctuality

The statistics are usually published without delay in relation to the scheduled date.

10.1 Statistical surveys and other data sources used for the income approach

The sources used for the income approach are:

- Quality Declaration for the Annual and Quarterly Working Time Accounts
- Quality Declaration for Employment, Compensation of Employees and Hours Worked

Below is a more detailed description based on Statistics Denmark's Quality declarations.

10.1.1 Quality Declaration for the Annual and Quarterly Working Time Accounts

10.1.1.1 Statistical presentation

The Working Time Accounts produce integrated statistics with consistent time series on employment, jobs, number of hours worked and compensation of employees on an annual and quarterly basis. The data basis is made up by a number of primary statistical data, which are adapted and adjusted to achieve agreement of the concepts and definitions used in the WTA system.
The statistical sources used in the WTA are:
• The Register-Based Labor Force statistics (RAS),
• Establishment-related employment statistics (ERE statistics),
• The Structural Earning Statistics (SES),
• Employment Statistics for Employees (BfL) og
• The Labor Force Survey (LFS).

10.1.1.2 Data description

The primary purpose of the WTA is to compile time series on hours worked. In addition, an object is to calculate the wage and employment data for national accounts. The current statistics include data broken down by sex, industry, two sectors (general government, corporations and organizations) and socioeconomic status (self-employed, assisting spouses or employees).
The WTA is an integrated statics with consistent time series on employment, jobs, hours worked and wages in both annual and quarterly basis. The data base consists of a number of statistics are adapted and adjusted to the framework provided by the WTA system.
The system for the Working Time Accounts is the result of a three-year project established in Statistics Denmark in 1995 with grants by The European Social Fund. The purpose of the project was to improve the current statistical description of the Danish Labor market. The background to the WTA is that there has been a considerable expansion in the number of statistics covering the Labor market and the fact that the figures from different statistics are not immediately comparable.
The project work has been concentrated on developing statistical systems integrating already existing Labor market statistics. In December 1998 the project ended with the publication of a report: "Integrated Labor Market Statistics - the Labor Market Accounts and the Working Time Accounts 1995-97" ("Integreret arbejdsmarkedsstatistik - Arbejdsmarkedsregnskab og Arbejdstidsregnskab 1995-97") in which two new statistical systems were presented. In 1999 the WTA were presented by Statistics Denmark with the inclusion of annual as well as quarterly statistics.
In December 2012 the Working Time Accounts were adjusted, implying that new data sources (primarily based on eIncome) are used for the compilation. Subsequently, the WTA are compiled on the basis of a new system. As changes have been made to the population, concepts, sources as well as methods, this has resulted in revised levels and revised developments throughout the year.
The Working Time Account transmits quarterly data to the short term business statistics (STS). The variables transmitted to STS_Eurostat are: - Number of Persons Employed (Variable 210) – Hours Worked (Variable 220): Paid hours worked in the jobs. - Gross Wages and Salaries (Variable 230): Earned DKK earned as compensation for hours worked or for hours paid but not worked.

10.1.1.3 Classification system

Industry: Industry indication is linked to the workplace and specific workplace's main activity, according to Statistics Denmark Danish Industrial Classification. Danish Industrial Classification is a 6-digit nomenclature based on the EU industrial nomenclature, NACE rev. 2.0, which constitutes the first 4 digits of the Danish Industrial Classification (DB07). In WTA publish aggregated industry reports, where the activities subdivided by industry codes are aggregated to Statistics Denmark's standard classifications. Also WTA publish statements broken down by [national accounts industrial aggregates](http://www.dst.dk/ ~ / media/Kontorer/06-Nationalregnskab/nrerhvervsgrupperingerdb07- pdf.pdf)
Sector: Sector uses national account sectors (ESA 2010 sectors) to make a 2 group sector breakdown in the WTA: general government versus Corporations and organizations.
• General government includes central government, regional government, municipal government, and social security funds.
• Corporations and organizations include private corporations, public corporations, private nonprofit organizations and sector not stated.
A detailed description of the transformation to ESA 2010 sectors is given in the paper Ny sektorkode i beskæftigelsesstatistikkerne (New sector code in the employment statistics).
Socioeconomic Status: Socioeconomic status is in WTA alone a breakdown if you are an employee, self-employed or assisting spouse (i.e. 3 groups).
Full time: In the annual Working Time Accounts a few tables are broken down according to work on full-time and part-time in the series Statistical News ("Statistiske Efterretninger"). In the present context, full-time work is defined as at least 32 paid hours of work in the job per week for employment over the entire week, or at least 139 paid hours of work in the job for employment over the entire month. Self-employed persons and assisting spouses work full-time in their main job. If they work as self-employed in their secondary job, they are working part time.

10.1.1.4 Sector coverage

WTA covers all the ESA 2010 sectors Danish registered companies can be assigned (i.e. all sectors excluding rest of the world and foreign-controlled entities). However, WTA sectors aggregated to a division into 2 groups, respectively Corporations and organizations and General government.

General government includes central government, regional government, municipal government, and social security funds.
Corporations and organizations include private corporations, public corporations, private nonprofit organizations and sector not stated.
See sectors for more detailed information on ESA2010 sectors.
Regarding data transmitted to the Eurostat short term business statistics (STS), only data in sector group Corporations and organizations are transmitted, and the indicators are broken down according to Annexes according to NACE rev. 2.0 local kind of activity unit according to the Danish business register:
A) Industry (IND): Covering Sections B to E (B, C, D, E, B_TO_E36, B06, B08, B09, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, D35, E36, MIG_ING, MIG_CAG, MIG_DCOG, MIG_NDCOG, MIG_NRG)
B) Construction (CONS): Covering Section F
C) Retail Trade and Repair (RTD): Covering Division 47, except Group 47.3 (G45, G46, G47, G47_X_G473)
D) Other services (SERV): Covering most of Sections H to N (H, H49, H50, H51, H52, H53, I, J, J58, J59, J60, J61, J62, J63, L, M_STS, N_STS)
No cut-off on the basis of the number of employees are used. All size classes are included (no breakdown on size classes).

10.1.1.5 Statistical concepts and definitions

Employment: Employment is an assessment of how many people (headcount) employed at any given time. Employed is, if one has an attachment to a workplace in the form of a job where you at least have one hour of paid work in the reference week. See detailed description of concepts.
Job: Jobs shows the number of jobs that are active (excluding temporary absences in the form of eg. maternity or other leave) at any given time. The labor market statistics is a job actively, if there is a minimum of 1 paid hour per week. A job is defined as a person connected to a workplace. The same person can have several jobs at the same time. See detailed description of concepts.
Compensation of Employees: Compensation of employees in the WTA includes compensation of employees in cash or in kind which the employer pays to an employee for work performed in an accounting period. See detailed description of concepts.
Hours Worked: Hours worked are defined as hours paid by employers, including paid overtime and excluding paid hours of absence. Unpaid overtime hours and black work are excluded from the calculation of hours worked in the WTA. See detailed description of concepts.

10.1.1.6 Statistical unit

• Paid hours worked.
• Earned DKK.
• Number of persons.
• The number of jobs.
An employed person can have one or more jobs. A job is defined as a person connected to a workplace. In each job the person performs a number of hours worked and receive as compensation a salary measured in DKK. A job involving less than 1 hour of paid work per week is excluded from the job definition. The same requirement applies to the definition of persons employed, however, there is no requirement as regard the number of hours worked in relation to temporary absence.
The working time account is not calculated at the level of individual jobs. Data in WTA is aggregated, where the number of hours worked, compensation of employees, the average number of jobs and the average employment summed to industry level (6 digit DB), sector (2 groups), socioeconomic status (3 groups), sex (2 groups), and scope of work (5 groups). From this level data is summarized for publication level (including various types of industrial aggregates).

10.1.1.7 Statistical population

Employed employees, self-employed and assisting spouses of Danish registered enterprises.
The population covers persons working in Danish enterprises or on Danish ships. The population of the WTA is persons affiliated to Danish registered companies, which is consistent with ESA2010 boundaries. ESA2010 includes working in resident companies (see ESA 2010 paragraphs 2.04 to 2.11).
The WTA do not include employees of foreign business enterprises hired out for work in Denmark according to the rules governing hiring-out of Labor.

Regarding data transmitted to the Eurostat short term business statistics (STS), only data in sector group Corporations and organizations are transmitted, and the indicators are broken down according to Annexes as defined in section Sector coverage.

10.1.1.8 Reference area

Denmark.

10.1.1.9 Time coverage

Q1 2008 - Q4 2014 (for all indicators in all breakdowns).

10.1.1.10 Base period

Not applicable to this statistic. Only absolute values are published.

10.1.1.11 Frequency of dissemination

Annual and quarterly statistics are published.

10.1.1.12 Reference period

01-01-2008 - 31-12-2014. Quarterly data.

10.1.1.13 Unit of measure

Data are published in absolute values
• Employment is calculated as the number of persons.
• Job is calculated as the number of jobs.
• Hours worked is calculated as the number of hours. In STATBANK these are calculated in 1000 hours.
• Compensation of employees is measured in DKK. In STATBANK compensation of employees measured in millions DKK.
Data are published as:
• Absolute values
• Seasonally adjusted values
• Working day adjusted (hours worked and compensation of employees).

10.1.1.14 Cost and burden

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

10.1.1.15 Legal acts and other agreements

Not relevant for the Working Time Account as they are compiled exclusively on existing statistics.
WTA provides labor market data to EUROSTAT business short-term regulation (STS) and the
National Accounts (ESA/ESA).
STS: Council Regulation (EC) concerning short-term statistics:
• Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics, 1165/98, OJ L 165, p.1, 05-06-1998.
• European Parliament and Council Regulation (EC) No 1158/2005 of 6 July 2005 amending Council Regulation (EC) No 1165 / 98 concerning short time statistics. 1158/2005, OJ L 191, p.1, 22-07-2005.
• Commission Regulation (EC) No 586/2001 of 26 March 2001 implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of Main Industrial Groupings. 586/2001, OJ L 86, p 11, 27-03-2001.
• Commission Regulation (EC) No 1503/2006 of 28 September 2006 implementing and amending Council Regulation (EC) No 1165/98 concerning short-term statistics as regards definitions of variables, list of variables and frequency of data compilation. 1503/2006, OJ L 281, p 15, 12-10-2006.
• Commission Regulation (EC) No 656/2007 of 14 June 2007 amending Regulation (EC) No 586/2001 implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of industry groups. 656/2007, OJ L 155, p 3, 15/06/2007.
• COMMISSION REGULATION (EC) No 1178/2008 of 28 November 2008 amending Council Regulation (EC) No 1165/98 concerning short-and Regulation (EC) No 1503/2006 and (EC) No 657/2007 as regards adaptations following the revision of statistical classifications NACE and CPA. 1178/2008, OJ L 319, p 16, 29-11-2008.

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

10.1.1.16 Comment

Concepts in the Danish Working Time Accounts.
Break in WTA on transition to eIncome.
Break in WTA due to changed classifications since 2008.
Differences in concepts and statistics on employment and number of hours worked are described in the following paper begrebsforskelle.
Additional documentation of differences between the employment statistics can be found at employment.
Documentation relating exclusively to the working time accounts can be found at [the Working Time Accounts]http://www.dst.dk/en/Statistik/emner/beskaeftigelse/arbejdstidsregnskab.aspx? tab=dok).

10.1.1.17 Statistical processing

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

10.1.1.18 Source data

The WTA are based on a combination of census and survey data.
The WTA are compiled on the basis of three primary data sources:
1) The Register of Employment Statistics forming the basis for both:
• Register-based Labor force statistics RAS statistics
• Establishment-related Employment Statistics ERE statistics
Employment Statistics for Employees BfL
The three above-mentioned statistics are compiled on the basis of eIncome:
2) The Structural Earning Statistics
3) The Labor Force Survey LFS
The WTA use the Register of Employment Statistics for obtaining data on jobs and persons employed at end-November as well as annual data on aggregate payroll costs (compensation of employees) and annual paid hours of work for employees.
The Statistics on Earnings are used in the WTA for converting paid hours of work into hours worked by employees during the year. Where the above-mentioned structural statistics set the level for the statistics in the WTA, the short-term statistics are used for describing the development throughout the year.
The Employment Statistics for Employees contain monthly data on jobs, paid hours of work and total wage and salary costs relating to employees throughout the year. The data are used in the WTA for projecting compensation of employees, hours worked, employment, primary and side line jobs for employees during the year.
The Labor Force Survey is used for describing the development in the number of hours worked during the year.
Furthermore, the Labor Force Survey is also used for measuring the effect derived from each day of absence from work during the Easter holiday on the distribution of hours worked between the months March and April. Subsequently, the effect derived from the Easter holiday is calculated by counting the number of Easter days of absence, falling in each of the two months during each year.
The Labor Force Survey is also applied in undertaking projections of employment and jobs for self-employed and assisting spouses during the period, following the latest November-statistics of the Register of Employment Statistics. Finally, the LFS is applied in describing how many more hours of work were performed by self-employed and assisting spouses compared to hours worked by employees.

For self-employed and assisting spouses, the development in employment and jobs is calculated as a steady development from one structural statistics to another (employed persons in the Register based Labor Force Statistics and the number of jobs in the Establishment-related Employment Statistics). However, rolling annual statistics from the Labor Force Survey are used for projections in the period following the latest structural statistics (i.e. after the end of November 2011).
The basis for calculating hours worked by self-employed persons and assisting spouses is hours worked per job for employees. These hours are enumerated by the number of jobs for self-employed persons and assisting spouses and adjustments are made on the basis of the number of more hours worked by self-employed persons and assisting spouses compared to hours worked by employees according to the Labor Force Survey.
Average employment (and average number of jobs) over the year is estimated as an average figure of average employment during the 4 quarters of the year (respectively average number of jobs of 4 quarters). Against the background of the projections, it is possible to compile preliminary annual statistics for the period following the latest structural statistics.
In deciding which data sources to apply in compiling the WTA, attention is centered on the major advantages provided by each individual statistics. For example, register-based data are used to ensure complete coverage in the calculation of employment, number of jobs, aggregate payroll costs and paid hours of work. Register-based short-term statistics are used for describing the development throughout the year in the same variables. Information from the wage and salary system of the business enterprises is used to convert paid hours of work into hours worked during the year. Personal interviews are used to obtain information on the distribution of hours worked during the year as well as information on the groups that are not covered by the registers.
The Working Time Accounts are exclusively based on existing data sources, which are subsequently converted to the concepts used in the WTA. The WTA is flexible in its choice of primary sources, which can be replaced by other sources, if these have proved to be more accurate. The choice of primary source decides the amount of data editing necessary. When it comes to integrating all the sources, however, all the concepts are consistent in conforming to international standards and every variable fulfils the requirement of the system for the WTA.

10.1.1.19 Data validation

Data are already checked for errors in the primary statistics. In the WTA further checks, troubleshooting and debugging are carried out. This is partly based on the information from the producers of the input sources, partly systematic (mostly figurative) controls the internal consistency between variables and over time, and by comparisons with other published statistics.
Finally developments are systematically being discussed with stakeholders from other statistics, including in the context of short term statistics interest groups (where data is typically assessed on the level of News from Statistics Denmark, which for the quarterly statistics will say aggregated to 10 industrial groups and 2 sector groups). When a development looks strange, then the reason behind this is being analyzed, with possible assistance from producers of input statistics, and if errors are detected then corrections are included in the system. In some cases, the statements lead to corrections in the primary statistics.
Each series are examined quarterly by evaluating the series over time (monthly from 2008 onwards)
Level:
• Employees: 127-industrial grouping * 2 sector groups
• Self-employed and assisting spouses: 36 industrial groupings
In connection with the annual estimates error detection is carried out also by gender and full time/part time.
Calculations to illustrate the internal consistency in the WTA (assessed accordingly over time at the above level):
• Hours worked per. employee
• Hours worked per. employed
• Hourly wage (compensation of employees / hours worked for employees)
• Wage per employee (compensation of employees / number of employed workers)
Comparisons with published statistics:
• National Accounts (employment, hours and compensation of employees)
• Employment of Employees (full-time jobs and compensation of employees)
• Public employment statistics
• Indices of average (hourly) earnings in the private and public sector
• Labor Force Surveys (employment and development in hours worked)
• Number of persons employed in the construction industry
It is possible in the system for the Working Time Account to enter corrections in the input data sources as well as in the output data sources of the Working Time Account before they are disseminated. It is also possible to make feedback to those responsible for the input data sources.

10.1.1.20 Data compilation

WTA is a statistic that is based on the integration of several input data sources / existing statistics. In the WTA a lot of development is continuously taken place in the form of revisions due to new data input sources, data breaks in existing input sources, revisions in line of industry codes, new sector codes, new or changing needs of users (national and international), need for projecting data back in time to periods of the current system does not cover, etc.

A special workflow that does not fall on a regular basis throughout the year, are descriptions of the method, answering various questionnaires (about strategy, comparability to other areas of statistical methodology development, etc.), updating of publishing calendars, formation of specific data to the STS (e.g. weights, changes to population coverage and groups of STS transmissions, changes to seasonal adjustment, etc.). This workflow can involve work and coordination between employees in different offices or departments. These tasks may well just start with an external query and end after analyzes and response. For more comprehensive changes may be needed for explanatory analyzes and preparation of memoranda for internal use, to Eurostat or to the website. This will typically happen in the incorporation of new annual structural data, and major revisions (where data is typically revised throughout the time series length). If the elucidations results in recommendations to revise (all or part of) the WTA begins a new project. In the following description, the above mentioned operations are not described.

Overview: Structural data constitutes the basis of the variables conceptual boundaries and levels. Thus, the WTA use annual data at the micro level (job level) from the Register of Employment Statistics. Earnings statistics are in the WTA used for converting paid hours of work to hours worked. Short-term statistics is used for distributing structural annual data over the months. Thus, employment from the Register-based Labor force statistics (RAS statistics) and jobs and aggregate payroll costs (compensation of employees) and annual paid hours of work for employees from the Establishment-related Employment Statistics (ERE statistics) is distributed to a monthly basis with the help of BFL's monthly data. Employment Statistics for Employees (BfL) is also used to predict job, employment, compensation of employees and hours worked by employees in the period after the latest available annual structural data.

The LFS is used to describe the distribution of hours worked during the year. Furthermore, the LFS is used for projecting the number of employed and jobs for self-employed and assisting spouses in the period after the latest annual structural data. Finally, the LFS is used for describing how many hours self-employed and assisting spouses work compared to employees.

More detailed description of work:

The necessary data sources are loaded.

Data is aggregated, integrated and projected: BFL and the Structural Earning Statistics are used on micro-level, in a preliminary step: As data from Structural Earning Statistics is imported, more updated workplace information from Employment Statistics for Employees (BfL) is transferred to data from the Structural Earning Statistics (including information on line of industry and sectors). Data from different sources are aggregated (to the extent this have not already be done so when loading the data). Any previous corrections to the input data (BFL or RAS / ERE) is included. This is followed by a calculation of factors for the number of paid hours actually worked in relation to the number of hours paid per years.

These factors are transferred to relatively detail structural data from the Register of Employment Statistics. Factors are calculated (based on BFL) to distribute annual data. Further factors are computed (based on LFS) to describe the distribution of hours worked during the year. Enumeration factors calculated for BFL level to the level of the Register of Employment Statistics end of November statements (RAS, ERE Statistics) for variables paid hours of work, main job and side line jobs and salary for employees.

The calculated projection factors (and in the initiation of the WTA also factors to project from 2009 to 2008), which describes the development of jobs, employment, compensation of employees, hours worked for employees over the year.

Data from different sources are integrated and projected.

Aggregated publishing data are formed: The most current version of the structural data from the Register of Employment Statistics is found. Non-corrected data for jobs, hours worked and compensation of employees are gathered in a single table. Non-corrected data is integrated with corrected data. Only data for the latest version of the reference period are included. Data is enriched with various aggregate line of industry (Statistics Denmark standard groups) and it is ensured that the variables and formats match names and formats used for publishing purposes and troubleshooting. The WTA is broken up on detailed sectors by means of end of November statements (Register-based Labor force statistics (RAS statistics) / the Establishment-related Employment Statistics (ERE statistics)).

Based on these data (not least for the national accounts industry aggregates) data sets are generated to the National Accounts at various levels of aggregation.

Data are seasonally adjusted, debugged and corrected: Initially an overall quality checks are implemented to see if something is wrong, just to be sure there is not a need for new input data deliveries. If necessary, the process stops here and the responsible person for the input data is contacted to find out what the problem is about / possibly to secure new supplies, and it is agreed, if necessary, who makes the adjustments and how. Because Easter can have very serious consequences for the development of hours worked, data are seasonally adjusted. Actual data, trading day adjusted data and seasonally adjusted data are also formed on Business Short Regulation (STS) groups so that these may also be used for troubleshooting. Actual and seasonally adjusted data are error detected in detail, mainly due by means of graphics. In addition, consistency checks are carried out (between variables, over time and in comparison to other statistics). This also takes place primarily based on graphics. Where deviations look strange any corrections are calculated for input sources and/or output data. It is checked whether the cause is an industry shift. Responsible of the input statistics are contacted in order to carry out analysis. If it turns out that there is a need for corrections, these can be incorporated to the various input sources, or they can be incorporated to the WTA output data. Cyclical interest group meeting is hold. This may reveal the need for additional troubleshooting and corrections.
Data are analyzed and disseminated: The stories in the data are found for the most recent data. If necessary notes on the subject site will be updated. Special features are described for use in e.g. News from Statistics Denmark and quality declarations. Quality declarations in Danish and English are updated. Danish and English figures, tables, stories and explanations in News from Statistics Denmark, Statistical News, Yearbook, STS, etc. are updated and proofread. Various data deliveries to Macro Database, various series for the STS, deliveries to internal users (including National Accounts and various stakeholders in relation to the short term statistics forum) as well as deliveries to external users are formed, controlled at an overall level and delivered. Answers to questions from the press, questions from the national accounts, Eurostat, Labor Movement's Business Council (Arbejderbevægelsens Erhvervsråd, AE), Danish Industry (DI), Danish employers' association (DA), the trade unions (LO), the Productivity Commission, ministries, or just one-off requests from individuals or organizations / companies. Any press contacts are reported.
Data are archived.

10.1.1.21 Adjustment

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

10.1.1.22 Relevance

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

10.1.1.23 User Needs

Among users are politicians, ministries, interest groups, businessmen, researchers, major private companies and others interested in the development of the Danish Labor market. The areas of application are mainly the National Accounts, economic models, economic government departments and Labor market organizations.

10.1.1.24 User Satisfaction

When major revisions are released, the changes are described in quality declarations and in potential more comprehensive notes available at the website. In addition users are oriented about the background for the changes, when the changes are put into force, and the reference period the changes are related to, as early as possible in the process via user committees (user committee for Labor market statistics and user committee for economic statistics), in the forum of short term statistics and on interest group meetings. In addition, revisions of the Working Time Accounts are discussed and coordinated with the national accounts. User Committee for Labor Market Statistics includes the areas employment, unemployment, wage subsidies jobs, earning statistics and statistics on absence. The user committee holds meetings one or twice a year to ensure running contact and dialog on the scope of statistics, developments, quality and communication. The members of the committees are important users of the products of Statistics Denmark within the subject areas of the user committee.
The User Committee for Economic Statistics covers the topics national accounts, public finances, short term statistics, external economy, globalization, employment, prices, consumption and financial statistics. The committee normally holds meetings in June and December. At these meetings the revisions of the Working Time Accounts has generally been embraced, as no users has doubted that the quality of the WTA has been improved significantly. However, the data breaks been more difficult for the users to deal with. Especially for the

national accounts and its users and for the Productivity Commission has the restructuring to using the eIncome statistics - especially with the very significant drop in the levels of hours worked - has given rise to much frustration and additional work load.

10.1.1.25 Data completeness rate

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

10.1.1.26 Accuracy and reliability

There are no calculations of the measures of accuracy. See section quality assessment.

10.1.1.27 Overall accuracy

There have been no measurements of the magnitude of revisions, etc.
In general, the quality of data has improved significantly with the use of the new eIncome source. Previously, the WTA was calculated by combining a multitude of different sources. After the reorganization in 2012 the WTA is based primarily on eIndkome sources. This is the same basic data for most of the sources included in the WTA, which ensures a high degree of internal consistency. In addition, the date markers, for when a job is active, have become much more precise, both in the annual structural statistics on jobs and employment at the end of November and the distribution over the year. Industry and sector rankings in eIncome is based on current work locations of employees. This is significantly more accurate than the projections underlying the former WTA. Hours statements have become much more precise, both because the date markers for when the job is active have become much more precise, but also because of eIncome now have a total population of employee relationships in Danish enterprises including reports on number of paid hours of work.
Not only is there has been a significant quality improvement related to the transition to eIncome. Over time, the eIncome register have also been improved. Thus, a quality measure for the calculation of hours worked is the proportion of hours paid in eIncome that have been imputed because they have either not been reported or because they have proved to be invalid:
Total: - 2008: 14.3 per cent. - 2009: 11.2 per cent. - 2010: 10.2 per cent. - 2011: 7.9 per cent. - 2012: 5.4 per cent. - 2013: 3.8 per cent.
It divided into:
Companies and organizations:
• 2008: 17.5 per cent.
• 2009: 13.3 per cent.
• 2010: 11.6 per cent.
• 2011: 9.3 per cent.
• 2012: 6.9 per cent.
• 2013: 4.6 per cent.
Government:
• 2008: 7.3 per cent.
• 2009: 7.2 per cent.
• 2010: 7.6 per cent.
• 2011: 5.2 per cent.
• 2012: 2.6 per cent.
• 2013: 2.4 per cent.
In general, there is a tendency that more and more report information on hours paid to eIncome, which guarantee a better quality over time. Furthermore, the guidelines from the tax authorities on the reporting of hours paid to eIncome have become more clear, and the precision and knowledge of concepts is increased in the reporting over time so that, for example, the reporters become aware that unpaid absences is not be included in the reported hours paid.

10.1.1.28 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

Some reports to eIncome for employees lack information on hours paid or the reported information has been found to be invalid. Therefore imputed (estimated) paid hours of work are used for these reports.
It is assumed in the WTA, that the end of November employment in RAS and number of jobs in ERE statistics equals the average employment (number of jobs) per. day in November. This is done because daily information on employment and the number of jobs is not available.
The structural statistics RAS and ERE statistics determines the WTA levels for each variable. Short-term statistics are used to project these levels over the year. Only the categories where there are non-missing figures in the RAS / ERE statistics will be projected. If the value is below 200 primary jobs, respectively 100 secondary job at the end of November, this level will be kept constant over the year (projection factor = 1). Are there too few observations in BFL category over the year the development from BFL at a more aggregate level are used (typically from a more aggregated industry level).
When the LFS is used to adjust for how much more self-employed and assisting spouses work compared to employees, it is not possible for us to take into account that the self-employed has a tendency to overstate their report more than employees do.

10.1.1.29 Timeliness and punctuality

Working hours are regularly published in accordance with Statistics Denmark's benchmark goals.
For quarterly statistics concerned, these goals imply the publications to be at the latest by the end of the following quarter. For the sake of short-term business regulation (STS), this implies the WTA to be published typical mid the last month of the following quarter. (The requirement for most employment series for STS is 2 months and 15 days).
For annual statistics concerned, this implies publications to be released at the latest by the end of the following year. In the interest of national accounts the annual WTA will be published in June with provisional figures for the previous year. This makes the annually WTA for the year t to be published in the same month as the publication of the quarterly WTA for the period 1 quarter t +1.
The transition to the new WTA resulted, however, that annual WTA 2011, based on the new eIncome sources, were not published until December 2012, whereas the publication of the quarterly statistics has not given rise to any delay.

10.1.1.30 Timeliness and time lag - final results

The Working Time Accounts are published once a year with annual figures, and four times a year with quarterly figures. The first publication of annual data covering the period 1995-1998* was on November 30th 1999.
The present publication of the WTA statistics is published on the basis of eIncome statistics.
Release time for the annual statistics is the reference year + 6 months. The latest year are preliminary figures calculated on the basis of the quarterly accounts. Release time for the quarterly statistics is the reference quarter +2 months and 15 days.
The statistics are available both in a preliminary version and the final version, so WTA for the last two quarters will be reviewed at each quarterly statement of the WTA. New knowledge or time for thorough debugging can cause changes in the other quarters which do not affect the annual working time account. When new structural data (RAS, ERE-statistics and the structural statistics on earnings) are incorporated in connection with the calculation of the annual WTA, the levels from the latest year where structural data is available and throughout the projection period is revised. When the data structure is incorporated, data up to and including the last year with structural data is considered to be final in the Working Time Account.
The time series covers the period:
• Q1 2008 - Q4 2014 in the quarterly WTA, published March 13, 2015
• 2008-2013 in the annual WTA with the release on 20 June 2014

10.1.1.31 Punctuality

For the quarterly Working Time Account 87.5 percent (7 out of 8 publications) is published exactly as planned or ahead of schedule. One releases (third quarter 2013) did not comply with the preannounced period, as the data quality was found too poor, and therefore the release was delayed for three days.
The annual WTA has been published three times on the basis of eIncome input data (since December 2012), and all the pre-announced publication dates were met (100 per cent).

Data to Eurostat short term business statistics (STS) are evaluated against the requirements for quarterly interim STS data (a deadline within 2 months after the reference quarter) and here 71.4 per cent of the releases met the requirements (5 out of 7 were released as scheduled).
For the final STS quarterly data 87.5 per cent (7 out of 8 of the releases) were transmitted according to the required deadline (within 2.5 months after the reference quarter).

10.1.2 Employment-_Compensation_of_Employees_and_Hours_Worked_2014

Skal denne med og er den I så fald det rigtige sted?

10.1.2.1 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.

10.1.2.2 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. Labour inputs in production are shown by employment (measured by the number of persons employed) and hours worked.

10.1.2.3 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.

10.1.2.4 Sector coverage

All industries according to Danish Industrial Classification 2007 (DB07).

10.1.2.5 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.

10.1.2.6 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.

10.1.2.7 Statistical population

All units generating Danish economic activity.

10.1.2.8 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.

10.1.2.9 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.

10.1.2.10 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.

10.1.2.11 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.

10.1.2.12 Frequency of dissemination

Annual and quarterly respectively.

10.1.2.13 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).

10.1.2.14 Cost and burden

No direct burden of respondents.

10.1.2.15 Comment

For further information, please contact Statistics Denmark.

10.1.2.16 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.

10.1.2.17 Source data

The primary sources of the annual compilation of employment, compensation of employees and hours worked are:
• The annual working time accounts (WTA) 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

10.1.2.18 Frequency of data collection

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

10.1.2.19 Data validation

The data validation is carried out in three steps according to the main process of setting up a national accounts system:
• In the first step a thorough validation of primary data sources is carried out. For more information reference is made to the specific quality declaration of each primary source.
• 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.
• 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.

10.1.2.20 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.

10.1.2.21 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.

10.1.2.22 User Satisfaction

Go to User Committee for Economic Statistics (available in Danish only).

10.1.2.23 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 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.

10.1.2.24 Overall accuracy

Statistical inaccuracy estimates do not exist.

10.1.2.25 Timeliness and punctuality

The quarterly national accounts are published first time 60 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.

10.1.2.26 Timeliness and time lag - final results

The quarterly national accounts are published first time 60 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.

10.1.2.27 Punctuality

The quarterly and annual statistics are published according to schedule.

10.2 Statistical surveys and other data sources used for the expenditure approach

The sources used for the expenditure approach are:

- Household-budget-survey
- International-trade-in-goods
- International-trade-in-service
- Retail-trade-index
- Census-of-housing
- Construction
- Construction-cost-index-for-residential-buildings
- Construction-cost-indices-for-civil-engineering-projects
- Ict-expenditure-in-enterprises.aspx
- VAT statistics
- Survey of housing rentals
- Housing survey
- Energy statistics
- Statistics on financial institutions (financial services)
- Statistics on public finances (user payments to public institutions)
- Tax statistics (quantities of goods on which excise duties are levied)
- Balance of payments statistics (tourist revenue and expenditure)
- ERE [establishment-related employment statistics] estimates of total wages and salaries
- Agricultural statistics
- Public finance statistics
- Accounts statistics for industries predominated by public corporations
- Index of construction costs
- Product statistics for the IT industries
- ICT expenditure
- Industrial accounts statistics
- Specific industry statistics
- Media statistics
- Register of motor vehicles
- Register of vessels
- Register of aircrafts
- Industrial commodity statistics
- SLS-E statistics
- Accounting statistics for industries where public corporations predominate
- Balance of payments statistics
- Settlements statistics from the Nationalbank

- Accounts statistics for sea water transport.

The most important sources are:

- Household-budget-survey
- International-trade-in-goods
- International-trade-in-service

Below is a more detailed description based on Statistics Denmark's Quality declarations.

10.2.1 Quality Declaration for the Household-budget-survey

10.2.1.1 Statistical presentation

The Household budget survey is calculated at Households level. The survey is based on a combination of interviews and accounting from the participating households. We only ask about information we can't get through our registers. 99 per cent of the total population is covered by the survey, which covers all private households in the country.

10.2.1.2 Data description

The Household Budget Survey is based on a combination of interviews and accounting from the participating households. In areas where data already are known through registers, data are taken from those registers. All participating households have to register their consumption over a period of 14 days. When a household is finish with the registration of their consumption - they got visit from our CAPI-interviewers. The CAPI-interviewers ask questions about the households fixed costs for the last 12 months. The survey covers all private households in the country, these accounts for approx. 99 percent of the total population.

10.2.1.3 Classification system

Consumption is defined as cost of goods and services used for the direct satisfaction of individual needs. Consumption are grouped by an international standard, known as COICOP classification (Classification of Individual Consumption by Purpose), where the purpose is essential. This means for example, that the main line clothing also includes washing and repair of clothing, the purpose could be said to be the same.
The international recommendations only give instructions on the division of consumption at an overall level, but Statistics Denmark has also made a further division in order to meet specific needs.
The total consumption can in the statement immediately grouped as follows:
• Level 1 11 groups
• Level 2 35 groups
• Level 3 103 groups
• Level 4 186 groups
• Level 5 316 groups
• Level 6 613 groups
• Level 8 approx. 1,300 individual items
Based on the most detailed consumer division, it is possible to group completely free to meet specific needs. For clothing and footwear, it is moreover possible to make distributions by sex and age, food can be broken down by preservation method, and it is possible to divide consumption expenditure by whether that is purchased in this country or abroad.
For fundamental reasons, Statistics Denmark does not breakdown of the consumption of certain brands.
In addition, a large number of other groups which are documented on the website of Statistics Denmark: nomenclatures. This is an example, region and education.

10.2.1.4 Statistical concepts and definitions

Equivalence scale: Weighted number of persons in the family, where the first adult aged over 14 years is counted as one person, other adults are counted as 0.5 and each child (under 15 years) is counted as 0.3. The scale is set up by the OECD and is called the modified equivalence scale.

Socio-economic status: The population´s socio-economic status is indicative of the most important labour market attachment. The labour force is divided into self-employed, assisting spouses, employees and unemployed persons. The population outside the labour force is divided according to the potential labour market attachment. Here, the personal groups comprise persons who are temporarily outside the labour force (job activation and leave during unemployment), retiring from the labour force (early retirement pay and

transitional payments), pensioners (recipients of civil servants earned pensions, old age pensioners and early retirement pensioners) and others outside the labour force (recipients of social assistance, students, children and other persons outside the labour force).
The breakdown of socio-economic groups in the income statistics is performed on basis of the primary income data source, unlike the labour market statistics where there is a close focus on the population´s labour market attachment. Consequently, the socio-economic breakdown is not the same across the statistical domains.

Further information is available from http://www.dst.dk/socio

Equivalence income: For the purpose of comparisons of income and the living conditions of families of various size, income of the families is subsequently subjected to adjustments. In conducting adjustments the family size is taken into account. The expenses of families with two or three persons are not necessarily double or treble with regard to a number of areas in relation to a family comprising one person only. As expenses on children are lower than expenses on adults, children are given a smaller weight than adults. In calculating the equivalence income, incomes for all persons in the family are added up and divided by a weighted number of persons in the family (the family´s equivalence scale).
Households: A household is defined as comprising one or several persons who live at the same address. The persons at the address share their meals, have joint income and expenditure. In the household budget survey the delimitation is carried out directly of the participating households in collaboration with the interviewer.

The definition of consumption expenditure in the household budget survey: The household budget survey estimates consumption as the private households´total expenditure on goods and service, when the intention is direct utility satisfaction. There are, especially, with regard to housing expenditure of homeowners some problems. Attempts are made at solving these problems in the household budget survey by calculating rent (rental value of own home). The calculation is based on the available statistics as regards the possible size of the rent for a corresponding rental dwelling, i.e. a dwelling of the same size and age, same location and with the same facilities. The distribution of consumption expenditure generally complies with the principles used in compiling the national accounts and is based on the European system of national accounts, ESA95. In accordance with this system, goods and services are distributed by purpose. In its most detailed form, about 1,200 single types of consumption are included in the household budget survey, each allocated with an 8-digit code. In the Statistical Yearbook the statistics are published at 2-digit level or 4-digit level, while detailed statistics can be supplied against payment of a service charge.

10.2.1.5 Statistical unit

The survey calculates the consumption at the level of a household.

10.2.1.6 Statistical population

The target population is all private households in Denmark. A private household is defined as an economic unit, i.e. a group of people who live together and have a high degree of common economy, i.e. share income and expenses. People in various forms of joint households (prisons, long-term patients in hospitals and other institutions.) is not covered, since it often will be impossible to separate the private economy from the economy of such a kind of institution. It is necessary to pay attention to this omission, if the surveys data for example are use to an analysis of hospital use. The private economy illuminated. Goods consumed in production (equipment, etc..) And other business expenses are not included.

10.2.1.7 Reference area

The Survey covered the entire country incl. Bornholm (except non-mainland islands).

10.2.1.8 Time coverage

Since 1996 the survey has been published annually.

10.2.1.9 Base period

The base period for constant price calculations are at present Year 2005.

10.2.1.10 Unit of measure

Consumption is calculated as DKK per. household.

10.2.1.11 Reference period

Consumption is calculated as an annual average for the year.

10.2.1.12 Frequency of dissemination

Two yearly versions are published. First a preliminary version is published and later a final one.

10.2.1.13 Legal acts and other agreements

The Household budget Survey is not based on an EU directive. The Survey is based on a so-called "Gentleman agreement", which means that the individual member states alone decide to if they want to provide Household budget data.

10.2.1.14 Cost and burden

No response burden has been estimated since participation in the survey is voluntary.

10.2.1.15 Comment

Additional information can be obtained by contacting the Section for the Household Budget Survey.

10.2.1.16 Statistical processing

The survey is based on a sample where the number of households accounts for about 2,500 out of Denmark's total of approximately 2.6 million households.
The survey included data from three different data sources: Accounting booklets, CAPI interviews and data from registers. In this way the sample can give results which are good approximations for all private households. The data from the 3 different sources are validated. We are constantly looking at how we can improve and do the statistic more efficiently.
The data is collected annually from approximately 860 households. Such a sample is too small to form the basis of a very detailed statistics; therefore we averaged data from three consecutive years to a single sample. All expenses, income, etc. is converted to the price and volume level of the middle of the three years.
Consumption survey is published twice a year. Preliminary figures are published 20 months after the reference year, while the final figures are published 27 months after the reference year.

10.2.1.17 Source data

The Household Budget Survey is calculated at household level, and is based on a combination of interviews and accounting of the participating households. All households are simply randomly selected. In areas where data already is known through registers, data are taken from those registers.
The survey used records from:
• Income Register
• CPR register
• BBR register
• Training Register
• Hospital Statistics Register

10.2.1.18 Frequency of data collection

Data are collected annually. Households are participating continuously throughout the year in the survey. In this way we ensure that seasonal consumption are represented in the survey.

10.2.1.19 Data collection

The Household Budget Survey is calculated at household level, and is based on a combination of interviews and accounting of the participating households. All households are simply randomly selected. In areas where data already is known through registers, data are taken from this registers.
In the survey we use records from:
• Income Register
• CPR register
• BBR register
• Training Register

• Hospital Statistics Register
The survey included information from three different sources:
• Interview
• Accounting
• registers
Interview: Households have participated in an extensive interview. The Households participants are asked about regular expenses the past 12 months, possession on and expenditure of a number of durable consumer goods, the use of health care, education and child-care arrangements on certain income and taxes as well as retirement plans. Since the households are visited spread evenly over the year, the information will partly be about spending in the previous year.
Accounting: Households have for a period of 2 weeks led a detailed account of all expenses. This accounting guidance is for individual households are spread out over the year to ensure that seasonal changes in consumption are covered by the survey.
The accounts have 2 main purposes: It ensures total coverage by , for example, new products on the market comes with , and by rarely consumed products , as it is too big to ask in the interview, in principle, be covered . The accounting also ensures that more everyday purchases that you normally do not remember for a long time will be covered.
Records: To save time for households and Statistics Denmark, the Households are been asked about topics that Statistics Denmark already has useful information about. Statistic Denmark has in particular income and tax information, housing information and information on education and occupation.

10.2.1.20 Data validation

The data validation takes place on many research levels. In the interviewees program for example there are built a large number of controls. These can be both monetary terms, but may also be more involved, for example, if a household has indicated that they have to dispose of a car and then answering no to the payment of vehicle excise duty or car insurance. Finished interviews and accounting records validated subsequently manually by Statistics Denmark with specially developed software that also examine the appropriateness of described amount.

10.2.1.21 Data compilation

When we are finish with the validation of the interviews and accounts booklets the registry variable are linked in the data set. Sometimes it's difficult to find the household in the sample in the register data, this kind of difficulties can often be attributed to differences in the calculation date. When this happens we make manual imputation of for example, an individual's level of education.
After finishing the processing of micro data the enumeration process of making the data representative for the entire country begins. The figures in all tables are weighted this is done in order to partially resolve the gaps, as different dropout and pure random coincidences leads. Those types of Household where the risk for not participating in the survey is relatively large, which therefore results in too few households in the survey are assigned a relatively large weight, while household types, as there are too many of, is assigned a relatively small weight.
Information about both the enumerated number of households in Denmark after the weighting and on the actual number of households in the survey finds in most tables. This last statement is relevant to assessing the sampling uncertainty, since a small number of households results in a relatively large uncertainties.
The weights are calculated using a regression estimate. The focus is on each characteristics of the relationship between sample and population. The advantage of this method is that many more features are considered than in the former method were poststratifikation was used. Following characteristics are involved in the estimation:

- Household size and composition
- Income
- Main Income Recipient's socio-economic status
- The household owns or rents the dwelling
- What type of urban household lives in
- Education
- Gender
- Geography

10.2.1.22 Adjustment

We do not make other corrections of data besides those corrections described during data validation and data processing.

10.2.1.23 User Needs

In addition to serving the general public interests the survey has a broad group of users:

- It is used internally at Statistics Denmark in compiling price indices and national accounts statistics.
- Government bodies use the survey for purposes of planning and for conducting analyses of the consequences of new legislation, etc.
- The survey is used for researches purposes within several fields.
- The survey can be used for marketing purposes, etc.
- Internationally, the survey is widely used. Especially, EUROSTAT is very active in enabling comparability of the survey results among the EU Member States.

The statistics are very rich in detail and have a relatively long production time. It is therefore not suitable as a short-term statistics.

10.2.1.24 Accuracy and reliability

Consumption applies throughout the year as a reference time. The sampling error for the total average consumption is about 0.9 per cent. Besides sampling errors it is a known fact that Household Budget Survey is a bit under-reporting in several areas, such as alcohol, tobacco, prostitution and undeclared work. The survey use sampling enumeration, while there is not adjusted for the less than 1 per cent of the population which is not covered by the survey.

10.2.1.25 Overall accuracy

A survey like the Household Budget Survey is subject to a number of inaccuracies. Most errors and shortcomings are not of a kind that can be measured, and it is therefore not possible to measure the total inaccuracy in the survey. The sample-related coefficient of variance for total consumption per household is estimated at less than 1 pct. Detailed Household Budget Survey figures for sample related coefficient of variance is published on www.dst.dk/forbrug in the folder Documentation. The total inaccuracy of which the sample related coefficient of variance is only a part can, as noted, not be measured, because it is not possible to measure the other types of errors. What other kinds of errors should be taken into account are described in the next section. In general, the inaccuracy is higher, the more detailed level data are broken down to and the fewer households on which the average is based.

10.2.1.26 Sampling error

The sampling error for the Household Budget survey for both the total average and the respective under groups for 2011-2013 figures can be obtain Uncertain.

10.2.1.27 Timeliness and time lag - final results

The statistics are updated twice yearly, where approximately one third of the households are new, while two thirds was also included in the previous survey. Preliminary figures are published approximately 7 month after the last data collection, final figures approximately a year after.

10.2.1.28 Punctuality

The statistics are usually published without delay in relation to the scheduled date.

10.2.2 International-trade-in-goods

10.2.2.1 Statistical presentation

The statistics show Denmark's imports and exports of goods from/to all countries in the world distributed by about 9,300 different commodity codes. The statistics do not cover the External trade of the Faroe Islands and Greenland.

10.2.2.2 Data description

The statistics show Denmark's imports and exports of goods from/to all countries in the world distributed by about 9,300 different commodity codes recorded by value, net weight in kilograms and any supplementary unit (e.g. liters, units or square meters).

10.2.2.3 Classification system

Commodity classifications are based on the groupings in the EU's Combined Nomenclature (CN).
Furthermore, when statistical data are published, the current version of the UN's Standard Trade Classification (SITC) is applied. In addition, imports are grouped by use in accordance with an adapted version of the UN's Broad Economic Categories (BEC), while exports are grouped by industrial origin (KONJ), which is a Danish classification defined on the basis of SITC.
The Combined Nomenclature (CN) is the merchandise nomenclature applied by the EU when reporting data on EU trade and trade with non-EU countries. In the Danish External Trade in Goods Statistics the most detailed statistics published are classified according to the Combined Nomenclature. The Combined Nomenclature consists of around 9,300 commodity codes. A detailed description of the CN codes is available in the EU Official Journal dissemination of Combined Nomenclature.
When disseminating External Trade in Goods Statistics by broader commodity groups, the Standard International Trade Classification (SITC) Revision 4 is mostly used. The SITC Revision 4 has been used in the Danish external trade statistics since 1 January 2007 and consists of 2,970 5-digit commodity items, which can be aggregated to 1,033 4-digits, 260 3-digits, 66 2-digits, and 10 1-digit commodity items. Statistics on periods before 2007 are disseminated using older revisions of the SITC classification. The SITC classification was revised in 2007 because of a major revision in the Harmonized System (HS) Nomenclature which is the base for the SITC classification.
UN's BEC classification (Broad Economic Categories) is with few exception based on SITC and consist of 7 main end-use categories. Each of the 7 categories of end-use in the BEC covers a number of commodity groups and is defined largely on the basis of SITC, so that all commodity items under a given SITC item are allocated to the same commodity group in BEC. Danish statistics are disseminated according to a modified version of the BEC classification. The KONJ classification is a Danish classification where exports are classified by industrial origin comprising 8 categories of exports (by industrial origin), each covering a number of commodity groups and defined largely based on the SITC.
The distribution by partner countries is done according to the Geonomenclature of Eurostat which classified more than 200 different countries and territories.
Trade by enterprise characteristics used the Danish Industrial Classification of All Economic Activities (DB07), which is 6-digit activity nomenclature based on EU's NACE classification. First four digits in DB07 are the same as in the NACE.

10.2.2.4 Statistical concepts and definitions

Data Collected in External Trade in Goods Statistics: The quantity of the imported and exported commodities is measured in terms of a basic unit and in some cases a supplementary unit (e.g. '1000 pieces' or 'liter'). The basic unit for the great majority of commodities is the net weight (excluding package) stated in kg.
For each commodity transaction (imports or exports), the following items of information are collected:
In Intrastat:
• Commodity code according to the Combined Nomenclature (CN)
• Partner country (country of dispatch/country of destination)
• Type of transaction (e.g. ordinary purchases/sales, returns of goods or contract processing)
• Invoiced value (converted into statistical value by Statistics Denmark)
• Net weight in kilogram
• Any supplementary unit, e.g. liters or no. of items (if required according to the CN)
In Extrastat:
• Commodity code according to the Combined Nomenclature (CN) or TARIC (imports only)
• Partner country (Country of origin and country of consignment in imports and country of destination in exports)
• Procedure code (7-digit code for the customs procedure, e.g. customs clearance for free sales and free consumption or for active processing)
• Statistical value
• Net weight in kilogram
• Any supplementary unit, e.g. liters or no. of items (if required according to the CN)

• Means of transport at the border
• Domestic means of transport
The statistics are published at the most detailed level as totals of statistical value (imports in terms of cif-values and exports in terms of fob-values), net weight and any supplementary unit for similar occurrences of commodity code and partner country. Furthermore, the statistics are grouped according to the current commodity nomenclatures (CN, SITC, BEC and KONJ).
Goods excluded from the statistics: Some goods and movements of goods are excluded from the statistics, e.g. means of payment which are legal tender, securities and monetary gold; goods benefiting from diplomatic, consular or similar immunity; and goods that are not the subject of a commercial transaction.
Indices in External Trade in Goods: For the purposes of conducting further analyses of external trade, indices of value, unit value and quantity and terms of trade are also published.
The value index analyses the development in values for imports and exports.
The unit index reflects the change in the value of goods imported and exported, which is mainly due to price changes (changes in the unit values).
The quantity index shows the change in the value of goods imported and exports, which is due to quantity changes.
The terms of trade are measured as the ratio between the unit value index for respectively, exports and imports.
Intrastat and Extrastat: The primary data on which the statistics are compiled are collected from the Intrastat and Extrastat systems.
• Intrastat is based on data reported by Danish enterprises with total annual imports of goods and/or exports of goods over respectively, DKK 6.0 million and DKK 5.0 million in 2015. The threshold for reporting data is separately fixed annually for imports and exports for the purpose of ensuring coverage of 93 pct. and 97 pct. of respectively, total imports and exports as laid down by EU legislation. Furthermore, a small transaction threshold is applied in Intrastat. If the total sum of homogeneous transactions within a calendar month has a value of not more than DKK 1,500 and a weight of not more than 1,000 kg, these goods can be reported as whole under a special commodity item (other goods).
• Extrastat is based on data reports concerning customs and supplies collected from the Danish tax authorities in connection with imports and exports of goods to/from Denmark and from/to non-EU member countries. A statistical threshold, which can be compared to the transaction threshold in Intrastat, is applied. If the value of a transaction is not over DKK 7,500 and the weight is not over 1,000 kg, these goods can be recorded under a special commodity item (other goods). All transactions related to imports must be stated, whereas it is possible to state orally transactions related to exports under the statistical threshold. This oral reporting is not recorded, but the amount of trade is insignificant.
Partner Country: The country distribution is conducted in accordance with Eurostat's Geonomenclature classifying about 200 different countries and territories. In Extrastat, information on country of origin (country of manufacture) is collected and for imports information on country of dispatch and for exports information on country of destination is collected. In most situations, it is information on country of origin that is applied in Extrastat. In Intrastat, only information on country of dispatch for imports and country of destination for an export is collected.
Specific goods and movements: A range of goods and movements of goods differ from the general external trade and in such cases the statistics are compiled according to other principles, e.g. vessels and aircraft, stores and supplies, sea products, electricity and natural gas.
Statistical value: The value of the external trade is published as the so-called statistical value. For imports this value is called the cif-value (cost, insurance and freight), i.e. the value of the commodity at the Danish border or sea port, including the service costs connected to the delivery of the commodity to the Danish border, e.g. transport costs and insurance. For exports the statistical value is equal to the fob-value (free on board), i.e. the value of the commodity at the point of export at the Danish border, including the costs connected to the transport of the commodity from the exporter to the export point at the Danish border or sea port.
Trade systems: External trade can be compiled according to two different principles: the general trade system and the special trade system.
General trades comprise all goods being moved into or out of the country, unless exceptions have been laid down in special rules (see below). Thus, imports cover all goods entering the country, including goods intended for re-export or goods that are, in actual fact, re-exported. Similarly, exports cover all goods leaving the country, whether processed in the country or have previously been imported (re-export).
External trade according to the special trade system excludes transactions between other countries and Danish customs bonded warehouses. Goods imported to a bonded warehouse are thus excluded from external trade based on the special trade principle and are only included when the goods are declared by the customs to Denmark.

Goods in transit, i.e. goods that are only being transported through the country, are excluded from the external trade statistics for special trade as well as general trade. In connection with a revision of the external trade data in 1997, data from 1988 and onwards were revised according to the general trade system. However, the statistical office of the EU, Eurostat, publishes external trade statistics for the member states using the special trade system. Consequently, there are nominal differences between Statistics Denmark's and Eurostat's figures for Danish external trade in goods.

10.2.2.5 Statistical unit

The statistical unit is commodities and commodities groups and partner country and country groups. In Trade by enterprise characteristics the legal enterprise unit is also used for identifying and defining the enterprises. The CVR number (Central Business Register) is the unit applied.

10.2.2.6 Statistical population

The statistical population consists of the enterprises which have external trade in goods and which report to either Intrastat or Extrastat for trade with EU countries, Intrastat, the population is defined as enterprises which have trade of a value which exceed an exemption threshold. For trade with non-EU countries, Extrastat, all traders are covered by the statistics.
In trade with EU countries, Intrastat, a statistical threshold is applied, based on the value of annual imports and exports to other EU Member States. The threshold is set by Statistics Denmark in compliance with the requirements of coverage stated in the EU legislation on Intrastat, and the limits are determined annually. Enterprises whose annual EU trade is below these limits are exempted from reporting detailed data under the Intrastat system. The Intrastat thresholds are set at levels where the enterprises reporting to Intrastat amount to minimum 93 per cent of the total value of EU imports and minimum 97 per cent of EU exports.
The Intrastat report obligation of the individual enterprises is based on their Intrastat reporting in previous year or on the amount of EU trade stated at their VAT statements. At the VAT statements the enterprises have to state the value of purchases of goods from other EU countries (box A) and the value of sales of goods to other EU countries (box B).
In trade with non-EU countries, Extrastat, there is no actual statistical population, as all transactions in principle are collected through the customs declarations submitted to the Danish Customs Authorities.

10.2.2.7 Reference area

The statistics cover Denmark’s imports and exports of goods from/to all countries in the world. The statistics do not cover the External trade of the Faroe Islands and Greenland.

10.2.2.8 Time coverage

The statistics cover the period from 1988 and onwards. Time series covering previous years are only available in paper publications and are described further in section ‘Comparability – over time’.

10.2.2.9 Base period

In the indices covering External Trade of Goods the base period is 1995 for the Quantity and Unit Value Indices.

10.2.2.10 Reference period

01-03-2015 - 31-03-2015

10.2.2.11 Frequency of dissemination

The statistics are published monthly.

10.2.2.12 Legal acts and other agreements

Act on Statistics Denmark (Consolidated act No. 599 of June 22, 2000) and Consolidated act No. 1495 of December 16, 2004 of the Ministry of Economic and Business Affairs Regulation (EC) No 638/2004 of The European Parliament and of the Council of 31 March 2004 on Community statistics relating to the trading of goods between Member States and repealing Council Regulation (EEC) No 3330/91, with associated changes.
Commission Regulation (EC) No 1982/2004 of 18 November 2004 implementing Regulation (EC) No 638/2004 of the European Parliament and of the Council on Community statistics relating to the trading of goods between Member States and repealing Commission Regulations (EC) No 1901/2000 and (EEC) No 3590/92, with associated changes.

Regulation (EC) No 471/2009 of the European Parliament and of the Council of 6 May 2009 on Community statistics relating to external trade with non-member countries and repealing Council Regulation (EC) No 1172/95.
Commission Regulation (EU) No 92/2010 of 2 February 2010 implementing Regulation (EC) No 471/2009 of the European Parliament and of the Council on Community statistics relating to external trade with non-member countries, as regards data exchange between customs authorities and national statistical authorities, compilation of statistics and quality assessment.
Commission Regulation (EU) No 113/2010 of 9 February 2010 implementing Regulation (EC) No 471/2009 of the European Parliament and of the Council on Community statistics relating to external trade with non-member countries, as regards trade coverage, definition of the data, compilation of statistics on trade by business characteristics and by invoicing currency, and specific goods or movements Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff.
Commission Regulation (EC) No 1779/2002 of 4 October 2002 on the nomenclature of countries and territories for the external trade statistics of the Community and statistics of trade between Member States Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code.

10.2.2.13 Unit of measure

The units of measure in the statistics are value in Danish crowns (DKK), net weight in kilograms and for many commodity codes also a supplementary unit (e.g. litres, units or square metres), all distributed by commodity codes and partner countries.

10.2.2.14 Cost and burden

For Intrastat the response burden is estimated as DKK 49.0 million in 2014 distributed across around 7,500 enterprises. In contrast, as an administrative source Extrastat does not impose any additional response burden on enterprises.

10.2.2.15 Comment

External Trade in Goods has a webpage:
http://www.dst.dk/en/Statistik/emner/udenrigshandel/udenrigshandel-med-varer.aspx

10.2.2.16 Statistical processing

Trade data is collected on monthly basis using the various data sources. The collected data are validated for logical errors and completeness and a credibility check of the reported data is carried out.
The collected data are used to compile the trade figures and full coverage of trade is ensured by estimation for missing. There is thus full coverage of International Trade in Goods in the disseminated statistics.
In connection with the release of trade figures some time series are seasonal adjusted and furthermore indices are calculated.

10.2.2.17 Source data

The statistics are compiled on the basis of two general sources: Extrastat and Intrastat.
Extrastat covers Denmark's trade in goods (imports and exports) with non-EU countries (third country) on the basis of the data on customs and supplies reported by business enterprises to the Danish tax authorities concerning their trade in goods with countries outside the EU. Consequently, Extrastat is an administrative (secondary) source. Intrastat is the system behind the statistics of the trade of goods between Denmark and the other EU countries. Prior to the introduction of EC's Single Market on 1 January 1993, this trade was also covered by the Extrastat-system. However, following the introduction of the Single Market, the requirement concerning customs and forwarding documents in connection with intra-EU trade was abolished. Consequently, Extrastat was no longer able to provide information about this trade and Intrastat was introduced on 1 January 1993. Intrastat is primarily based on monthly data reports submitted to Statistics Denmark by approximately 7,500 business enterprises in Denmark with regard to their trade in goods with enterprises in other EU countries (supplemented by information about EU trade derived from the VAT declarations that are filled out by all enterprises liable to pay VAT in Denmark). Consequently, Intrastat is a statistical (primary) source.
In addition to Intrastat and Extrastat, trade data are also collected via other data sources. Data on vessels and aircrafts are partly coming from registers kept by Danish Maritime Authority and Danish Transport Authority, respectively. Data on sea products landed in foreign harbor are coming from The Danish AgriFish Agency and

trade in electricity is based on data on the actual transmission across the borders provided by the grid operator, Energinet.dk.

10.2.2.18 Frequency of data collection

Intrastat data are collected monthly and the deadline for reporting data under Intrastat is the tenth working day after the reference month. Extrastat data are collected on daily basis when the customs declarations are submitted to the customs authorities.

10.2.2.19 Data collection

In Intrastat it is mandatory to submit declarations digitally. The main reporting tools in Intrastat are Idep.web and forms online on virk.dk portal. In Extrastat, reporting tools provided customs authorities are used and almost all are digitally reporting tools.

10.2.2.20 Data validation

Statistics on the Danish External Trade in Goods are compiled on the basis of customs declarations for the trade with non-EU countries and reports to the Intrastat system covering trade with EU countries.
The collected data are validated at several levels before the statistics are disseminated. First, the reporting obligation of the enterprises is monitored. Furthermore, the data are check for any logical error (e.g. wrongful commodity code) or missing information. Trade reported on e.g. wrongful commodity codes is not included in trade figures before the information is corrected.
Credibility checks of the reported data are also carried out. In these checks the reported records are compared with records reported in the past. Those records which have a significant effect on the trade figures are checked manually. Records with less effect on the trade figures are automatic corrected. Significant errors are corrected quickly by telephone contact with the enterprises, while the other potential erroneous records are included in the statistics while investigations are carried out.
The reports are also checked for completeness. Large records are checked manually each month. In Intrastat, the reported figures are also compared with the enterprises' declaration of EU purchases and acquisitions stated on the VAT statements.
It is likely that not all erroneous records are identified and therefore the accuracy of the trade figures can be somewhat affected at detailed levels. Since the validation is targeted on large records, it is assessed that the effect of wrongful records is limited at aggregated level of the trade figures.

10.2.2.21 Data compilation

The reported EU trade is grossed up to full coverage of external trade in goods, by making estimation for trade from enterprises exempted from Intrastat reporting based on the stated value of purchases of goods from other EU countries (box A) and the value of sales of goods to other EU countries (box B) from the VAT statement and by making estimation from the enterprises obliged to Intrastat which have failed to report or have reported wrongfully. Consequently, the disseminated trade figures are thus covering the total trade. The estimations are distributed by commodity codes and partner countries.
In total the adjustments constitute around 9-10 per cent in EU imports and 6-7 per cent in EU exports, when final trade figures are released.

10.2.2.22 Adjustment

Seasonal adjustment is applied. No other adjustments are carried except the adjustments described in sections ‘Data validation’ and ‘Data compilation’.

10.2.2.23 Relevance

There is great interest in the disseminated statistics of External Trade in Goods among users who monitor the Danish economy. The statistics are demanded widely by trade and industry organizations, the bank and finance sector, politicians, public and private institutions, researchers, enterprises, news media, embassies and international organizations.
The statistics is also used for compilation of National Accounts and Balance of Payments Statistics. Furthermore, Eurostat use the statistics to make joint EU trade statistics. The users view the External Trade in Goods Statistics as an important short term indicator, and it often gets a lot of attention in the media and amongst professional users.

10.2.2.24 User Needs

Users are public authorities, private organisations and firms, international organisations, embassies, the media and private individuals. Furthermore, the detailed figures are widely used for conducting market analyses and research.

10.2.2.25 Data completeness rate

Trade in certain commodity/partner country combinations can be made confidential according to the rules defining confidentiality. These combinations are not disclosed in the statistics. Furthermore, at the first release of statistics 40 days after the reference month, detailed statistics on the EU trade is not disseminated. It is based on an assessment that these figures are not reliable enough so soon after the end of the reference month.

10.2.2.26 Accuracy and reliability

The reliability of the final statistics at aggregated level is relatively high. In Extrastat, the reliability at detailed commodity/country levels is also high, while the reliability is comparatively lower in Intrastat due to the margins of uncertainty involved in estimating trade by enterprises exempted from reporting data.
However, the first publications of the external figures are subject to some uncertainty, as a relatively high number of erroneous data reports cannot be included at the time of publication. Compensation for this is made by estimation and a later correction. The reliability of figures for a given month is greatly increased by later publications of statistics. Similarly, the highest reliability is achieved at aggregated level.

10.2.2.27 Overall accuracy

The uncertainty levels of the two main sources for the statistics differ.
Extrastat covering trade with non-EU countries is generally of a high quality. However, the reliability of the figures at the detailed level is affected by:
• The figures on imports probably have a slightly higher quality compared to the figures on exports, due to the circumstance that import transactions are subject to greater control measures via the customs system.
• Information on weight and quantity may be subject to greater margins of uncertainty compared to information on value.
Intrastat covering trade with EU member countries is subject to considerably higher margins of uncertainty compared to Extrastat. Current data-editing measures give rise to corrections, but especially the lack of data reports constitutes a considerable source of uncertainty. Particularly in the first months, estimates for delayed data reports are replaced by actual data reports, which give rise to, e.g. changes in trade between different goods and countries. Estimating trade of the smallest business enterprises exempted from reporting data also contributes to the circumstance that the statistics at the most detailed level are subject to some degree of uncertainty. The figures for total imports and exports from/to EU countries are considered to be of high quality in the final statistics as information is added with information from the VAT returns of the business enterprises, which cover all transactions of goods between Denmark and the EU countries.
At the detailed level, the reliability of the figures is affected by:
• No data reports from enterprises below the threshold limits of Intrastat.
• Imperfect and/or delayed data reports from enterprises obliged to report.
• Submission of inconsistent information, e.g. where the relationship between value and net weight in kg and/or supplementary unit seems unlikely.
• For reasons of resources, it is not possible to examine all data reports where (probably) inconsistent information has been submitted.
At the moment, there are no exact figures for the statistical uncertainty.

10.2.2.28 Sampling error

For non-EU trade, Extrastat, there is full coverage of population and sampling error is thus 0. In EU trade, Intrastat, the population is in principle a cut-off sample. The sampling error is not known.
The overall accuracy of Intrastat is affected by sampling error and non-sampling error combined. Non-sampling errors include measurement error and non-response error, i.e. missing or wrongful reports from enterprises obliged for Intrastat reporting or wrongful estimation of missing trade from enterprises which are exempted from reporting to Intrastat.

10.2.2.29 Timeliness and punctuality

Aggregated statistics for selected countries and country groups and for aggregated commodity groups are published monthly 40 days after the end of the reference period. Detailed statistics are published 70 days after the end of the reference period. The statistics are usually published without delay in relation to the scheduled date, which is announced at least 3 months in advance on Statistics Denmark's website.

10.2.2.30 Timeliness and time lag - final results

Aggregated statistics for selected countries and country groups and for aggregated commodity groups are published monthly 40 days after the end of the reference period. Detailed statistics are published 70 days after the end of the reference period. All months of the reference year are revised in connection with each publication of statistics up to and including October in the following year. Subsequently, figures will not be revised for a whole year. The figures are also revised in October in the two following years. This implies that final figures for external trade in goods are published about 2½ years after the end of the statistical year.
This revision practice is coordinated with the Balance of Payments Statistics and the National Accounts Statistics.

10.2.2.31 Punctuality

The statistics are usually published without delay in relation to the scheduled date, which is announced at least 3 months in advance on Statistics Denmark's website.
Trade data are without delay submitted to Eurostat on the same day as statistics are published.

10.2.3 International-trade-in-service

10.2.3.1 Statistical presentation

The statistics show Denmark's imports and exports of services from/to other countries distributed on partner countries and approx. 60 service categories on an annual basis.

10.2.3.2 Data description

The statistics show Denmark's imports and exports of services from/to other countries distributed on partner countries and approx. 60 service categories on an annual basis. On a quarterly basis the statistics are published on a more aggregate level and on a monthly basis completely aggregated only.

10.2.3.3 Classification system

The statistics on international trade in services cover approx. 60 categories of services; in the quarterly publication these are aggregated to 18 main groups and subgroups:
• Manufacturing services
• Repair services
• Sea transport
• Passenger sea transport
• Freight transport by ship
• Auxiliary sea transport services
• Air transport
• Other transport
• Postal and courier services
• Travel-related services
• Construction services
• Insurance services
• Financial services
• Royalties and licenses
• Telecommunication services, computer services, and information services
• Other business services
• Cultural, personal, and recreational services
• Public services n.i.e.

10.2.3.4 Statistical concepts and definitions

Resident business: A resident business enterprise is either a Danish enterprise in Denmark or a foreign enterprise which has been engaged or intends to be engaged in economic activities in Denmark. This means that branches of or subsidiaries in Denmark of non-resident enterprises are regarded as resident enterprises, while branches or subsidiaries of resident Danish enterprises abroad are regarded as non-resident enterprises.
Resident person: A resident person is a Dane resident in Denmark or a foreign citizen who is resident in Denmark and who intends to be a resident in Denmark for at least one year.

10.2.3.5 Statistical unit

In the statistics the units are delimited according to their legal registration number (cvr. number).

10.2.3.6 Statistical population

The statistical population is assumed to consist of approx. 40.000 units (cvr. numbers), which according to different assumption are considered to be covering the total foreign trade in services. This population is delimited using the business register and some other sources.

10.2.3.7 Reference area

The statistics cover trade in services performed by Danish residents with foreign residents.

10.2.3.8 Time coverage

The statistics cover the period since New Year 2004/2005.

10.2.3.9 Unit of measure

The statistics are compiled in DKK.

10.2.3.10 Reference period

01-01-2015 - 31-03-2015

10.2.3.11 Frequency of dissemination

The statistics are published quarterly, for main results, however, monthly with the balance of payment statistics.

10.2.3.12 Legal acts and other agreements

Act on Statistics Denmark (§ 9a and § 10).
Parliament and Council regulation (EEC) No 184/2005 of 12 January 2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment (OJ L 310 08.02.05) and later Commission regulations.

10.2.3.13 Cost and burden

The response burden has been estimated to DKK 8.1 million.

10.2.3.14 Comment

International trade in services has a webpage:
http://www.dst.dk/en/Statistik/emner/udenrigshandel/udenrigshandel-med-tjenester.aspx

10.2.3.15 Statistical processing

Data is collected every month. The data is screened for obvious and likely errors. The completeness of the reports is checked. The data is used for compiling the statistics through a process of grossing up for the trade not covered. The statistics is accordingly to be considered to completely cover the Danish foreign trade in services.

10.2.3.16 Source data

The most important source of the statistics is a combination of monthly reports from approx. 400 firms and annual reports from approx. 1300 firms. Another important source is interviews with travelers; the interviews with foreign travelers in Denmark are carried out in cooperation with VisitDenmark; the interviews with Danes travelling abroad are conducted in the context of Holiday and Business Journeys. Supplementary information

from other sources on travel as well as on other items is used. Information on public services is provided through statistics on public finance.

10.2.3.17 Frequency of data collection

Data is collected monthly and annually.

10.2.3.18 Data collection

Data is collected mostly electronically through the system IDEP.

10.2.3.19 Data validation

Data is compared with earlier reported data. If relevant, data is also compared with reports to other statistics.

10.2.3.20 Data compilation

Data is grossed up to the total population, assumed to consist of about 40.000 units. The grossing up routine is dynamic as the weights are recompiled when new data are available. The 400 monthly reporters are allotted with weight 1, while the 1300 annual reporters are allotted with weights larger than 1 (or 1). The routine is simple; a stratum weight is determined directly on the likelihood of choosing this unit.

10.2.3.21 Adjustment

In the quarterly statistics adjustment for seasonality is performed.

10.2.3.22 Relevance

The International trade in services statistics constitutes an essential part of the balance of payments statistics and of the rest-of-the-world account of national accounts. The statistics are occasionally commented upon in the public debate.

10.2.3.23 User Needs

Foreign trade in services is an independent statistics and is used in the compilation of the Balance of payments. Important users are hence public authorities, private organizations, firms and private individuals.

10.2.3.24 User Satisfaction

Measurements of user satisfaction are not available.

10.2.3.25 Data completeness rate

The publication of data is compatible with the EU requirements on data reporting.

10.2.3.26 Accuracy and reliability

In the first release of the figures for foreign trade in services there will be a certain degree of uncertainty as a minor part of the data has either not been reported yet or has errors to a degree that it cannot be included in the release. In these cases data will be supplemented by estimations. The reliability of the figures for a given quarter increases in later releases. The final figures are to be considered as fairly reliable, to a decreasing degree though the more detailed level that is applied.

10.2.3.27 Overall accuracy

The statistics on foreign trade in services are basically compiled on partly a cut-off sample of Denmarks 400 largest firms engaged in this trade (monthly reports) and partly a stratified sample of about 1300 small and medium-sized firms (annual reports) by grossing up this sample information. This entails by its very nature some inaccuracy. An important element of inaccuracy is attached to the frame from which the sample is drawn. The frame was first derived from the settlement statistics of Danmarks Nationalbank,. Effective from 2009 a new frame has been taken into use. This frame has been delimited from a one-off investigation in 2008 - the "screening" - in which some 10.000 firms were requested to report summarily on their imports and exports of services in 2007. A similar investigation has been conducted in 2013, where 5.000-6.000 firms have been questioned.
Finally it must be considered that the concepts being employed in the statistics are rather complicated. Accordingly misunderstandings in the reports leading to inaccurate compilations are unavoidable. This problem

is constantly addressed by contacting the reporters when suspicions of misunderstandings are raised. Special analyses have been conducted on the items sea transport, travel, insurance, merchanting, government services (n.i.e.), construction services, and services between affiliated enterprises (n.i.e.) and most lately on intellectual property services.
The travel item entails some difficulty. It is compiled using different information on consumption by Danes abroad, number of nights abroad, and transport abroad from statistics from other countries; but the risk of error is fairly big, particularly concerning small partner countries. This error margin can, however not be calculated.
With the implementation of the new international guidelines some additional questions have been included in the questionnaire on international trade in services. The new variables have made it possible to validate the information by comparing more directly vis-à-vis other statistical domains. Against that background, Statistics Denmark will map the foreign activities of selected larger Danish enterprises. Among others it is expected that the validation will affect the compilation of processing activities. The new information is expected to be included in the statistics in October 2015.
Measures on accuracy on final exports and imports of services are not calculated.

10.2.3.28 Sampling error

Measurements are not yet available.

10.2.3.29 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

An important element of inaccuracy is attached to the frame from which the sample is drawn. The frame was first derived from the settlement statistics of Danmarks Nationalbank. Effective from 2009 a new frame has been taken into use. This frame has been delimited from a one-off investigation in 2008 - the "screening" - in which some 10.000 firms were requested to report summarily on their imports and exports of services in 2007. A similar investigation has been conducted in 2013, where 5.000-6000 firms have been questioned.
Trade on the internet is only partly covered; an example of undercoverage can be streaming services. Finally it must be considered that the concepts being employed in the statistics are rather complicated. Accordingly misunderstandings in the reports leading to inaccurate compilations are unavoidable. This problem is constantly addressed by contacting the reporters when suspicions of misunderstandings are raised. Special analyses have been conducted on the items sea transport, travel, insurance, merchanting, government services (n.i.e.), construction services, and services between affiliated enterprises (n.i.e.) and most lately on intellectual property services.
The travel item entails some difficulty. It is compiled using different information on consumption by Danes abroad, number of nights abroad, and transport abroad from statistics from other countries; but the risk of error is fairly big, particularly concerning small partner countries. This error margin can, however not be calculated.
With the implementation of the new international guidelines some additional questions have been included in the questionnaire on international trade in services. The new variables have made it possible to validate the information by comparing more directly vis-à-vis other statistical domains.
Against that background, Statistics Denmark will map the foreign activities of selected larger Danish enterprises. Among others it is expected that the validation will affect the compilation of processing activities. The new information is expected to be included in the statistics in October 2015.

10.2.3.30 Timeliness and punctuality

The statistics are published every quarter approx. 70 days after the end of the reference period; main results are published monthly approx. 40 days after the end of the particular month. The balance of payments statistics are normally published without delays as to the preannounced dates.

10.2.3.31 Timeliness and time lag - final results

The statistics are published every quarter approx. 70 days after the end of the reference period. However, main results are published monthly approx. 40 days after the end of the particular month.

10.2.3.32 Punctuality

The statistics are normally published without delays as to the preannounced dates.

10.3 Statistical surveys and other data sources used for the transition from GDP to GNI

The sources used for the transition from GDP to GNI are:

- Balance of Payments

Below is a more detailed description based on Statistics Denmark's Quality declarations.

10.3.1 Quality Declaration for the Balance of Payments

10.3.1.1 Statistical presentation

The balance of payments records the value of the economic transactions which are made within a given period between the Danish balance of payments area and the rest of the world.

10.3.1.2 Data description

The balance of payments records the value of the economic transactions which are made within a given period between the Danish balance of payments area and the rest of the world. Until September 2000 the account also covered the Faroe Islands and Greenland, but since then it has only covered Denmark.

10.3.1.3 Classification system

The balance of payments can be divided into three main accounts: the current account showing income and expenditure, the capital account and the financial account showing how a deficit/surplus on current account is financed/spent or transactions within these two accounts. The following main items are entered under current account: goods, services, income, and current transfers. The most frequently used statistical measure is the current account balance sometimes also referred to as the balance of payments surplus or deficit.

10.3.1.4 Statistical concepts and definitions

Resident business: A resident business enterprise is either a Danish enterprise in Denmark or a foreign enterprise which has been engaged or intends to be engaged in economic activities in Denmark. This means that branches subsidiaries in Denmark of non-resident enterprises are regarded as resident enterprises, while branches or subsidiaries of resident Danish enterprises abroad are regarded as non-resident enterprises.
Resident person: A resident person is a Dane resident in Denmark or a foreign citizen who is resident in Denmark and who intends to be a resident in Den-mark for at least one year.

10.3.1.5 Reference area

The statistics record the economic transactions by Danish residents with residents of the rest of the world.

10.3.1.6 Time coverage

The balance of payments for Denmark has been compiled since 1934.

10.3.1.7 Unit of measure

The statistics are compiled in DKK

10.3.1.8 Reference period

01-02-2015 - 28-02-2015

10.3.1.9 Frequency of dissemination

Information about the balance of payments is published monthly at an aggregated level and quarterly at a less aggregated level.

10.3.1.10 Legal acts and other agreements

Data originates from other statistics. The European Parliament and Council Regulation (EC) No 184/2005 of 12 January 2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment (OJ L 35 08.02.05) is applied.

10.3.1.11 Cost and burden

There is no direct response burden since data originates from other statistics.

10.3.1.12 Comment

www.dst.dk/BB.

10.3.1.13 Statistical processing

Data originates from other statistics. Some of the sources are used as they stand while others are used as indicators of development. The settlements statistics of Danmarks Nationalbank have for many years been an all-important source for the balance of payments statistics. The collection of information for the settlements statistics is ceased by New Year 2004/05.

10.3.1.14 Source data

The statistics are prepared on the basis of the foreign trade statistics; cf. External trade in goods and International trade in services, and furthermore financial statistics of Danmarks Nationalbank (the Danish central bank) and information from public authorities, cf. General Government Finances. Supplementary information from other statistics is used. Some of the sources are used as they stand while others are used as indicators of development.

10.3.1.15 Relevance

The publication of balance of payments statistics in general and of the monthly figures in particular calls great public interest.

10.3.1.16 User Needs

Traditionally, the balance of payments statistics form part of the most important background information in the planning of the economic policy of the country. Thus, one important user is the Ministry of Finance. The balance of payments statistics is used in the compilation of the national accounts. The balance of payments statistics constitutes Denmark's contribution to the compilation of the EU Balance of payments.

10.3.1.17 Data completeness rate

The publication of data in the Danish balance of payments is largely compatible with the EU requirements on data reporting. In some cases more detail is displayed; and in other cases, where statistical uncertainty is considered too big, aggregation is performed.

10.3.1.18 Accuracy and reliability

The compilation of the balance of payments is mainly based on other statistics. Accordingly, the accuracy of the balance of payments statistics is very much dependent upon these statistics. Most importantly, there will be some uncertainty attached to the first compilation of a given period, as some of the relevant information will not be available until later.

10.3.1.19 Overall accuracy

The transfer to new statistical sources and methods from January 2005 unavoidably incurred some transitional problems. Accordingly in a transitional period the uncertainty of the figures was higher than usually. In particular, this applied for the service item, for which the changes were the biggest, cf. Foreign trade in services. With the implementation of the new international guidelines some additional questions have been included in the questionnaire on international trade in services as from 2013. The new variables have made it possible to validate the information by comparing more directly vis-à-vis other statistical domains. Against that background, Statistics Denmark will map the foreign activities of selected larger Danish enterprises. Among others it is expected that the validation will affect the distinction between processing and merchanting activities. Further it is expected that the current level of goods sold abroad after processing abroad will be adjusted upwards. The new information is expected to be included in the statistics in October 2015. Measures on accuracy are not calculated.

10.3.1.20 Non-sampling error and A4. Unit non-response - rate for U and A5. Item nonresponse - rate for U

The balance of payments is compiled according to the double-entry system. Every transaction involves both a credit entry and a debit entry. The employment of this principle implies that the balance of payments, i.e. all

three main accounts taken together, will always balance, any differences between the totals being attributable to statistical discrepancies, the so-called "errors and omissions".

10.3.1.21 Timeliness and punctuality

The statistics are published every quarter approx. 70 days after the end of the reference period, preliminary figures, however, after approx. 40 days. Main results are published monthly approx. 40 days after the end of the particular month. The balance of payments statistics are normally published without delays as to the preannounced dates.

10.3.1.22 Timeliness and time lag - final results

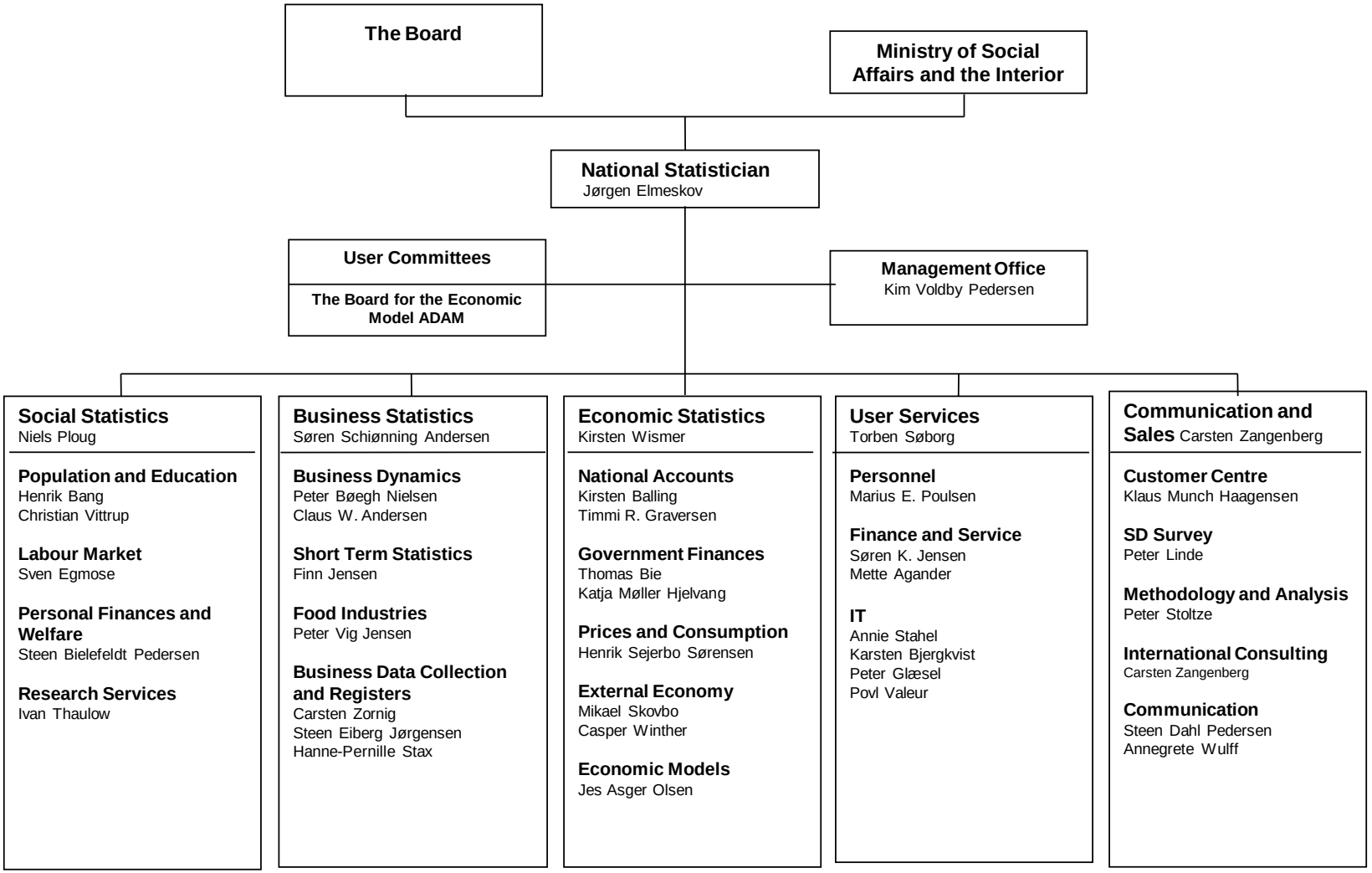
The statistics are published every quarter approx. 70 days after the end of the reference period, preliminary figures, however, after approx. 40 days. Main results are published monthly approx. 40 days after the end of the particular month. The statistics in full detail on an annual basis are published approx. 10 months after the reference year.
According to practice the data of the months of the previous year are locked by late September. Simultaneously the data of the preceding year are revised and locked again. The final revision is coincident with the final national account compilation three years after the reference year.

10.3.1.23 Punctuality

The balance of payments statistics are normally published without delays as to the preannounced dates.

Annex 1 Statistics Denmark's organisation chart

Statistics Denmark's Organisation January 2016



Annex 2 National Account's organisation chart

Organisational Chart February 2016

National Accounts

Kirsten Balling
Timmi Rølle Graversen

Quarterly NA	Annual NA Institutional sectors	Constant prices	Environmental accounts Input-output	Capital stock
Quarterly accounts Regional accounts Quarterly employment and wages Volume indicators for General government	SUT, current prices Preliminary annual NA Annual sector accounts Quarterly sector accounts	SUT, constant prices Final annual NA, constant prices	Environmental accounts Energy accounts Input-output Green NA	Stocks of fixed capital Stocks of cars in households R&D Productivity Investments matrices
Timmi Rølle Graversen Bahar Dudus Bo Siemsen Carina Sølling Damm Daníel Freyr Gústafsson Jonas Dan Petersen Kathrine Lindeskov Johansen Rasmus Rold Sørensen *Carmela Moreno* *Ulla Ryder Jørgensen*	**Annette Thomsen** Brian Südel Christina Just Brandstrup Dennis Bülow Jørgensen Jens Holst Jensen Søren Henri Larsen Therkild Therkildsen Tue Rasmussen *Maria Nilsson*	**Jonas Nicolai Mikkelsen** Lars Gustafsson Marianne Jensby Winther	**Thomas Olsen** Anna Andriianets Bogomil Illiev Emma Blom Ingeborg Vind Leif Hoffmann Ole Gravgård Pedersen Peter Rørmose Jensen	**Christian Gysting** Irina Bernstein Magnus Børre Eriksen Mette Ferslev

Italic: Currently on maternity leave

Cross cutting groups							
	Publishing	Bo Siemsen		Marianne Jensby Winther	**Thomas Olsen**	Mette Ferslev	
	Meta data		Dennis Bülow Jørgensen Brian Südel	**Lars Gustafsson**			
	IT	Timmi Rølle Graversen	Annette Thomsen		Ole Gravgård Pedersen	Mette Ferslev(secretary)	**Kirsten Balling**
	Analysis		**Anntte Thomsen**	Lars Gustafsson Marianne Jensby Winther	Peter Rørmose Jensen	Magnus Børre Eriksen	
	Administration	Bo Siemsen	Dennis Bülow Jørgensen	**Marianne Jensby Winther**		Mette Ferslev	

Bold: Responsible for the group

Annex 3 Accounts Statistics Questionnaire, 2012

STATISTICS DENMARK

Translation of questionnaire - enterprise level

Accounts statistics

CVR-no.

Survey year 2012 | Survey no. 1196000

Financial year: Results should relate to your firm's financial year, more specifically the one ending in the period 1 May 2012 to 30 April 2013. Please indicate your financial year: (tick the box)

☐ Calendar year 2012

☐ Other period, please specify: From to

Amounts are given in ☐ DKK (Danish kroner) ☐ EURO

Profit and loss statement

		1 000 DKK/ 1 000 euro
	Ordinary non-financial items	
1a.	Turnover (net sales). Excluding discounts, VAT and excise duties 1a	
1b.	Capitalised work performed by your firm for own purposes 1b	
2.	Other operating income 2	
3.	Increase (+) / decrease (-) in stocks (raw materials, finished products etc.) 3	
4a.	Purchases of goods for resale 4a	
4b.	Purchases of raw materials, consumables and packaging materials 4b	
5.	Purchases of energy products (electricity and fuels, excl. for registered motor vehicles) 5	
6.	Cost of subcontractors and other work done by others on your firm's materials (by non-employees) 6	
7.	Rent paid (excl. heating bill) 7	
8.	Cost of minor equipment and fixtures not capitalised 8	
9.	Payments for temporary workers provided from another enterprise (e.g. agencies) 9	
10.	Payments for long-term rental and operational leasing of goods 10	
11.	Ordinary write-offs in respect of debtors 11	
12.	Other external charges (excl. secondary) 12	
13.	Wages and salaries 13	
14.	Pension costs 14	
15.	Other social security costs 15	
16.	Value adjustments in respect of fixed assets (depreciation charges etc.) 16	
17.	Value adjustments in respect of current assets (apart from financial current assets) 17	
18.	Other operating charges (of a non-trading type) 18	
19.	*Profit or loss before financial and extraordinary items* 19	
	Financial items	
20.	Income from participating interests, cf. item 40. Negative amounts should be added to item 24 20	
21.	Dividends received on other fixed financial assets, cf. item 40 21	
22.	Interest received on fixed financial assets, cf. items 39 and 41 22	
23.	Interest received on current assets, cf. items 50-56 23	
24.	Depreciation etc. on financial assets 24	
25.	Interest payable and similar charges 25	
	Extraordinary items	
26.	Extraordinary income 26	
27.	Extraordinary charges 27	
28.	*Profit or loss before tax on ordinary and extraordinary result* 28	
	Taxes	
29.	Corporation tax etc. on ordinary and extraordinary result (not relevant for sole proprietors etc.) 29	
30.	Profit or loss for the financial year 30	
	Appropriation of profit or treatment of loss	
31.	Profit retained or loss sustained 31	
32.	Dividends to shareholders and similar payments to owners 32	

Balance sheet

Assets

Fixed assets

			1 000 DKK/ 1 000 euro
33.	*Intangibles*	33	
	Tangible fixed assets		
34.	Land and buildings	34	
35.	Production machinery and equipment	35	
36.	Other plant and equipment	36	
37.	Prepayments	37	
38.	*Tangible fixed assets, total*	38	
	Financial fixed assets		
39.	Claims	39	
40.	Shares and other ownership certificates	40	
41.	Bonds and similar documents	41	
42.	*Financial fixed assets, total*	42	
43.	Fixed assets, total (33+38+42)	43	

Current assets

			Opening stock 1 000 DKK/ 1 000 euro	Closing stock 1 000 DKK/ 1 000 euro
	Stocks			
44.	Raw materials and consumables	44		
45.	Work in progress for own account (semi-manufactures etc.)	45		
46.	Finished goods produced by your own enterprise	46		
47.	Purchased goods for resale	47		
48.	Prepayments for goods	48		
49.	*Stocks, total*	49		
	Debts receivable			
50.	Debts receivable from customers	50		
51.	Work in progress, not for own account (contract work)	51		
52.	Other debts receivable	52		
53.	*Debts receivable, total*	53		
	Shares, bonds and cash			
54.	Shares and ownership certificates	54		
55.	Bonds and similar documents	55		
56.	Cash	56		
57.	*Shares, bonds and cash, total*	57		
58.	Current assets, total (49+53+57)	58		
59.	Assets, total (43+58)	59		

Liabilities

60.	Capital and reserves	60	
61.	Provisions for liabilities and charges	61	
62.	Long-term debts to suppliers	62	
63.	Other long-term debts	63	
64.	Short-term debts to suppliers	64	
65.	Other short-term debts	65	
66.	Liabilities, total	66	

Investment (capital expenditure)

Increase (acquisitions) should be stated at book value before any adjustments. Assets acquired through financial leasing should be included.

Decrease (disposals) should be stated at selling price (if not known then the written-down value).

Investment during the year

	1 000 DKK/ 1 000 euro
Increase	
67. *Intangibles* 67	
Real estate	
68. Purchases of existing buildings (incl. land value) 68	
69. Construction of new buildings (excl. land value) 69	
70. Purchases of land not built upon 70	
71. Alterations and improvements of buildings and installations, including heating and ventilating systems 71	
72. Construction, alteration and improvement of roads, harbours, squares, etc., including development and improvement of land 72	
73. *Real estate, total* 73	
Machinery, plant and equipment	
74. Production machinery and equipment 74	
75. Other plant, operating assets, fixtures and furniture 75	
76. *Machinery, plant and equipment, total* 76	
77. *Prepayments* 77	
78. Increase, total (67+73+76 +77) 78	
Decrease	
79. *Intangibles* 79	
Real estate	
80. Disposal of buildings (incl. land value) 80	
81. Disposal of land not built upon 81	
82. Disposal of roads, harbours, squares, etc. 82	
83. *Real estate, total* 83	
Machinery, plant and equipment	
84. Disposal of production machinery and equipment 84	
85. Disposal of other plant, operating assets, fixtures and furniture 85	
86. *Machinery, plant and equipment, total* 86	
87. Decrease, total (79+83+86) 87	

Supplementary questions

A. Turnover from your own production or from resale

Items 88-89 should be skipped if the turnover (item 1a) does not include both your own production and purchased goods for resale

Purchased goods for resale are goods purchased by your own enterprise and resold without transformation, except possibly breaking bulk or repackaging. Please include raw materials and semi-manufactures purchased for use in your production but eventually sold without being processed. Finished parts that are purchased and assembled by your enterprise should be excluded.

		Goods and services produced by you	Purchased goods for resale
		1000 DKK/1000 euro	1000 DKK/1000 euro
88. Turnover	88		

If you are unable to answer one or more of these questions (item 88) please fill in instead item 89:

		1000 DKK/1000 euro
89. Estimated turnover of goods sold without transformation	89	

C. Free copy of the statistics in return for your help

Enter X in the box if you wish to receive results of the accounts survey in the form of a table of statistics for your kind-of-activity group.

Enter X

Your contact person: Name	Date and certification
Phone number E-mail	

Annex 4 Tax account return (Selvangivelse aktieselskaber m.fl), 2012

Indkomståret 2012

Skattemyndighed

Navn og adresse

Selskabsselvangivelse

SELMNR.	CVR-/SE-nr.
Virksomhedsform	Administrationsselskab CVR-/SE-nr.
Erhvervsområde	
Sidste indsendelsesfrist	Antal dage for sent 010

Husk TastSelv på skat.dk
Log på TastSelv/Erhverv

Regnskabsperiode:	Beløb i kroner	Felt nr.
Skattepligtig indkomst før fradrag af underskud fra tidligere indkomstår		
Anvendt skattemæssigt underskud, fremført fra tidligere indkomstår		003
Skattepligtig indkomst efter anvendt underskud		016
Underskudssaldo ultimo til modregning i fremtidig skattepligtig indkomst		085
Tabssaldo ultimo efter aktieavancebeskatningsloven mv. Se skema 05.033		086
Tabssaldo ultimo efter ejendomsavancebeskatningslovens § 6		087
Tabssaldo ultimo efter kursgevinstlovens § 31		088
Genbeskatningssaldo, jf. selskabsskattelovens § 31B, stk. 2, jf. § 31A, stk. 10 (International sambeskatning)		180
Genbeskatningssaldo, jf. Lov nr. 426 af 6. juni 2005 § 15, stk. 8 og 9 som ændret ved Lov nr. 344 af 18. april 2007 § 6 (skyggesambeskatning)		181
Erhvervet dansk udbytte (brutto) uden indeholdelse af udbytteskat i indkomståret*		091
Erhvervet dansk udbytte (brutto) med indeholdelse af 25% udbytteskat i indkomståret*		190
Erhvervet dansk udbytte (brutto) med indeholdelse af 27% udbytteskat i indkomståret*		191
Erhvervet dansk udbytte (brutto) med indeholdelse af 28% udbytteskat i indkomståret*		093
Erhvervet udenlandsk udbytte (brutto) i indkomståret*		094
Beregnet lempelse for udenlandsk skat efter Ligningslovens § 33 eller en dobbeltbeskatningsoverenskomst (maksimum den danske skat)		019
Sumkontrol (forbeholdt skattemyndigheden)		024
Selskabets udloddede udbytte på grundlag af indkomståret 2012 inkl. ekstraordinær udlodning	Beløb	037
Heraf udbytte af egne aktier på grundlag af indkomståret 2012 inkl. ekstraordinær udlodning, egne aktier	Beløb	038
Selskabet indgår i sambeskatningsforhold, hjælpeskema 05.027 kan hentes på www.skat.dk	▪ ▪ ▪ ▪ Ja	
Attesterede aftaler om medarbejderaktier mv. efter ligningslovens § 7 H, indgået før 21. november 2011	▪ ▪ ▪ ▪ Ja	

*) **Bemærk,** at hele udbyttet (100%) skal skrives uanset eventuelle forlods tilbagebetalinger jf. selskabsskattelovens § 29D eller § 29E stk. 2. Samlet udbytte for alle selskaber i sambeskatningen skrives på administrationsselskabets selvangivelse.

2012.05

05.007

Opgørelse af skattemæssigt underskud

	Beløb i kroner
Saldo primo	
Anvendt i året (beløbet indgår i forsiden, felt 003)	
Tilgang (årets underskud fra forsiden, felt 016)	
Saldo ultimo (overføres til forsiden, felt 085)	

Kontrollerede transaktioner

Tilhører selskabet kredsen af skattepligtige omfattet af skattekontrollovens § 3 B om kontrollerede transaktioner, jf. vejledningen 05.020	▪ ▪ ▪ ▪ Ja	059
Overstiger de samlede kontrollerede transaktioner 5 mio. kr. i indkomståret? Hvis ja skal blanket 05.021 udfyldes	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	067
Har selskabet kontrolleret gæld over 10 mio. kr. og overstiger forholdet mellem fremmedkapital og egenkapital 4:1, jf. selskabsskattelovens § 11?	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	068

Rentefradragsbeskæring

Er selskabets nettofinansieringsudgifter begrænset jf. selskabsskattelovens § 11 B eller § 11 C	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	195
Selskabets nettofinansieringsudgifter jf. selskabsskattelovens § 11 B, stk. 4		196
Skattemæssig værdi af selskabets aktiver jf. selskabsskattelovens § 11 B, stk. 5		197

Felterne 161 til 164 skal udfyldes (nederst side 3)

Regnskabsoplysninger (sæt kryds)

		Felt nr.
Er selskabet fritaget for at give regnskabsoplysninger, jf. vejledningen	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	100
Begrundelse for fritagelse:		
1___efter virksomhedstype		
2___nettoomsætning over 100 mio. kr. gælder for hele koncernen		
3___nettoomsætning under 500.000 kr. gælder for hele koncernen – oplysninger om revisorbistand mv. ***skal*** besvares		101

Oplysninger om revisorbistand (sæt kryds)

Bistand fra: 1___statsautoriseret revisor 2___registreret revisor 3___anden revisor 4___ingen revisor		102
Er årsrapporten forsynet med revisorerklæring	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	103
Erklæring om: 1___revision 2___gennemgang af regnskab(review) 3___assistance med regnskabsopstilling 4___andet		104
Forbehold/supplerende oplysninger i revisorerklæring	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	105
Forbehold/supplerende oplysninger om 1___overholdelse af skatte- og afgiftslovgivningen 2___overholdelse af selskabslovgivningen 3___overholdelse af regnskabslovgivningen 4___andet		106
Er skattepligtig indkomst opgjort med bistand af revisor	▪ ▪ ▪ ▪ Ja ▪ ▪ ▪ ▪ Nej	107

Udvalgte oplysninger fra årsrapporten (skal kun udfyldes hvis felt 100 er angivet med nej)		Beløb i kroner	
Nettoomsætning			111
Vareforbrug			112
Regnskabsmæssige afskrivninger			113
Ordinært resultat før finansiering og ekstraordinære poster	(+/÷)		115
Årets resultat før skat	(+/÷)		116
Skatter (skatteudgift anføres med ÷, skatteindtægt anføres med +)	(+/÷)		117
Varebeholdninger			120
Anlægsaktiver			121
Egenkapital	(+/÷)		123
Balancesum			124
Årets tilgang af materielle og immaterielle anlægsaktiver til købspris			126
Årets afgang af materielle og immaterielle anlægsaktiver til salgspris			127
Er der sket ændringer i regnskabspraksis eller værdiansættelsesprincipper		■ ■ Ja ■ ■ Nej	128

Oplysninger om opgørelsen af skattepligtig indkomst	Beløb i kroner	Felt nr.
Visse tilbageførte ikke skattepligtige indtægter (jf. vejledningen)		130
Visse tilbageførte ikke fradragsberettigede udgifter (jf. vejledningen)		131
Skattemæssigt tab på salg af immaterielle aktiver (goodwill mv.)		134
Skattemæssige gevinster af: 1___aktier (realisations- og lagerbeskattede) 2___salg af fast ejendom 3___ salg af immaterielle aktiver (goodwill mv.)		135
Fast ejendom, straksafskrivning/nedrivningsfradrag		140
Fast ejendom, skattemæssige afskrivninger		141
Fast ejendom, genvundne afskrivninger		142
Driftsmidler, skibe og inventar, skattemæssige afskrivninger		143
Straksafskrivning på småaktiver		144
Immaterielle aktiver (goodwill mv.), skattemæssige afskrivninger		145
Tab på debitorer		148
Nedskrivning af varelager for ukurans		149
Fratrukne hensættelser		150
Gevinst eller tab ved indfrielse af kontantlån (+/÷)		156

Oplysninger om specifikke hændelser	Skal udfyldes	
Er der opnået akkord/gældseftergivelse/sket konvertering af gæld til aktier, anparter eller konvertible obligationer	■ ■ Ja ■ ■ Nej	161
Er der foretaget skattepligtig eller skattefri omstrukturering eller køb/salg af virksomhed	■ ■ Ja ■ ■ Nej	162
Er den skattefri omstrukturering gennemført uden tilladelse	■ ■ Ja ■ ■ Nej	164
Er der købt eller solgt immaterielle aktiver (goodwill mv.)	■ ■ Ja ■ ■ Nej	163

Ejerforhold mv.

Selskabets navn | CVR-/SE-nr.

Selskabet har registreret følgende ejere. Ved ophørte ejerforhold skal ophørsdato udfyldes

CPR-/CVR-/SE-nr. | Navn | **Ophørsdato:**

Nye ejere anføres her:

Fra dato | Navn | CPR-/CVR-/SE-nr.

Adresse | By

Bopælsland (Udfyldes kun, såfremt ejeren ikke er skattepligtig til Danmark) | Nom. kapitalandel i kr.

Fra dato | Navn | CPR-/CVR-/SE-nr.

Adresse | By

Bopælsland (Udfyldes kun, såfremt ejeren ikke er skattepligtig til Danmark) | Nom. kapitalandel i kr.

Fra dato | Navn | CPR-/CVR-/SE-nr.

Adresse | By

Bopælsland (Udfyldes kun, såfremt ejeren ikke er skattepligtig til Danmark) | Nom. kapitalandel i kr.

Vejledning – husk at benytte TastSelv

Aktieselskaber, anpartsselskaber m.fl., der er skattepligtig efter selskabsskattelovens § 1, stk. 1, nr. 1 og 2, har pligt til sammen med selvangivelsen at indsende oplysninger om fulde navn, adresse og CPR-nr. eller CVR-/SE-nr. på ejere/medlemmer, der i løbet af indkomståret har ejet mindst 5 pct.. af kapitalen eller rådet over mindst 5 pct af den samlede stemmeværdi.

På skemaet er printet de ejeroplysninger, som selskabet tidligere har oplyst over for skattemyndighederne.

Ejere/medlemmer er pligtig at afgive oplysning om navn, adresse, CPR-nr. eller CVR-/SE-nr. til selskabet. Se skattekontrollovens § 3 A. Selskabet må ikke videregive oplysninger om personnumre til uvedkommende, herunder til andre aktionærer.

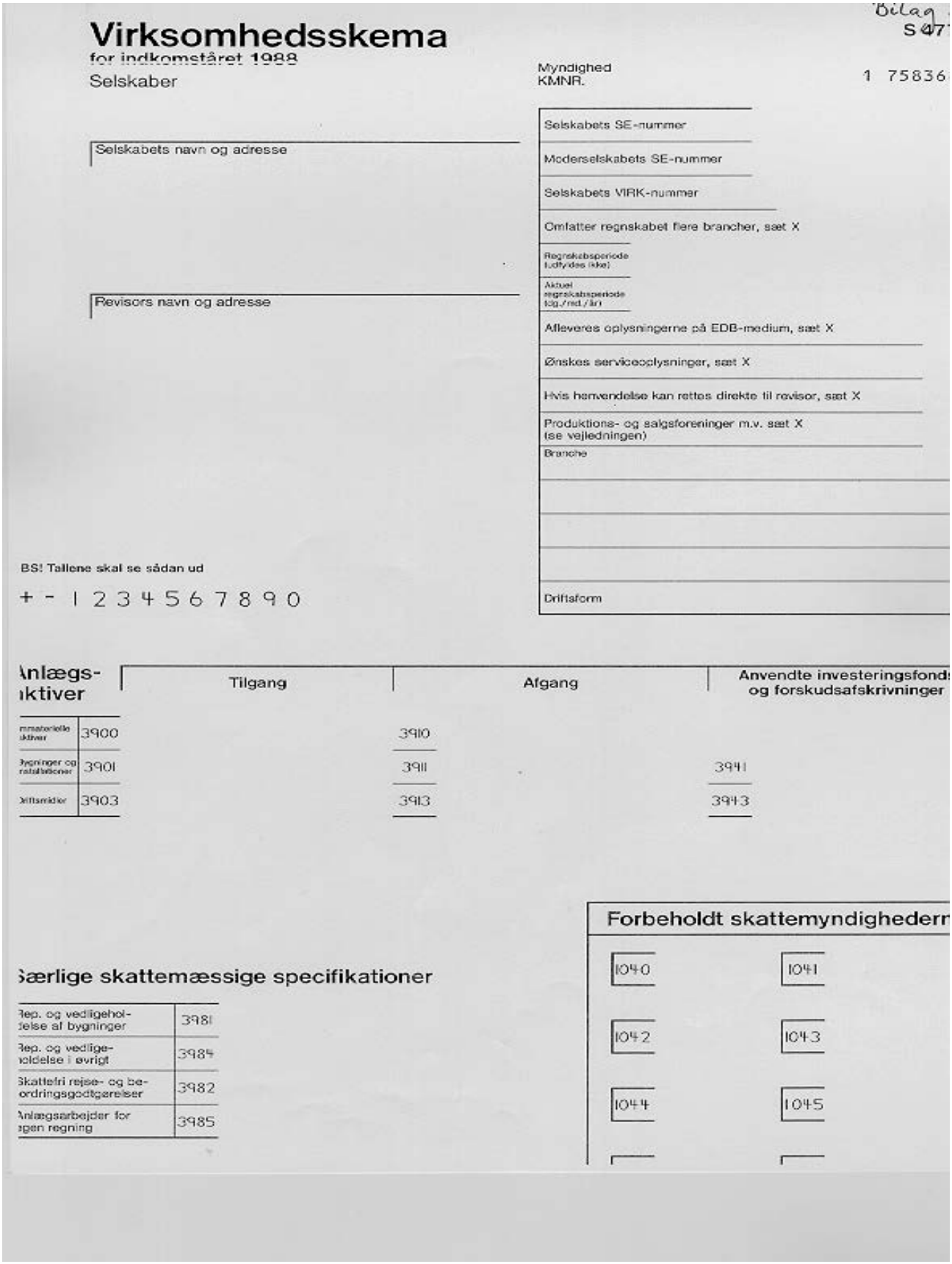
Udenlandsk ejer.
Ejere, der ikke er skattepligtige til Danmark, vil normalt ikke være printet. Selskabet skal selv hvert år afgive oplysninger herom og indberette det i TastSelv. Anføres det udenlandske fødselsdato, skatteidentifikationsnummer (TIN-nr) eller registreringsnummer vil ejeren være printet næste gang.

Hvis der tidligere er registreret mere end 6 ejere, vil det ikke fremgå af ovenstående. En oversigt over de registrerede aktionærer kan rekvireres hos SKAT. **TastSelv kan benyttes.**

Foranstående oplysninger afgives under strafansvar efter reglerne i skattekontrolloven og straffeloven.

Dato | For selskabet | Telefonnummer hvortil evt. henvendelse kan rettes

Annex 5 Detailed SLS-E questionnaire, valid until 1988



Virksomhedsskema

for indkomståret 1988

Selskaber

Bilag S 47

Myndighed KMNR. 1 75836

Selskabets navn og adresse

Revisors navn og adresse

Selskabets SE-nummer

Moderselskabets SE-nummer

Selskabets VIRK-nummer

Omfatter regnskabet flere brancher, sæt X

Regnskabsperiode (udfyldes ikke)

Aktuel regnskabsperiode (dg./md./år)

Afleveres oplysningerne på EDB-medium, sæt X

Ønskes serviceoplysninger, sæt X

Hvis henvendelse kan rettes direkte til revisor, sæt X

Produktions- og salgsforeninger m.v. sæt X (se vejledningen)

Branche

Driftsform

BS! Tallene skal se sådan ud

+ - 1 2 3 4 5 6 7 8 9 0

Anlægs-aktiver	Tilgang	Afgang	Anvendte investeringsfonds og forskudsafskrivninger
immaterielle aktiver 3900		3910	
Bygninger og ejendomme 3901		3911	3941
Driftsmidler 3903		3913	3943

Særlige skattemæssige specifikationer

Rep. og vedligehol-delse af bygninger	3981
Rep. og vedlige-holdelse i øvrigt	3984
Skattefri rejse- og be-ordringsgodtgørelser	3982
Anlægsarbejder for egen regning	3985

Forbeholdt skattemyndighederne

1040	1041
1042	1043
1044	1045

Resultatopgørelse

Opgørelse af driftsøkonomisk resultat	Dækningsbidrag		Netto-omsætning	+ 2100
		Stykomkostninger	Vare-forbrug	- 2205
			Produk-tionsløn	- 2210
			Andre stykomkost.	- 2240
	Kapacitetsomkostninger		Administra-tionsløn	- 2300
			Personale-omkostninger	- 2310
			Reklame & marketing	- 2320
			Tab på debitorer	- 2330
			Små-anskaffelser	- 2335
			Husleje og varme	- 2345
			Kontorhold	- 2350
			Øvrige kap.omkost.	- 2360
	Driftsøkonomiske afskrivninger			- 2380
	Sekundære indtægter			+ 2410
	Sekundære udgifter			- 2415
	Ekstraordinære indtægter			+ 2420
	Ekstraordinære udgifter			- 2425
	Renter	Finansierings-indtægter		+ 2430
		Finansierings-udgifter		- 2435
	Skatter (fortegn)			2460
	Driftsøkonomisk resultat (fortegn)			2499

Opgørelse af skattemæssigt resultat	Driftsøkonomiske afskrivninger og skatter tilbageført (fortegn)			
	Skattemæssig afskrivning	Bygninger og installationer		- 3871
		Driftsmidler		- 3873
		Andre		- 3875
	Ændring varelager-nedskrivning (fortegn)			3800
	Henlagt til investeringsfond			- 3805
	Forskuds-afskrivning			- 3810
	Straksfradrag (bygninger)			- 3815
	Skattemæssigt underskud fra tidligere år			- 3840
	Korrektioner- skriv de 3 sidste cifre til det felt der korrigeres, samt beløb med fortegn.			
	Skattemæssigt			

2 75836

Balance

Opgørelse af driftsøkonomisk egenkapital	Anlægsaktiver		Immaterielle aktiver	+ 2500
			Materielle	+ 2510
			Finansielle	+ 2530
	Omsætningsaktiver		Varebeholdning	+ 2553
			Igangværende arbejder	+ 2554
			Tilgodehavender for salg	+ 2565
			Øvrige tilgodehavender	+ 2570
			Værdipapirer	+ 2575
			Likvide beholdninger	+ 2580
	Gæld		Leverandører af varer	- 2600
			Kortfristet gæld	- 2605
			Langfristet gæld	- 2612
	Hensættelser			- 2625
	Egenkapital ultimo (fortegn)			2799

Opgørelse af skattemæssig egenkapital	Immaterielle og materielle anlægsaktiver tilbageført			-
	Skattemæssige værdier	Ejendomme		+ 3881
		Driftsmidler		+ 3883
		Andre anlægsaktiver		+ 3885
	Nedskrivning på varelager			- 3865
	Korrektioner- skriv de 3 sidste cifre til det felt der korrigeres, samt beløb med fortegn.			
	Skattemæssig egenkapital (fortegn)			3799

Kapitalposteringer	Egenkapital primo (fortegn)			2700
	Driftsøkonomisk resultat overført (fortegn)			
	Kapitaludvidelser (kontant)			+ 2711
	Kapitalnedsættelser (kontant)			- 2716
	Udbytte			- 2740
	Andre kapitalindtægter			+ 2750
	Andre kapitaludgifter			- 2755
	Egenkapital ultimo			