Chapter 3. GDP by the production approach

3.0 Introduction

For 1995, the calculation of output-based GDP can be summarised as in the table below:

Table 23 GDP, production approach, 1995

	Value, DKK million	% of GDP
Output at basic prices	1 663 164	165
- Intermediate consumption	791 822	78
+ Taxes on products	157 254	16
- Subsidies on products	18 840	2
GDP	1 009 756	100

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 130 individual industries are set out in Sections 3.7 - 3.22, 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 actually at a much more detailed level, namely the DK-NACE extremely detailed grouping of 810 industries. The national accounts are balanced at the 130-industry level in the supply and use tables. Balanced values for value added divided by industry appear in the final national accounts for 130 industries in prices for the year in question, in fixed 1995 prices and as time series of Laspeyres chain indices based on estimates in the previous year's prices.

3.1 Reference framework

3.1.1 Business register

A high-quality business register is crucial for a reliable and exhaustive calculation of GDP using the production approach. If it is not possible to calculate the population of producer units in the economy, or if the information on the units' activity, size, etc. is not reliable, a considerable measure of uncertainty is introduced into the national accounts. Full coverage of the population and correct information on the registered units are essential, both to enable representative samples to be selected for statistical surveys and to enable the figures to be grossed up correctly to cover the total population. A properly functioning business register is therefore one of the cornerstones of the national accounts.

Denmark has a long-standing tradition of central business registers. The first such administrative register was set up under legislation in 1975. The content and technical aspects were thoroughly revised in years 1989-1995. In 1997-1999, the EDP technology was substantially upgraded, and this has made it possible for Danmarks Statistik's business register to replace all decentralised registers in other *departementer* and other administrations as from 1999. Since that year, all public authorities have been using the CVR (*Centrale Virksomhedsregister*, the Central Business Register), which is an administrative counterpart to Danmarks Statistik's *statistiske erhvervsregister* [statistical business register].

It is vitally important for the coverage of the Danish business register, which compares favourably with coverage in other countries, that there should be a very low threshold for mandatory registration in the Danish VAT system (turnover limit of DKK 20 000), that virtually all non-financial market activity other than passenger transport is subject to VAT, and that all employers and the self-employed who have no employees have to be registered for payment of pay-as-you-earn and the labour market contribution. According to current regulations, only activity liable to VAT which is totally insignificant and is in the nature of a hobby can avoid VAT registration.

The Central Business Register has two types of unit, economic units and local kind-of-activity units. The economic units are the institutional producer units (enterprises), which have autonomy of decision-making within their institutional framework. For the time being, the economic unit and the firm, which is the legal unit, are the same thing in Denmark's case. The definition of local kind-of-activity units in the business register is the same as the definition of local kind-of-activity units (local KAUs) in the ESA 95, i.e. they are the smallest units for which production and generation of income accounts can be compiled. The register continually monitors the links between economic units and local kind-of-activity units.

The register contains an activity coding of both economic units and the local kind-of-activity units that go with them which is based on the DK-NACE, the Danish version of the NACE Rev. 1. In the case of the economic units, the grouping into subsectors divided by the main activity of these institutional units is known as "firm branches". This is a division of the economy into very heterogeneous groups of industries. This type of grouping is used in various contexts as an indicator for the quarterly national accounts, but in no case for the final, annual national accounts. In the case of the local kind-of-activity units, the business register includes the activity code which is used for the compilation of the production and generation of income accounts in the national account. In a few cases, the Danish national accounts operate with (homogeneous) branches defined by function. With these exceptions, the statistical unit for production and generation of income accounts is the local kind-of-activity unit, which will normally have secondary output in the supply and use tables. The branches defined by function have no secondary output. The statistical units for the estimate of production and generation of income thus comply in full with the guidelines in the ESA 95 and in a few respects, which are extremely important for input-output analysis, they go further than is required by the ESA 95 by collecting the output of certain special products into homogeneous branches.

In years 1991 - 1993, when Denmark implemented the NACE Rev. 1 Regulation, a great deal of work was done to validate and revise the branch coding in the business register. All firms other than the very smallest were sent survey forms asking them to update the designation of their local kind-of-activity units and to suggest an activity coding for each individual unit in the light of the description of the activity in the NACE Rev. 1. Danmarks Statistik compared the firms' own proposals for coding with *Told&Skat*'s proposals for the activity code for the firm as a whole. If they did not tally, the producer units' own coding was in most cases taken to be the correct one. If there were serious question marks, Danmarks Statistik decided the matter by looking at the products produced by the individual local kind-of-activity units. For industries such as manufacturing, which are covered by ongoing product statistics, this effective form of validation was simple and not particularly resource-intensive. The business register branch coding is continually validated by means of annual branch surveys covering around 20 000 units, the industry groups covered changing from year to year. Over a five-year period, all producer units in the economy will be included in a branch survey. *Told&Skat*'s registers are used to update the register regularly by adding new units and deleting those which have ceased to exist.

In addition, along with the activity coding - and this is extremely important - the business register tags all local kind-of-activity units which are classified as government non-market producers, thus ensuring that government non-market activity is neither omitted nor double-counted.

Below, we show how the quality of the register is continually assessed. There is a brief discussion of what quality means for a register such as this. The focus is on four key quality dimensions. There is then brief factual information on the content of the business register. The four key quality dimensions are assessed as they apply to the business register and, finally, the results of a specific quality measure are presented.

The reasons for working with a set of quality dimensions are obvious:

1. *relevance*, i.e. the register includes those data (types of unit and variables) which are necessary for business statistics;
2. *accuracy*, i.e. the information in the register corresponds to reality;
3. *topicality*, i.e. the register is continually updated and any back-log is known, and
4. *ease of access*, i.e. it has to be a simple matter to look things up or extract data.

The register includes the following types of unit:

5. administrative units: SE units/JUR units;
6. statistical units: DS-JUR units, economic units and workplaces.

SE units are those which remit VAT, which in most cases are the same as the legal unit, the firm, but may also be made up of parts of firms (partial registration for export sales, for example) or of more than one firm (units which are jointly liable for VAT). DS-JUR units are legal units (firms). Economic units are those institutional units which in the ESA 95 are called "enterprises". Workplaces are local *producer units*, in the SNA93 referred to as "establishments" and in the ESA 95 as "local kind-of-activity units". This last unit is the basis for the calculation of the production and generation of income accounts in the ESA 95. The Danish business register and national accounts comply in full with both the Business Register Regulation (2186/93/EEC) and the ESA 95 Regulation, where this particularly demanding point is concerned.

One of the main sources for updating is the weekly tape from *Told&Skat* with data on the administrative units, from which statistical units are also generated. A further major source for updating is the Workplace Project, where information is gathered on, *inter alia*, places of work belonging to an enterprise.

A third major source of updating is feedback from other divisions of Danmarks Statistik about changes in branches, new workplaces, etc.

In 1998, we received from *Told&Skat* a total of some 1.2 million transactions relating to new units and the updating of existing ones.

The business register contains a good 422 000 active DS-JUR units and a corresponding number of economic units. In all, some 480 000 active workplaces are registered.

In addition, the register contains a substantial number of inactive units and comprehensive historical information, with "real history" (the period in which a particular characteristic actually applied) and "register history" (when the information was updated in the register) for all data.

Assessment of the quality of the business register on the basis of the four quality dimensions

Ad relevance:

It is logical for the register's users, i.e. Danmarks Statistik's various divisions, to be the ones to assess its relevance.

A further reference point may be what the EU requires of business registers for statistical purposes.

In principle, the register includes those types of unit and variables which, according to the EU's Business Register and Units Regulation, should appear in business registers for statistical purposes.

In two areas, the register does not meet EU requirements 100%, however:

- Economic units are defined as units consisting of one or more legal units. At present, the link between economic and legal units in the business register is in all cases one to one. The data model for the register has had built into it the possibility of setting up genuine economic units consisting of more than one legal unit, but owing to technical problems, *inter alia*, such units have not so far been recorded.

- The register contains no information on whether a unit falls below the "minimum threshold" or not. This is a problem, because the register includes all entrepreneurs regardless of the size of their entrepreneurial activity. For data extraction, a minimum threshold has been defined as the need has arisen, in cooperation with Danmarks Statistik's divisions, using information on employment and turnover in the units, but a standard minimum threshold is needed in the business register, for the sake of uniformity. The work for this has been started. The lack of a "minimum threshold" does not, of course, affect GNI.

Ad accuracy:

In order to assess this quality dimension, a questionnaire-based survey is carried out every year, when around 3 000 enterprises in the register, selected at random, are sent information on the way in which they are registered and asked either to confirm the information or correct it.

This quality analysis focuses more particularly on: the branch, name and address and number of workplaces. The main results are discussed in the section below headed "Main results of the quality measure".

A further 10 000 or so units receive similar questionnaires every year. These units are selected from branches where the random sample or feedback from Danmarks Statistik's divisions shows that there may be particular problems with the branch coding. The questionnaire for these groups aims to improve the quality of the register content.

Ad topicality:

Business start-ups are entered in the business register one to two weeks after they are registered with *Told&Skat*. Similarly, data updating existing units are in place in the register one to two weeks after *Told&Skat* receive them. For new (legal) units, the information must be considered to be extremely up-to-date, but it is more difficult to assess how topical the updates are.

Information on employment (ATP [labour market supplementary pension scheme] figures) and turnover is input with a time-lag of at least three months. Employment per workplace is input once a year.

Data on workplaces are updated continually and once a year there is an overall update of the information, when the workplace lists are sent out to most enterprises with more than one workplace.

Ad ease of access:

The system for consulting the register works very effectively, with very short response times, even.

Owing to the volumes of data involved, batch extracts from the register are large data runs. The aim is to deliver extracts to the Danmarks Statistik divisions within a few working days.

Main results of the quality measurement

As mentioned above, once a year a questionnaire-based survey is carried out, primarily to assess the quality of the branch and name-and-address information in the business register.

The main results of this quality measure, as set out below, come from the 1997 survey, which was chosen because the results are already available in note form.

Quality of the branch information

As Table 24 shows, the branch information was incorrect in the case of 12.3% of the enterprises questioned. The error percentage varies considerably from one division to another, with the lowest percentage in group 3 and the highest in 2.

Table 24 Branch changes per division

	Sample	Branch change		
		Number	Share	Distri-bution
			%	
1. Agriculture, fishing, mining and quarrying	538	72	13.4	25.8
2. Manufacturing	171	34	19.9	12.2
3. Energy and water supply	40	1	2.5	0.4
4. Construction	153	9	5.9	3.2
5. Trade, hotels and restaurants etc.	507	74	14.6	26.5
6. Transport, post and telecommunications	102	3	2.9	1.1
7. Financial intermediation etc, business activities	446	71	15.9	25.5
8. Public and personal services	319	15	4.7	5.4
9. Industry not stated	0	0	0	0
Total	2 276	279	12.3	100.1

Source: "Results from the 1997 industry survey on an arbitrary sample", note dated February 1998.

Table 25 shows the distribution of incorrect branch information by size group. It would appear that the problem becomes less serious as size increases but then increases again for nine or more employees.

Table 25 Branch changes by size group (number of employees)

	Sample	Branch change		
		Number	Share	Distri-bution
			%	
No employees	1 227	180	14.7	64.5
1 employee	432	44	10.2	15.8
2 employees	136	16	11.8	5.7
3 employees	98	13	13.3	4.7
4 employees	61	5	8.2	1.8
5 employees	45	2	4.4	0.7
6 employees	40	2	5.0	0.7
7 employees	29	1	3.5	0.4
8 employees	22	0	0	0
9 or more employees	186	16	8.6	5.7
Total	2 276	279	12.3	100.0

Source: "Results from the 1997 industry survey on an arbitrary sample", note dated February 1998.

Tables 24 and 25 show branch changes at the 6-digit DK-NACElevel. However, a shift within the same division may be a less serious quality problem than a shift from one division to another.

Table 26 shows branch shifts within and between divisions. Around two-thirds of units change branch within the same division (diagonally) and around one-third change from one division to another.

Table 26 Branch changes at division level

From division	To division									Total
	1	2	3	4	5	6	7	8	9	
1	49			2	2		13	1	5	72
2	1	16		6	5	1	5			34
3			1							1
4		1		4	1		3			9
5	2	8			48	1	9	5	1	74
6						2	1			3
7	5	5		3	8	1	42	5	2	71
8							1	13	1	15
9										0
Total	57	30	1	15	64	5	74	24	9	279

Source: "Results from the 1997 industry survey on an arbitrary sample", note dated February 1998.

Quality of name-and-address information

10.7% of the units questioned reported changes to the name and/or address information.

Quality of information on number of workplaces

1.7% of the units questioned reported the opening of new workplaces or closure of existing ones.

3.1.2 Main types of source and method

3.1.2.1 Breakdown of the economy into sectors, subsectors and industries

The statistical unit for the estimate of output and value added in the ESA 95 is the local kind-of-activity unit (which in Danish is synonymous with the producer unit, the workplace). In the ESA 95, these units are grouped into industries. When discussing the estimate of GDP from the output side, it is therefore logical to proceed industry by industry. However, the primary statistics available - and thus the statistical methods which it is relevant to use - will almost always be based on a grouping of the somewhat broader institutional units (firms) by main activity (a grouping into "subsectors", 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 Other monetary financial institutions
S.123 Other financial intermediaries, except insurance corporations and pension funds
S.125 Insurance corporations and pension funds

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.14 Households (other than agriculture and dwellings)
S.124 Financial auxiliaries

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

S.15 Non-profit institutions serving households.

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. The exception is S.123, where most of the institutions are covered but where a certain amount of grossing up is necessary. 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.

For agriculture and dwellings (group 3), one particular point is that grossing up on the basis of employment is statistically unreliable and that using VAT sales is either difficult or impossible, either because the activity includes extensive sales of capital goods or because it is not liable for VAT. A far better basis for grossing up the figures is in this case physical quantities (areas). The national accounts estimates for these two subsectors of S.11 and S. 14 therefore take advantage of the existence of physical data.

Finally, for Sector S.15, Non-profit institutions serving households, there are no accounting statistics, but there is an annual total estimate of wages and salaries, which is the starting point for the national accounts calculation.

Below, the four sectors/subsectors are discussed individually.

3.1.2.2 Sectors with complete accounts and full coverage

In 1995, these sectors together accounted for 27% of total gross value added in the economy. Of this, financial intermediation services indirectly measured (FISIM), i.e. the financial institutions' interest rate margin, made up 3.6%. A good 23% of the value added of the economy other than from FISIM is therefore covered by statistical estimates where there is no uncertainty resulting from grossing up because there is a total count of all producer units.

3.1.2.2.1 General government

3.1.2.2.1.1 Delimitation of the sector

In Denmark, S. 13 is taken to cover institutional units consisting solely of government non-market producer units. All government-controlled market producer units are considered to constitute independent institutional units. If they are not corporations, they are treated in the national accounts as quasi-corporations with autonomy of decision-making and are included in the corporate sector. For example, all local government utilities are included in the non-financial corporations sector S.11 even though their accounts are often lumped together ["integrated"] with local government accounts.

In the Danish national accounts, therefore, the institutional sector is identical with the population of government non-market producer units. This coincidence is extremely useful from the point of view of both the actual calculations and the analytical uses of national accounts.

This delimitation does not result directly from the ESA 95 rules. The European System of Accounts allows government market producer enterprises to be assigned to Sector S.13. There may be units which are market producers but which do not meet the requirements for autonomy of decision-making or complete sets of accounts set out in the ESA 95 paragraph 2.12, and which consequently do not constitute independent institutional units which can be included in the corporations sector. In the ESA 95, such units are counted as market producer enterprises belonging to institutional units in general government. As already stated, Denmark has consistently chosen to avoid this treatment, although it is in principle possible.

It is in practice extremely useful to be able to avoid having market producer units in S.13, general government, because the whole output value of S.13 is then estimated by convention from the point of view of costs. The convention about estimating the value of the output of non-market producer units on the basis of costs places a great many constraints on the calculation systems (accounting identities) and in practice it is far easier to ensure that these constraints are met when S.13 does not at the same time include market producer units whose output value is estimated on the basis of sales income. In addition, this convention that the institutional sector for general government equals government non-market producer units is handy for the users of the figures.

A further point is that market output, where income from sales accounts for over 50% of production costs, can in fact occur - and to a large extent does occur - in S.13, but as the secondary activity of the producer units in question. This secondary market activity does not stop the whole of output value of such producer units being calculated from the point of view of costs.

Those economic units with local kind-of-activity units which are considered to be government non-market producers are tagged in the business register, to distinguish them from full market producers and private non-market producers, i.e. NPISHs. This tagging is crucial, to ensure that there are no exceptions or double-counting such as would occur if a given enterprise were to be counted when the figures were grossed up as both a market producer and a government non-market producer. The 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. In the publication *Statistiske Efterretninger, Offentlige finanser 1999:20 "Dokumentation af statistikken for den*

offentlige sektor" there is a full list of the units which were included in the statistical system for the public sector in 1999.

3.1.2.2.1.2 Subsectors

In Denmark, 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 comprises central government institutions, "self-owning" institutions [i.e. those owning their own capital], funded 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 *primærkommuner* [district, i.e. "municipal", authorities], *amtskommuner* [counties], "self-owning" institutions funded and controlled by local government and local government organisations. Social funds cover the ATP [labour market supplementary pension scheme], the *Særlige Pensionsopsparing* [special pension savings] administered by the ATP, the *a-kasse*r [unemployment insurance funds] and *Lønmodtagernes Garantifond* [employees' wage guarantee fund].

3.1.2.2.1.3 Statistical sources

For central government, the statistical source is central government accounts. For local government, it is local government accounts for all the 275 municipalities and 14 counties. For social security funds, it is their annual accounts, which are collected in for all the units concerned.

3.1.2.2.1.4 Links with the business register

As already mentioned, the units included in the statistical system for public finance as producer units in S.13 and those units which are coded in the business register as government non-market units are exactly the same. The grouping of government units by purpose, COFOG, is found only in the public finance statistical system and is not used in the business register.

3.1.2.2.1.5 From the accounting plan in public accounts to the national accounts estimate

The accounting plan in central government accounts is not the same as that used for local government accounts. All municipalities and counties are obliged to use the local government plan. For processing, the central government, local government and social security funds accounts are coded with national accounts codes when they are input into *DIOR* [*Databasen for integrerede offentlige regnskaber, i.e.* database for integrated public accounts]. The coding rules are based on the ESA 95.

3.1.2.2.1.6 Output of government non-market producer units

As set out in the ESA 95, paragraph 3.53, the output value 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).

For 1995, there are no other subsidies on production (D.39) for government non-market producers.

Government final consumption expenditure is calculated as follows: government sales income (from both non-market output - "user payments" - and sales of market products produced as a secondary activity) and general government output of capital goods for own use are subtracted from output value and social transfers in kind of market goods and services are added. In 1995, the only output of capital goods for own use was 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 facilities made available to households. These last products are not included as the intermediate consumption of non-market services by general government but are entered directly as final uses in a special category for government final consumption expenditure on market products.

3.1.2.2.1.7 Breakdown of output by industry and product

In the *DIOR* database for public 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' 130 industries on the basis of the industry codes in *DIOR* which are the same as the industry codes for the units concerned in the *CVR*.

The breakdown by product is based on the detailed *DIOR* industry codes. In 1995, general government output was divided in the national accounts product balance system over 101 products, 48 for output from various activities counted as public consumption expenditure, 48 for the corresponding public receipts from sales with uses other than public consumption expenditure plus sales income from canteens, two products for internal deliveries and, finally, one product for own-produced software. One example of such a product would be Q802000, Secondary education . The breakdown is shown in the table below.

Table 27 Breakdown of S.13 output by type of product

	DKK million
Output for government final consumption expenditure	247 168
Sales receipts, non-market and market products	31 507
Own-produced software	468
Total S.13 output value	279 143

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 software, like other products for capital goods produced for own account, has K as the first letter.

3.1.2.2.1.8 Intermediate consumption

DIOR contains all public accounts with national accounts coding. Intermediate consumption divided into the national accounts' 130-industry grouping is obtained by simple aggregation.

3.1.2.2.1.9 Breakdown of inputs by product

The industry-level input structure for the individual general government branches was originally established for 1984, when the accounting plan in both central and local government accounts was considerably more detailed than in later years. The input structure established at that time was later modified, with annual balancing of resources and uses in the light of changes in supplies of the products in question and the use of products - estimated on the basis of the input target totals divided by industry - for the intermediate consumption of government non-market services.

3.1.2.2.1.10 Other taxes on production less other subsidies on production

Since the value of government non-market output is calculated from the point of view of costs, 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 public accounts, which include the necessary detail on the structure of costs.

For 1995, there are no other subsidies on production for government non-market producers.

3.1.2.2.2 Credit institutions

The sectoral delimitation of the subsectors complies strictly with the ESA 95 rules. Subsectors S.121 and S.122 have complete accounts. For S.123, the figures are grossed up for units not covered by either the estimates of the Financial Supervisory Authority, *Finanstilsynet*, or Danmarks Statistik's financial primary statistics. The grossed up share is, however, of such little importance in relative terms that it is more useful to describe the sector as being essentially covered by a full set of accounts. The sources and methods of calculation for the two national accounts industries which correspond to subsectors S.121, S.122 and S.123 are discussed in Section 3.16.

3.1.2.2.3 Insurance corporations and pension funds

This subsector is covered in full by *Finanstilsynet's* accounting estimates.

3.1.2.2.4 Publicly controlled non-financial corporations

3.1.2.2.4.1 Delimitation of the (sub)sector

Sector S.11001, "Public non-financial corporations", along with the national private and foreign-controlled enterprises which carry out activity in the same branches as the public corporations, has a special status. Those industries which are dominated by public corporations are normally not covered by the two general sets of accounting statistics, "questionnaire-based accounting statistics" and "tax accounting statistics", but are instead covered by special accounting statistics produced in Danmarks Statistik's Public Finances and Prices Division for general government statistics. The reason is that historically it has been 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 cover all producer units in the industries which they cover. These are industries which have traditionally included a certain share - in many cases a dominant share - of public corporations and quasi-corporations.

When the structural regulation is implemented, as from reference year 2000 inclusive, these accounting statistics will be incorporated into the general questionnaire-based accounting statistics. On the whole, the breakdown of the corporate sector into national private, public and foreign-controlled subsectors is less stable than it used to be. Widespread privatisations in the telecommunications field have meant that this industry is no longer dominated by public corporations (as from 1998, when the State sold its remaining shares in *Teledanmark*).

The starting point is therefore a sectoral 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 branches in which public corporations predominate are then covered in their entirety, regardless of ownership, and that coverage is not reduced by any subsequent privatisations.

In 1995, the following industries in the national accounts' 130 grouping* were included in whole or in part in the special treatment of industries where units belonging to S.11001 predominate:

401000 Production and distribution of electricity
402000 Manufacture and distribution of gas
403000 Steam and hot water supply
410000 Collection and distribution of water
601000 Transport via railways
602100 Other scheduled passenger land transport
610000 Water transport
620000 Air transport

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* [N.B. As before, notes in square brackets and footnotes with asterisks are translator's notes. Numbered footnotes are in the original.]
With very few exceptions, the English translation of the 130 industries is taken from "*Nyt nationalregnskab 1988 - 1996*", published by Danmarks Statistik, and the translation at the more detailed 810-industry level is based on the Danish Yellow Pages (Internet).

631130 Cargo handling, harbours, etc.: travel agencies
640000 Post and telecommunications
900010 Sewage removal and disposal
900020 Refuse collection and sanitation
900030 Refuse dumps and refuse disposal plants
920001 Recreational, cultural, sporting activities (market).

3.1.2.2.4.2 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. Section 11.1 describes these statistics. They are produced by the Public Finances and Prices Division in connection with general government statistics. As general government statistics are compiled in line with national accounts principles, the extended statistics for public enterprises are processed according to national accounts definitions and presented according to the accounting plan for non-financial corporations in the ESA 95. One of the reasons is the desire to be able to produce 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 is all producer units in the economy which are under public control.

3.1.2.2.4.3 Estimate of the production account by industry

Sections 3.7 to 3.23 describe the calculation of value added for the individual industries. Only the general sources and methods in "statistics for public enterprises" are mentioned, and these, as already stated, cover all industries.

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.

The population of units comes from the business register, and all public units are covered directly. All large national private and foreign-controlled units are also covered directly but small non-public units are covered via grossing up.

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

Ad b): For public corporations and quasi-corporations which are not included in central and local government accounts, Danmarks Statistik collects accounting information on a questionnaire which is shown in Annex 6. The same questionnaire is used for the national private and foreign-controlled units in the industries in question.

Ad c): Official annual accounts are used in a few cases, primarily in the telecommunications field.

Ad d): For the electricity sector, the vast majority of electricity corporations report accounting information to the branch organisation *Danske Elværkers Forening*. These figures are used as the basis for the statistics instead of the usual questionnaire, since the organisation's statistics 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. For the processing, 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 various other industries, where there are 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 28 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 28 Degree of coverage in the accounting statistics for industries where public corporations predominate

DK-NACE industry	Text	National accounts industry	% grossed up
401000	Production and distribution of electricity	401000	Nil
402000	Manufacture and distribution of gas	402000	Nil
403000	Steam and hot water supply	403000	Nil
410000	Collection and distribution of water	410000	34
601000	Transport via railways	601000	Nil
602100	Other scheduled passenger land transport	602100	11
611020	Shipping business, passengers	610000	Nil
621000	Scheduled air transport	620000	Nil
622010	Charter flights, transport of passengers	620000	Nil
622020	Charter flights, transport of goods	620000	Nil
622030	Taxi air services	620000	Nil
632210	Harbours (traffic and fishing harbours)	631130	31
632220	Yachting harbours (marinas)	631130	49
632230	Lighthouse activities and pilotage activities	631130	30
632300	Airports	631130	Nil
641100	National post activities	640000	Nil
641200	Courier activities other than national post activities	640000	Nil
642000	Telecommunications	640000	Nil
900010	Sewage removal and disposal	900010	44
900020	Refuse collection and sanitation	900020	42
900030	Refuse dumps and refuse disposal plants	900030	28
922000	Radio and television activities	920001	Nil
927100	Gambling and betting activities	920001	Nil

In those industries where there is 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 branch (with the exception of 602100, which is not liable for VAT and where the figures are therefore grossed up to total ticket sales).

3.1.2.3 Sectors calculated mainly from grossed up accounting statistics

3.1.2.3.1 Delimitation

The following are the sectors/subsectors which do not have complete or virtually complete coverage of all institutional units carrying out productive activity:

S.11002 National private non-financial corporations
S.11003 Foreign-controlled non-financial corporations
S.123 Other financial intermediaries, except insurance corporations and pension funds (minor part)
S.124 Financial auxiliaries
S14 Households
S15 Non-profit institutions serving households.

3.1.2.3.2 Statistical sources

In the two financial subsectors S.123 and S.124, certain units are not covered by the financial accounting statistics collected by the supervisory authority, *Finanstilsynet*, or by Danmarks Statistik. For S.123, those accounts which are available for the sector are grossed up to cover all units in that sector on the basis of employment. Enterprises in S.124 are covered by the general tax accounting statistics (SLS-E), which in the case of S.124 are grossed up on the basis of VAT sales, or employment in cases where the major part of of activity is not subject to VAT.

In the case of NPISHs, Denmark has the edge on some countries in that their total wages and salaries are estimated on an ongoing basis. This total figure is used to gross up the account of the country's largest trade union, whose costs structure is considered to be more or less representative of non-profit institutions. In any event, trade unions are by far the most important non-profit institutions in Denmark, with membership covering a very large percentage of employees.

The remaining (sub)sectors, i.e. non-financial corporations other than the government-controlled and the household sector (sole proprietorships and households as owner-occupiers) together account for by far the largest share of market output in the economy. As a general rule, value added is calculated from the two transversal sets of accounting statistics, namely a) the new questionnaire-based accounting statistics, which for 1995 cover manufacturing, construction and the retail trade, and b) "tax accounting statistics" which cover virtually all the other industries which have market output with the exception of agriculture.

3.1.2.3.3 Accounting plan

Annex 3 shows the form for manufacturing as an example of the questionnaire used for the questionnaire-based accounting statistics. Similarly, Annex 4 shows the SLS-E accounting form used to report standardised tax accounts for 1995. Annex 5 then shows the much more detailed SLS-E 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.

The connection between the accounting plan in the questionnaire for manufacturing and the plan in the intermediate system was seen in Table 4 in Section 1.3.4.3. A similar connection is defined for the accounting forms for construction and retail trade plus the SLS-E form.

3.1.2.3.4 Degree of detail

The questionnaire for the questionnaire-based accounting statistics is designed to ensure that the accounting statistics can live up to the requirements of the Structural Regulation. By normal standards in this field, the degree of detail must be said to be extremely high. In the "tax accounting statistics", 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 tax accounting statistics 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. As from reference year 2000 inclusive, when the questionnaire-based accounting statistics are extended to cover virtually all industries, information on capital formation will be available from the purchasers' point of view for almost the whole of the economy.

3.1.2.3.5 Degree of coverage and method of grossing up

1. Questionnaire-based accounting statistics

The data are based partly on the replies to the questionnaires sent out to a sample of firms and partly on information from Danmarks Statistik's business statistics register and from *Told&Skat*. The statistics are a legal requirement and non-response is not a serious problem. After reminders have been sent out, the response rate is as high as 96%. Non-response is usually due to death or bankruptcy. Firms which refuse to cooperate are prosecuted in accordance with the law.

From the business statistics register, information is extracted on all firms which have been active during the calendar year in question, including their branch, form of ownership and annual full-time equivalent (FTE) workforce (number of employees converted to full-time employment).

The firms are divided into groups ("strata") on the basis of their branch, form of ownership and employment. The breakdown into strata concentrates on balancing two points. On the one hand, it has to be so precise that the firms in one and the same stratum may reasonably be considered homogeneous from the accounting point of view, and on the other hand it has to be possible with the sampling method set out below to extract from each stratum as many firms as are necessary to give reliable and stable distribution figures which can be used to calculate accounting figures for the other firms in the stratum. The stratification is designed to ensure that at least five firms are selected from each stratum.

As a general rule, all firms with at least 50 FTEs are selected, 50% of those with 20-49 FTEs, 20% of firms with 10-19 FTEs and 10% of those with 5-9 FTEs. Firms with between 0 and 4 FTEs are not included in the sample, to minimise the administrative burden on very small businesses. The sample rotates so that, over time, the burden of reporting is divided evenly over the firms in each FTE group.

For the 1995 accounting year (defined as including the account closed during the period 1 May 1995 to 30 April 1996), a sample was drawn of around 3 000 manufacturing firms, 1 200 construction firms and 600 retail firms. These were all sent a questionnaire (Annex 3 shows the questionnaire for the manufacturing firms). Each firm can choose either to complete and return the questionnaire or to send in specified accounts which include the same information. Around 45% of the firms chose the latter possibility.

Pharmacists are not included in the sample. They send accounting information to *Lægemiddelstyrelsen* [the Medicinal Products Agency], which sends Danmarks Statistik copies. The breakdown used for some of the items is not the same as that used in Danmarks Statistik's questionnaire, but adjustments are estimated.

The accounting information received is checked and errors are corrected. Checks include ensuring that the accounts are internally consistent, as they should be, and that the information given by a firm is up to a certain point comparable with corresponding information from other firms in the same stratum and with any information given previously by the same firm. If it is considered necessary, the firm is contacted to ensure that incorrect information is corrected.

Danmarks Statistik receives from *Told&Skat* copies of the standardised accounting information which corporations and the self-employed have to send in to the tax authorities and which is recorded in a special computerised register system (SLS-E). In addition to purely fiscal information, around 20 major items are reported from each firm's profit and loss accounts and balance sheets. Some firms, however, including those with annual turnover below DKK 0.5 million, companies quoted on the stock exchange and ordinary partnerships, do not have to report to the SLS-E. These "tax accounts" are the main source for the "tax accounting statistics", but are also important input for the questionnaire-based accounting statistics.

In addition to those firms included in the sample to which Danmarks Statistik sent questionnaires, in 1995 accounting information was received from the SLS-E system covering around 10 500 manufacturing firms, 12 300 construction firms and 14 000 retail firms.

The aim of the processing is to produce accounting figures in the degree of detail on the questionnaire for each individual firm whose main activity is in manufacturing, construction or retail trade and which has been active during the calendar year.

The processing is in stages:

1. From the information reported at questionnaire level by the firms selected for the sample, distribution figures are worked out for each stratum, to be used to calculate accounting items for those firms for which only SLS-E information is available - cf. point 2.
2. In the case of those firms for which only SLS-E information is available, the main profit and loss items from that information are "frozen" for each individual firm and the extra accounting items included on the questionnaire are imputed from stratified distribution figures based on those firms which have reported on the questionnaire.
3. On the basis of the above two groups, accounting figures are then calculated for each stratum per FTE for each accounting item on the questionnaire. The calculations are corrected for items such as the owners' input of labour in firms which are personally owned. These accounting figures are used to calculate the figures for the remaining group of firms which have to be included in the statistics but where only the branch, form of ownership and number of FTEs are known. This remainder group consists of around 12 800 manufacturing firms, 12 400 construction firms and 17 100 retail firms, virtually all of them fairly small. For example, just under three-quarters of them have no paid employees.

The "questionnaire firms" account for 71% of turnover, "SLS-E firms" for 22% and "remainder group firms" for 7%.

Figure 2 Degree of coverage in the questionnaire-based accounting statistics

Number of firms and their sales divided by source

As Figure 2 shows, Danmarks Statistik's new questionnaire-based accounting statistics have extremely high coverage in the form of accounts which are actually observed. This is due to the combined use of questionnaires and the SLS-E tax accounts. One characteristic of manufacturing is that the great majority of activity is carried out in firms with 50 or more employees, which all receive a questionnaire from Danmarks Statistik. In non-manufacturing, small and medium-sized firms are much more important and the SLS-E accounts therefore carry much greater weight in the total accounting figures underlying the accounting statistics.

Taking together the three main groups of industry which in 1995 were covered by the new accounting statistics for the Structural Regulation, only 7% of turnover has to be imputed. This high degree of coverage is achieved without sending questionnaires to firms with fewer than five annual FTEs, i.e. attaching great importance to not overburdening small-business respondents.

2. Tax accounting statistics

The main basis for these statistics is the standardised accounting information which corporations and the self-employed have to report to the tax authorities and which is recorded in a special computerised register system, *Statens LigningsSystem for Erhvervsdrivende* (SLS-E).

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], and
- firms which started up or ceased trading during the income year.

The basic data for 1995 include SLS-E information on around 90 000 firms.

Since in some branches (other than manufacturing, construction and retail trade), the basic data do not include information on certain major firms (more especially listed companies), accounting information for just under 50 firms has been added from other sources, in particular official annual accounts from *Erhvervs- og Selskabsstyrelsen* [the Danish Commerce and Companies' Agency]. To convert this additional information to the same accounting plan as is used for the SLS-E, a few breakdowns have to be estimated.

The degree of coverage of SLS-E accounts and additional annual accounts for those national accounts industries where tax accounting statistics are the (main) source for the estimate of value added is shown in the table below, divided into coverage via SLS-E tax accounts and coverage via supplementary annual accounts. The degree of coverage is calculated in relation to the VAT sales of firms whose main activity is in the industry in question, multiplied by 0.98. Experience suggests that, for market activity in urban industries*, around 98% of VAT sales - which include sales of used capital goods, of course - are on average relevant to national accounts.

* i.e. all except agriculture, fishing and forestry.

Table 29 Degree of coverage in tax accounting statistics

Industry	Text	Sales DKK million	Covered by SLS-E, %	Covered by annual accounts, %	Total coverage, %
501009	Sale of motor vehicles	60 524	79	0	79
502000	Repair and maintenance of motor vehicles	12 774	100	0	100
505000	Service stations	10 047	79	0	79
510000	Wholesale trade	263 182	61	12	73
551009	Hotels	4 288	67	0	67
553009	Restaurants	9 321	53	0	53
602209	Taxi operation and coach services	3 230	75	0	75
602409	Freight transport by road	18 590	76	2	78
630000	Supporting transport activities	21 384	61	1	62
703009	Real estate agents	2 517	70	0	70
710000	Renting etc.	4 140	62	0	62
720000	Computer and related activities	8 693	46	16	62
741100	Legal activities	1 921	42	0	42
741200	Accounting	3 511	45	0	45
742009	Consulting engineers etc.	11 369	49	3	52
744000	Advertising	8 721	73	0	73
747000	Industrial cleaning	3 257	53	26	79
748009	Business activities n.e.c.	8 520	75	0	75
851209	Medical etc. activities	6 422	53	0	53
920000	Recreational activities	3 741	73	5	78
930009	Service activities n.e.c.	2 481	52	13	65
Total		468 632	64	8	72

For those industries where tax accounting statistics are the source for the national accounts calculations, the degree of coverage for accounts actually observed averages 72%, and the imputed share is therefore 28% (average). This degree of coverage must be considered particularly satisfactory, considering that the accounting figures in the tax accounting statistics are representative of all forms of ownership and size groups and include service industries, where there are many small enterprises.

Whilst the figures are grossed up to the total population in the primary statistics, this does not meet national accounts requirements as regards either the concept of sales or stratification for the national accounts institutional sectors. Danmarks Statistik's National Accounts Division does not, therefore,

use the grossed up statistics, but receives from the Primary Statistics Division complete accounting figures at the level of individual firms (around 90 000 accounts) and then stratifies and grosses up the figures for national accounts purposes in its own calculation systems.

For this grossing up, a special edition of VAT statistics is used, known as JUR-VAT, indicating that VAT sales are aggregated/split into legal units, i.e. firms, the units in tax accounting statistics. VAT legislation allows firms/company groups to elect 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 JUR-VAT (as in ordinary VAT statistics), these partial registrations are netted out and, in addition, in the JUR-VAT file 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 JUR-VAT sales. 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 JUR-VAT. For each individual firm in the tax accounting figures and the supplementary accounts, the appropriate VAT sales are obtained by matching with the JUR-VAT 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:

$$A = \frac{JUR-VAT\ sales\ in\ the\ population\ \ in\ the\ stratum}{JUR-VAT\ sales\ in\ \ firms\ in\ the\ accounting\ \ figures\ in\ the\ stratum}$$

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 sales" in the accounts, which correspond to sales in the national accounts sense, are grossed up using VAT sales as the raising variable. Experience has shown that net sales and VAT sales correlate very closely.

3.1.2.3.6 Periodisation

1. Questionnaire-based accounting statistics

In the case of enterprises covered by the questionnaire survey, the statistics for year t cover firms whose accounting year closes between 1 May of year t and 30 April of year t+1. Firms whose SLS-E form is used for the statistics are included for year t if they close their accounts between 1 April of year t and 31 March of year t+1.

Questionnaire-based sales figures for 1995, broken down by month, are shown in Table 30. If the main groups of industry covered, namely manufacturing, construction and retail trade, are looked at as a whole, the 1995 distribution of sales would appear in itself to indicate a slight difference compared with the calendar year (minus just under one month). But the figures include a number of firms which were not operating throughout the year and which therefore tend to shift the average accounting year forward. The opposite case, namely firms which cease trading, is not included in the sample, for

obvious reasons. Overall, the accounting statistics' questionnaire-based figures must be considered a good approximation of a calendar-year-based estimate.

Table 30 Closing month for accounts in the accounting statistics questionnaire-based survey

Month when accounts close	Number of firms	Sales
January	10	417 986
February	9	3 160 494
March	76	5 233 023
April	510	37 048 584
May	97	7 304 782
June	780	33 170 492
July	31	1 979 068
August	45	24 155 667
September	664	91 639 015
October	49	19 420 259
November	15	2 261 957
December	3053	285 917 256

These statistics are not periodised for use in national accounts. For one thing, they are considered to approximate closely in practice to a calendar-year estimate, and for another there are two factors which speak against any attempt to produce an absolutely exact calendar year periodisation of accounting statistics. Firstly, there are a good many SLS-E forms on which the accounting period is not stated, and secondly more accurate periodisation would require accounts for both year t and year t+1 to be available when statistics for year t were produced, which would delay the calculation of the final national accounts.

For that share of the figures which comes from SLS-E forms, the breakdown of turnover by month when the accounting period ends is not known, since a good many firms have not filled in the accounting year box on the SLS-E form. Whilst the firms in question might possibly all have calendar-year accounts, this hypothesis would seem unlikely. For firms covered by the SLS-E, the accounting period for the accounts included is one month different from the period for the questionnaire-based firms.

If we take as the basis the known distribution by month of sales in the manufacturing, construction and retail firms covered by the questionnaire, as shown in Table 30, then the difference in the accounting period compared with the questionnaires would appear on the face of it to indicate a considerably larger shift away from the calendar accounting year in the SLS-E figures than in the questionnaire figures. However, we know from a survey for the 1987 accounting year that small and medium-sized firms are more likely than large firms to have calendar-based accounting years. Since it is mainly small and medium-sized firms which are covered in the statistics by SLS-E accounts, it may be assumed that the periodisation of the SLS-E share of the figures is in practice closer to the calendar year delimitation than Table 30 - viewed in isolation - would suggest.

As was the case with the questionnaire part of the accounting figures, it is also true that new firms which have calendar year accounts exert a pull in the opposite direction to the (slight) deviation compared with the calendar year which is indicated by the 31 March cut-off date for the accounts included.

2. Tax accounting statistics

As is the case with the questionnaire-based accounting statistics, the cut-off date for the accounts which are included in the statistics, viewed in isolation, exerts a pull towards the previous calendar year in the estimate of activity. However, this must be seen against the effect that new firms have on the accounting figures, which would normally lead to a shift forward in time compared with the calendar year.

It may be assumed that many new enterprises which have not been in operation throughout the year send in the SLS-E accounting form even though they are not obliged to do so, since the SLS-E accounts tie in so closely with the income tax returns of corporations and sole proprietors that they are in many cases filled in along with the income tax returns, purely as a matter of course - especially when firms of auditors are involved. For new enterprises with calendar year accounts, which are the most common, the inclusion of accounts for the first year of operation - on average, approximately the last six months' sales - in the calendar year in question will shift the average accounting period away from the calendar year. In this connection, new enterprises do not just mean "new economic activity". They may also be formed from the restructuring of established firms and company groups. There is no information available on the size of the amounts involved.

In view of the above two opposing shifts in the SLS-E figures compared with the calendar year, it was decided not to periodise the statistics. The view is taken that the accounts included in the statistics are, overall, the best possible estimate of the accounts on a calendar year basis. No more exact periodisation is possible, since a substantial share of the firms involved, as already mentioned, do not complete the accounting period field on the SLS-E accounting form.

There is also the practical point that accurate periodisation would require statistics for both year t and year t+1 to be available when the statistics were worked out for year t, and this would delay the estimate of the final national accounts.

3.1.2.3.7 National accounts processing of the grossed up general accounting statistics, consistency check and transition from firm branches to national accounts industries

3.1.2.3.7.1 Questionnaire-based accounting statistics received from primary statistics

For years 1995 to 1997, the statistics cover all DK-NACE industries from 140000 to 370000, construction industries from 451100 to 455000 and retail trade and repair industries from 521110 to 527490. Within these areas, accounting statistics have exhaustive coverage, which means that all enterprises which have been active during the calendar year ought to be included.

Complete coverage of the above-mentioned DK-NACE industries also means that the former "craft branches" within manufacturing are now covered by accounting statistics. As long ago as the changeover to DK-NACE industries in the accounting statistics for manufacturing in 1993, coverage was extended to include publishing activities, apart from the publishing of sound recordings 221110-221340 and 221500. The new questionnaire-based accounting statistics from 1995 also cover 158120, bakers' shops, 221400, the publishing of sound recordings, 2851, the treatment and coating of metals, 285200, general mechanical engineering on a fee or contract basis, 291120, the repair of ships' engines, repair of machinery for agriculture and forestry, 316220, electrical engineering workshops, 361120, furniture upholstery activities and 361490, the painting of furniture etc. The recycling branches 371000 and 372000 are now also covered.

The population in the new accounting statistics is based on a business register extract from November 1995, plus units which were not found on the date when the data were extracted, but which were active during 1995.

The questionnaire-based accounting statistics are 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 accounting statistics but which belong to firms with a firm branch within the scope of accounting statistics, referred to below as the "remainder file". This contains only information on the JUR 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.

Figure 3 Overview of the coverage of workplaces in files from primary statistics

Workplace Firm	Workplaces within the scope of the accounting statistics	Workplaces outside the scope of the accounting statistics
Firms within the scope of the accounting 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 accounting 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 questionnaire-based accounting 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 questionnaire-based accounting statistics, typically those which belong to the tax accounting system. As was the case prior to 1995, it was decided in the case of these workplaces to use the information which can be compiled in the accounting statistics system. To avoid inconsistencies with the breakdown of the firms in question in the tax accounting statistics system, the accounting information calculated here is removed from the tax accounting system's firm-level information before the remainder is broken down by kind-of-activity branch outside the scope of the questionnaire-based accounting statistics. The units in question are called, technically, FBRUDE, which is explained later. In principle, area 4 should be blank. If there is anything here, it is because the branch allocation of some of the accounting 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. The Table 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 31 Questionnaire-based accounting statistics at firm level and workplace level

Label	Variable	# in firm record	# in work-place record	MLS-code	MLS-text
JUR number (also in "remainder")	JURNR	1	1		
Workplace code (also in "remainder")	AKODE		2		
DB93 branch (also in "remainder")	BRANCHE	2	3		
9-branch code	BRA009	3	4		
27-branch code	BRA027	4	5		
53-branch code	BRA053	5	6		
111-branch code	BRA111	6	7		
Firm's main branch (also in "remainder")	F_DB93		8		
Ownership code	EJKOD	7	9		
Combination code	KOMB	8	10		
County code	AMTKOD		11		
Municipality code	KOMKOD		12		
Accounting period	PERIOD	9			
Record entry code	JKOD	10			
FTEs (also in "remainder")	VAERK		13		
FTEs	AARSV	11			
Number of employees	BESK	12			
Sales	OMS	13	14		
Own-account work	AUER	14	15	1012	Manuf. of plant and machinery for own use
Other operating income	ADR	15	16	1019	Other, secondary operating income
Difference in inventories	DLG	16	17		
Purchases of goods, ancillary materials and packaging	KRH	17	18		
Purchases of energy (**excluding running of vehicles!**)	KENE	18	19	**2013**	Purchases (consumption) of fuel and power
Purchases of processing to order	KLOE	19	20	2014	Purchases of processing to order and subcontracting
Rental expenditure	UDHL	20		7020	Expend. on rentals excluding heating
Expenditure on the acquisition of consumables etc.	UASI	21		7025	Expenditure on consumables
Ordinary bad debts	OTDE	22		7026	Ordinary bad debts
Other external expenditure (**incl. running of vehicles**)	OEEU	23		**7042**	Other external expenditure
Wages and salaries	LGAG	24		4015	Wages/salaries & employer contribs.
Expenditure on pensions	PUDG	25		4016	Expenditure on pensions
Other expenditure on social security	AUDG	26		4017	Other staffing expenditure
Writing off and writing down of tangible and intangible assets	ANMI	27		5100	Writing off and writing down of non-financial fixed assets
Writing down of current assets	NOAK	28		5200	Writing down of non-fin. current assets
Secondary expenditure	SEUD	29		7060	Other operating expenditure
Profit/loss before financial and extraordinary items	RFEP	30			
Income from lasting interests	INKI	31		4030	Income from lasting interests
Other return on financial fixed assets	UDFA	32		4032	Other interest and dividend income
Interest etc. received from financial fixed assets	RIFA	33		4032	Other interest and dividend income
Interest etc. received from current assets	RIOM	34		4031	Interest etc. rec. from current assets
Writing down of financial fixed and current assets	NFAO	35		5300	Writing down of financial assets
Interest paid etc.	RUDG	36		4040	Interest paid
Extraordinary income	EOI	37		1060	Extraordinary income
Extraordinary expenditure	EOU	38		7061	Extraordinary expenditure
Annual pre-tax profit/loss	ARFS	39			
Corporation tax on annual profit/loss	SSAR	40		4041	Corporation tax
Annual profit/loss	AARE	41		4043	Profit/loss for tax purposes
Consolidation, i.e. trans. to/from equity	KEGN	42			
Dividends	UDBY	43		4044	Distributed income
Intangible fixed assets, total	IAAT	44		8110	
Label	**Variable**	**# in firm**	**# in work-**	**MLS-**	**MLS-text**

		record	place record	code	
Land and buildings	GRBY	45		8120	Land and buildings
Technical plant and machinery	ATAM	46		8121	Technical plant and machinery
Other plant, machinery and equipment	AADI	47		8122	Other plant, machinery and equipment
Advance payments and tangible fixed assets etc.	FMAA	48		8129	Other tangible fixed assets (e.g. advances)
Tangible fixed assets, total	MAAT	49			
Amounts outstanding	TILG	50		8130	Financial fixed assets
Holdings of shares and equity	ABAE	51		8130	Financial fixed assets
Holdings of bonds and other securities	ABOA	52		8130	Financial fixed assets
Financial fixed assets, total	FAAT	53		8130	Financial fixed assets
Fixed assets, total	AAT	54			
Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	55	21	5060	Opening stocks of raw materials
Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	56	22	6060	Closing stocks of raw materials
Work in progress (opening stocks)	PVUF	57	23	5065	Opening stocks of finished goods
Work in progress (closing stocks)	UVUF	58	24	6065	Closing stocks of finished goods
Manufacture of finished goods and goods for resale (opening stocks)	PFFH	59	25	5061 / 5062 / 5065	Opening stocks of finished goods
Manufacture of finished goods and goods for resale (closing stocks)	UFFH	60	26	6061 / 6062 / 6065	Closing stocks of finished goods
Ongoing work for account of others (opening stocks)	PIAF	61	27	5065	Opening stocks of finished goods
Ongoing work for account of others (closing stocks)	UIAF	62	28	6065	Closing stocks of finished goods
Advance payments, purchased goods (opening stocks)	PFKV	63	29		
Advance payments, purchased goods (closing stocks)	UFKV	64	30	8149	Other current assets
Total stocks of goods (opening)	POAT	65	31	8141	Opening stocks
Total stocks of goods (closing)	UOAT	66	32	8142	Closing stocks
Amounts outstanding from sales of goods and services	TSVT	67		8149	Other current assets
Other claims	ANTI	68		8149	Other current assets
Total claims	TGT	69		8149	Other current assets
Holdings of shares and equity	OBAE	70		8149	Other current assets
Holdings of bonds and other securities	OBAV	71		8149	Other current assets
Liquidity holdings	LIBE	72		8149	Other current assets
Securities and particip. interests, total	VKT	73		8149	Other current assets
Total current assets	OMAT	74		8149	Other current assets
Total assets	AT	75			
Equity, closing stocks	EGUL	76		8210	Equity
Provisions	HENS	77		8220	Provisions
Long-term debts to suppliers	LGL	78		8230	Long-term debts
Other long-term debts	ALG	79		8230	Long-term debts
Short-term liabilities to suppliers	KGL	80		8240	Short-term liabilities
Other short-term liabilities	AKG	81		8240	Short-term liabilities
Total liabilities	PAST	82			
Intangible fixed assets (additions)	TIAA	83		6102 / 6110	Software bought in/purchases of intang. assets, other and unspecified
Purchases of existing buildings (including land value)	KEB	84	33	6121	Purchases of existing buildings (including land value)
Construction expenditure, new building (excluding land)	OPNY	85	34	6123	Construction of new buildings (excluding land value)
Purchases of unbuilt land	KUBG	86	35	6122	Purchases of unbuilt land
Rebuilding and improvements to buildings and installations	OFBB	87	36	6124	Rebuilding and improvements to buildings
Roads, ports, open spaces, etc.	VHPK	88	37	6125	New layout and rebuilding of roads, ports, etc.
Total real estate (additions)	FET	89	38		
Technical plant and machinery (operating equipment)	DTAM	90	39	6134	Purchases of plant and machinery, other and unspecified
Other plant, machinery and equipment (additions)	TAAD	91	40	6134	Purchases of plant and machinery, other and unspecified

Label	Variable	# In firm-record	# Workplace record	MLS-code	MLS-text
Total plant and machinery (additions)	TDRT	92	41		
Total additions	ATIT	93	42		
Intangible fixed assets (disposals)	AIAA	94		6202 / 6210	Disposals of software/intangible assets, other and unspecified
Sales of buildings (including land value)	SABY	95	43	6221	Sales of existing buildings (including land value)
Sales of unbuilt land	SUBG	96	44	6222	Sales of unbuilt land
Sales of roads, ports, open spaces, etc.	SVHP	97	45	6223	Sales of roads, ports, open spaces, etc. (including land value)
Total real estate (disposals)	FEGT	98	46		
Sales of technical plant and machinery	STAM	99	47	6234	Sales of plant and machinery, other and unspecified
Sales of other plant, machinery and equipment	SADI	100	48	6234	Sales of plant and machinery, other and unspecified
Total plant and machinery (disposals)	ADRT	101	49		
Total disposals	AFAT	102	50		
Sales (goods for resale)	HOMS	103	51	1016	Sales of goods for resale
Purchases (goods for resale)	HKOB	104	52		Goods for resale, purchases
Opening stocks (goods for resale)	HLPR	105	53	5066	Opening stocks of work in progress for resale
Closing stocks (goods for resale)	HLUL	106	54	6066	Closing stocks of work in progress for resale
Estimated sales of goods for resale	AOH	107			
Estimated profit as % of sales of goods for resale	AAH	108			
Total financial leasing expenditure in the accounts	RSUF	109		7057	Correction for gross leasing taxes (negative in the intermediate system)
Real estate (financial leasing)	FLFE	110			
Technical plant and machinery (financial leasing)	FTAM	111			
Other plant, machinery and equipment (financial leasing)	FADI	112			
	UDV111	113			

In the questionnaire-based accounting statistics, questions are asked about purchases (as opposed to consumption) of raw materials and auxiliaries, finished goods and packaging, and for this reason the previous intermediate system items for the consumption of these goods cannot be derived directly from the accounting statistics files but can be worked out via a correction to changes in inventories (which thereafter can be the changes in inventories for national accounts purposes).

The questionnaire-based accounting statistics make a distinction between expenditure on rentals, consumables and ordinary losses on bad debts in special items, cf. Table 32.

Table 32 Special costs specification in the questionnaire-based accounting statistics

Text	Gl. RSI 1983-94	New RG-stat	Costs survey
Rental expenditure	Part of P06	UDHL	OMKp31, part of p32,p33,p34,p35
Expenditure on acquisitions of consumables etc.	Part of P06	UASI	OMKp49
Ordinary losses for bad debts	Part of P06	OTDE	OMKp47

"Gl. RSI" refers to the former accounting statistics for manufacturing, which as from 1995 were replaced by the general questionnaire-based accounting statistics. For the processing of the accounting statistics, it was decided to keep 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 accounting 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 accounting statistics could be used to compile regional accounts.

3.1.2.3.7.2 Processing of the questionnaire-based accounting statistics

3.1.2.3.7.2.1 Correcting the workplace and firm file

The logical first stage in the processing is to input corrections to the records for firms and workplaces which are received from the Primary Statistics Division. In 1995, we had to start by recoding the branch allocation of enterprises which should be counted as foundries and the manufacture of pesticides, since these branches had in fact been deleted from the primary statistics as from 1993 owing to a few doubtful criteria. 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 accounting statistics was run through several times, as more and more problems were identified and corrected.

3.1.2.3.7.2.2 Collection of firm and workplace information

For both firms and workplaces, a few items are calculated which were not originally in the files: sales of own products, purchases of raw materials (excluding goods for resale), opening and closing stocks of finished goods and approximate output 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 F_DB93, so that this variable overall indicates the firm branch. These items are kept in the files throughout the further processing.

Table 33 Items calculated to supplement the accounting statistics files

Label	Variable	# in the firm record	# in work-place record	MLS-code	MLS-text
Sales of own products	EOMS	New	New	1018	Other and unspecified net sales
Purchases of raw materials, ancillaries and packaging	RKOB	New	New	2015	Other and unspecified purchases (consumption) of raw materials
Manufacture of finished goods (opening stocks)	PFFV	New	New	5065	Opening stocks of finished goods
Manufacture of finished goods (closing stocks)	UFFV	New	New	6065	Closing stocks of finished goods
Approximate output 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 questionnaire-based accounting 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 wholesaling occurs in the FBRUDE part. This is because wholesaling is not covered by the questionnaire-based accounting statistics. For wholesaling, the statistical source is the tax accounting statistics and the national accounts calculations for this group of industries are carried out in another calculation system, namely the tax accounting system.

The firm file is correlated with the workplace file which has the firm branch covered by accounting statistics. The remainder of the firm file, which ought to consist of workplaces outside the scope of the questionnaire-based accounting 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 correlation, various workplaces (mainly independent cooperatives) have to be combined into a joint JUR-NR, 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 JUR-NR is also kept in the record.

The firm file remainders which are not found in the workplace file are correlated 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 JUR-NR 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.

In 1995, there were a number of cases where the firm's sales were less in the firm statistics than in the workplace statistics[1]. In these cases, it was mostly the workplace figures which were the most credible. Cases of conflicting economic data also came to light, along with cases where workplaces which had changed owners during the period came up several times under different JUR 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 large number of errors are revealed during the process, many of them 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 accounting statistics' contribution to the intermediate system's industries outside the scope of the questionnaire-based accounting statistics (disregarding any subsequent corrections to the branch allocation of workplaces).

[1] The main reason is that the firm statistics were published before the workplace statistics processing was complete. In many cases, the final breakdown of the firm was not fixed at that point, and so a greater or lesser share of the firm's internal flows were input into the workplace file's total sales and purchases for the firm. The Primary Statistics Division supplied the National Accounts Division with a list of firms with known problems of this kind. In the meantime, it has been decided that in the future the definitive firm statistics will be compiled after the workplace statistics.

3.1.2.3.7.2.3 Recoding of workplace industries which conflict with firm branches

When firm files and workplace files for 1995 were correlated, a large number of firms were found which did not have workplaces in the firm branch. This somewhat suspect state of affairs arose because the two files were not based on the same versions of the business register extract. Even though it would have been less complicated to use the workplace file's branch coding, it was clear that the firm file's branch coding had to be assumed to be the more accurate and the one that most closely tallied with the industrial commodity statistics[2]. 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 questionnaire-based accounting statistics. On the basis of the workplace file, figures are worked out for kind-of-activity units, and for each firm (JUR-NR) information is compiled on the composition of output value by DK-NACE industry (here, the variable previously worked out for approximate output 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 when this will make the branch coding in the files tally. In more complicated cases, we could not justify correcting the branch allocation automatically. Checklists are printed out, showing the firm with the breakdown by workplace before and after recoding. If the automatic recoding is considered improbable, the input data are instead corrected manually.

The problem with conflicting branch allocation in the firm and workplace files was - like other running-in problems - much greater in 1995 than in the following years. The above example shows that, via its own checking procedures, the National Accounts Division improves the quality of the data in the primary statistics.

3.1.2.3.7.2.4 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 are added to the workplace file:

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[2] The firm statistics were compiled on the basis of a register version in which the units' branch allocation had been thoroughly revised. Here, many units in manufacturing had changed branches after an assessment of the product composition in the commodity statistics. By the time we managed to work out workplace statistics, this register version had been lost, and there was no time to reconstruct it. We therefore had to go back to a version which was a simple extract from the business register.

Table 34 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:
Accounting period	PERIOD	9	Transferred
Record entry code	JKOD	10	Transferred
Number in employment	BESK	12	VAERK
Rental expenditure	UDHL	20	OMS-HKOB
Expenditure on the acquisition of consumables etc.	UASI	21	OMS-HKOB
Ordinary losses, bad debts	OTDE	22	OMS
Other external expenditure (including the running of vehicles)	OEEU	23	OMS-HKOB
Wages and salaries	LGAG	24	VAERK
Expenditure on pensions	PUDG	25	VAERK
Other expenditure on social security	AUDG	26	VAERK
Acquisitions of intangible assets	TIAA	83	TDRT
Disposals of intangible assets	AIAA	94	ADRT
Total expenditure on financial leasing in the accounts	RSUF	109	OMS-HKOB
Real estate (financial leasing)	FLFE	110	KEB+OPNY
Technical plant and machinery (financial leasing)	FTAM	111	DTAM
Other plant, machinery and equipment (financial leasing)	FADI	112	TAAD

The calculation is in two stages, the first for those workplaces which belong to firms within the scope of the questionnaire-based accounting 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 *pro rata* with the above-mentioned variables. If any of these variables is nil 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.

The missing items are then added to those workplaces which belong to firms outside the scope of the accounting 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 NR130 branch is used for the calculation instead.

3.1.2.3.7.2.5 When trading activity is included

During the above stages, records are completed for all the accounting 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.

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 tax accounting system and the intermediate system, a file is set up in which the trade included is as a rule recoded to branch 510008, but trade in branch 158120, bakers' shops, is allocated to branch 522410, 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.

3.1.2.3.7.2.6 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[3]. Each individual intermediate system [MLS] code refers to either firm branch or kind-of-activity industry information. It is with the transfer to files in the intermediate system format that the individual data are removed from the figures aggregated here to data for DK-NACE industries/ESA 95 sectors. The figures are already available in a breakdown into DK-NACE industries. The sector codes are based on the ownership code, EJKOD, with the following key:

[3] For use in the compilation of institutional sector accounts, an alternative file is now compiled with the accounting 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 35 Connection between ownership codes and ESA 95 institutional sectors

EJKOD	Sector		EJKOD	Sector	
010	S14	Sole proprietorships	060	S11	Cooperative societies (may also be S.12)
013	S14	Sole proprietorships in liquidation	063	S11	Cooperative societies in liquidation
014	S14	Sole proprietorships subject to bankruptcy proceedings	064	S11	Cooperative societies subject to bankruptcy proceedings
021	S11	Ordinary partnerships	070	S13	Central government
022	S11	Jointly owned shipping firms	081	S13	Counties [*Amtskommuner*]
023	S11	Ordinary partnerships/jointly owned shipping firms in liquidation	082	S13	Municipalities [*Primærkommuner*]
024	S11	Ordinary partnerships/jointly owned shipping firms subject to bankruptcy proceedings	091	S11	Associations (may also be S.15)
030	S11	Limited partnerships	092	S11	Foundations and "self-owning" institutions (also S.15)
033	S11	Limited partnerships in liquidation	093	S13	Danish National Church
034	S11	Limited partnerships subject to bankruptcy proceedings	094	S13	National Church parish councils
041	S11	Corporations with share capital (A/S) being set up	904	S13	Other public authorities (but also HT [the Copenhagen Transport Authority], S.11)
042	S11	A/S operating normally	905	S14	Estates of deceased or bankrupt persons
043	S11	A/S in liquidation	906	S14	Private households
044	S11	A/S subject to bankruptcy proceedings	908	S11	Other owners n.e.c.
045	S125	Insurance corporations with share capital	980	S11	Foreign enterprises
051	S11	Private companies (APS) being set up	990	S14	Owners not known
052	S11	APS operating normally	993	S14	Owners not known, in liquidation
053	S11	APS in liquidation	994	S14	Owners not known, subject to bankruptcy proceedings
054	S11	APS subject to bankruptcy proceedings			

Those items which have to be input at firm level are extracted from the accounting statistics firm part. The accounting statistics codes are transferred to the intermediate system, using the key shown here, and a file is printed out with firm data in the intermediate system format.

Table 35a Transfer of items to the intermediate system [MLS] at firm level

Label	Variable	%	MLS-code	MLS-text
Writing off and writing down of tangible and intangible assets	ANMI	100.00	5100	Writing off and writing down of non-financial fixed assets
Writing down of current assets	NOAK	100.00	5200	Writing down of non-financial current assets
Secondary expenditure	SEUD	100.00	7060	Other operating expenditure
Income from lasting interests	INKI	100.00	4030	Income from lasting interests
Other return on financial fixed assets	UDFA	100.00	4032	Other interest and dividend income
Interest etc. received from fin. fixed assets	RIFA	100.00	4032	Other interest and dividend income
Interest etc. received from current assets	RIOM	100.00	4031	Interest etc. received from current assets
Writing down of financial fixed and current assets	NFAO	100.00	5300	Writing down of financial assets
Interest paid etc.	RUDG	100.00	4040	Interest paid
Extraordinary income	EOI	100.00	1060	Extraordinary income
Extraordinary expenditure	EOU	100.00	7061	Extraordinary expenditure
Corporation tax on profit/loss for the year	SSAR	100.00	4041	Corporation tax
Profit/loss for the year	AARE	100.00	4043	Profit/loss for tax purposes
Dividends	UDBY	100.00	4044	Distributed income
Intangible fixed assets, total	IAAT	100.00	8110	Intangible fixed assets
Land and buildings	GRBY	100.00	8120	Land and buildings
Technical plant and machinery	ATAM	100.00	8121	Technical plant and machinery
Other plant, machinery and equipment	AADI	100.00	8122	Other plant, machinery and equipment
Advance payments and tangible fixed assets etc.	FMAA	100.00	8129	Other tangible fixed assets
Amounts outstanding	TILG	100.00	8130	Financial fixed assets
Holdings of shares and equity	ABAE	100.00	8130	Financial fixed assets
Holdings of bonds and other securities	ABOA	100.00	8130	Financial fixed assets
Total financial fixed assets	FAAT	100.00	8130	Financial fixed assets
Amounts outstanding from sales of goods and services	TSVT	100.00	8149	Other current assets
Other claims	ANTI	100.00	8149	Other current assets
Total claims	TGT	100.00	8149	Other current assets
Holdings of shares and equity	OBAE	100.00	8149	Other current assets
Holdings of bonds and other securities	OBAV	100.00	8149	Other current assets
Liquidity holdings	LIBE	100.00	8149	Other current assets
Securities and participatory interests, total	VKT	100.00	8149	Other current assets
Current assets, total	OMAT	100.00	8149	Other current assets
Equity, closing stocks	EGUL	100.00	8210	Equity
Provisions	HENS	100.00	8220	Provisions
Long-term debts to suppliers	LGL	100.00	8230	Long-term debts
Other long-term debts	ALG	100.00	8230	Long-term debts
Short-term liabilities to suppliers	KGL	100.00	8240	Short-term liabilities
Other short-term liabilities	AKG	100.00	8240	Short-term liabilities

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

Table 36 Transfer of items to the intermediate system [MLS] at workplace level

Label	Vari-able	%	MLS-code	MLS-text
Sales of own products	EOMS	100.00	1018	Other and unspecified net sales
Own-account work	AUER	100.00	1012	Manu. of operating equipment for own use
Other operating income	ADR	100.00	1019	Other, secondary operating income
Purchases of raw materials, ancillary materials and packaging	RKOB	100.00	2015	Other and unspecified purchases (consumption) of raw materials
Purchases of energy (excl. running of vehicles)	KENE	100.00	2013	Purchases (consumption) of fuel and power
Purchases of processing to order	KLOE	100.00	2014	Purchases of processing to order and subcontracting
Rental expenditure	UDHL	100.00	7020	Expenditure on rentals, excl. heating
Exp. on the acquisition of consumables etc.	UASI	100.00	7025	Exp. on consumables
Ordinary bad debts	OTDE	100.00	7026	Ordinary bad debts
Other external expenditure (incl. the running of vehicles)	OEEU			Distrib. as in costs survey etc.
Wages and salaries	LGAG	100.00	4015	Wages/salaries and employer contributions
Expenditure on pensions	PUDG	100.00	4016	Expenditure on pensions
Other expenditure on social security	AUDG	100.00	4017	Other staffing expenditure
(1)Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	100.00	5060	Raw materials, opening stocks
(2)Raw materials, ancillaries, fuel and packaging (opening stocks)	PRHB	100.00	2015	Other and unspecified purchases (consumption) of raw materials
(1)Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	100.00	6060	Raw materials, closing stocks
(2)Raw materials, ancillaries, fuel and packaging (closing stocks)	URHB	-100.00	2015	Other and unspecified purchases (consumption) of raw materials
Work-in-progress (opening stocks)	PVUF	100.00	5065	Finished goods, opening stocks
Work-in-progress (closing stocks)	UVUF	100.00	6065	Finished goods, closing stocks
Manufacture of finished goods (opening stocks)	PFFV	100.00	5065	Finished goods, opening stocks
Manufacture of finished goods (closing stocks)	UFFV	100.00	6065	Finished goods, closing stocks
Ongoing work for account of others (opening stocks)	PIAF	100.00	5065	Finished goods, opening stocks
Ongoing work for acc. of others (closing stocks)	UIAF	100.00	6065	Finished goods, closing stocks
Advance payments, purchased goods (closing stocks)	UFKV	100.00	8149	Other current assets
Total stocks of goods (opening)	POAT	100.00	8141	Opening stocks
Total stocks of goods (closing)	UOAT	100.00	8142	Closing stocks
Purchases of existing buildings (inc. land value)	KEB	100.00	6121	Purchases of existing buildings (including land value)
Constr. expenditure, new building (excl. land)	OPNY	100.00	6123	Constr. of new buildings (excl. land value)
Purchases of unbuilt land	KUBG	100.00	6122	Purchases of unbuilt land
Rebuilding and improvements to buildings and installations	OFBB	100.00	6124	Rebuilding and improvements to buildings
Roads, ports, open spaces, etc.	VHPK	100.00	6125	New layout and rebuilding of roads, ports, etc.
Tech. plant and machin. (operating equipment)	DTAM	100.00	6134	Purch. of plant & machin., other & unspec.
Other plant, machinery and equipment (additions)	TAAD	100.00	6134	Purch. of plant & machin., other & unspec.
Intangible fixed assets (additions)	TIAA	100.00	6110	Software bought in/purchases of intangible assets, other and unspecified
Intangible fixed assets (disposals)	AIAA	100.00	6210	Disposal of software/ intangible assets, other and unspecified
Sales of buildings (incl. land value)	SABY	100.00	6221	Sales of existing buildings (incl. land value)
Sales of unbuilt land	SUBG	100.00	6222	Sales of unbuilt land
Sales of roads, ports, open spaces, etc.	SVHP	100.00	6223	Sales of roads, ports, open spaces, etc. (including land value)
Sales of technical plant and machinery	STAM	100.00	6234	Sales of plant and machin., other and unspecified.
Sales of other plant, machinery and equipment	SADI	100.00	6234	Sales of plant and mach., other & unspec.
Sales (goods for resale)	HOMS	100.00	1016	Sales of goods for resale
Purchases (goods for resale)	HKOB	100.00	7019	Goods for resale, purchases

Label	Varia-ble	%	MLS-code	MLS-text
(1) Opening stocks (goods for resale)	HLPR	100.00	5061 / 5062 / (5060)	Opening stocks of work-in-progress for resale
(2) Opening stocks (goods for resale)	HLPR	100.00	7019	Goods for resale, purchases
(1) Closing stocks (goods for resale)	HLUL	100.00	6060 / 6061 / (6060)	Closing stocks of work-in-progress for resale
(2) Closing stocks (goods for resale)	HLUL	-100.00	7019	Goods for resale, purchases
Total expenditure for financial leasing in the accounts	RSUF	-100.00	7057	Correction for gross leasing taxes (is negative)

Since few enterprises have filled in the RSUF item "Total expenditure for financial leasing", this item is in fact never used for the compilation of the intermediate system. It is replaced altogether by a separate, transversal calculation of financial leasing covering the whole of the economy. On the other hand, it is clear from the text on the new reporting forms that equipment leased under financial leasing schemes should be included in the returns for capital formation. The question is how financial leasing is actually treated in the returns and the accounts. In the national accounts, it was decided to assume that accounting practice is moving closer to the national accounts treatment and that the accounting figures to a large extent reflect the treatment in the enterprises' own accounts. For this reason, the 1995 leasing correction (for services relating to financial leasing counted by the users as purchases of services) has been scaled down to 2/3 of the previous years' level within the area covered by the questionnaire-based accounting statistics[4].

The accounting statistics item for "other external expenditure", OEEU, is divided up over a number of MLS codes. Within most manufacturing industries, the division may, as hitherto, be based on those distributions which are compiled from the latest services enquiry, dating from 1992. The distribution keys compiled on this basis are converted from DSE industries to DK-NACE industries in connection with the compilation of the manufacturing industry system for 1993 and 1994. Since the questionnaire-based accounting statistics have now split rental expenditure, UDHL, consumables, UASI and ordinary bad debts, OTDE, 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 OEEU 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.

[4] A further argument in favour of a smaller leasing correction is that in many branches the correction had become larger than 202: renting and leasing prior to correction. However, the fact that this item results from distribution keys which are based on the 1992 services enquiry, which is not exactly topical, must be taken into account.

Table 37 Percentage shares of the OEEU item. Examples from the services enquiry industries

MLS-code	National accounts industry:	**140009**	**1510000**	**152000**	**153000**	**154000**	**155000**
4046	Exp. on insurance	2.67	3.38	3.72	2.27	3.17	2.12
6102	Software bought in	0.38	2.85	0.52	2.83	0.28	1.24
6121	Purchases of existing buildings	0.44	0.53	0.17	0.23	0.17	0.04
7021	Renting and leasing of machinery	0.79	1.51	1.60	5.20	2.63	1.72
7022	Renting and leasing of motor vehicles	0.03	0.06	0.03	0.09	0.11	4.15
7023	Renting and leasing of computer equipment	1.14		0.40	0.54	2.45	2.01
7024	Other and unspecified renting and leasing	0.64	0.63	0.05	0.02	0.10	0.03
7027	Repair and maintenance of buildings	2.39	3.25	3.19	2.47	1.16	2.61
7028	Repair and maintenance of structures	1.05	0.52	0.65	0.53	0.46	0.63
7029	Repair and maintenance of transport equipment	3.28	1.37	1.40	0.92	0.43	5.15
7030	Repair and maintenance of machinery and equipment	24.38	12.06	15.08	12.35	10.80	14.71
7040	Contributions to trade organisations, input	1.26	2.88	1.66	0.96	0.38	1.79
7041	Expenditure on licences and royalties	0.13	0.05	0.11	0.18	0.18	
7042	Other external expenditure which is input	59.84	69.44	70.16	70.62	76.15	63.49
7043	External expenditure n.e.c.	1.58	1.47	1.26	0.78	1.53	0.31
	Total	100.00	100.00	100.00	100.00	100.00	100.00

The questionnaire-based accounting statistics now also cover all previous "craft branches" within manufacturing, the construction branches and retail trade etc. in NACE-52 which were previously compiled in the tax accounting system, because they were not covered by the old accounting statistics for manufacturing. In addition, the questionnaire-based accounting statistics cover "remainder" units which do not come within the scope of accounting statistics. For industries not included in the 1992 services enquiry, distribution keys for the OEEU item are based on the tax accounting system's basic register, so that the distribution key continues the ratios used for the calculation of the same magnitudes in that system. These keys are available with a breakdown into both DK-NACE and national accounts industries. Wherever possible, the DK-NACE industry's distribution key is used for these industries.

Table 38 Percentages of the OEEU ["other external expenditure"] item. Examples from industries not included in the services enquiry:

MLS-code	DK-NACE industry:	**524410**	**524420**	**524430**	**524440**	**524450**	**524510**
4046	Expenditure on insurance	4.31	3.32	5.87	5.37	5.58	5.84
7024	Renting and leasing, n.e.c. and unspecified	2.92	4.87	2.00	2.71	3.46	3.33
7027	Repair and maintenance of buildings	2.92	1.04	0.51	1.32	0.92	1.22
7035	Repair and maintenance, n.e.c. and unspecified	1.77	1.38	1.22	2.09	2.26	2.09
7042	Other external expenditure which is input	88.09	89.39	90.39	88.51	87.79	87.52
		100.00	100.00	100.00	100.00	100.00	100.00

3.1.2.3.7.2.7 Correlation of accounting statistics and industrial commodity statistics*

"Commodity statistics", i.e. product statistics for the extraction of raw materials 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 accounting statistics. Previously, it was automatically assumed that the branch allocation in the accounting statistics was most likely to be correct, since it was decided at a later stage on the basis of knowledge of the composition of output in the accounting year in question, whereas the branch allocation in the commodity statistics showed the composition of output for a previous accounting year.

As already mentioned, the firm accounting statistics for 1995 were branch-allocated on the basis of an examination of the commodity statistics for that year, whereas the workplace statistics complied to a greater extent with the branch allocation in the business register, which was based on earlier information from commodity statistics. Since the national accounts have introduced corrections to the workplace statistics wherever possible so that they are allocated to the same branch as in the firm statistics, it must be assumed that it is still most logical, failing better information, to go by the accounting statistics if these conflict with commodity statistics.

The accounting 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 accounting 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 depends to a large extent on which version of the business register is used, and this can lead to difficulties for the comparison with statistics based on other register versions.

* This is the translation used by Danmarks Statistik - cf. Chapter 11.

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 accounting statistics. In 1995, the commodity statistics units were still identified using an "SAF" number. Previously, for use in regional accounts, a series of transition keys had been produced for SAF/JUR numbers from years 1993 to 1997. By searching in these keys, we managed to link JUR numbers to most of the commodity statistics' kind-of-activity units[5]. Not all units could be compared with the corresponding units in the accounting statistics. There were obviously the fewest problems in firms with only one kind-of-activity unit. The largest of the sales figures among the non-matching enterprises are shown in Table 39:

Table 39 Non-matching units in commodity statistics (VS) and accounting statistics (RS)

Branch:		Sales in commodity statistics, DKK million
151390	Other production, processing and preserving of meat products	846
155200	Manufacture of ice cream	898
158300	Manufacture of sugar	2 723
159100	Manufacture of distilled potable alcoholic beverages	556
244200	Manufacture of pharmaceutical preparations	7 545
245120	Manufacture of polishing and cleaning preparations	1 436
246300	Manufacture of essential oils	530
268210	Manufacture of asphalt and roofing felt	980
297110	Manufacture of domestic refrigerators and freezers	1 358

In the main, therefore, the matching problem seems to affect large units. In cases where the commodity statistics' kind-of-activity units appear to cover the same enterprise as in the accounting statistics to a reasonable extent, the accounting statistics' kind-of-activity industry was transferred automatically to the commodity statistics unit.

Various doubtful cases were examined more closely and in some cases the branch allocation in the accounting statistics was corrected in the input data used for the final run[6].

The particular difficulties of comparing units by JUR number/DK-NACE industry and SAF numbers were noticeable up to 1997, where the commodity statistics units are also available with JUR numbers. An incomplete match meant that a good number of estimated corrections had to be made to the breakdown of the industries' sales by product, which is otherwise based on the commodity statistics. Attempts were made here to ensure that total sales in each of the national accounts' product balances were not smaller than the sales which appear in the commodity statistics.

5 In cases where the same kind-of-activity unit had more than one possible JUR number, these numbers were prioritised, so that first of all a match was sought with the most up-to-date. When we managed to match a kind-of-activity unit with the accounting statistics, sales figures were compared to see whether it was the same unit which had been found in both sets of statistics.

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

3.1.2.3.7.3 Dividing lines between the accounting statistics system, the tax accounting system and other calculation systems

Ideally, the different accounting systems, i.e. the accounting statistics system, the tax accounting system, the systems for calculating on the basis of industry-specific accounting 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. Often, however, the situation is 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.

I. FBRUDE

As already mentioned, the questionnaire-based accounting statistics information on workplaces is also used where the workplaces belong to firms within the scope of the tax accounting system. In general, the accounting 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. For a consistent estimate of the accounting statistics system and the tax accounting system overall, however, the way in which the tax accounting system 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). The national accounts calculation systems are constructed in a way which ensures that this basic constraint on totals is met.

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

If the questionnaire-based accounting statistics and the JUR-VAT which is used as the basis for grossing up in the tax accounting system were based on a common view of the delimitation of firms and their workplaces, and used the same unit allocation by industry, the task would be simpler. Even though it would be misleading to claim that there are big differences in the different versions of the business register in force at different times, there are nonetheless so many dissimilarities that the resulting problems are substantial, especially since the really large firms are frequently reorganised and acquire or dispose of enterprises during the year. Checks have had to be run to avoid obviously unreasonable results, e.g. large residual items with the opposite mathematical sign in the tax accounting system's firm branches.

In the first instance, the accounting figures relating to the FBRUDE units have to be allocated to firm branches which match their allocation in the JUR-VAT file. The accounting statistics file with FBRUDE workplaces is correlated with JUR-VAT. Where the accounting statistics JUR numbers can also be found in JUR-VAT, the firm branch is corrected to the JUR-VAT branch allocation. In addition, a list is printed out showing those amounts, divided by branch, which it was not possible to match with the JUR-VAT file. In such cases, the workplaces involved must be those which the

register allocates to different units in the two sets of statistics. In 1995, there were many such small units spread over most industries. In some industries, however, the magnitudes involved are significant. These are: 503010, Wholesale of motor vehicle parts and accessories, and various branches within NACE 51, Other wholesale: 515100, Wholesale of automotive fuels etc, represents very large unmatched sales which, however, do not account for a gross margin of any significance. As might be expected, there are problems in the area of 521110 - 521210: grocers' shops, supermarkets and department stores, where value added of the order of DKK 500 million could not be matched by JUR number in 1995. Finally, there are problems with 602410, haulage contractors, and within 74: other business activities. Even though we did not manage to find the units in JUR-VAT, it is assumed that the units are allocated uniformly in the statistics unless there are indications to the contrary.

Next, 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 tax accounting system's "firms", the items are first of all recoded, to convert them to the (reduced) accounting plan used here. The FBRUDE figures are compared with the corresponding accounting figures in the tax accounting system's firms. In cases where the separating out would leave the remainder with an invalid negative sign, the remainder are 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 tax accounting system. No further action is taken with insignificant and probably random differences of this kind. With larger differences there is a more thorough investigation into what has gone wrong. Typically, the larger enterprises which can give rise to problems can be found in the business register and on the Internet. In some cases, this may lead to corrections to the data input into the calculation systems. In others, it may be necessary to estimate corrections to any implausible initial estimates (target totals), which may have been produced by the calculation systems.

II. Correlation of accounting statistics and MS-JUR. Removal of dual coverage. Correlation of questionnaire-based accounting statistics and MS-JUR

Experience shows that the JUR-VAT file which is the starting point for the tax accounting register may include firms liable for VAT which at the same time may occur in public enterprises, government non-market activities or the questionnaire-based accounting 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.

Since tests have made it clear that the allocation of firms to branches is not always the same in the various sources, as a result, for example, of extracting from the business register on different dates, 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 accounting statistics, government non-market output (OIMA) in S.13 or the questionnaire-based accounting statistics, before the remainder is divided up in the tax accounting statistics system.

In particular, the public units in the JUR-VAT had to be "cleaned out". 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. In 1995, a large number of units with ownership code 093: the National Church and 194: parish councils also had to be taken out of the market activities of JUR-VAT. Finally, a check was made on which large units with ownership codes 070: central government, 081: counties and 082: 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.

The firm file from the questionnaire-based accounting statistics is then correlated with JUR-VAT from which public units have been removed. In cases where a firm is found in both accounting statistics and JUR-VAT, VAT sales and purchases according to JUR-VAT are compared with the corresponding figures which can be compiled from the accounting statistics. In principle, the accounting statistics' firms should not be included in the population of firms divided by kind-of-activity unit in the tax accounting system - assuming, of course, that the firms have the same delimitation in both sets of statistics. The 1995 comparison highlighted a number of firms where there were considerable differences in the two sources, and it is therefore scarcely reasonable to assume automatically that the differences can be explained by differences in periodisation. It was decided not to assume automatically that the JUR-VAT unit is covered in full by the questionnaire-based accounting statistics if the JUR-VAT figures are very much larger than the corresponding figures in the accounting statistics. In 1995, the criterion was a difference in sales > DKK 25 million and > 3% and a difference in sales minus purchases > DKK 3 million and > 15%. Just over 100 firms had differences which met this criterion. In these cases, the differences were kept in the JUR-VAT file, and in the other cases the firms were removed. To the extent that these are firms which, in the final analysis, are allocated to the national accounts branches which fall within the scope of the questionnaire-based accounting statistics, the remainder retained is unimportant for the tax accounting system's calculation and thus the calculation of total value added. The major differences were with a few large firms in the tobacco industry, pharmaceutical products manufacturing, shipyards, supermarkets and department stores, i.e. units where it must be assumed that the accounting statistics provide the best basis for determining the economic magnitudes and should therefore take precedence over other sources. The differences which are allowed to remain therefore have no great effect on value added. Other than any periodisation problems, the main reason for these differences must presumably be sought in differences between the accounting statistics' breakdown into kind-of-activity units/workplaces and the VAT statistics breakdown into VAT units, since it can be assumed that internal deliveries have not been removed altogether from JUR-VAT.

A further check consists in comparing sales and purchases in the questionnaire-based accounting statistics for non-matching JUR numbers. In 1995, print-outs of these figures divided by DK-NACE industry showed total calculated VAT sales of DKK 13.7 billion and total VAT purchases of DKK 10.7 billion for non-matching accounting statistics units. In JUR-VAT, there were overall in the same branches non-matching units with VAT sales totalling DKK 14.0 billion and VAT purchases of DKK 10.2 billion[7]. Some of the non-matching units in JUR-VAT have few if any sales, and there is no really good convergence between the breakdown by branch for the non-matching sales in the two sources. The figures show, however, that it is reasonable to argue that the accounting statistics give more or less the same result for the non-matching units as would have emerged if the calculation were based instead on the JUR-VAT units. In the light of these checks, it was decided to take the view that the accounting statistics give a complete description of the industries they cover and that the firms which are left in the JUR-VAT after the accounting statistics firms and the public units have been

[7] In 1996 and 1997, the non-matching share of JUR-VAT sales increased by a good deal more than the corresponding non-matching share of accounting statistics sales. This would appear to be due primarily to the fact that a number of pro rata consortia were included in the JUR-VAT figures in connection with bridge-building (the *Storebælt* and the *Øresund* bridges) but were deliberately excluded from the accounting statistics since they recurred in the accounts of the individual contractors and did not contribute to the value added of construction.

removed are the best possible estimate of those firms which should be included in the tax accounting system's calculations.

3.1.2.3.7.4 Transition from firm branches to national accounts industries in the tax accounting system

A "control key" controls which industries are to be collected from the accounting statistics system/tax accounting system for the intermediate system. This key is continuously adjusted as the questionnaire-based accounting statistics are extended and are gradually replacing the accounts based on tax accounting statistics within the services industries.

To avoid delimitation problems, units which are calculated in full in the questionnaire-based accounting statistics and, wherever possible, units included in OIMA or calculated on the basis of industry-specific accounting statistics or accounting statistics for industries where public corporations predominate are stripped out of the JUR-VAT file, as mentioned in the previous section, before it is used as the basis for grossing up in the tax accounting system.

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 questionnaire-based accounting 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 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 relinquishes value.

In a number of cases which are significant in quantity terms, further information is available in the form of a distribution of the firm branch turnover by product group, for example. In this case, this information is used to determine the output which is to be transferred between the industries with the switch from firm branches to kind-of-activity industries, and it replaces the calculation described above which is based on the distribution of the firms' total wages and salaries by industry according to the industry breakdown of the associated workplaces. This kind of direct information on the breakdown of sales/output is available, for example, for the extremely important motor vehicle repair activity in the trading industries and for sales of convenience goods at service stations.

3.1.2.3.8 Sector-industry tables

Since the national accounts processing of accounting statistics includes a systematic double coding of both the accounts actually observed and the grossed up share by industry for the individual producer unit and institutional sector for the firm to which the producer unit belongs, sector-industry tables appear directly in the accounting system, including for those sectors where the accounting figures collected are grossed up.

3.1.2.4 Industries with output value calculated as price times volume

3.1.2.4.1 Agriculture, horticulture and the raising of fur animals

3.1.2.4.1.1 Delimitation and consistency vis-à-vis other industries

Agriculture, horticulture and the raising of fur animals covers national accounts industries 011009 agriculture and 011209 horticulture, orchards, etc. In agriculture, to which the raising of fur animals belongs, there is only market activity. Horticulture consists of both 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 Section 3.1.2.2.1, general government. A certain percentage of government non-market activity in the DK-NACE classification comes under horticulture.

The following description refers to market activity. In the national accounts, this is defined by activity, i.e. "agriculture", for example, is the single activity of producing agricultural products. All productive activity on agricultural holdings which does not involve the production of agricultural products is transferred to the relevant industries. In practice, secondary activity on agricultural holdings is predominantly the letting of dwellings (including holiday homes) and non-residential premises. This secondary activity is transferred to the relevant industries (702009 the letting of dwellings or 702040 the letting of non-residential buildings etc.). The statistical producer units for agriculture, horticulture and the raising of fur animals are thus units of homogeneous production as defined in the ESA 95, paragraph 2.112. If a given agricultural holding produces both agricultural and horticultural products, the holding 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.

3.1.2.4.1.2 Statistical sources

The statistical source for agriculture, horticulture and the raising of fur animals is Danmarks Statistik's agricultural statistics which, as already stated, are a national accounts estimate. The statistics comply with the guidelines in Eurostat's agricultural statistics manual. The calculations of intermediate consumption are based on 1) quantities of products used multiplied by the average selling price, 2) accounting information collected by the economic advisers for agriculture and 3) annual accounting statistics for agriculture and horticulture compiled by *Statens Jordbrugs- og Fiskeriøkonomiske Institut*.

Agricultural statistics are the statistical source in the national accounts for the estimate of national accounts industries 011009 agriculture and 011209 horticulture and orchards, etc.

However, the agricultural statistics estimates include machine pools, which in the national accounts come under 014000, agricultural services*. Since all the output of agricultural services is inputs for agriculture, this does not affect the estimate of value added. In the national accounts, agricultural services [machine pools] are calculated separately from tax-based accounting statistics and the activity is transferred to industry 014000, agricultural services.

For reference year 1995, the Danish agricultural statistics were compiled in line with the "national farm" principle set out in the previous edition of the EU agricultural statistics manual, which means that direct sales between agricultural holdings which do not involve intermediaries are netted out. Strictly speaking, this conflicts with the ESA 95, which requires internal deliveries within agriculture to be included in the estimate of gross output and intermediate consumption. According to the ESA 95, the statistical unit for the production account is the local kind-of-activity unit (producer unit) in agriculture as in all other industries. Since this discrepancy is, however, temporary and does not affect GNI, it was decided not to deconsolidate in the national accounts but to keep the direct and easily verifiable link with the published agricultural statistics. As from reference year 1999 inclusive, agricultural statistics have switched to using the local kind-of-activity unit as the statistical unit. As from that year, this relatively unimportant point therefore complies in full with the ESA 95 principles.

3.1.2.4.1.3 Method of calculation

The usual method of calculating output is to use prices multiplied by quantities (volumes). For the largest crop product, cereals, the yield of the individual kinds of cereal harvested is calculated first of all. These figures are then multiplied by the average selling prices for cereals collected from all the larger cereal merchants. For the largest animal product, i.e. pigs for slaughter, the sales value is calculated in a similar way on the basis of the total number of slaughterings at abattoirs and slaughterhouses as reported to *Fødevaredirektoratet* [the Danish Veterinary and Food Administration]. This quantity divided by the number of types of animals slaughtered is multiplied by the average settlement weights reported to the *Danske Slagterier* organisation. Thus a figure is arrived at for the number of kilograms of slaughter meat divided by category of pig. The price variable is calculated monthly on the basis of the official *Danske Slagterier* prices.

3.1.2.4.1.4 Estimate of intermediate consumption

On the basis of the sources referred to in 3.1.2.4.1.2, total intermediate consumption is calculated by grossing up to the total population of agricultural holdings. The figures are grossed up separately for the very small holdings not covered by the annual agricultural censuses. A large share of intermediate consumption can be calculated extremely reliably on the basis of domestic supplies, either as physical quantities multiplied by an average price or as an estimate of total sales to agriculture. The source for that share of inputs to which the above does not apply is accounting information available either from accounts collected by economic advisers to agriculture or the annual sample-based accounting statistics for agriculture and horticulture which come from *Statens Jordbrugs- og Fiskeriøkonomiske Institut*.

3.1.2.4.1.5 Breakdown of output by product

Since agriculture, horticulture and the raising of fur animals are activity-defined on the basis of the products produced and the estimate of value added using a price times volume method, the product breakdown is self-evident.

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* The Danish translates literally as "machine pools, landscape gardeners, etc.".

3.1.2.4.1.6 Breakdown of intermediate consumption by product

In the agricultural statistics, the majority of intermediate consumption is broken down by product directly, usually on the basis of information on quantities of the products in question used (e.g. cereals for fodder) multiplied by average prices or from information on sales to agricultural holdings (feedingstuffs, fertilisers, pesticides). The remaining share of intermediate consumption - energy and services, for example - which is typically calculated from accounting statistics, is available in agricultural statistics in a breakdown by main type of product. For the compilation and balancing of the national accounts supply and use tables, national accounts statisticians divide these main types into individual products, generally using the most detailed accounting plan in the accounting statistics.

3.1.2.4.2 Dwellings

3.1.2.4.2.1 Delimitation and consistency vis-à-vis other industries

Industry 702009, dwellings, is 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 industry covers both the production of dwelling services in the form of letting dwellings (actual rentals) and imputed rentals in owner-occupied dwellings.

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 702040 the letting of non-residential buildings etc.

In practice, the output value in the "dwellings" industry 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 702040, the letting of non-residential buildings etc., is estimated from the expenditure side.

3.1.2.4.2.2 Statistical sources

The output value of dwellings is estimated every fourth year as a benchmark calculation of the price times volume type, based on the total stratified housing stock and comprehensive rental figures covering almost two-thirds of all dwellings in Denmark which are let. A description of the annual estimates of the housing stock and of the major four-yearly rental surveys can be found in Section 11.3. Both sources must be considered to be of high quality.

In years between the benchmark calculations, the latest benchmark is projected using price and volume indicators. The price indicator is rental information from the sample survey of rentals which

is carried out every six months to provide information on changes in rentals in the consumer price index. Section 11.3 describes this source. The volume indicator is information from building statistics based on *Bygnings- og Boligregistret (BBR)* [the Register of buildings and dwellings] which gives the number of square metres constructed combined with an estimate of the number of dwellings demolished.

3.1.2.4.2.3 Method of calculating output

The benchmark calculation is particularly detailed and uses the stratification method which the GNP Committee approved as the preferred method. The stratification of the housing stock is much more detailed than the minimum requirements set out in the Commission Decision (95/309/EC, Euratom). Whilst this Decision requires a minimum of 30 strata, the Danish calculation of levels for 1995 uses 896 strata. A detailed account of the method of calculation can be found in Section 3.17.

In general, a new benchmark can be calculated two years before the national accounts become final for the year to which the estimate refers. The discrepancies - normally slight - that will occur between the projected former benchmark estimate and the latest estimate can therefore normally be spread over two years as general data revisions between provisional and final estimates. The four-yearly benchmarking is intended to ensure that the calculations for dwellings, which are some of the most important in the national accounts, do not "go off the rails".

3.1.2.4.2.4 Estimate of intermediate consumption

This is calculated separately for dwellings which are let and owner-occupied dwellings, using an input percentage (intermediate consumption/output) derived from accounting material for landlords/owners. The source for dwellings which are let is the accounts for all social housing corporations. These are market non-profit institutions which come in the non-financial corporations sector. They let housing which more often than not has been built with the help of public funds in the form of direct or indirect rent subsidies. This social housing makes up around 43% of all dwellings which are let, and there is no reason to assume that their costs structure (operating expenditure excluding interest expenditure) is not representative of the letting market as a whole. For owner-occupied housing, the accounting figures come from the FU [Survey on income and expenditure = household budget survey] The respondents who are owner-occupiers are extracted. Stamp taxes on housing loans and financial intermediation services which are paid for directly* and which are inputs for the dwellings industry are calculated not from the above-mentioned accounting figures but from separate information from tax statistics and statistics on financial institutions.

* Please see note on the use of "paid for" in Chapter One.

3.1.2.4.2.5 Breakdown of inputs by product

The most important intermediate consumption item is ordinary repairs and maintenance. Information on these items can be found separately in the accounts for the social housing corporations and in the FU. The whole of expenditure on ordinary repairs and maintenance in corporations which let dwellings must by definition be considered as intermediate consumption. As regards expenditure on owner-occupied housing, that share of ordinary repairs and maintenancewhich would normally be paid for by the tenant if the dwelling were let, i.e. minor routine repair and maintenance work, is treated not as intermediate consumption but as private final consumption expenditure. Typically, this is internal maintenance in the form of painting, wallpapering and flooring maintenance. Such items are calculated from the detailed FU estimate of expenditure on craftsmen and materials.

The other intermediate consumption expenditure items, apart from stamp taxes on housing loans and fees to financial institutions, are generally divided by product on the basis of the summary breakdown of operating expenditure other than on repairs and maintenance by major type in the social housing corporation accounts.

3.1.2.4.3 Non-profit institutions serving households

3.1.2.4.3.1 Delimitation and consistency vis-à-vis other industries

In exactly the same way as Sector S.13, General government, by definition covers only government non-market producer units in the Danish national accounts, Sector S.15, Non-profit institutions serving households, by definition covers only private non-market producer units. All market producer units which belong to private non-profit institutions are treated as quasi-corporations and transferred to the non-financial corporations Sector S.11 or the financial corporations Sector S.12.

The only real delimitation and consistency problem which occurs with private non-market producers is the link between unemployment funds and trade unions. Unemployment funds are part of S.13 whereas trade unions come under S.15. In practice, many unemployment funds are administered by the trade unions to which they are linked, and the funds reimburse the trade unions for the relevant administration costs. This activity overlap is calculated on the basis of the accounts for the country's largest trade union HK [the Union of Commercial and Clerical Employees in Denmark], which is considered to be representative of this field. That share of trade union activity which is for the account of the unemployment funds is already included in the public accounts which are the basic data for the calculation of S.13, and therefore have to be stripped out from the calculation of activity in trade unions.

3.1.2.4.3.2 Statistical sources

By far the largest expenditure component in the case of private non-market output is the wage or salary bill. If, in this area where statistical coverage in the accounts is weak in virtually all countries, one can at least be certain that the total wage or salary bill is included, then one has gone a long way towards reliable and exhaustive estimates. This is the case in Denmark, where the ERE* statistics calculate the total wage or salary bill in all producer units in the economy, including in private non-profit institutions serving households. This is the main source for the calculation.

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* *Erhvervsbeskæftigelsesstatistik*, translated into English in Danmarks Statistik publications as "Establishment-related employment statistics" (ERE). Please see Section 1.4.2.

For want of accounting statistics in this field, the other components in the estimate of output from the costs side, i.e. intermediate consumption, consumption of fixed capital and other taxes and subsidies on production, are calculated on the basis of the accounts for the largest trade union (HK). The ratio of, for example, intermediate consumption and total wages and salaries in this trade union is thus assumed to be representative of all private non-market producers. The validity of this assumption should be judged in the light of the fact that trade unions in Denmark make up by far the largest share of private non-market producers and that it is reasonable to take the HK costs structure to be representative of trade unions in general.

3.1.2.4.3.3 Method of calculation

The starting point is, as already mentioned, direct and complete coverage of the total wage bill. Since all employees are covered by the ERE statistics, there is no need for any grossing up on the basis of employment data etc, with the uncertainty that this would imply. The total wage bill in the ERE statistics is raised by 15% to cover the employer contributions to pension schemes etc, which are to be included in the national accounts compensation of employees. Intermediate consumption excluding repairs and maintenance are estimated, on the basis of HK's accounts, at 55% of total wages and salaries (excluding employer contributions). The repair and maintenance of buildings and machinery is put at 5%/1% respectively of total wages and salaries. On the basis of the national accounts capital stock estimates, the consumption of fixed capital is put at 49.4% of the wage bill. Finally, other taxes and other subsidies on production are calculated in the national accounts' special calculation system for taxes and subsidies.

3.1.2.4.3.4 Production in private, non-market producer units

Output value is estimated as the sum of the cost components intermediate consumption, compensation of employees, other taxes on production less other subsidies on production and the consumption of fixed capital.

3.1.2.4.3.5 Breakdown of output by industry and product

Private (other) non-market output occurred in the following national accounts industries in 1995:

853209 Social institutions etc. for adults
910000 Activities of membership organisations.

In addition to the private non-market output of NPISHs, these two national accounts industries include output in government non-market producer units. There are no market producer units in these two industries.

The total output value of NPISHs was DKK 8 187 million in 1995, divided into the following products which each correspond to an industry code at the most detailed industry grouping (DK-NACE):

Table 40 Output of NPISHs divided by product, 1995

Product number	Text	Output (DKK 1000
853255	Associations combating diseases and performing activities aimed at social work, etc.	1 031 456
853260	Charitable trusts and foundations	242 683
911200	Activities of professional organisations	666 381
912000	Activities of trade unions	4 511 771
913120	Activities of religious institutions and organisations	389 868
913200	Political parties	162 711
913310	Tenants' associations	82 206
913320	Outdoor organisations	126 690
913330	Other political and ideological organisations	259 905
913340	Other professional and cultural organisations and institutions	308 180
913390	Social associations, lodges, etc.	404 920
Total		8 186 771

3.1.2.4.3.6 Breakdown of intermediate consumption by product

The items "rentals" and "repair and maintenance" are estimated directly in HK accounts and these percentages are used for all NPISHs combined. For the other intermediate consumption, there is no accounts-based costs structure. The breakdown is based on the costs structure in similar activities within business services and on common sense considerations, such as the fact that a certain number of office staff equals a certain supply of window polish for the windows in the offices occupied.

3.1.2.4.4 Private households with employed persons

3.1.2.4.4.1 Delimitation

National accounts industry 950000, private households with employed persons, comprises private home help supplied by persons who do not invoice their customers for the work they do. By far the majority is some kind of hidden activity or work such as babysitting by children and young people who do not pay tax because their income is below the threshold. Private cleaning and garden maintenance etc. carried out by firms under the "home service scheme" are not covered. This activity is included as market activity in national accounts industry 747000, industrial cleaning. The public subsidy for the "home service", one of the purposes of which is to counteract work in the black economy, is treated in the national accounts as a subsidy on products.

3.1.2.4.4.2 Choice of sources

Consumer surveys versus labour force surveys:
Since most of the activity is "concealed", tax information is not useable here, covering as it does only a small part of the activity. *A priori*, it is likely that the FU [household budget survey] will be a suitable source, since it puts questions to the purchasers and not the vendors. Since it is only a minority of households which have help in the house to any noticeable extent, however, the sampling uncertainty in the FU is too high for it to be a realistic source. Instead, it was decided to carry out a benchmark survey linked to the labour force survey for 1992, in which the households were asked a series of questions on their untaxed activities. Interviewees were asked about the number of hours worked and their income. On the basis of these figures, a benchmark value was fixed for output by grossing up to the total population.

3.1.2.4.4.3 Benchmark years versus current years

The benchmark value calculated for 1992 is 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 new benchmark will next be established when resources can be made available to extend the labour force surveys to include special questions on work in the black economy.

3.1.2.5 Industries where output is estimated from the expenditure side

3.1.2.5.1 Letting of non-residential buildings etc. - consistency

In the Danish national accounts, there is only one industry where all output value is calculated indirectly from the expenditure side, namely 702040, the letting of non-residential buildings etc. There are two reasons for this, firstly that the letting of non-residential buildings is commonly a secondary activity, and secondly that the estimates of the output and input of non-residential rentals need to be consistent. The problem is particularly crucial in that non-residential rentals in 1995 totalled DKK 25 billion. By their very nature, they have only one use, namely as intermediate consumption.

As already mentioned, the letting of non-residential buildings is very largely a secondary activity carried out within institutional units (firms) which are classified according to their main activity in other industries such as life insurance and pension funds. An estimate of output value based directly on the accounts for firms whose main activity is in industry 702040 would in all cases omit a huge volume of non-residential rentals which should be transferred from secondary activities in other industries. And even without this complication, a direct estimate of actual output value would be difficult because the letting of non-residential premises is not subject to VAT although many landlords voluntarily register so that they can deduct VAT on purchases. VAT sales in the industry are therefore not a suitable basis for grossing up the figures. For obvious reasons, the apparent alternatives, namely employment or total wages and salaries, are not particularly good bases for grossing up in an industry where by far the most important primary factor of production is capital stock.

The calculation of the output value of those industries which are the main activity of firms which also have a secondary activity in the form of letting non-residential buildings ignores rental income.

Under the Annual Accounts Act and all regulations relating to accounts and accounting statistics forms, such income is to be posted under the accounting item "secondary income", which covers ordinary income not earned from the ordinary operations of the enterprise concerned, such as reimbursements of daily allowances for sick leave and maternity leave, income from canteens and income from non-residential rentals. None of these items is included in the estimate of the output value of the main activity - cf. the description of the link between the intermediate system and the target total module. Like non-residential rental incomes, income from canteens is processed separately. It is transferred to restaurants, along with the intermediate consumption which goes with it.

If we are to avoid omissions and double counting in this field, it is crucial that the product balance for non-residential rentals be compiled as determined in advance and that the output value be calculated separately from all other output and counted as equal to the non-residential rental expenditure included in the calculation of total intermediate consumption in the individual industries. Anything else would mean a risk of inconsistency in the calculations, with a direct effect on GDP. As an illustration, let us assume that the output value of the letting of non-residential buildings was calculated on the basis of grossed up accounting statistics as value x and that the input of non-residential rentals was lumped together with other services in the calculation of intermediate consumption in the industries on the basis of grossed up accounting statistics and was adjusted at a much more aggregated level. An analysis of the "rentals" accounting item in the grossed up accounting statistics could reveal that a value y for non-residential letting was in fact entered as input to the economy, whilst output of non-residential rentals was calculated as x. This inconsistency would obviously lead to an incorrect measure of GDP. Since, as already mentioned, non-residential letting accounts for a substantial amount, the error could be quite significant. Estimating non-residential rentals from the expenditure side guarantees consistency and ensures that any incorrect measure of total non-residential rental expenditure has no effect on GDP/GNI.

3.1.2.5.2 Statistical sources

Since the output value of non-residential rentals is estimated as the sum of non-residential rental expenditure in all industries in the economy, the sources for the estimate are those accounting statistics which underlie the estimate of value added in all the industries in the economy as described earlier in this chapter.

Intermediate consumption in industry 702040, the letting of non-residential buildings, is calculated by applying the input percentage, i.e. the ratio of intermediate consumption to output value, in the letting of dwellings to the letting of non-residential premises as well. For 1995, this figure was 25.6%.
(This percentage is applied to output value excluding fringe benefits.)

As a result of widespread secondary activity in the letting of non-residential buildings, this method of calculation is considered more reliable at present than a method consisting of applying the input percentage from the available accounts for non-residential letting corporations. When the new questionnaire-based accounting statistics are complete for reference year 1999 onwards, the amount of detailed accounting information from property companies will increase markedly, and it will be appropriate to reconsider whether the input percentage should be based on these accounts.

3.1.2.5.3 Breakdown of inputs by product

Since there is no separate information on the structure of costs for non-residential letting, the input structure is based on the input structure of the letting of dwellings. This is then adjusted with the annual balancing in the light of the supply and use of the products in question. As is the case with the

letting of dwellings, the largest component of intermediate consumption is the repair and maintenance of buildings.

3.2 Valuation

According to the ESA 95, output has to be valued at basic prices. Since the 1940s, this has been the value used in the Danish national accounts, so in this respect nothing has changed for Denmark, which has always thought that the "producer prices" concept in the ESA 79 was inappropriate in the national accounts from the point of view of both producing and analysing statistics.

Danish accounting and product statistics have always asked for turnover in basic prices, partly for national accounts purposes but also simply because 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 ESA 95 concept of basic prices. The sales observed in the sources are sales at basic prices.

3.3 Transition from private accounting and administrative concepts to ESA 95 national accounts concepts

3.3.1 Uniform principles for the transition from business accounting concepts to national accounts concepts

One characteristic of the Danish national accounts is a consistent and uniform transition from the principles of business accounts to national accounts concepts. This means, firstly, that the necessary conceptual corrections are made for all industries in the economy and not simply for selected industries where they are of particular importance. Secondly, the transition is based on uniform principles, using the same sources and methods in all industries in the economy. For example, the same method is used for all industries to correct for that share of insurance premiums paid which must not be included in the estimate of intermediate consumption.

In Denmark, the accounts of corporations are governed by the Annual Accounts Act if they are non-financial, and if they are financial corporations by orders issued by *Finanstilsynet* referring to the filing of accounts under various laws. Sole proprietorships are not subject to the Annual Accounts Act but to the Bookkeeping Act, the requirements of which are less stringent. However, since these enterprises have to submit standardised accounting information (SLS-E) forms when the owner(s) file(s) income tax returns, they are in fact subject to legislation on the submission of accounts which is almost as demanding as the Annual Accounts Act, apart from the fact that there is, of course, no requirement for the accounts to be certified by an auditor. The auditing of the accounts of sole proprietorships will normally be an audit for tax purposes connected with the check on the owner's tax returns.

The fact that the filing of business accounts in Denmark is governed by legislation laying down accounting principles which are, by and large, uniform is extremely important in practice for national accounts. For example, it is important that there should be clear and uniform rules for the whole economy stating which expenditure should be posted as operating expenditure in business accounts and which has to be capitalised, i.e. treated as capital formation. If enterprises were free to choose how to present their accounts in this respect, it would be very difficult to convert them to national accounts concepts, since the accounting principles used for each individual enterprise would have to be investigated. Fortunately, this is not the case in Denmark. The legislation regulates strictly which expenditure may be treated as ordinary operating expenditure and which may be capitalised, i.e. counted as an investment, and this is the key factor which means that when the industries' value added is estimated in the national accounts, the switch from operating expenditure in the business accounts to intermediate consumption as defined in the ESA 95 can be reasonably accurate.

After the accounting statistics in the relevant calculation systems:
(1) the "accounting statistics system" for the questionnaire-based accounting statistics;
(2) the "tax accounting system" for tax accounting statistics;
(3) the calculation systems based on industry-specific accounting statistics - technically known as the "A-file system";
(4) the calculation system for general government statistics - technically known as "OIMA"

have been converted to the common accounting plan for business accounts, there remains the transition to national accounts concepts, as follows: various correction items are entered in the accounting plan, which, in combination with the accounting information transferred from the business accounts, enable figures to be compiled in line with national accounts concepts in the "target total module", MTM. Statistics for general government (S.13) and for industries where public corporations predominate are, however, as already mentioned, converted to national accounts concepts on the basis of information which the Public Finances and Prices Division passes on to the National Accounts Division. The further processing, which for these statistics is carried out in the National Accounts Division, consists basically of incorporating them into the supply and use tables.

The conceptual adjustments which have to be made to arrive at an estimate for national accounts purposes can be divided into two categories:

- corrections which do not depend on the industry concerned, where the same distribution keys for the accounting items in the intermediate system accounting plan are used for all industries and sectors;

- corrections which do depend on the industry concerned, where the corrections to the individual accounting items vary from industry to industry.

3.3.1.1 Corrections which do not depend on the industry concerned

These are:

1. dividing expenditure on "consumables" into capital formation and intermediate consumption;

2. determining the shares of secondary income and secondary expenditure which relate to canteens, and

3. isolating that share of external expenditure which consists of contributions to fighting funds.

Ad 1. Consumables

According to ESA 95, paragraph 3.70 e), producers' purchases of durables with a (total) order value of under ECU 500 in 1995 prices should be treated as intermediate consumption and not as gross fixed capital formation.

The tax legislation includes an equivalent rule on consumables which may be posted as operating expenditure, i.e. written off immediately. It is assumed for national accounts purposes that the accounting statistics information on expenditure on consumables is compiled according to the tax rules. Since these rules are different from the ESA rules, the accounting item has to be split into that part which, according to the ESA rules, is consumables, 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 during years prior to 1995. This means that that share of the "consumables" item which has to be counted as intermediate consumption in the national accounts has had to be reduced and the capital formation share increased. Table 41 shows changes in that share of the consumables item in the accounting statistics which, during the period 1988-1995, was entered as intermediate consumption or gross fixed capital formation.

Table 41 Breakdown of the "consumables" accounting item

Year	% share for intermediate consumption	% share for gross fixed capital formation
1988	**28.0**	**72.0**
1989	**28.1**	**71.9**
1990	**26.5**	**73.5**
1991	**27.2**	**72.8**
1992	**21.0**	**79.0**
1993	**16.5**	**83.5**
1994	**16.1**	**83.9**
1995	**15.1**	**84.9**

The correction is substantial. For 1995, only 15% of the expenditure on consumables considered in the business accounts to be current operating expenditure was treated as intermediate consumption in the national accounts.

Ad 2. Canteens

In the accounting statistics, canteen sales are counted as secondary income and the related costs - other than staffing expenditure - are included in secondary expenditure. Part of the secondary income has therefore to be transferred to net sales and part of secondary expenditure to intermediate consumption.

The amount transferred to net sales is a fixed share of the enterprise's total expenditure on wages and salaries and employer contributions, based on the 1987 FU as follows:

Table 42 Calculation of the running of canteens

	Amounts	Comments
1. Canteen expenditure per person, purchasers' prices	DKK 259	1987 FU [household budget survey]
2. Canteen expenditure excluding VAT	DKK 224	Average VAT 15.5% in 1987
3. Wages and salaries inc. pension contributions per person	DKK 78421	1987 FU
4. Percentage	0.3 %	Item 2/item 3

Since it is assumed that the running of canteens produces neither a deficit nor a surplus, the output value thus calculated is divided into purchases of raw materials and wages and salaries in line with the percentage distribution in restaurants. For years 1988-1995, the breakdown was more or less constant at 64% to raw materials and 36% to wages and salaries, but in the future the breakdown should in principle be assessed every year.

Ad 3. Trade organisations' fighting funds

The subscriptions paid by enterprises to trade organisations are counted in the national accounts as purchases of services and are included in intermediate consumption. However, this does not apply to that share of the subscription which goes towards building up fighting funds, which is considered as a transfer. In the accounting statistics, the total subscription is counted as external costs, and an amount therefore has to be estimated which is entered for national accounts purposes as a transfer and not as inputs.

There is not a great deal of evidence in the statistics on which to base such an estimate. One feasible method would be to estimate the total amount used to build up fighting funds in a given year and to relate this amount to an estimate of total wages and salaries and employer contributions. A corresponding share of wages and salaries as recorded in the accounts is then moved to transfers.

According to a one-off survey of the trade organisations' funds undertaken for the year 1982, their total own funds in that year were DKK 4.7 billion and the DKK 500 million or so in provisions set aside during the year was financed largely from the funds' property income. Since there were no conflicts during the period 1982-1997 on a scale likely to have weakened the funds' finances, it may be assumed that in those years no contribution was made from subscriptions to build up the funds. The share of wages and salaries to be transferred was therefore put at 0 for those years. This share is reviewed annually.

In 1998, there was a major conflict on the Danish labour market, which ate into the employer organisations' fighting funds. In the national accounts for 1998 and subsequent years, the necessary correction is being made for the rebuilding of fighting funds via subscriptions.

3.3.1.2 Corrections which vary from industry to industry

Under this heading, corrections are made for the following 11 output or cost items:

1) bad debts
2) changes in inventories and intermediate consumption price correction
3) correction for net insurance premiums
4) financial intermediation services paid for directly
5) other taxes (subsidies) on production
6) purchased software
7) own-produced software
8) financial leasing
9) public fees
10) licences and royalties
11) entertainment, literary and artistic originals.

Ad a) Correction for bad debts

In business accounts, ordinary losses on bad debts and (ordinary) changes in provisions for bad debt are posted under "Other external expenditure" or "Other current overheads", which as a general rule cover types of expenditure which are to be included in the national accounts estimate of intermediate consumption. Losses on bad debts are not to be treated in the national accounts as part of intermediate consumption, since goods do not disappear from the economy. In the national accounts, losses on bad debts (other than those which are forgiven or cancelled by agreement) are other changes in the volume of assets.

In the questionnaire-based accounting statistics, there is a separate item for "ordinary losses on bad debts". For that share of the accounting figures which is based on the less detailed tax accounts (SLS-E), the item is estimated from the accounting ratios in those firms which have answered the questionnaire. The questionnaire-based item can be transferred directly to the intermediate system accounting plan.

In the "tax accounting statistics", bad debts are included in the "Other current overheads" item. For years prior to 1991, however, they were shown separately on the SLS-E tax account form. The 1990 accounting ratios for the individual industries are used for those industries where the calculation is based on tax accounting statistics, to separate out the bad debts item for the transition to the intermediate system's accounting plan.

Ad b) Price correction for changes in inventories and intermediate consumption

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) Wholesaling inventories
(4) Retailing 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 counterpart to the price correction to changes in inventories in business accounts is a correction of output (stocks of finished goods, stocks of goods for resale) or intermediate consumption according to the business accounts. The two corrections are two sides of the same coin. The correction to the business accounts' output value/intermediate consumption ensures that output- and income-based GDP are compiled in line with ESA principles. Similarly, the correction to changes in inventories according to business accounts ensures that expenditure-based GDP is compiled in accordance with the ESA 95 principles. The correction to intermediate consumption and inventory movements by the same values follows directly from the accounting identity, i.e. supplies are equal to uses of products.

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.

Ad c) Net insurance premiums and supplementary premiums

As discussed in Section 1.3.4.5, there is here, with good reason, a difference between the accounting principles in business accounts and in national accounts. 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 3.16. 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 130 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 95 rules with the compilation of the target total module (MTM).

Ad d) 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 - cf. Section 3.16. 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 e) Other taxes (subsidies) on production

These taxes - property taxes or road fund licences, for example - are included in the business accounts under the items "Other external expenditure" or "Other overheads". They are thus not shown separately in the business accounts but are part of a more broadly defined accounting item which primarily covers types of expenditure which are to be included in the estimate of intermediate consumption. If no correction were made, these taxes on production would incorrectly be counted in with the calculation of intermediate consumption.

The source is the national accounts calculation system for other taxes on production. In this system, these taxes are available in a breakdown into the national accounts' 130 industries, and the values are distributed over the detailed DK-NACE industries on the basis of the distribution of output within each of the 130 national accounts industries. The other taxes on production thus calculated are deducted from the accounting item "Other external expenditure" in the intermediate system and hence in the compilation of the target total module, MTM.

Other subsidies on production also come from a special calculation system in the national accounts. In the business accounts, they will normally come under the "secondary income" item which is generally not used for the estimate of national accounts.

Ad f) Purchased software

In Danish business accounts, software which is purchased is not normally capitalised but is considered as current operating expenditure. This practice stems from the custom of applying a prudence principle. The value of purchased software, which, according to the ESA 95, has to be counted as gross fixed capital formation, therefore has to be deducted from the operating expenditure items in the business accounts which cover purchases of goods and services.

In the national accounts, purchased software is calculated in a subsystem which, *inter alia*, includes a breakdown by industry. The calculation is made from the resources side on the basis of product statistics for the IT industries. The total domestic supply of purchased software for the industries thus calculated is distributed by industry on the basis of a key which, *inter alia*, depends on the number of computers in the individual industries. To some extent, the key is an approximation, for want of expenditure-based information on software purchases. The uncertainty about the distribution by industry within market industries does not, however, affect GNI, and the total for the economy as a whole may be said to be based on reasonably solid foundations.

The values in the subsystem are input into the intermediate system, with purchased software deducted from the business accounts' purchases of goods and services for the estimate of intermediate consumption in the target total module.

Ad g) Own-produced software

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). This practice stems from the Annual Accounts Act and the customary application of a prudence principle. 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 MTM.

Ad h) Financial leasing

In Danish business accounts (other than the accounts for shipping companies), rental payments under financial leasing contracts traditionally count as expenditure on the intermediate consumption of services. This expenditure is assigned to the accounting item "Other external expenditure" or "Other current overheads". According to the ESA 95, rental payments under financial leasing contracts, other than the minor share which is FISIM, and which for the time being is not broken down by user, are not transactions in products. According to the ESA 95, rental payments consist of three components: 1) interest, 2) repayments and 3) financial intermediation services paid for indirectly (FISIM). If business accounts were not corrected for financial leasing, the result would be an overvaluation of intermediate consumption.

In the national accounts, payments under financial leasing contracts are broken down into three components as above. The interest component is a property income transaction which goes into the non-financial sector accounts. The repayment share is a financial transaction occurring in the financial sector accounts and the FISIM is for the time being posted as intermediate consumption in an artificial sector and an artificial industry.

Payments under financial leasing contracts and the breakdown by industry are calculated in a national accounts subsystem. In the questionnaire-based accounting statistics, there are special questions on financial leasing. The values are recorded in the intermediate system and for the calculation of the MTM the financial leasing payments are deducted when intermediate consumption is estimated.

Where payments under financial leasing contracts are concerned, business accounting practice over the past few years has been moving towards recording on the basis of the national accounts principles in the ESA 95. This change is being monitored closely for national accounts calculation purposes, and the correction for conceptual differences is continually being adjusted industry by industry in the light of changes in accounting practice.

Ad i) Government fees

According to the ESA 95, 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.

Ad j) Licences and royalties

According to the ESA 95, 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 already covered elsewhere - cf. f) above. These values are recorded in intermediate system 2 and included in output and intermediate consumption when the MTM is compiled.

Ad k) Entertainment, literary and artistic originals etc.

In the business accounts of authors, artists etc, the value of the originals they create will not be counted as output of capital goods, since this would break the rules in both the Annual Accounts Act and the Bookkeeping Act, as well as the SLS-E tax accounting rules.

To bring the accounts for these producers into line with the ESA 95 rules, own output of originals must be estimated separately and added to the business accounts output. Similarly, the amount calculated has to be added to gross fixed capital formation on the expenditure side.

3.3.2 Correlation of accounting data and transition to national accounts estimate in kind-of-activity units

3.3.2.1 Transition to common accounting plan

After processing, all the accounting statistics underlying the national accounts calculations of value added are transferred to a common accounting plan, namely the plan in the intermediate system shown in Table 4. After this first stage, however, various accounting items are still defined as in business accounts. For example, insurance premiums are still gross, where only that share of the premium which is the services element (insurance payment) should be counted in the estimate of intermediate consumption, and the remainder, which is the payment for risk coverage, i.e. the claims paid out by the insurance corporations, should be treated as a distributive transaction. This database is referred to as the "intermediate system, version 1". After this, there is a transition to national accounts definitions covering all industries and sectors. In the same connection, 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 the ESA 95, is the producer unit or a hypothetical unit of homogeneous production. After these two types of account processing, the database is called "intermediate system, version 2".

3.3.2.2 Transition from institutional units ("firm branches") to producer units

Of the national accounts main sources in the form of accounting statistics, namely

1) detailed accounting statistics based on questionnaires and tax accounts
2) less detailed accounting statistics based on standardised tax accounts
3) accounting statistics for industries where public corporations predominate
4) industry-specific accounting statistics and individual accounts for large entities
5) accounting statistics for general government,

1), 3) and 5) are supplied from the primary statistics divisions in Danmarks Statistik in terms of producer units (local kind-of-activity units), whereas 2) and 4) are broken down by firm, i.e. are institutional units (legal units). In the primary statistics, the latter are grouped into "firm branches", i.e. by main activity for the firms covered by the statistics. For the national accounts estimate - more specifically, for the transition from intermediate system version 1 to the final version 2 - sources 2) and 4) have to be processed, to convert them into producer units which are more homogeneous from the point of view of activity. The way in which this is done must be consistent with sources 1), 3) and 5), so that all producer units in the economy are included once and once only.

Compared with many other countries, the economic activity of the actual "firm branches" is fairly homogeneous in Denmark, where it is extremely simple and inexpensive to set up a corporation with share capital or a private company, and where there are few requirements for putting up liable capital. In other words, there is no institutional barrier to deter owners of corporations from setting up groups in which the individual corporations are responsible for the group's various areas of business or activities. It is therefore the exception rather than the rule in Denmark that legal units have widespread secondary activities.

Whilst the transition from "firm branches" to the national accounts' 130 industries defined on the basis of producer units is fundamental, of course, its importance should not be exaggerated. The main activity accounts for by far the largest share of activity in the legal units, and large-scale secondary activities occur primarily within manufacturing, where all the larger producer units with an industry code other than that of the "firm branch" for the legal unit are sent a questionnaire, and where the producer units are therefore observed directly.

The methods for the transition from "firm branches" to industries based on producer units in cases where these are not observed is based on use of the maximum currently available information on the producer units within a firm. In all cases, the methods used ensure that the constraints on totals are complied with, i.e. that the sum of the figures calculated for the producer units is equal to the total for the variable in question as stated in the firm accounts. Three situations arise:

1) sales are known at producer unit level
2) sales are not known but total wages and salaries are known at producer unit level
3) the transition is already made in the primary statistics.

In Section 3.1.2.3.7 above, we discussed the method used for the transition from firm branches to kind-of-activity unit industries, the basic unit for which is the local kind-of-activity unit (producer unit).

3.4 Direct versus indirect methods of estimation

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 national accounts use indirect estimates of the value added of industries if accounting statistics are not available. The critical factor is usually the estimate of intermediate consumption, since a reasonably reliable estimate of sales in the various industries is usually available from the VAT system, for example. An indirect estimate of the value added of a given industry may, for example, consist in calculating the industry's output value as x % of its sales (using firms as the statistical unit), where x is based on hypotheses or historical information about the ratio of sales value in the kind-of-activity units in the industry to firm-based VAT sales. Note that VAT sales include, *inter alia*, sales of used capital goods which should not be included in the estimate of output .

In the previous Danish national accounts system, which was replaced by the present one in 1997, these indirect calculations were used fairly widely, since up to the reference year 1987 there were no accounting statistics in Denmark which covered all the industries in the economy. Coverage of market services was particularly poor.

In the Danish national accounts published after 1997, the situation is very much better. With a single exception, the value added of all industries is calculated from a direct estimate of output value and intermediate consumption in business accounts.

There is an indirect estimate of value added only for NR [national accounts] industry 702040, the letting of non-residential buildings etc, where output is calculated from the expenditure side as the sum of the rental expenditure of all other industries and where intermediate consumption is calculated using the input percentage (intermediate consumption/output value) for the letting of dwellings (i.e. actual letting) in industry 702009, 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 share of gross value added estimated by direct as opposed to indirect methods can be seen in the following table.

Table 43 Share of gross value added, direct versus indirect methods of estimation, 1995

Method of estimation	Gross value added, DKK mill.	%
Direct estimation	853 239	98
Indirect estimation	18 103	2
Total	871 342	100

3.5 Direct estimates of levels as opposed to projections

"Direct estimates of levels" is understood to mean estimates of value added of industries where the level of both output and intermediate consumption is calculated each year as a level on the basis of accounting statistics or via an indirect calculation, cf. Section 1.3.6. 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 used in only three areas:

4) housing (dwellings)
5) a minor share of value added in NPISHs
6) the allowance for underreporting etc. and for hidden activity ("work in the black economy").

Housing is an extremely important industry for the whole of the economy. In this area, extensive benchmark calculations are carried out every fourth year in connection with the large-scale rental surveys - cf. description of the benchmark calculations in Section 3.17. The figures are projected only within the four-year intervals. The practice in other countries is similar, though in many cases there will be ten years between the calculations of levels, depending on the periodicity of population and housing censuses.

As regards the second point, i.e. non-profit institutions serving households, by far the largest share of value added, namely total wages and salaries, is calculated as a level every year, whilst projections are used only for the minor components, capital consumption and other taxes less subsidies on production.

Moving on to the third point, 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 for the estimate of underreporting is based on observations in years 1992-1994, whilst the level for work in the hidden economy is based on observations connected with the 1992 harmonised labour force surveys. The method then consists of projecting 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. For example, the major item "work in the black economy connected with building repairs" is assumed to move in parallel with "legitimate" building repairs, i.e. building repairs complying with current legislation on taxes and contributions to social security schemes. The same assumption is made in the case of underreporting in the restaurant industry, which is assumed to move in parallel with legitimate turnover in the industry. This method of projection is equivalent to using constant correction percentages at the most detailed level in the calculations. The levels for the hidden economy are determined at 5- to 10-year intervals, but adjustments for fringe benefits are estimated directly in terms of levels each year, since in most cases the underlying sources are available on an annual basis. The levels for the hidden economy were thus

last revised in the final national accounts for 1997 and 1998 in the light of new interview surveys of the extent of hidden activity.

Value added in the non-market activity of non-profit institutions serving households (NPISHs) is calculated using projections for the (minor) part which consists of other taxes on production and consumption of fixed capital. These value added components are calculated as constant percentages of the compensation of employees. This latter, which accounts for the major share of value added, is calculated directly in terms of levels each year on the basis of a particularly reliable statistical source, namely the estimate of total wages and salaries broken down by legal units and workplaces.

In conclusion, GDP as calculated using the production approach in the Danish national accounts for the final years is projected from a benchmark only to a very limited extent. The situation is, of course, very different with the provisional yearly and quarterly national accounts, which to a large extent are based on projections from the latest final year.

Table 44 Share of gross value added estimated as a level as opposed to being projected, 1995

Method of estimation	Gross value added, DKK mill.	%
Annual estimates, levels	784 982	90.1
Projected from benchmark	86 360	9.9
Total	871 342	100

3.6 Most important initiatives to provide exhaustive coverage

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 are covered by corrections which are explicit wherever possible. These are based on the principles of Commission Decision 94/168/EC, Euratom, the "exhaustiveness decision", in compliance with which the Danish national accounts do not include production activity which in itself is illegal.

3.7 Agriculture, hunting and forestry (NACE A)

3.7.1 Introduction

NACE Section A is defined by function and comprises four of the national accounts' 130 industries, namely:

011009 Agriculture
011209 Horticulture, orchards, etc.
014000 Agricultural services*
020000 Forestry

It covers 23 industries at the most detailed DK-NACE level. In 1995, this NACE Section accounted for 3.5% of the value added of the Danish economy - cf. Table 45.

Table 45 NACE Section A's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
011009 Agriculture	49 658	25 704	23 955
011209 Horticulture, orchards etc.	4 276	1 792	2 483
014000 Agricultural services	5 774	2 861	2 913
020000 Forestry	2 107	1 137	970
Total NACE A	61 815	31 494	30 321
Percentage of the economy	3.7	4.0	3.5

3.7.2 Statistical sources

The primary statistics sources underlying the estimate of value added can be seen in the table 46 .

Table 46 Statistical sources underlying the calculation of value added for NACE A

National accounts industry		Source
011009	Agriculture	Specific industry statistics: agricultural statistics
011209	Horticulture, orchards etc.	Specific industry statistics: agricultural statistics
014000	Agricultural services (part), machine pools	Tax accounting statistics
014000	Agricultural services (part), landscape gardeners (market producers)	Tax accounting statistics
014000	Agricultural services (part), landscape gardeners (non-market producers)	General government statistics
020000	Forestry	Tax accounting statistics

* The literal translation would be "machine pools, landscape gardeners etc.".

The statistical source for agriculture, horticulture and the raising of fur animals is Danmarks Statistik's agricultural statistics which, as already stated, are a national accounts estimate. The statistics comply with the guidelines in Eurostat's agricultural statistics manual. The calculations of intermediate consumption are based on 1) quantities of products used multiplied by the average selling price, 2) accounting information collected by the economic advisers for agriculture and 3) annual accounting statistics for agriculture and horticulture compiled by *Statens Jordbrugs- og Fiskeriøkonomiske Institut*.

Agricultural statistics are the statistical source in the national accounts for the estimate of national accounts industries 011009 agriculture and 011209 horticulture and orchards etc. These statistics do not cover landscape gardeners, the market share of which is instead covered by tax accounting statistics, with the non-market share taken from general government statistics.

The estimates do, however, include machine pools, which in the national accounts come under 014000, agricultural services. Since the output of all agricultural services (machine pools) is inputs for agriculture, this does not affect the estimate of value added. In the national accounts, agricultural services (machine pools) are calculated separately on the basis of the tax-based accounting statistics and the activity is transferred to industry 014000, agricultural services .

The agriculture and horticulture census of 2 June 1995 put the total number of agricultural and horticultural holdings at 68 771. The census unit was the holding, which consists of the land area and the buildings, machinery and livestock which go with it and are considered by the holders as belonging to the same farm. A holding may thus consist of one or more properties assessed independently and/or one or more parts of properties assessed independently. Areas which are rented and leased are included with the holding but those which are let or leased out are not considered to belong to the holding.

In 1983, the lower limit for a holding to be included in the agricultural and horticultural census was raised. Since then, it has covered holdings with at least 5 ha under cultivation (including horticultural crops) and holdings with under 5 ha if the holding's total standard gross margin is at least ECU 3 000 in 1980 prices. The standard gross margin is calculated on the basis of average gross margins per hectare or per head of livestock. Up to 1984, the SGM reflected output and prices during a three-year period around 1973 and the threshold value was ECU 2 000. In 1985, the reference year for SGMs was changed to 1980. As a result of price changes, in particular, the threshold value was at the same time increased to ECU 3 000. In 1995, the threshold value was put at ECU 4 000 in 1990 prices. The increased lower limit as from 1983 means that around 6 300 very small holdings, or around 8% of all agricultural and horticultural holdings, are no longer included in the census. However, their agricultural output was under ½% of the total. For the estimate of output and value added in agriculture, the figures are grossed up for these very small holdings.

Until 1983, Danmarks Statistik collected information for the annual agricultural and horticultural census from all holdings (over the lower limit). As from 1984, the survey has been carried out only every second year (in odd years) as a total census. In the intervening years, information was collected from only around one-quarter of holdings. Owing to budget cuts, it was decided that the annual structural surveys, which, as already mentioned, alternated between sample and total surveys after 1984, would be carried out as sample surveys only as from 1990. Consequently, the 1989 Farm Structure Survey was the latest total census available for the 1995 estimates. A new total census was held in 1999.

The 1995 sample survey covers around 24 300 holdings. The population is those holdings which were included in the total agricultural and horticultural census in 1989, updated by the sample surveys

in 1990-94. Around 4 000 census units were added to this sample, covering all properties leased out which had changed hands since the last census and which could not be allocated directly on the basis of the owner's personal identity number to an existing holding with the same owner in the agricultural statistics register, plus new agricultural properties (on which information was obtained from the municipal property registers). With a view to updating the agricultural statistics register, a sample of around 1 800 small holdings was added to the census.

The agricultural and horticultural census collects together many different kinds of information on individual holdings. It is therefore almost impossible to make up a sample which can be expected to give the best possible estimate of each individual item of census information seen in isolation. For most crops and livestock, the size of the census variables in question varies with the size, type and location of the holding. For the sample selection, therefore, the holdings were divided into some 1 500 groups by type (main type of farming), size (standard gross margin) and location (county). A number of holdings within each group were then selected at random. The number in a given group was fixed to ensure that the estimate of the holdings' total standard gross margin was as statistically reliable as possible. The SGM was chosen as the optimisation variable because, owing to its definition as a measure of economic size, it may be assumed that the main census figures and the total standard gross margin correlate closely. As a result of the selection method, the sample includes a comparatively large number of the largest and most specialised holdings.

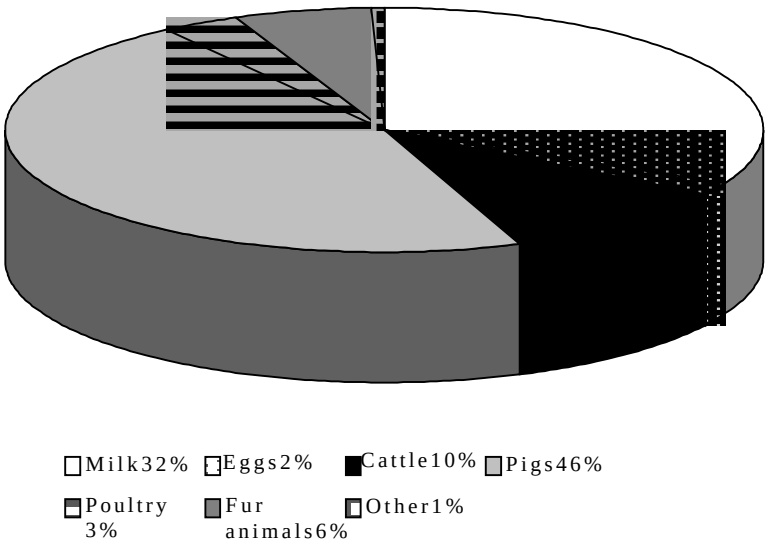
The information reported by the holdings selected is grossed up to total level by multiplying the holding information within each group of holdings by the reciprocal sampling fraction. As a measure of the statistical uncertainty in the sample estimate, the relative spread of the estimates over the main results was calculated. The relative standard deviation gives the standard deviation of the estimate as a percentage of the estimate. With 95% certainty, the true value will lie within certain limits, which can be calculated as the estimate +/- the spread of the estimate multiplied by 1.96. The statistical uncertainty of the estimates increases as the degree of detail increases. For the total area under cultivation, the relative deviation was calculated at 0.2%.

3.7.3 Method of calculation

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, is added.

Output in agriculture and horticulture, other than landscape gardeners, is divided into 49 product balances in the national accounts supply and use tables. The ten largest products account for over 90%. Animal output is by far the most important. Its distribution by product is shown in the figure below.

Figure 4 Output values for animal products, 1995



It can be seen that pigs for slaughtering and raw milk are the two most important products.

The estimate of agricultural value added is based on a set of definitions and methods of calculation which accord with the guidelines agreed by the EU countries for returns to the EU statistical office, Eurostat. These guidelines are in turn drafted to comply with the ESA 79 definitions.

The following points should be made, in particular, about the above guidelines:

The sales values of the products listed give the value of total sales at ex-farm prices, including the share which is sold to dealers and bought back later during the same period to be used as means of production within the industry. Similarly, expenditure on means of production which are bought back is included in total intermediate consumption expenditure. 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. Quantities which are produced and then used as means of production (e.g. cereals for animal fodder) on the properties where they are produced are included in the sales value via the final product.

In accordance with the accounting rules in the ESA 79, expenditure on ordinary repair and maintenance of the production apparatus and on hand tools and the like is considered to be current expenditure on production and is therefore included in intermediate consumption.

Agricultural statistics use gross value added at factor cost (gross factor income) as the primary concept of value added. The national accounts primary value added concept, gross value added (GVA) at basic prices, is obtained by adding other taxes on production to gross factor income and deducting other subsidies on production.

Gross factor income in agriculture is estimated by adding general subsidies to the agricultural industry (but excluding investment subsidies) and deducting taxes and duties on the agricultural production apparatus, primarily property taxes. Gross factor income is thus equal to: total sales value + the value of changes in stocks and livestock herds with the producer - expenditure on intermediate consumption + general operating subsidies - taxes on the production apparatus.

Gross factor income is that amount which is available as compensation for the total labour and capital input in the agricultural sector, including depreciation, the return on equity and borrowed capital, wages for non-family workers and remuneration for the farmer's labour input, etc.

Danmarks Statistik's estimate of agricultural gross factor income before the addition of general operating subsidies and the deduction of property taxes and indirect taxes can be seen in Agricultural Statistics Table 14.1 (cf. point D). The figures given equal total sales value plus the value of changes in stocks and livestock herds held by the farmers minus agricultural expenditure on purchased raw materials and auxiliaries and services from other industries.

The estimate includes payments to producers from support schemes which involve payments based on individual products, and similarly the taxes on products paid by producers under the relevant taxation schemes are deducted from the values for the individual products. The sales values given thus correspond to the national accounts basic price concept.

This applies primarily to proceeds to agriculture in the form of product subsidies from the EU's agricultural fund - see Agricultural Statistics Table 14.2 (EAGGF), which are included in the values for the individual products, and similarly the charges paid by agriculture to the EU are the largest share of total taxes on products. For those schemes which form the basis of the amounts in question, reference should be made to the Official Journal of the European Communities and to the guidelines on the various schemes which are issued by the Ministry of Agriculture and the EU Directorate.

The value of products sold covers total sales of the individual products, including to dealers and the like, and the producers' consumption of their own output. The values are calculated on the basis of quantities sold and the average selling prices obtained by the producers.

The sales values for cereals cover total sales during the periods in question, including to dealers. The figures shown represent sales values obtained after deduction of the co-responsibility levy for cereals. The sales value for the other crop products covers the sale of the output of the periods in question. Other crop products are primarily straw, but fodder beet etc. is also included.

Sales values for meat and livestock cover, for each individual type of livestock, both animals slaughtered in Denmark and the ex-farm value of live animals exported for slaughter. In addition, the ex-farm sales value of livestock for breeding and production is included in the case of animals which are exported whilst sales from one farmer to another are not included, even though the sales may be through dealers (e.g. sales of piglets). The value for cattle includes the male bovine premium up to 1994 inclusive. Since 1995, this premium has been added to general operating subsidies and, accordingly, deducted from output value.

The sales value of natural milk is the value of the total quantity of milk weighed in at dairies, plus the producers' own consumption and direct sales to consumers. The figures quoted are sales values obtained after deduction of co-responsibility levies (until 1 April 1993) and any superlevies under milk quota schemes plus general taxes on production etc., whilst amounts paid out to producers under suspension schemes are included in the figures.

The sales value of eggs for human consumption covers sales of hens' eggs for human consumption including producers' own consumption and sales directly to consumers. Other animal products include sales of honey, wool, rabbits for fattening and exports of hens' eggs for hatching and eggs from poultry other than hens.

The value of changes in stocks and livestock herds held by producers is estimated on the basis of a special calculation for each of the periods for which changes can be estimated in quantity terms. For the value calculation, time-weighted average selling prices for the period are used and the value for the whole year is estimated as the sum of the values of the changes in the individual periods.

For cereals, the changes in the business year/calendar year are estimated for each of the periods in question as a whole, and for the value calculation the average sales prices for the whole period are used. For other crop products sold (including horticultural) and for roughage, no estimate is made of changes in stocks.

According to paragraph 3.58 of the ESA 95, 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. In the quarterly national accounts, however, there are substantial movements in inventories of work-in-progress to implement the rule in paragraph 3.58 of the ESA 95.

For pigs, the changes are estimated on the basis of the changes in the periods between the six annual censuses. For cattle, they are estimated from six-monthly censuses. For horses, sheep and fur animals, only annual changes are estimated, but these calculations are made in terms of both the agricultural year and the calendar year. For poultry, only changes during the agricultural year are calculated. The changes in livestock numbers thus estimated must be seen as the best possible feasible measure of animal production in the agricultural sector in line with the added growth principle - cf. ESA 95, paragraphs 3.58 and 3.119 b) (2). According to the ESA 95, the output value of animals for slaughter should not be counted as at the date of slaughter but continuously throughout the period of growth. Again according to the ESA 95, changes in numbers of animals for slaughter should be recorded as changes in inventories of work-in-progress (finished goods, etc.) whereas changes in stocks of livestock for breeding should be treated as gross fixed capital formation (P.51). However, agricultural statistics do not make a distinction between the two types of changes in livestock. In the national accounts, total changes in inventories of animals for slaughter and livestock for breeding are treated as part of gross fixed capital formation under the heading "changes in livestock". This failure to distinguish between the two types does not, of course, affect GNI.

Expenditure on intermediate consumption 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 expenditure 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.

Expenditure on seed corn and cereals for fodder includes purchases from dealers. Expenditure on feedingstuffs is calculated on the basis of actual purchases of either straight or compound feedingstuffs and the prices actually paid by the farmers for the products supplied. Expenditure on milk returned for fodder covers the repurchase of skimmed milk, buttermilk and whey. Expenditure on other purchases of feedingstuffs covers items such as molasses, meat and bonemeal, fodder yeast, pulp, brewing dregs and lees, together with various imported vegetable feedingstuffs (e.g. tapioca flour and citrus pulp) and sugar for feeding bees.

Expenditure on fertilisers is calculated as the value of the total consumption in Denmark with a roughly estimated deduction of 1% to cover consumption other than agricultural or horticultural.

Expenditure on pesticides is calculated on the basis of information from *Miljøstyrelsen* [the Danish Environmental Protection Agency]. Expenditure on energy covers the total consumption of electricity and fuel by the agricultural and horticultural industries, including for the business use of private vehicles. The consumption of fuels by machine pools for work in agriculture and horticulture is included. The CO2 tax is included in energy expenditure. Expenditure on repairs and maintenance covers buildings for stock-rearing, production plant, machinery and tools (including purchases of hand tools) and the repair and maintenance of soil improvement and land reclamation. For agriculture, expenditure is calculated on the basis of accounting information collected by economic advisers. For horticulture, the repair and maintenance expenditure excludes landscape gardening, which is not included in the estimate.

Other expenditure on raw and auxiliary materials and services covers expenditure on growing media, pots and plastic for use in plant-breeding in agriculture and horticulture and expenditure on services such as those provided by machine pools (shown as a separate industry in the national accounts), veterinary surgeons, milk-recording associations, insurance corporations and banks, and subscriptions to trade unions, sales taxes, freight charges, etc.

Agricultural statistics also cover, in addition to agricultural and horticultural activities (including the rearing of animals for fur), hunting, fishing and related services.

In addition to the above sources, total intermediate consumption is calculated by grossing up to the total population of agricultural holdings. As already mentioned, there is a separate calculation to cover very small holdings not covered by the annual agricultural censuses. A good deal of intermediate consumption can be calculated extremely reliably on the basis of domestic supplies, in either physical quantities, which are multiplied by an average price, or in the form of an estimate of total sales to agriculture. For the remaining share of inputs, the source is the accounting information available either from accounts collected by agricultural economic advisers or the annual sample-based accounting statistics for agriculture and horticulture from *Statens Jordbrugs- og Fiskeriøkonomiske Institut*.

3.7.4 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.

3.7.5 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 (feedingstuffs, fertilisers and pesticides). The remaining share of intermediate consumption, such as energy and services, which is typically based on accounting statistics, is available in the agricultural statistics in an estimate by main type of product. For the compilation and balancing of the national accounts supply and use tables, national accounts statisticians divide these main types into individual products, in most cases using the most detailed accounting plan in the accounting statistics.

3.8 Fishing (NACE B)

3.8.1 Introduction

NACE Section B is defined by group of producer units and covers one of the national accounts' 130 industries, namely 050000 fishing. It covers two industries at the most detailed DK-NACE level, namely:

050100 Fishing
050200 Operation of fish hatcheries and fish farms.

This section accounted for 0.3% of the value added of the Danish economy in 1995 - cf. Table 47.

Table 47 NACE Section B's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
050000 Fishing	4 137	1 845	2 292
Total NACE B	4 137	1 845	2 292
Percentage of the economy	0.2	0.2	0.3

3.8.2 Statistical sources

The primary statistical sources underlying the estimate of value added can be seen in Table 48.

Table 48 Statistical sources underlying the calculation of value added for NACE B

National accounts industry	Source
050000 Fishing (value added)	Tax accounting statistics
050000 Fishing (product breakdown)	Ministry of Fisheries: fish landings

3.8.3 Method of calculation

Value added is calculated by the standard method for industries covered by the general accounting statistics based on tax accounts - cf. Section 3.1.2.3.

3.8.4 Breakdown of output by product

The output value calculated 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.

3.8.5 Breakdown of intermediate consumption by product

There are no continuous cost structure surveys for fishing. The input structure is based on information on the structure of costs which can be found in the SLS-E accounting plan up to 1990 and annual information on the consumption of energy in energy statistics.

3.9 Mining and quarrying (NACE C)

3.9.1 Introduction

NACE Section C is defined by group of producer units and covers two of the national accounts' 130 industries, namely:
110000 Extraction of crude petroleum etc.
140009 Extraction of gravel, clay, salt, etc.

These in turn cover 11 industries at the most detailed DK-NACE level. In 1995, this section accounted for 0.9% of the value added of the Danish economy - cf. Table 49.

Table 49 NACE Section C's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
110000 Extraction of crude petroleum etc.	8 615	1 977	6 638
140009 Extraction of gravel, clay, salt etc.	2 364	1 362	1 001
Total NACE C	10 979	3 339	7 639
Percentage of the economy	0.66	0.42	0.88

3.9.2 Statistical sources

The primary statistical sources underlying the estimate of value added can be seen in Table 50.

Table 50 Statistical sources underlying the calculation of value added for NACE C

National accounts industry	Source
110000 Extraction of crude petroleum etc.	Business accounts (all units)
140009 Extraction of gravel, clay, salt etc.	Questionnaire-based accounting statistics

Industry 110000, the extraction of crude petroleum etc, 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, DORAS, which is part of national accounts industry 602409, freight transport by road and via pipelines. No further distribution or processing is counted in output value. The pipeline tax of 5% of the value of the oil transported, which has to be remitted to the government, is considered as a product tax on pipeline transport services. The output value of DORAS, plus the pipeline transport tax, is posted as intermediate consumption in the "extraction of crude petroleum etc." industry.

The industry covers *Dansk Undergrunds Consortium* (DUC) and other licence holders in this area, plus the activities of the DOPAS corporation other than prospecting for oil and gas. In 1995, DUC was by far the most important operator, the only one which had production plant. The industry consists solely of these companies. Danmarks Statistik collects very detailed accounting information from DUC and any other corporations which may begin to extract petroleum and gas. In addition, accounting information collected by *Energistyrelsen* is used for those corporations which have a concession in parts of the North Sea and which are prospecting for oil and gas but do not yet have any productive wells, with the exception of the state corporation DOPAS.

Industry 140009, the extraction of gravel, clay, salt etc, is covered by the questionnaire-based accounting statistics.

3.9.3 Method of calculation

The output value of 110000, 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 units in the industry for their own account (other than by the DOPAS corporation) is included in the industry's output value. This output is not transferred to construction. 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 exploratory share - output, intermediate consumption and the compensation of employees - of the activity of the DOPAS corporation, which also carries out certain ancillary functions for oil and gas, is transferred to the construction industry. The share of DOPAS's intermediate consumption which does not relate to exploratory activity is included in the intermediate consumption of industry 110000, extraction of crude petroleum, natural gas etc. The corresponding output value is netted out, i.e. is included neither as output nor as intermediate consumption in the industry.

The output value of 140009 is taken directly from the questionnaire-based accounting statistics, which are 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.

3.9.4 Breakdown of output by product

The output of the extraction of crude petroleum etc. is broken down directly into the three products concerned: crude petroleum, unprocessed natural gas and exploratory drilling, on the basis of the accounts collected in. The extraction of gravel, clay, salt etc. 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.

3.9.5 Breakdown of intermediate consumption by product

In the extraction of crude petroleum etc, 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.

3.10 Manufacturing (NACE D)

3.10.1 Introduction

NACE Section D is defined by group of producer units and covers 55 of the national accounts' 130 industries - cf. Table 51. In the detailed DK-NACE, manufacturing consists of 322 industries, each of which is calculated separately when the primary statistics are processed.

In 1995, this section accounted for 17.7% of the value added of the Danish economy - cf. Table 51.

Table 51 NACE Section D's contribution to the gross value added of the economy

Industry		Output	Intermediate consumption	Value added at basic prices
151000	Production etc. of meat and meat products	38 746	31 447	7 299
152000	Processing etc. of fish and fish products	10 347	8 165	2 182
153000	Processing etc. of fruit and vegetables	4 595	3 554	1 041
154000	Manufacture of vegetable and animal oils and fats	2 855	2 476	379
155000	Manufacture of dairy products	21 811	18 310	3 501
156009	Manufacture of starch products	14 891	10 856	4 034
158109	Manufacture of bread, cake and biscuits	4 750	3 114	1 635
158120	Bakers' shops	3 940	1 910	2 030
158300	Manufacture of sugar	2 809	1 773	1 037
159000	Manufacture of beverages	9 056	5 817	3 239
160000	Manufacture of tobacco products	3 035	1 597	1 438
170000	Manufacture of textiles	8 398	5 307	3 091
180000	Manufacture of wearing apparel	5 403	3 441	1 962
190000	Manufacture of leather and leather products	2 092	1 557	534
200000	Manufacture of wood and wood products	11 828	7 573	4 255
210000	Manufacture of pulp, paper and paper products	10 154	6 436	3 719
221200	Publishing of newspapers	6 245	3 013	3 232
221309	Publishing activities, excluding newspapers	9 048	5 708	3 340
222009	Printing activities, etc.	12 395	6 555	5 840
230000	Manufacture of refined petroleum products etc.	8 756	8 477	279
241109	Manufacture of industrial gases and inorganic basic chemicals	912	410	503
241209	Manufacture of dyes, pigments and organic basic chemicals	4 424	2 413	2 010
241500	Manufacture of fertilisers	1 488	1 173	315
241617	Manufacture of plastics and synthetic rubber	842	546	296
242000	Manufacture of pesticides and other agro-chemical products	1 410	849	561
243000	Manufacture of paints, printing ink, etc.	3 532	2 523	1 009
244000	Manufacture of pharmaceuticals, etc.	14 088	6 706	7 382
245070	Manufacture of detergents and other	7 005	4 476	2 529

	chemical products			
251122	Manufacture of rubber products and plastic packing goods	9 609	5 876	3 733
252300	Manufacture of builders' ware of plastic	1 487	962	525
252400	Manufacture of other plastic products n.e.c.	5 278	2 780	2 498
261126	Manufacture of glass and ceramic goods etc.	3 951	2 249	1 702
263053	Manufacture of cement, bricks, tiles, flags, etc.	1 961	1 009	952
266080	Manufacture of products of concrete, cement, asphalt, etc.	10 863	6 356	4 507
271000	Manufacture of basic ferrous metals	2 337	1 646	691
272030	First processing of iron and steel	4 261	2 918	1 343
274000	Manufacture of basic non-ferrous metals	2 287	1 574	714
275000	Casting of metal products	1 672	859	813
281009	Manufacture of construction materials of metal etc.	17 216	9 158	8 058
286009	Manufacture of hand tools, metal packaging etc.	11 438	6 328	5 110
291000	Manufacture of marine engines, compressors, etc.	15 772	7 576	8 196
292000	Manufacture of other general purpose machinery	16 310	10 011	6 298
293000	Manufacture of agricultural and forestry machinery	4 260	2 556	1 704
294009	Manufacture of machinery for industries etc.	14 129	8 147	5 982
297000	Manufacture of domestic appliances	5 424	3 602	1 822
300000	Manufacture of office machinery and computers	1 708	1 086	623
310000	Manufacture of electrical machinery and apparatus	14 774	9 325	5 449
320000	Manufacture of radio and communication equipment	8 899	5 304	3 595
330000	Manufacture of medical and optical instruments etc.	10 972	5 859	5 113
340000	Manufacture of motor vehicles, etc.	5 712	3 519	2 193
351000	Building and repairing of ships and boats	9 408	5 871	3 537
352050	Manufacture of transport equipment excluding ships, motor vehicles etc.	1 921	1 158	762
361000	Manufacture of furniture	17 510	10 783	6 727
362060	Manufacture of toys, gold and silver articles etc.	5 807	3 195	2 612
370000	Recycling of waste and scrap	793	628	165
Total NACE D		430 615	276 520	154 095
Percentage of the economy excluding FISIM		25.9	34.9	17.7

NACE Section D covers a much greater share of the national accounts' 130 industries than its share of the value added of the economy because the input percentage, i.e. the ratio of 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. Compared with the previous Danish national accounts system, the number of industries within manufacturing has actually been reduced substantially, from 82 to 55. The breakdown of the services industries, however, is much more detailed in the present Danish system than in the previous one.

3.10.2 Statistical sources

By far the most important primary statistics source underlying the estimate of value added is the questionnaire-based general accounting statistics, use of which in the national accounts was described in Section 3.1.2.3. Below, therefore, we discuss only statistical sources and the corresponding calculations which are not connected with the questionnaire-based accounting statistics. Table 52 gives an overview of manufacturing industries where the general accounting statistics are supplemented by other information for the national accounts' estimate of value added.

Table 52 Statistical sources underlying the calculation of value added for NACE D

National accounts industry	Source
151000 (part: coverage of all slaughtering)	Information from the Meat Inspectorate, Agricultural statistics
151000 (part: back payments)	Agricultural statistics
155000 (back payments)	Tax accounting statistics
370000	Tax accounting statistics
Other NACE D industries	Questionnaire-based accounting statistics

3.10.3 Method of calculation

The method of calculation for by far the largest share of manufacturing is the standard method for use of the general questionnaire-based accounting statistics described in Section 3.1.2.3. We will therefore discuss below only those methods used for the sources listed in Table 52.

In 151000*, production etc. of meat and meat products, a correction is made first of all for slaughtering at public slaughterhouses [*slagtehuse*] which are not classified as *slagterier* and 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. As regards the total output of meat, however, it is not insignificant, and is therefore important for the adjustment of the product balances for meat.

Much more important for value added is the other correction in the production etc. of meat, namely for the treatment of back payments to agriculture for the supply of animals for slaughter. In 1995, this correction amounted to DKK 1 090 million, which is the amount subtracted from the accounting statistics' uncorrected value added in the production etc. of meat when the figures were processed for national accounts purposes.

Many slaughterhouses [*slagterier*] in Denmark are organised on a cooperative basis, members of the cooperative being the farmers who supply to the slaughterhouses. When agriculture supplies animals

* A literal translation of the Danish for 151000 would be simply "slaughterhouses etc.". But two words are used in this paragraph for "slaughterhouses". It would seem that there is a distinction between "*slagterier*", which are allowed to export, and "*slagtehuse*", which may not.

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 questionnaire-based accounting 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 [*slagterier]*. Without the correction, agricultural back payments would be counted twice over in total value added. The correction consists of reclassifying back payments in the accounts for the slaughterhouses [*slagterier*] from profit to intermediate consumption.

The correction for back payments in 155000, 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 684 million in 1995.

Finally, 370000, the recycling of waste, a manufacturing industry which is a small one in Denmark and not covered by the questionnaire-based accounting statistics, is given special treatment. The two sub-industries in 370000 are covered instead by the general tax accounting statistics. The method of calculation is the standard method for industries covered by these accounting statistics, as described in Section 3.1.2.3.

3.10.4 Breakdown of output by product

For manufacturing, there are particularly comprehensive and detailed product statistics, namely the industrial commodity statistics (VS). These cover all producer units within manufacturing which have 10 or more 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 2 750 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 sales 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 fewer 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 322 manufacturing industries.

The breakdown of output in manufacturing by product was illustrated in Section 1.3.9.1.2 using as an example 320000, the manufacture of radio, television and communication equipment etc. Below is a more detailed description of the sources and methods underlying the product breakdowns.

What sales include:
Code 1010 in the functional target total module, MTM, shows total sales in each of the national accounts 130 branches.

In manufacturing branches, total sales will consist of:

net sales according to accounting statistics
\+ manufacture of plant and machinery for own use
\+ own output of software
\+ fringe benefits, output

where net sales according to accounting statistics will be exclusive of sales of goods for resale, which are picked out and transferred to wholesale.

Coding of sales in the intermediate system:

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 output of software	
1017	Income from licences and royalties	(part of net sales)
1018	Other net sales, excluding 1017 and excluding 1059	(part of net sales)
1059	Other (services) sales, excluding 1017	(part of net sales).

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 economy)
K Plant and machinery (capital goods), plant for own use
L Processing to order
M Repairs and installation work in manufacturing
N Services, in non-profit organisations
Q Government non-market services for consumption
S Public sales income
T Services, market
U Non-HS goods
V HS goods.

Breakdown of sales by product:
Those parts of sales 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 intermediate 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 branch-specific key for minor manufacturing activity. The breakdown and the basis for it can be seen in the following tables, 53 and 54. For much the largest share of sales in this manufacturing industry, the product breakdown is directly observed, and for this reason there is very little uncertainty about the product composition. This is characteristic of virtually all national accounts industries within manufacturing.

Table 53 Extract from the 1995 intermediate system for NACE 320000

MLS code text	MLS code	National accounts industry	Basic price
Fringe benefits, output	1007	320000	8 807
Manufacture of plant and machinery for own use	1012	320000	39 238
Own output of software	1015	320000	17 680
Income from licences and royalties	1017	320000	0
Other and unspecified net sales (excl. "other sales" and excl. licences and royalties)	1018	320000	**8 399 868**
"Other sales", excluding licences and royalties	1059	320000	286 862
Total sales	1010	320000	8 752 455
Inventories of finished goods	2065	320000	146 767
Output value		320000	**8 899 222**

Table 54 Breakdown of sales in NACE 32 by product

National accounts industry	DK-NACE industry	Sales of own products in the MLS (own products from sales input into MLS excluding other sales P.63 from VS	Industrial Commodity Statistics (VS) (Total P.01 Excluding goods for resale P.43 and excluding other sales P.63)	Differences MLS-VS	Differences MLS<VS	For the breakdown with the VS for year t VM1995DB.txt	For the breakdown with "craft industries" year t-1 HÅ_NGL.92
320000	321010	1 028 815	965 995	62 820	0	965 995	62 820
320000	321090	651 472	486 773	164 699	0	486 773	164 699
320000	322010	1 157 638	1 257 462	-99 824	-99 824	1 157 638	0
320000	322020	1 492 698	1 217 933	274 765	0	1 217 933	274 765
320000	323010	2 169 401	2 021 142	148 259	0	2 021 142	148 259
320000	323020	976 371	1 021 435	-45 064	-45 064	976 371	0
320000	323030	923 473	781 554	141 919	0	781 554	141 919
Total		8 399 868	7 752 294	647 574	-144 888	7 607 406	792 462

The VS "net sales" include a breakdown of sales into "sales of own goods", "processing to order" and "repair and installation work carried out for others", which makes possible a corresponding product breakdown into V-, L- and M-products.

3.10.5 Breakdown of intermediate consumption by product

For that part of the intermediate consumption of manufacturing which consists of *goods*, including energy and packaging, 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 periodic - as from 2000 annual - costs structure surveys. These have traditionally been referred to as "raw materials censuses", a term which today, however, may be considered misleading, since most inputs of goods in manufacturing consist of semi-finished products rather than raw materials. Formerly, the statistics were not annual but were collected at 5- to 6-year intervals. The two most recent "raw materials censuses" refer to 1991 and 1997. The input structure in the national accounts and the input-output tables for 1995 are based on a projection of the raw materials census for 1991, taking into account the adjustment of the national accounts product balances during the intervening period. These surveys of the structure of the consumption of goods during the production process covers manufacturing only and, as a general rule, all manufacturing kind-of-activity units belonging to firms with 50 employees or more. 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 commodity statistics and in the raw materials statistics.

When this information is incorporated into the balancing of the national accounts supply and use tables, the figures are first of all grossed up to cover all units in manufacturing. There is then a systematic comparison with the values estimated from the technical coefficients in the supply and use tables from the previous year. A probability check is also carried out: the technical coefficients from the current survey are compared with those from previous surveys. Finally, the plausibility of the information is assessed on the basis of the total supply and use of the products in question in the economy and changes in the industries' output structure since the last "raw materials census".

Unless otherwise indicated by the probability check, the grossed up "raw materials census" value for the intermediate consumption of a given good in a given manufacturing industry is incorporated directly in terms of a level into the supply and use tables for the year to which the survey refers. Otherwise, the technical coefficients are fixed on the basis of an overall assessment of the information referred to in the paragraph above.

The costs structure in the intermediate consumption of *services* is covered by periodic surveys, the latest of which refers to 1992. This survey covers manufacturing firms with at least 200 employees and coverage is therefore much less good than in the costs structure surveys for the consumption of goods. The results are grossed up in the national accounts processing of the figures to cover all manufacturing enterprises and are incorporated into the supply and use tables following the same guidelines as the costs surveys relating to the consumption of goods. In the annual costs surveys for 2000 and subsequent years, the consumption of services is included in full in the same way as the intermediate consumption of goods.

For the costs structure surveys, it is vital to ensure that respondents comply with accounting stringency and discipline. If the questionnaire does not relate absolutely clearly 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. In both the costs structure survey on the consumption of goods and the structural survey on consumption of services, respondents are asked to subdivide well-defined accounting items on the accounting statistics questionnaire by product, although 5% may be unspecified. This strong linkage between accounting statistics and costs structure statistics for manufacturing is without any doubt instrumental in ensuring that the data in these statistics are of generally high quality. 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. As a result of the validation of the initial GDP estimates from the three angles in the form of the balancing in a detailed product balance system, this particularly solid statistical basis for an important industry group in the economy is instrumental in increasing the overall reliability of the estimate of GDP as regards both levels and growth rates.

3.11 Electricity, gas and water supply (NACE E)

3.11.1 Introduction

NACE Section E is defined by function and includes four of the national accounts' 130 industries, namely:

401000 Production and distribution of electricity
402000 Manufacture and distribution of gas
403000 Steam and hot water supply
410000 Collection and distribution of water.

It also covers four industries at the most detailed DK-NACE level. In 1995, NACE E accounted for 2.5% of the value added of the Danish economy – cf. Table 55.

Table 55 NACE Section E's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
401000 Production and distribution of electricity	13 317	4 029	9 288
402000 Manufacture and distribution of gas	6 706	2 735	3 971
403000 Steam and hot water supply	10 990	3 747	7 243
410000 Collection and distribution of water	2 358	1 224	1 134
Total NACE E	33 371	11 735	21 636
Percentage of the economy excluding FISIM	2.0	1.5	2.5

3.11.2 Statistical sources

The statistical source underlying the estimate of value added in all four 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 (municipal) accounts. The accounts from public units which are included in the municipal accounts are collected from municipal accounting statistics. The calculations for electricity and district heating works are based on accounting information collected and published by *Danske Elværkers Forening* and *Foreningen af Danske Fjernvarmeværker*.

Table 56 Statistical sources underlying the calculation of value added for NACE E

National accounts industry	Source
401000 Production and distribution of electricity	Accounting statistics for industries where public corporations predominate
402000 Manufacture and distribution of gas	Accounting statistics for industries where public corporations predominate
403000 Steam and hot water supply	Accounting statistics for industries where public corporations predominate
410000 Collection and distribution of water	Accounting statistics for industries where public corporations predominate

3.11.3 Method of calculation

All four supply industries are defined by activity. All output of electricity, gas, district heating and water is assigned to the respective industries. This is important particularly for the combined production of electricity and district heating. The output of district heating and the intermediate consumption that goes with it are transferred from the electricity supply industry to the district heating industry. This is feasible in practice because in 1995 electricity prices were subject to public control, which obliged the electricity producers to break down costs for the combined production of electricity and district heating into two parts.

For all the supply industries, the output value in the national accounts is the output for supply to 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 *Danske Elværkers Forening* and municipal accounts cover all electricity utilities apart from a single generating unit in a power station in South Jutland which exports all the electricity it produces. This unit's output is calculated from external trade statistics and added in. 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 1995, the subsidy was DKK 652 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. In 1995, gasworks produced only 223 million. This industry includes the cleaning and processing of the natural gas which comes to the mainland from the North Sea gasfields. 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 the municipal 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.

For *the collection and distribution of water*, the accounting figures collected for accounting statistics do not cover all units and are therefore grossed up to the total population of producer units. In 1995, the raising factor was 1.34. The figures are grossed up on the basis of VAT sales. The great majority of accounting figures in the accounting statistics come from municipal accounts.

3.11.4 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 industrial 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, the supply industries, like all other industries, produce software for their own use and fringe benefits for employees.

3.11.5 Breakdown of intermediate consumption by product

By far the largest input in the supply industries is, of course, energy, and this intermediate consumption is established directly. Another large input is repair and maintenance, information on which is available in accounting statistics. There are no supply industry 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 costs structure in related manufacturing industries, together with common sense considerations such as the link between the number of office workers and the consumption of stationery.

3.12 Construction (NACE F)

3.12.1 Introduction

NACE Section F is defined by function and comprises four of the national accounts 130 industries, namely:

450001 Construction of new buildings
450002 Repair and maintenance of buildings
450003 Civil engineering
450004 Construction materials.

This section accounted for 4.7% of the value added of the Danish economy in 1995 – cf. Table 57.

Table 57 NACE Section F's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
450001 Construction of new buildings	28 185	16 643	11 542
450002 Repair and maintenance of buildings	37 859	17 645	20 215
450003 Civil engineering	36 328	27 018	9 309
410000 Construction materials	12 205	12 205	0
Total NACE F	114 577	73 511	41 066
Percentage of the economy	6.9	9.3	4.7

The industry covers all construction and civil engineering activity in the Danish economy. The construction activity of Danish construction firms abroad is counted as output by a foreign institutional unit (notional resident unit) owned by the Danish firm, and does not give rise to any value added in Denmark but solely to transfers of wages and salaries and property income to and from the rest of the world. The reverse applies to the activity of foreign construction firms in Denmark.

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' 130 grouping, but to the single division 45000, 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 Danmarks Statistik'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 450004 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 three uses - intermediate consumption in the "dwellings" industry, final consumption expenditure in households, or capital formation in housing construction - purchases by owner-occupiers and tenants of construction materials for ordinary repairs and maintenance or major 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 including non-refundable VAT. This output is then distributed over the three categories of use referred to above.

3.12.2 Statistical sources

As already mentioned, the industry is defined by function and covers all construction and civil engineering activity in the economy apart from ordinary repairs to buildings and structures for own account in other industries. Own-account construction activity for *capital formation* in producer units classified in industries other than construction is transferred to construction. As always when branches are defined by function, the components transferred are output, intermediate consumption, compensation of employees, capital formation and employment. The fact that own-account ordinary repairs to buildings and structures in other industries are not transferred to branch 45000, construction, is due to the lack of information on the value of this activity over and above the value of the materials included, i.e. expenditure on wages and salaries and the value of the owner's own work. 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.

For example, agricultural consumption of paint and wood preservative for the maintenance of buildings for 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 450004, and agriculture receives an input of building repairs corresponding to 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. Intermediate consumption corresponding to the repair of buildings for own account is in this case based on the value of the materials used.

In all cases other than own-account ordinary repairs to buildings and structures, the national accounts separate out secondary construction activity and transfer it to construction.

Substantial secondary construction output for capital formation occurs in a number of industries, particularly in the supply industries, transport and communications. There is in this case an output of civil engineering for 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 companies' own accounts.

The statistical source for the estimate of value added in genuine construction and civil engineering enterprises is the questionnaire-based accounting statistics – cf. Section 3.1.2.3. 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 detailed industries in the DK-NACE.

Table 58 Statistical sources underlying the calculation of value added for NACE F

National accounts industry	Source
450001 Construction of new buildings	Questionnaire-based accounting statistics
450002 Repair and maintenance of buildings	Questionnaire-based accounting statistics
450003 Civil engineering	Questionnaire-based accounting statistics
410000 Construction materials	No value added by definition

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 accounting statistics, more particularly in statistics for industries where publicly controlled units predominate - the supply industries (electricity etc.), railways and telecommunications - and where there is substantial output of civil engineering work for own account.

Conversely, the activity of Danish construction firms in the economic area of the rest of the world has to be separated out and subtracted. The main source here is VAT statistics, which provide information on the tax-free exports of construction and civil engineering firms. This export income is divided into the following components: 1) exports of construction materials to the firms' building sites in other countries; 2) payment for construction materials supplied directly from the ROW to construction sites in the ROW; 3) the compensation of employees on construction sites in the ROW and 4) gross operating surplus and mixed income (property income from the ROW). This breakdown, which is used for the calculations of construction activity, is also used in the ROW account and in balance of payments statistics, so that consistency is guaranteed. The breakdown is based on an estimate which in turn is based on the structure of costs in new building work.

The construction activity of foreign construction firms in the Danish economic area is covered via grossing up, with the relevant wages and salaries and employment recorded in Denmark and thus included in the employment to which the accounting statistics are grossed up.

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 Section 7.1. 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 connivance 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.

3.12.3 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. The sources for that share of output which is repairs to buildings and structures for the account of others are the quarterly employment censuses for the construction industry and a special run of VAT statistics. 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. Their VAT sales are obtained from a special run of VAT statistics. Next, turnover per person in employment in these firms is calculated and multiplied by total employment in construction and civil engineering repairs as taken from the employment census. In this way, we obtain a figure for the total output of construction and civil engineering repairs. 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.

When the output of construction and civil engineering products estimated from these other sources is compared with output according to accounting statistics corrected for subcontracting, it emerges that the former set of statistics has regularly higher figures than the latter. The most likely explanation is that the output of capital formation in structures is calculated from the expenditure side and will include machinery and equipment which is not in all cases purchased and installed by the building contractor but may often be purchased and installed by the client without the contractor's being involved. One example is machinery in a power station. This problem affects only the dividing line between capital formation in machinery on the one hand and construction and civil engineering on the other, and does not affect GNI. The method of calculation chosen for the Danish national accounts means that all (or virtually all) capital formation in a power station, for example, is classified as being in civil engineering, even though the customer has purchased buildings and machinery separately. The consequence in the product balance system is that the relevant quantity of machinery is posted as an input in civil engineering and is included in civil engineering output value.

In the Danish national accounts, all construction and civil engineering activity carried out in the rest of the world by Danish construction firms is considered to be an activity taking place in an ROW

quasi-corporation (notional resident unit) owned by the Danish construction firm, and not as an export of Danish construction and civil engineering activity. The value added therefore arises in the rest of the world and not in the Danish economy. This treatment is in line with footnote 4 to paragraph 2.09 b) in the ESA 95. In Denmark's case, the activity in question is almost always one which gives rise to gross fixed capital formation in the rest of the world – as opposed to the ordinary repair and maintenance of buildings and structures. This is the criterion in the relevant paragraph of the ESA 95. In the accounts for construction and civil engineering firms with activity on foreign building sites, the activity in other countries will, however, be included. To bring the calculation of value added into line with the geographical delimitation described above, output and intermediate consumption corresponding to the activity in the rest of the world have to be extracted from these business accounts, as described above. The source for this is VAT statistics information on the tax-free export sales of construction and civil engineering firms.

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.

The calculation of output, intermediate consumption and value added for the construction industry is shown in the table below:

Table 59 Corrections to the accounting statistics output values, 1995

	RS = accounting statistics	DKK million
	Market output in RS (plus work in the black economy)	98 044
+	Government non-market output	6 164
-	Subcontracts imputed	10 897
+	Construction and civil engineering activity in power stations	712
+	Own-account structures in telecommunications	1 700
+	Own-account structures in integrated public corporations	687
+	Own-account structures in the "operation of toll bridges"	220
-	Tax-free exports according to VAT statistics	5 480
+	Imports of contractors' services relating to investments in the North Sea	840
=	Output value according to corrected accounting statistics	91 991

Table 60 Corrections to accounting statistics for the calculation of intermediate consumption, 1995

		DKK million
	Intermediate consumption in RS (market)	57 808
+	Intermediate consumption (government non-market)	4 279
-	Subcontracts imputed	10 897
+	Construction and civil engineering activity in power stations	0
+	Own-account structures in telecommunications	1 227
+	Own-account structures in integrated public corporations	342
+	Own-account structures in “operation of toll bridges”	63
-	Input corresponding to tax-free exports	3 231
+	Allowance for self-build	156
+	Imports of contractors' services relating to investments in the North Sea	840
=	Intermediate consumption according to corrected accounting statistics	50 587

Table 61 Determining value added and the initial estimate for intermediate consumption, construction and civil engineering as a whole, 1995

		DKK million
	Output value according to corrected RS	91 991
-	Intermediate consumption according to corrected RS	50 587
=	Value added according to corrected RS	41 404
	Output according to product balances	114 577
	of which construction materials branch	*12 205*
-	Value added according to corrected RS	41 404
=	Initial estimate for intermediate consumption	73 173
-	Intermediate consumption after balancing	73 511
=	Difference between initial estimate and balanced input total	-338

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. In addition, the correction for construction materials corresponding to construction and civil engineering activity in the economic area of the rest of the world is hedged with a certain amount of uncertainty. 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.

3.12.4 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 in Section 3.12.3.

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. For the repair and maintenance of buildings, the initial estimate prior to balancing assumes 45% for ordinary repairs and maintenance (intermediate consumption) and 55% for major repairs (gross fixed capital formation). These percentages are based on information on kinds of expenditure on craftsmen and expenditure on materials connected with housing in the household budget survey.

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. Table 62 below shows the breakdown of output from construction and civil engineering in 1995. Construction resources come from both industry 450001 New building and 450002 Repair and maintenance of buildings. This latter addition is major repairs and improvements which in the national accounts are considered to be capital formation.

Table 62 Breakdown by product of output from construction, 1995

Sub-industry	Product	Text	Value (DKK mill)
450001	F711000	Fringe benefits, free car	68
450001	H454010	Housing construction in the black economy	67
450001	K450000	Plant and machinery/structures for own use in the construction industry	63
450001	K722000	Own-produced software	17
450001	T000005	Licence payments (excl. software)	66
450001	U454010	Housing construction	11 571
450001	U454011	Private non-residential construction	10 744
450001	U454012	Public construction, commercial	1 036
450001	U454013	Public construction, non-commercial	4 507
450001	U454030	Military construction	47
450001 Total new building			28 185
450002	F711000	Fringe benefits, free car	85
450002	H454001	Output in the black economy, building repairs	1 487
450002	K450000	Plant and machinery/structures for own use in the construction industry	43
450002	M454001	Building repairs (ordinary)	14 877
450002	U454010	Housing construction	`
450002	U454011	Private non-residential building	4 078
450002	U454013	Public construction, non-commercial	1 276
450002	U454030	Military construction	742
450002 Repair and maintenance of buildings, total			37 859
450003	F711000	Fringe benefits, free car	30
450003	K450000	Plant and machinery/structures for own use in the construction industry	105
450003	K454023	Own output of new structures, public, non-commercial	203
450003	M454005	Repairs to structures	7 935
450003	Q454005	Repairs to structures, government non-market	5 765
450003	S454005	Repairs to structures, public sales income	131
455003	S980990	Internal supplies between public bodies	269
450003	U454021	Private new structures	2 532
450003	U454022	Public new structures, commercial	16 309
450003	U454023	Public new structures, non-commercial	2 935
450003	U454030	Military construction	114
450003 Civil engineering, total			36 328
450004	M454001	Building repairs	10 066
450004	U454010	Housing construction	2 140
450004 Construction materials, total			12 205
450000 Construction and civil engineering, total			114 577

3.12.5 Breakdown of intermediate consumption by product

There are no regular costs structure surveys for intermediate consumption in construction. The information which it 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 – cf. the description of the method of calculation in Section 3.12.3. 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 is in principle 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 with wholesale margins. 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. Next, the output value of wholesaling is increased by the same amount, so that the total wholesaling margins are increased by the amount of 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", the "formal" being the fact that a transport service is involved. The economic reality is, however, that the margin is a distribution margin similar to wholesale and retail margins. The way in which formal transport is structured means that a substantial share of the input of services in construction is shown in the supply and use tables as inputs of wholesale services.

In the balanced supply and use tables for 1995, there is a good DKK 11 000 million in wholesale margins (including formal transport) and a good DKK 900 million retail margins for intermediate consumption in the construction industry, including the materials branch. These figures illustrate the importance of distribution services in the total intermediate consumption of the construction industry.

Even though there are no actual costs structure statistics for the composition of intermediate consumption in the construction industry, the input structure in the industry may be said to be established with a reasonable degree of certainty. The reason is the close connection between the technical properties of the goods and their use, in this case as inputs in construction. Goods such as cement and prefabricated building components have no real uses other than as inputs in construction or as exports (or as changes in inventories). When supplies to the domestic market are fixed on the basis of industrial output statistics, external trade statistics and calculations of inventories, the remaining use is more or less bound to be as inputs in the construction industry. It is precisely in a situation such as that described here that a detailed product balance system really comes into its own, since maximum utilisation of information about kinds of goods is a way of determining the structure of costs indirectly via the compilation and balancing of the supply and use tables.

3.13 Trade and repair (NACE G)

3.13.1 Introduction

NACE Section G is defined by function and covers nine of the national accounts' 130 industries, as shown in Table 63, which also shows that this section accounted for 13.6% of value added in the Danish economy in 1995:

Table 63 NACE Section G's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
501009 Sale of motor vehicles, motorcycles, etc.	13 057	3 564	9 493
502000 Repair and maintenance of motor vehicles	15 149	10 639	4 511
505000 Service stations	1 913	495	1 418
510000 Wholesale and commission trade, except of motor vehicles	111 384	47 489	63 895
521009 Retail sale of food etc.	20 740	6 236	14 504
522099 Department stores	7 001	3 051	3 949
533000 Retail sale of pharmaceutical goods, cosmetic articles, etc.	2 671	594	2 077
524190 Retail sale of clothing, footwear, etc.	6 603	2 383	4 220
524490 Other retail sale, repair work	21 274	7 148	14 126
Total NACE G	199 792	81 599	118 193
Percentage of the economy	12.0	10.3	13.6

NACE G covers all trading activity in the Danish economic area. Secondary trading activity in producer units classified under other industries is separated out and transferred to the relevant trade industry, normally 510000, wholesale and commission trade except of motor vehicles. Secondary trading activity occurs particularly in manufacturing and transport. All motor vehicle repair activity is collected together under industry 502000.

This section covers 159 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.

3.13.2 Statistical sources

NACE 50, sale and repair of motor vehicles, etc, and NACE 51, wholesale trade and commission trade except of motor vehicles, are based on tax accounting statistics.

For 1995, NACE 52, retail trade except of motor vehicles etc., is covered by the questionnaire-based accounting statistics, this source being preferred to tax statistics. The sources can be seen in the following table:

Table 64 Statistical sources underlying the calculation of value added for NACE G

National accounts industry	Source
501009 Sale of motor vehicles, motorcycles, etc.	Tax accounting statistics
502000 Repair and maintenance of motor vehicles	Tax accounting statistics
505000 Service stations	Tax accounting statistics
510000 Wholesale and commission trade, except of motor vehicles	Tax accounting statistics
521009 Retail sale of food etc.	Questionnaire-based accounting statistics
522099 Department stores	Questionnaire-based accounting statistics
533000 Retail sale of pharmaceutical goods, cosmetic articles, etc.	Questionnaire-based accounting statistics
524190 Retail sale of clothing, footwear, etc.	Questionnaire-based accounting statistics
524490 Other retail sale, repair work	Questionnaire-based accounting statistics

3.13.3 Method of calculation

Since the whole of NACE G is covered by the two general accounting statistics systems for urban industries, the method of calculation is the standard method for use of these statistics, as described in Section 3.1.2.3. The only particular point to be mentioned is that, in line with the ESA 95, 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 price. 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 3.3.1.2.

3.13.4 Breakdown of output by product

NACE 50 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 50.20, maintenance and repair of motor vehicles, but in those classified under DK-NACE 50.10.20, retail sale of motor vehicles. The first stage in the breakdown of products is therefore to divide the output of NACE 50 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.

For this, we use special product statistics for the “motor vehicles group”, which were established at the time with the help of a grant from the EU’s special GNP statistics appropriation. The statistics “Distribution of sales in the motor vehicles branches” break down sales in NACE 50 enterprises. Following this stage, the output of NACE 50 is divided up into trade margins on the one hand and motor vehicle repairs on the other.

Similarly, the output of NACE 52 has to be divided up into trade margins and repair services. This breakdown is, however, simple, since there is much less overlap between trade and repair activity than in NACE 50. In practice, producer units in the detailed DK-NACE industries within groups 52.1-52.6 are considered to be purely retail enterprises whose output (other than fringe benefits and capital goods for own account) consists solely of retail margins, whilst units classified in industries within group 52.7 are considered to be purely repair enterprises whose output is repair services.

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 51 is by definition a wholesale margin and, similarly, the whole margin in NACE 52 is a retail margin. NACE 50 covers both wholesale and retail trading activity, and in the national accounts the total trade margin in NACE 50 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.

3.13.5 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 costs 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 of the products in question to the domestic market has been determined, along with their use as inputs in manufacturing, their use in the trading industries can be worked out reliably via a residual calculation.

3.14 Hotels and restaurants (NACE H)

3.14.1 Introduction

NACE Section H is defined by function and comprises two of the national accounts' 130 industries. These two industries are illustrated in Table 65, which also shows that NACE H accounted for 1.8% of the value added of the Danish economy in 1995:

Table 65 NACE Section H's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
551009 Hotels etc.	7 548	3 938	3 610
553009 Restaurants etc.	23 256	10 921	12 335
Total NACE H	30 804	14 859	15 945
Percentage of the economy	1.85	1.87	1.83

NACE H 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 553009 restaurants etc., 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 1995, the amount was DKK 3 223 million.

NACE H covers 15 industries at the most detailed DK-NACE level. As for all other industries in the economy, the national accounts calculations of value added in the hotel and restaurant industries are based on accounting data for the individual detailed DK-NACE industries and subsequent aggregation.

3.14.2 Statistical sources

Coverage is provided by tax accounting statistics, which are the statistical source for all primary activity. Secondary canteen activity is calculated from the accounting item "secondary sales" in the relevant accounting statistics and the fringe benefit "canteen subsidies" is calculated from the labour costs surveys.

Table 66 Statistical sources underlying the calculation of value added for NACE H

National accounts industry	Source
551009 Hotels etc.	Tax accounting statistics
553009 Restaurants etc.	Tax accounting statistics

3.14.3 Method of calculation

Since the whole of this section is covered by the general tax accounting statistics, the method of calculation is the standard method for the calculation of value added from the general accounting statistics via the intermediate system and the target total module, as described in Section 3.1.2.3.

3.14.4 Breakdown of output by product

In addition to the fringe benefit "free cars" and "own-produced software", output is divided into 16 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.

3.14.5 Breakdown of intermediate consumption by product

There are no regular costs structure statistics for the catering 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.

3.15 Transport etc. (NACE I)

3.15.1 Introduction

NACE I is defined on the basis of a grouping of producer units and covers nine of the national accounts' 130 industries. These are shown in Table 67, which also shows that NACE I accounted for 7.98% of the value added of the Danish economy in 1995.

Table 67 NACE Section I's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
601000 Transport via railways	10 267	3 095	7 172
602100 Other scheduled passenger land transport	6 752	4 967	1 785
602223 Taxi operation and coach services	5 262	1 949	3 313
602409 Freight transport by road and via pipelines	23 914	11 811	12 103
610000 Water transport	41 561	31 071	10 490
620000 Air transport	11 858	8 024	3 834
631130 Cargo handling etc.	13 436	6 903	6 533
634000 Activities of other transport agencies	8 126	3 121	5 005
640000 Post and telecommunications	27 340	9 153	18 187
Total NACE I	148 517	80 095	68 422
Percentage of the economy	8.9	10.1	7.9

This section covers 36 industries at the most detailed DK-NACE level. As for all other industries in the economy, the national accounts' calculations of the value added of transport, post and telecommunications are based on accounting data for the individual detailed DK-NACE industries and subsequent aggregation.

3.15.2 Statistical sources

The most important sources are tax accounting statistics and the accounting statistics for industries where publicly controlled corporations predominate. In addition, there are special industry-specific accounting statistics for the most important industry, water transport - cf. Section 11.1. Use is also made of information from transport statistics on the value of package tours and from balance of payments statistics on the expenditure of Danish vessels in the rest of the world.

With two of the national accounts industries, one set of accounting statistics is used for some of the detailed DK-NACE industries covered and another set for other industries. The following table of statistical sources refers in such cases to the national accounts' most detailed industry grouping and shows the source used for each of the very detailed DK-NACE industries. "RS" stands for "accounting statistics".

Table 68 Statistical sources underlying the calculation of value added for NACE I

National accounts industries/DK-NACE industries	Source
601000 Transport via railways	RS for industries where public corporations predominate
602100 Other scheduled passenger land transport	RS for industries where public corporations predominate
602223 Taxi operation and coach services	Tax accounting statistics
602409 Freight transport by road and via pipelines	Tax accounting statistics
602410	Tax accounting statistics
602420	Tax accounting statistics
603000	Accounts for DORAS, cf. Section 3.9
610000 Water transport	RS for shipping companies, RS for public corporations
620000 Air transport	RS for industries where public corporations predominate
631130 Cargo handling, harbours etc.	
631100 Cargo handling	Tax accounting statistics
631132 Government non-market output	Statistics for general government
631200 Storage and warehousing	Tax accounting statistics
632110 Operation of stations and terminal facilities for the handling of goods	Tax accounting statistics
632120 Operation of parking lots or garages	Tax accounting statistics
632130 Operation of tollbar stations for roads, bridges and tunnels	RS for industries where public corporations predominate
632210 Harbours (traffic and fishing harbours)	RS for industries where public corporations predominate
632220 Yachting harbours (marinas)	RS for industries where public corporations predominate
632230 Lighthouse activities and pilotage activities	RS for industries where public corporations predominate
632240 Towing and lifeboat service	RS for industries where public corporations predominate
632300 Airports, etc.	RS for industries where public corporations predominate
633010 Tourist agency activities	Tax accounting statistics
633020 Travel agencies, tour operators	Tax accounting statistics
633030 Travel agencies, furnishing tickets	Tax accounting statistics
633040 Tourist guide activities	Tax accounting statistics
634000 Activities of other transport agencies	Tax accounting statistics
640000 Post and telecommunications	RS for industries where public corporations predominate

3.15.3 Method of calculation

The whole of this section with the exception of the important industry of water transport is covered by the general accounting statistics, i.e. tax accounting statistics and accounting statistics for industries where public corporations predominate. The method of calculation here is the same as the standard method for the calculation of value added based on the general accounting statistics via the intermediate system and the target total module as described in 3.1.2.3 above.

The calculations for 610000, water transport, are, as stated above, based on the accounting statistics of shipping companies, which cover all private shipowners. The shipping company statistics are supplemented by accounts for public shipping companies, which are the shipping company owned by the Danish State Railways, *DSB Rederi*, and public shipping companies whose accounts are included in the accounts of central and local government. A correction is made for a single shipping company

which is included in both the shipping company accounting statistics and the accounting statistics for industries where public corporations predominate. In addition, the Swedish share of the joint Swedish/Danish-owned company *Scandlines* is deducted, since this is output in the Swedish economic area and not the Danish.

The calculation of output, intermediate consumption and value added can be seen in the following tables:

Table 69 Calculation of the output value of water transport

	RRS: Shipping company accounting statistics	DKK million
	ROS: RS for industries where public corporations predominate	
	RRS: Gross freight earned with own vessels	15 972
+	RRS: Gross freight earned with chartered vessels	13 827
+	RRS: Time charter income – added from the rest of the world	3 366
+	RRS: Rents for chartered vessels (time charter hire)	5 049
-	RRS: Time charter hire paid for in the rest of the world	-4 481
+	RRS: Earned from passenger transport, restaurants, etc.	2 611
+	RRS: Other gross income	2 272
+	ROS: Turnover in public corporations (integrated)	496
+	ROS: Turnover in public corporations (non-integrated)	2 955
-	Correction for *Dampskibsselskabet Øresund*	-267
-	Correction for the Swedish share of *Scandlines*	-265
+	Output of the fringe benefit free cars	17
+	Own-produced software	6
=	Output	41 561

Table 70 Calculation of intermediate consumption, water transport

	RRS: Shipping company accounting statistics	DKK million
	ROS: RS for industries where public corporations predominate	
	RRS: Direct costs excluding fuel	18 267
+	RRS: Expenditure on fuel	2 164
+	RRS: Rents for chartered vessels (time charter hire)	5 049
+	RRS: Other operating expenditure	3 499
+	RRS: Other administrative expenditure	850
+	ROS: P.20 in public corporations (integrated)	232
+	ROS: P.20 in public corporations (non-integrated)	1 424
-	Correction for *Dampskibsselskabet Øresund*	172
-	Correction for Swedish share of *Scandlines*	199
-	Correction for fringe benefits etc.	34
=	Intermediate consumption	31 080

The initial pre-balancing estimate of the value added of water transport can be seen in Table 67. With one minor discrepancy, it remains unchanged after the .

3.15.4 Breakdown of output by product

Apart from the fringe benefit "free cars" and "own-produced software", output is divided into three products, namely freight transport, passenger transport and inland waterway transport. Freight is by far the most important, with output of around DKK 36 billion of the total output value of the industry (DKK 41.6 billion). The largest share is for exports.

3.15.5 Breakdown of intermediate consumption by product

There are no regular costs 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.

3.16 Financial intermediation (NACE J)

3.16.1 Introduction

NACE J is defined on the basis of a grouping of producer units and covers five of the national accounts' 130 industries, as shown in Table 71, which also shows that this section accounted for 4.9% of the value added of the Danish economy in 1995.

Table 71 NACE J's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
651000 Monetary intermediation	36 265	8 985	27 280
652000 Other financial intermediation	9 628	3 286	6 343
660102 Life insurance and pension funding	4 477	2 664	1 812
660300 Non-life insurance	10 306	6 091	4 216
670000 Activities auxiliary to financial intermediation	4 353	1 725	2 628
Total NACE J	65 029	22 751	42 279
Percentage of the economy	3.9	2.9	4.9

The division covers 24 industries at the most detailed DK-NACE level. Where NACE 65 and 66 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.

3.16.2 Statistical sources

The great majority of financial institutions in NACE 65 and 66 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 Economic Affairs. *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 652230. 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 10 mortgage credit corporations in 1995, Danmarks Statistik decided to base the calculations directly on the 10 annual accounts, which include much more detailed information.

There are minor parts of NACE 65 which are not subject to *Finanstilsynet* control. One such is financial leasing, where the source is statistics for large financial corporations. For consumer credit, the accounts of a single large credit card company were used for 1995 and grossed up on the basis of employment to the whole of DK-NACE industry 652200. As from 1997, new statistics are being used for consumer credit instead of the above single set of accounts. Finally, for NACE 65.23, Other financial intermediation n.e.c., the accounts of *Arbejdsmarkedets Feriefond*, *Grundejernes Investeringsfond*, *Lønmodtagernes Dyrtidsfond* and *Arbejdernes Kooperative Finansieringsfond* are used. In addition, information on factoring comes from statistics on large financial corporations, grossed up on the basis of employment to cover the total population.

NACE 67, Activities auxiliary to financial intermediation, is covered not by the sector-specific primary statistics for financial institutions, but by general tax accounting statistics.

The following table gives an overview of the sources used for the national accounts' calculations for NACE J.

Table 72 Statistical sources underlying the calculation of value added for NACE J

National accounts industry/DK-NACE industry	Source
651000 Monetary intermediation	
651100 *Danmarks Nationalbank*	*Nationalbank* annual report and accounts
651200 Other monetary intermediation*	Report from *Finanstilsynet*
652000 Other financial intermediation	
652100 Financial leasing	Statistics for large financial corporations
652230 Mortgage credit institutes	Annual accounts for all corporations
652240 Other credit institutes	Accounts grossed up on the basis of employment
652250 Credit granting by other than credit institutes	Accounts grossed up on the basis of employment
652260 Financing companies	Accounts grossed up on the basis of employment
652295 Other lending activities	Accounts grossed up on the basis of employment
652310 Unit trusts**	Report from *Finanstilsynet*
652320 Investment companies***	Covered by grossing up on the basis of employment
652330 Security dealing activities (own account)	None: not relevant to the production account
632340 Financial holding companies	None: no independent value added
652395 Other financial intermediation n.e.c.	Accounts grossed up on the basis of employment
660102 Life insurance and pension funding	Report from *Finanstilsynet*
660300 Non-life insurance	Report from *Finanstilsynet*
670000 Activities auxiliary to financial intermediation	Tax accounting statistics

3.16.3 Method of calculation

The output of NACE 65 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 two cases where output is established from the costs point of view as the sum of production costs. These two cases are *Danmarks Nationalbank* and four financial institutions which are non-profit. In these cases, an estimate based on flows of property income for the calculation of their output of FISIM would yield results which made no sense in economic terms. Since the whole of the output value of the four institutions consists of FISIM, the convention chosen has no effect on GDP or GNI, provided that FISIM is not broken down by user sector or industry. The *Nationalbank* convention has no effect, either. On the other hand, it is clear that if it were later to be decided to break FISIM down by user in the national accounts for the purposes of the countries' GNI reports, this neutrality would not apply. In this case, however, the ESA 95 Regulation would be amended so that the *Nationalbank* would have to be calculated from the costs point of view in accordance with current Danish practice.

The method of calculation for NACE 65, 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 651200, Other monetary intermediation:

* Literally: banks, savings banks and savings and loan associations.

** "Investeringsforeninger" translates "mutual funds" in the ESA 95.

*** "Investeringsselskaber" translates "investment trusts" in the ESA 95.

Table 73 Calculation of the output value of monetary intermediation

	FPI: *Finanstilsynet's* report – monetary intermediation	DKK million
	NB: *Nationalbank* annual report	
	Financial intermediation services paid for indirectly (FISIM)	
	FPI: Interest received	69 285
-	FPI: Interest paid	40 340
=	Net interest received (FISIM) according to report	28 945
+	Mark-up for savings banks under 100 million	145
+	Mark-up for savings and loan associations under 100 million	37
+	ROW monetary intermediation, branches in Denmark	277
-	Greenland banks	124
-	Danish monetary intermediation, branches in the ROW	2 009
=	Net interest received (FISIM), monetary intermediation, total	27 271
	Financial intermediation services paid for directly	
	FPI: Fees and charges	6 410
+	FPI: Commission on guarantees	885
+	FPI: Ordinary income	933
=	Services paid for directly, according to accounts	8 228
+	Mark-up for savings banks under 100 million	15
+	Mark-up for savings and loan associations under 100 million	3
+	ROW monetary intermediation, branches in Denmark	117
-	Greenland banks	26
-	Danish monetary intermediation, branches in the ROW	883
=	Monetary intermediation services paid for directly, total	7 454
	FISIM, monetary intermediation, total	27 271
+	Monetary intermediation services paid for directly, total	7 454
+	NB: Output from the costs side (FISIM)	413
+	Own-produced software in industry 651000	1 096
+	Output of "free car" fringe benefit, industry 651000	31
=	Output of the *Nationalbank* and monetary intermediation, total	36 265

The very small savings banks and savings and loan associations under 100 million in the above table are institutes with a working capital of under DKK 100 million. They are also covered by *Finanstilsynet's* report, which has 100% coverage of legal units. However, the accounting plan for these small units is less detailed than for other monetary intermediation. It is apparent that they represent a very minor activity.

It can be seen that the estimate of FISIM does not tally with the – now outdated – formula for the estimate of "global" FISIM in ESA 95 paragraph 3.63 J, since there is no correction for the payment of interest on own funds. But this is not important for GNI as long as FISIM is not divided up by user sector and industry. According to the FISIM Regulation, however, in future FISIM will presumably

have to be estimated in a way which is different again, namely from the micro point of view, and the final decision on sources and methods for FISIM in the Danish national accounts will not be made until there is clarification at EU level, by the end of 2002.

Table 74 Intermediate consumption, monetary intermediation

	FPI: *Finanstilsynet's* report – monetary intermediation	DKK million
	NB: *Nationalbank* annual report	
	FPI: Other administrative costs	5 234
+	FPI: Other operating expenditure	3 598
+	FPI: Fees etc. paid	837
+	Mark-up for savings banks under 100 million	46
+	Mark-up for savings and loan associations under 100 million	11
+	ROW monetary intermediation, branches in Denmark	110
-	Greenland banks	49
-	Danish monetary intermediation, branches in the ROW	921
=	Intermediate cons. excl. *Nationalbank* before software	8 977
+	NB: Intermediate consumption, *Nationalbank*	131
-	Correction for software purchased by industry 651000	123
=	Int. cons., *Nationalbank* and monetary intermediation, total	8 985

The method of calculation for NACE 66 is shown for both of the national accounts industries, since there are essential differences in the estimates for life insurance and pension funds on the one hand and non-life insurance on the other.

For *life insurance and pension funding*, output value is calculated from the costs point of view, and not using the formula in the ESA 95 paragraph 3.63 J, but 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 95 paragraph 3.63 J 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 come 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.

It would seem that this complication was not taken into account in the wording of paragraph 3.63 J of the ESA 95. This point should be taken up with the next revision of the ESA and the SNA.

With output value determined from the point of view of costs, the result is *presented* below in the form of the calculation formula in the ESA 95 paragraph 3.63 J, with an extra element added, "Revaluation gain added to reserves". This latter is calculated as a residual, to tally with output value as estimated from the point of view of costs. Table 75 illustrates the estimate for life insurance corporations. An identical estimate is made for pension funds and burial funds. The property income allocated to the policyholders is calculated from the corporations' net interest and dividend income multiplied by the share of the total reserves, bonus equalisation provisions and the corporations' own funds accounted for by insurance technical reserves plus the bonus equalisation provisions.

Table 75 Output of life insurance and pension funding

	FLI: *Finanstilsynet's* report – life insurance corporations	DKK million
	Life insurance corporations	
	FLI: Premium income	26 071
-	FLI: Insurance claims	20 382
-	FLI: Change in life insurance provisions	20 386
-	FLI: Change in bonus equalisation provisions	2 226
+	FLI: Revaluation gain increasing provisions	1 177
+	FLI: Imputed interest from the corporation's income side	18 791
+	FLI: Reinsurance commissions	800
=	Output of life insurance corporations	3 845
	(excl. own-produced software and fringe benefits)	
+	Corresponding calculation for general pension funds	537
+	Corresponding calculation for company pension funds	56
+	Corresponding calculation for burial funds	`
+	Own-produced software	32
+	Output of the "free cars" fringe benefit	5
=	Output of industry 660102	4 477

Table 76 estimates the intermediate consumption of life insurance corporations. For pension funds and burial funds, the estimates are made in exactly the same way.

Table 76 Intermediate consumption of life insurance and pension funding

	FLI: *Finanstilsynet's* report – life insurance corporations	DKK million
	Life insurance corporations	
	FLI: Administration fees	1 122
-	FLI: Other ordinary income	69
+	FLI: Rentals	49
+	FLI: Other staffing expenditure	738
+	FLI: Costs associated with investment activity	162
+	FLI: Other acquisition and administrative costs	698
+	FLI: Commissions to own sales staff	171
+	FLI: Other ordinary expenditure	67
-	FLI: Wages and salaries	911
-	FLI: Contribution to dividends (R44) from wages and salaries and fees	5
-	Purchase of computer software	12
+	Government fees which are sales of services	17
+	FLI: Commissions to other insurance corporations	127
+	FLI: Reinsurance premiums	455
-	Reinsurance share of insurance claims	419
-	Reinsurance share of increase in life insurance provisions	62
+	Grossed up supplementary premium	75
=	Intermediate consumption in life insurance corporations	2 202
+	Corresponding calculation for general pension funds	422
+	Corresponding calculation for company pension funds	39
+	Burial funds	1
=	Intermediate consumption in industry 660102	2 664

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.

For *other insurance* (non-life), output value is calculated in accordance with the rule in the ESA 95 paragraph 3.63 J. In this case, those problems which the rule runs up against in the case of life insurance and pension funding do not apply to any noticeable extent, since the corporations do not noticeably increase insurance technical reserves as share prices rise. Property income allocated to policyholders (supplementary premiums) is calculated here (in contrast to life insurance and pension funding) by calculating the return on the corporations' portfolio of bonds and then using this percentage for the insurance technical reserves.

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.

The calculation of the output value of other insurance is illustrated in Table 77.

Table 77 Output, other insurance

	FLI: *Finanstilsynet*'s report – non-life insurance corporations	DKK million
	FLI: Premium income	30 491
-	FLI: Expenditure on claims	26 453
-	FLI: Increase in equalisation provisions	277
+	Supplementary premiums	3 135
+	Grossing up addition to supplementary premiums	590
-	Grossing up addition to increase equalisation provisions	52
+	FLI: Reinsurance commissions	722
+	Other ordinary income (deconsolidation)	1 488
+	Own-produced software	626
+	Output of the "free cars" fringe benefit	35
=	Output of industry 660300	10 306

Intermediate consumption is calculated as shown in the table below:

Table 78 Intermediate consumption, other insurance

	FLI: *Finanstilsynet's* report – non-life insurance corporations	DKK million
	FLI: Administration fees	588
+	FLI: Rentals	427
+	FLI: Other staffing expenditure	4 556
+	FLI: Costs connected with investment activity	67
+	FLI: Other acquisition and administration costs	932
+	FLI: Commissions to own sales staff	1 005
+	FLI: Other ordinary expenditure	117
-	FLI: Wages and salaries	4 126
-	FLI: Contributions to dividends (R.44) from wages and salaries and fees	25
-	Purchases of computer software	21
+	Public fees which are sales of services	161
+	FLI: Reinsurance premiums	4 830
-	Reinsurance share of claims	4 140
+	Grossing up addition to supplementary premiums	590
-	Grossing up addition to increase in equalisation provisions	52
+	Commissions to other insurance corporations	1 183
=	Intermediate consumption of industry 660300	6 091

3.16.4 Breakdown of output by product

In the supply and use tables, the output of NACE J is divided into 13 products, one of which is own-produced software and another the output of the fringe benefit free cars. The product breakdown is based on the breakdown of the financial corporations sector into subsectors and of the producer units which belong to them into industries. Industry 660300, non-life insurance, produces services connected with life insurance and pension funding, since non-life insurance corporations carry out administrative services for life insurance corporations and pension funds.

3.16.5 Breakdown of 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.

3.17 Real estate, renting and business activities (NACE K)

3.17.1 Introduction

With the exception of industries 702009, dwellings, and 702040, the letting of non-residential buildings, NACE K is defined on the basis of a grouping of producer units. The above two industries are the exception, being defined by function and combining 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. NACE K covers 14 of the national accounts' 130 industries, as can be seen in Table 79, which also shows that in 1995 NACE K accounted for 18.5% of the value added of the Danish economy.

Table 79 NACE Section K's contribution to the gross value added of the economy

Industry		Output	Intermediate consumption	Value added at basic prices
701109	Real estate agents etc.	4 112	1 843	2 269
702009	Dwellings	92 554	14 666	77 888
702040	Letting of non-residential buildings.	25 009	6 906	18 103
710000	Letting of machinery and equipment etc.	7 492	2 566	4 925
721009	Computer activities excluding software consultancy and supply	8 637	3 799	4 838
722000	Software consultancy and supply	12 354	5 254	7 101
730001	Research and development (market)	563	207	357
730002	Research and development (other non-market)	2 785	976	1 810
741100	Legal activities	5 034	936	4 098
741200	Accounting, book-keeping, auditing etc.	8 374	1 440	6 934
742009	Consulting engineers, architects, etc.	24 954	11 153	13 801
744000	Advertising	13 264	9 665	3 599
747000	Industrial cleaning	6 493	1 508	4 985
748009	Other business activities	17 364	7 202	10 162
Total NACE K		228 989	68 120	160 869
Percentage of the economy		13.8	8.6	18.5

The section covers 72 industries at the most detailed DK-NACE level. In all cases bar one the calculations are made at that detailed level. The exception is the letting of dwellings, where 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.

3.17.2 Statistical sources

Apart from the two major industries, dwellings and the letting of non-residential buildings, where special sources and methods are used, the primary statistics source is in the vast majority of cases tax accounting statistics. Table 80 shows the primary statistics used.

Table 80 Statistical sources underlying the calculation of value added for NACE K

National accounts industries/DK-NACE industries		Source
701109	Real estate agents etc.	Tax accounting statistics
702009	Dwellings	Housing censuses, rent surveys, the accounts of housing corporations, consumer surveys
702040	Letting of non-residential buildings	Calculated from the expenditure side: the sources underlying the calculations for all other industries
710000	Letting of machinery and equipment etc.	Tax accounting statistics
721009	Computer activities excluding software consultancy and supply	Tax accounting statistics
722000	Software consultancy and supply	Tax accounting statistics
730001	Research and development (market)	Tax accounting statistics
730002	Research and development (other non-market)	Central and local government accounts
741100	Legal activities	Tax accounting statistics
741200	Accounting, book-keeping, auditing etc.	Tax accounting statistics
742009	Consulting engineers, architects, etc.	Market: tax accounting statistics
		Government non-market: central government accounts etc.
744000	Advertising	Tax accounting statistics
747000	Industrial cleaning	Tax accounting statistics
748009	Other business activities	Tax accounting statistics
		Government non-market: central government accounts etc.

3.17.3 Method of calculation

In all cases where the statistical sources are either tax accounting statistics or general government accounts, the standard method is followed for the estimate of output, intermediate consumption and value added, on the basis of these general sources. 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 Decision 95/309/EC, Euratom with the exception of the changes brought about by the transition from the ESA 79 to the ESA 95, which include the symmetrical treatment of repairs and maintenance in rented and owner-occupied dwellings, which has in any case always applied in the Danish national accounts. As Table 79 shows, in 1995 dwellings accounted for 8.9% 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 Decision 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 Decision are size and location. First of all, the average actual rent is calculated for rented dwellings in each stratum and this average stratum rent is then used for owner-occupied dwellings within the same stratum to estimate the imputed rental value of owner-occupied housing.

The Decision requires countries to operate with a minimum of 30 strata generated by at least three stratification criteria, of which the two mandatory ones are size and location. In addition, at least three size classes and two kinds of location are required. In Denmark's case, the sources enable a

much more detailed calculation to be made. For the 1991 benchmark calculation, 1 408 strata were used, and for the 1995 benchmark calculation, 896.

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 4-5 years, when large-scale rent surveys are carried out. The levels are projected during the intervening period using appropriate price and quantity indices. Thanks to the unique *Bygnings- og Boligregister* (BBR) annual information is available on the total housing stock divided according to numerous criteria. It is therefore not the quantity component in the price x quantity calculation formula which is missing on an annual basis but the price component. The large-scale 4-5 yearly housing surveys – cf. Section 11.1 – are an extremely robust statistical source. They are carried out to provide an objective basis in the form of price information for the public assessments of real estate values. These public assessments are used both for the calculation for tax purposes of the rental value of owner-occupied housing, which is subject to income tax, and as a basis for the collection of property taxes. The rent surveys cover all property which is let comprising three or more tenancies. They therefore have an extremely high degree of coverage of 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. Compared with the information on rents which is available from the population and housing censuses used in Denmark until 1970, and which are still an important source of data in many countries, the quality of rent survey data must be assumed to be much higher because the information is collected from professional landlords as opposed to households which rent property, which are presumably more likely to misunderstand what has to be included in answers to questions and what should be omitted – for example, heating bills etc. which are included with actual rents. The rent survey covers only dwellings which are occupied all year round.

For the 4-5 yearly calculations of levels, rentals (actual and imputed) are compiled using the stratification method as a price x quantity calculation. Since the rent survey does not have 100% coverage, the figures have to be grossed up to the total population of rented dwellings. The grossing up also uses the stratification method. For each stratum, the average annual stratum rent according to the rent survey is multiplied by the annual average number of dwellings let in the stratum in question. At the same time, the imputed rental value of owner-occupied housing is calculated by multiplying the annual average number of owner-occupied dwellings in each stratum by the same annual average stratum rent. Finally, a separate calculation is made for holiday homes (weekend cottages etc.) and garages, carports, etc.

The estimate of output in "dwellings" in the Danish national accounts for 1995 is based on an estimate of levels for 1991 projected to 1995. Subsequently, i.e. after the national accounts figures were final, this estimate was validated against a new, comprehensive benchmarking based on the rent survey for 1995.

Below, we show the main principles behind the calculation of levels for 1991 before discussing the projection to 1995 and, finally, the validation against the new survey of levels for 1995.

The Danish estimate of levels for 1991 uses the following stratification criteria:

Table 81 Stratification criteria for the calculation of levels, 1991

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
Rental status	1. Rented
	2. Used by owner, owner-occupied flats
	3. Used by owner, other dwellings
	4. Not known
Type	1. Farmhouses and detached houses
	2. Terraced, linked and semi-detached houses
	3. Dwellings in blocks of flats
	4. 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 m^2 and [over]
	8. Not known
Year of construction	1. –1939
	2. 1940-1959
	3. 1960-1969
	4. 1970-1974
	5. 1975-1979
	6. 1980-1984
	7. 1985-
	8. 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 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 districts: Birkerød, Dragør, Gentofte, Hørsholm, Lyngby-Tårbæk, Søllerød and Værløse. HT-2 consists of: Allerød, Ballerup, Brøndby, Farum, Fredensborg, Frederiksberg, Gladsaxe, Glostrup, Greve, Helsingør, Herlev, Hillerød, Hvidovre, Karlebo, København, Ledøje, Lejre, Roskilde, Rødovre, Solrød, Stenløse, Tårnby and Vallensbæk. HT-3 comprises: Albertslund, Bramsnæs, Frederikssund, Græsted-Gilleleje, Gundsø, Helsinge, Hundested, Hvalsø, Høje-Taastrup, Ishøj, Jægerspris, Køge, Ramsø, Skibby, Skovbo, Skævinge, Slangerup, Valsø and Ølstykke.

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 next 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 do not have 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.

In the housing census, there are a small number of dwellings where the rental status, type and quality group are not known. These are divided over the other groups in the light of the remaining information on the dwellings in question. In this connection, all dwellings where the type is not known are assumed to be in blocks of flats. All dwellings built after 1970 are also assumed to belong to quality group 1, i.e. have all facilities. Thus the number of factor levels for the type criterion has been reduced from 4 to 3 and for the quality criterion from 3 to 2.

Disregarding rental status, which is not a significant stratification criterion for the actual calculation of total rents, we then have the following theoretical number of strata: 8 x 3 x 2 x 8 x 8 = 3 072. However, the rent calculation assumes that all dwellings constructed after 1970 belong to quality group 1, and therefore the number of significant strata is reduced by 8 x 3 x 1 x 8 x 5 = 960 from 3 072 to 2 112. In addition, as discussed below, rents for detached dwellings are put at 1.02 times the

rent for corresponding flats, and thus one of the three factor levels for type of dwelling is in fact eliminated from the final estimate. Thus the number of significant strata in the calculation is cut down to 1 408.

The calculation of total rents is based on the above stratification with a simple price times quantity calculation for all-year-round dwellings other than farmhouses and detached houses, with a separate calculation for owner-occupied and rented dwellings. For farmhouses and detached houses, the information in the rent survey is relatively sparse, and there is some doubt about the extent to which rented houses which stand on their own are representative of the stock. In 1991, a large number of detached houses were repossessed by building societies under forced sales. These houses, which were possibly somewhat neglected, and let under special circumstances, may have artificially depressed the rent levels of the detached houses observed. It was therefore decided not to base the calculation for detached houses on the relatively scanty material on the rents of detached houses which are let out, but instead to base it on the firm observations for dwellings in blocks of flats, which had very different coverage. In this connection, a regression analysis was carried out to take account of the significance of the fact that a dwelling was detached. The result was that, on the basis of the 14 000 or more observations of detached houses which were let in 1991, there was no statistically significant rental difference (at the 95% level).

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. 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 for (external) garages, carports etc. for 1992 was as follows: the average construction costs per m^2 for garages and carports were calculated together with the corresponding construction costs for single-family houses. The ratio of these two figures multiplied by the ratio of the average size of garages etc. on the one hand to single family houses on the other and again multiplied by the average rent in single family houses was the calculated rental value of garages, etc.

The rent survey for 1991 refers to the level of rents in September 1991. The quantity variable, i.e. the housing survey, relates to the housing stock as at 1 January 1992. In order to obtain an estimate of levels for 1991 (and the first half of 1992, as a basis for the projection), the result of the above level calculation has to be corrected for both changes in rents between the first and the second halves of 1991 (second half of 1991 and first half of 1992), and for changes in the stock of housing during 1991 (and the first half of 1992) as a result of new buildings which came into use on the one hand and demolitions on the other.

After the corrections referred to above, we have total rents for 1991 (and the first half of 1992) for all dwellings in the economy, based on the average level of rents for the period and the average number of dwellings. To obtain the national accounts estimate of total rents, however, there have to be various additional corrections for items included in the rents observed in the rent survey, which are not to be considered as rents. In addition, the total rents calculated must be reduced by the total which in the price times quantity calculation was allocated to dwellings which stood empty during the period and therefore did not produce any actual or imputed dwelling service. Corrections are made to the rents observed for the following items which were included in rents:

- payments for water and water rates
- drainage charges

- refuse collection
- chimney sweeping
- insurance.

These amounts are instead counted as household consumption expenditure under the items in question. Where insurance is concerned, only the services element in the gross premiums is included.

There is also a correction for vacant dwellings. In accordance with the principles in the Commission Decision on dwellings, no output value is assigned to dwellings which are standing empty.

The figures thus calculated for total rents in the housing stock as at 1 January 1992, in terms of rental levels for September 1991, are first projected to the first half of 1992. This projection takes account of:

- changes in rents between the second half of 1991 and the first half of 1992
- new buildings first occupied between 1/1/92 and the average for the first half of 1992
- dwellings demolished between 1/1/92 and the average for the first half of the year.

The level thus calculated for the first half of 1992 constitutes the benchmark which is then projected using a price and a quantity index until the next level calculation can be incorporated into the national accounts. The next time this happened was for reference year 1996. During the intervening period, we use the percentage distribution of total rents into actual rents and imputed rents in the benchmark calculation to distribute total rents into these two categories . This does not, of course, have any effect on GNI but is important as regards the calculations of household consumption expenditure, since actual rents and imputed rents in owner-occupied dwellings are in two different consumption groups in the national accounts' detailed grouping of consumption.

The benchmark for the first half of 1992 has the following values:

Table 82 Total rents for the first half of 1992 divided by type of dwelling – calculation of levels

	DKK 1000
All-year-round dwellings	38 926 562
of which	
rented dwellings	14 276 593
owner-occupied dwellings	24 649 969
Holiday homes	1 214 999
Total rents for actual dwellings	40 141 560
Garages etc.	1 214 653
Total rents	41 356 213

The total rent is then projected from one six-month period to the next, starting with the projection from the first to the second half of 1992. The projections are made on a six-monthly basis because Danmarks Statistik's rent surveys which are used for the calculation of the housing item in, for example, the consumer price index are six-monthly surveys. The projection from the first to the second half of 1992 is shown in Table 84 for all-year-round owner-occupied dwellings. The projection for the other types of rent is exactly the same. The value for garages etc. is projected on the basis of the calculated change in total rentals for all-year-round owner-occupied dwellings. Danmarks Statistik's small-scale six-monthly rent surveys which are used for the consumer price index in particular cover a sample of around 4 200 rented dwellings.

Table 83 Projection of the calculation of levels from the first half of 1992 to the second half of 1992, owner-occupied dwellings, all-year-round dwellings

		DKK 1000
(1)	Rents for stock in first half-year before correction for water, drainage, etc.	26 343 993
(2)	Rents for stock in first half-year after correction for water, drainage, etc.	24 649 969
(3)	Six-monthly increase in rents (first half of 1992 – second half of 1992)	0.895 %
(4)	Rents for the second half of 1992of stock in previous half-year (1)x(1+(3))	26 579 791
(5)	Addition for new dwellings coming into use	147 134
(6)	Dwellings demolished	15 876
(7)	Total growth in the half-year (5)-(6)	131 258
(8)	Rents, stock in the second half of 1992 before correction for water etc. (4) +(7)	26 711 049
(9)	Water paid for via rents	493 283
(10)	Drainage charges paid for via rents	1 049 193
(11)	Deduction for vacant dwellings	152 957
(12)	Pure rents in the second half of 1992 (8)-(9)-(10)-(11)	25 015 616

The projection to 1995 uses exactly the same method as that shown in Table 83.

The level for total rents in 1995 thus obtained was subsequently validated against a new estimate of levels based on a new large-scale rent survey for September 1995 combined with an estimate of the housing stock as at 1 January 1996.

For the benchmarking based on the 1995 rent survey, the number of strata was reduced somewhat compared with the 1991 calculation. A statistical analysis of the figures showed that the optimum method was to aggregate over the factor levels for the stratification criterion type of housing as regards dwellings constructed from 1970 onwards. The reason was that the rent figures for 1995 for the newer dwellings in certain strata appear to be affected by changes in the legislation on rents and by work on urban renewal projects. It is generally the case that there are many more owner-occupied newer dwellings than rented ones. Abnormally large rent increases in relatively few newer rented dwellings could, under these circumstances and if stratification remained unchanged, work through to a very lsrge number of owner-occupied dwellings, with implausible results. The statistical analysis showed that the figures were robust, however, if detached, terraced, linked and semi-detached houses were aggregated along with dwellings in blocks of flats as regards that share of the figures which relates to dwellings constructed in 1970 or later. This reduces the significant strata in the calculation from 1 408 in the 1991 benchmark to 896 in the 1995 calculation.

However, even with the reduction in the number of strata needed for the 1995 calculation, this calculation of levels is still much more finely meshed and thus robust as regards the aggregation bias than is required by the Commission Decision on dwelling services. The Decision requires, as already mentioned, a minimum of 30 strata.

The result of the validation showed that the rent level *extrapolated back* to the average level for 1995 was around DKK 1 billion greater than the level projected from the first half of 1992 to 1995 from the previous benchmarking. The two estimates tally as well as can reasonably be expected. Against this background, a level was fixed for 1996 which was 1 billion higher than the level which would have emerged if the projection model had been used for the reference year 1996. A new direct estimate of levels based on the rent survey for September 1995 and the housing stock as at 1/1/1996 is, in other words, included in the national accounts as from reference year 1996. The next large-scale survey relates to September 1999 and is expected to be included directly as regards levels for the estimate of the final 1999 national accounts.

The DKK 1 billion adjustment in the output value for 1996 compared with the results of a continued projection is not considered as a major revision issue in the national accounts, partly because it is relatively small and partly because the calculation of levels based on the 1995 rent survey in fact uses the housing stock as at 1/1/1996 as the quantity component, rather than the average stock in 1995. It therefore cannot be excluded that the 1995 value for total rents produced by the projection model, which was incorporated into the 1995 national accounts, in fact tallies with the newly calculated benchmark value. It is possible that the difference in level is solely attributable to the inaccuracy of the extrapolation of the price and quantity component from the average values for the year to the month of September and 1 January of the following year respectively.

It was therefore decided to consider the benchmark calculation based on the rent survey for September 1995 and the housing stock as at 1 January 1996 as a new calculation of levels compatible with the figures projected for 1995. It was incorporated into the national accounts as a *direct estimate of levels* as from reference year 1996 inclusive.

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.

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) – cf. Section 11.3.

For *other intermediate consumption apart from stamp taxes and financial intermediation services paid for directly*, the sources are the same as for expenditure on repair and maintenance. 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. For dwellings which are let, it is much larger and includes, in particular, substantial administration services.

Expenditure on refuse collection, chimney sweeping, insurance services etc. will normally be included in the rent demanded. 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 and thus output of dwelling services. 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 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.

The figures for industry *702040, 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 in Section 1.3.9.1.1.

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. From the point of view of GNI, an expenditure-based estimate is best, since any measurement errors in the estimate of the input of non-residential rentals are thus neutralised as regards GDP/GNI.

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 closely 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. Once Danmarks Statistik's questionnaire-based accounting statistics have been expanded as from reference year 2000 to include this industry as well, it will be appropriate to consider using the accounting information for the industry directly to fix the input percentage, since by that time it will be much more comprehensive.

3.17.4 Breakdown of output by product

For the industries in NACE K other than dwellings and the letting of non-residential buildings, 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 1995 was divided by product as shown in Table 84.

Table 84 Breakdown of output in the "dwellings" industry by product

Product number	Text	Value DKK 1000
F702000	Fringe benefits, free housing	104 680
F711000	Fringe benefits, free car	11 409
K722000	Own-produced software	2 507
T702001	Letting of dwellings	31 812 488
T702002	Imputed rental value of owner-occupied dwellings	57 907 858
T702003	Garages etc. not an integral part of the dwellings	2 715 987
Total dwellings		92 553 987

The output of the "letting of non-residential buildings" industry covers two products. All non-residential letting is one product and there is also a small amount of output of the fringe benefit "free car" in the relevant product balance.

3.17.5 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 these industries other than the summary costs structure included in the 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 in Section 3.17.3. 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.

3.18 Public administration, defence and social security (NACE L)

3.18.1 Introduction

NACE L is defined on the basis of a grouping of producer units. It covers four of the national accounts' 130 industries. In Denmark in 1995, virtually the whole group consisted of government (other) non-market output, the exception being national accounts industry 752000, which in addition to non-market activity covers rescue services which are market. As shown in Table 85, NACE L accounted for 7.7% of the value added of the Danish economy in 1995.

Table 85 NACE L's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
751100 General (overall) public service activities	24 167	6 889	17 279
751209 Regulation of public service activities exc. for business	19 285	4 175	15 110
751300 Regulation of and contribution to more efficient operation of business	20 246	6 542	13 704
752000 Provision of services to the community*	32 603	11 539	21 064
Total NACE L	96 302	29 145	67 157
Percentage of the economy	5.8	3.7	7.7

NACE L covers 11 industries at the most detailed DK-NACE level, at which the calculations are made in every case. Here, this level of breakdown is less obviously an advantage, however, since government non-market output is 100% covered by accounts.

3.18.2 Statistical sources

In all cases other than the market output of rescue services etc. in DK-NACE industry 752500, which is included in national accounts industry 752000, the source is the accounts in *Databasen for Integrerede Offentlige Regnskaber (DIOR)* [the database for integrated public accounts] – cf. Section 11.1. This database covers central government, local government and social security fund accounts, plus all other units included in national accounts S.13. The source for the calculations of the market activity of rescue services etc., national accounts industry 752000, is the tax accounting statistics – cf. Section 3.1.2.3.

Table 86 Statistical sources underlying the calculation of value added for NACE L

National accounts industry/DK-NACE industry	Source
751100 General (overall) public service activities	Central government account, local government accounts, etc.
751209 Regulation of public service activities exc. for business	Central government account, local government accounts, etc.
751300 Regulation of and contribution to more efficient operation of business	Central government account, local government accounts, etc.
752000 Provision of services to the community	Central government account, local government accounts, etc.

3.18.3 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 accounting statistics.

3.18.4 Breakdown of output by product

The output of government non-market services is divided up 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

* Literally: Defence, police and the administration of justice.

supplies between public institutions. In addition, there is own-produced software. The market output in 752000 is for a single product, namely rescue services.

3.18.5 Breakdown of intermediate consumption by product

The input structure for general government is generally based on the breakdown in the central and local government accounts, which was much more detailed in the mid-1980s than it is now. This detailed breakdown of intermediate consumption was originally based on these detailed accounting plans combined with special information on defence, for example. For the major revision of the national accounts, the input structure was analysed in detail in the light of activity in the individual government industries. This was in the nature of a plausibility check, since, as already mentioned, there had been no fresh, detailed statistical information on the structure of public purchases of goods and services since the mid-1980s. In the current year, input structure is estimated on the basis of the technical coefficients from previous years.

3.19 Education (NACE M)

3.19.1 Introduction

NACE M is defined on the basis of a grouping of producer units comprising five of the national accounts' 130 industries. In Denmark in 1995, virtually the whole group consisted of government (other) non-market output, the exception being national accounts industry 804001, which covers market output in DK-NACE industries 804100 and 804290. In Denmark, what are known as “private schools” for children are without exception part of S.13, and are thus government non-market producers in that over 50% of production costs are met by public funds and the public authorities to a large extent control these institutions via the rules for award of grants. As shown in Table 87, NACE M represented 5.4% of the value added of the Danish economy in 1995.

Table 87 NACE M's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
801000 Primary education	28 568	5 675	22 893
802000 Secondary education	14 575	4 160	10 415
803000 Higher education	10 159	2 394	7 765
804001 Adult and other education (market)	1 704	512	1 193
804002 Adult and other education (non-market)	6 954	2 082	4 872
Total NACE M	61 960	14 822	47 139
Percentage of the economy	3.7	1.9	5.4

NACE M covers 24 industries at the most detailed DK-NACE level, the level at which all calculations are made. However, this degree of detail is not such an advantage here, since government non-market output is 100% covered by accounts.

3.19.2 Statistical sources

In all cases other than market output in industry 804001, the source is the accounts in *Databasen for Integrerede Offentlige Regnskaber (DIOR)*, - cf. Section 11.1. This database covers central government, local government and social security fund accounts, plus all other units included in

national accounts S.13. The source for the calculations of the market activity in 804001 is the tax accounting statistics – cf. Section 3.1.2.3.

Table 88 Statistical sources underlying the calculation of value added for NACE M

National accounts industry/DK-NACE industry	Source
801000 Primary education	Central government account, local government accounts, etc.
802000 Secondary education	Central government account, local government accounts, etc.
803000 Higher education	Central government account, local government accounts, etc.
804001 Adult and other education (market)	Tax accounting statistics
804002 Adult and other education (non-market)	Central government account, local government accounts, etc.

3.19.3 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 accounting statistics.

3.19.4 Breakdown of output by product

The output of government non-market services is broken down 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. The market output in 804001 covers two products, namely driving schools etc. and other market education.

3.19.5 Breakdown of intermediate consumption by product

The input structure for general government is generally based on the breakdown in the central and local government accounts, which was much more detailed in the mid-1980s than it is now. This detailed breakdown of intermediate consumption was originally based on these detailed accounting plans combined with special information on defence, for example. For the major revision of the national accounts, the input structure was analysed in detail in the light of activity in the individual public industries. This was in the nature of a plausibility check, since, as already mentioned, there had been no fresh, detailed statistical information on the structure of public purchases of goods and services since the mid-1980s. In the current year, input structure is estimated on the basis of the technical coefficients from previous years.

3.20 Health and welfare institutions** (NACE N)

3.20.1 Introduction

NACE N is defined on the basis of a grouping of producer units. It covers seven of the national accounts' 130 industries. As Table 89 shows, it accounted for 10.7% of the value added of the Danish economy in 1995.

Table 89 NACE N's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
851100 Hospital activities	35 970	10 898	25 072
851209 Medical, dental, veterinary activities etc.	17 953	4 508	13 445
853109 Social institutions etc. for children	21 778	3 920	17 858
853209 Social institutions etc. for adults	41 297	9 537	31 759
900010 Sewage removal and disposal	4 553	2 038	2 516
900020 Refuse collection and sanitation	5 777	3 462	2 315
900030 Refuse dumps and refuse disposal plants	1 403	803	600
Total NACE N	128 731	35 166	93 565
Percentage of the economy	7.7	4.4	10.7

NACE N covers 35 industries at the most detailed DK-NACE level, and all the calculations are carried out at that level.

3.20.2 Statistical sources

For government, non-market output, the source is the accounts in *Databasen for Integrerede Offentlige Regnskaber (DIOR)*, cf. Section 11.1, 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 either accounting statistics for industries where public corporations predominate or tax accounting statistics. The sources can be seen in the table below:

Table 90 Statistical sources underlying the calculation of value added for NACE N

National accounts industry/DK-NACE industry	Source
851100 Hospital activities	Public accounts (DIOR)
851101 Private market	Tax accounting statistics
851102 Government non-market	Public accounts (DIOR)
851209 Medical, dental, veterinary activities, etc.	
851202 Government non-market output	Public accounts (DIOR)
Other DK-NACE industries in 851209	Tax accounting statistics
853109 Social institutions etc. for children	Public accounts (DIOR)
853209 Social institutions etc. for adults	Public accounts (DIOR)
900010 Sewage removal and disposal	RS for industries where public corporations predominate
900020 Refuse collection and sanitation	RS for industries where public corporations predominate
900030 Refuse dumps and refuse disposal plants	RS for industries where public corporations predominate

** The Danish wording here is not the same as in the NACE Rev. 1.

3.20.3 Method of calculation

The calculations use the standard methods for general transversal sources in the form of *Databasen for Integrerede Offentlige Regnskaber (DIOR)*, accounting statistics for industries where public corporations predominate and tax accounting statistics.

3.20.4 Breakdown of output by product

The output of government non-market services is divided up 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. The output of market producers in NACE N is divided into nine products plus fringe benefits and own-produced software.

3.20.5 Breakdown of intermediate consumption by product

The input structure for general government is generally based on the breakdown in the central and local government accounts, which was much more detailed in the mid-1980s than it is now. This detailed breakdown of intermediate consumption was originally based on these detailed accounting plans in the central and local government accounts, combined with special information on defence, for example. For the major revision of the national accounts, which was completed in 1997, the input structure was analysed in detail in the light of activity in the individual public industries. This was in the nature of a plausibility check, since, as already mentioned, there had been no fresh, detailed statistical information on the structure of public purchases of goods and services since the mid-1980s. In the current year, input structure is estimated on the basis of the technical coefficients from previous years.

3.21 Organisations, recreational and cultural activities etc.* (NACE O)

3.21.1 Introduction

NACE O is defined on the basis of a grouping of producer units and consists of four of the national accounts' 130 industries. As Table 91 shows, it accounted for 10.1% of the value added of the Danish economy in 1995.

Table 91 NACE O's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
910000 Activities of membership organisations	14 676	3 477	11 199
920001 Recreational, cultural, sporting activities (market)	19 515	7 263	12 252
920002 Recreational, cultural, sporting activities (non-market)	6 476	2 832	3 644
930009 Other service activities	5 625	1 724	3 900
Total NACE O	46 292	15 296	30 995
Percentage of the economy	2.8	1.9	3.6

* The wording is again different from the NACE Rev. 1 wording.

NACE O covers 43 industries at the most detailed DK-NACE level, and in virtually all cases the calculations are made at that level, the exception being 910000, where the whole of the national accounts industry is lumped together but with private institutions and government non-market producers shown separately.

3.21.2 Statistical sources

The statistical sources underlying the national accounts calculations for NACE O can be seen in the table below:

Table 92 Statistical sources underlying the calculation of value added for NACE O

National accounts industry/DK-NACE industry	Source
910000 Activities of membership organisations	
910001 Private institutions	Statistics on wages and salaries, trade union accounts
910002 Government non-market	Government accounts (DIOR)
920001 Recreational, cultural, sporting activities (market)	
921100 Motion picture and video production	Tax accounting statistics
921200 Motion picture and video distribution	Tax accounting statistics
921300 Motion picture projection	Tax accounting statistics
922000 Radio and television activities	RS for industries where public corporations predominate
923110 Live theatrical presentations, concerts and opera production	Tax accounting statistics
923120 Activities of individual artists	Statistics on wages and salaries, numbers of artists, statistics on culture
923200 Operation of arts facilities	Tax accounting statistics
923300 Fair and amusement park activities	Tax accounting statistics
923400 Other entertainment activities n.e.c.	Tax accounting statistics
924000 News agency activities	Tax accounting statistics
925200 Museum activities etc.	Tax accounting statistics
925300 Botanical and zoological gardens	Tax accounting statistics
926110 Sports centres and public swimming baths	Tax accounting statistics
926190 Other sports facilities	Tax accounting statistics
926210 Sports clubs	Tax accounting statistics
926290 Other sporting activities n.e.c.	Tax accounting statistics
927100 Gambling and betting activities	RS for industries where public corporations predominate
927200 Other recreational activities n.e.c.	Tax accounting statistics
930002 Recreational, cultural, sporting activities (non-market)	RS for industries where public corporations predominate
930009 Other service activities	Tax accounting statistics

All the activity in NACE group 9251 is government non-market output which is covered under NACE L..

3.21.3 Method of calculation

The calculations for all DK-NACE industries other than 923120 comply with the standard methods for general transversal sources in the form of *Databasen for Integrerede Offentlige Regnskaber* (DIOR), tax accounting statistics and the questionnaire-based accounting statistics. For industry 923120, activities of individual artists, the calculation is divided into 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 NACE 92 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. It has to be borne in mind that part of the income (mixed income) may be taxed in the same way as earned income.

For the output of royalties (services output) the information in statistics on culture which refers to royalty payments for art and culture is used directly. 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. This calculation convention has no statistical basis but is based on economic growth theory. The lack of primary statistics on the value of original works presumably applies to the great majority of countries.

Intermediate consumption is calculated using an input percentage derived from SLS-E figures. 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 SLS-E returns. There is not considered to be any intermediate consumption corresponding to royalties and the output of artistic originals in branch 923120. 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.

3.21.4 Breakdown of output by product

The output of the national accounts industry is divided into 42 products, 33 of which represent market activity and nine government non-market output.

3.21.5 Breakdown of intermediate consumption by product

There are no regular costs structure statistics on the market output of these industries other than the summary costs structure included in the SLS-E accounting plan and in the accounting statistics for industries where public corporations predominate. The input structure is based on those statistics. The breakdown into individual products has to a certain extent been based on estimates which in turn were based on common sense considerations. For the current year, an initial estimate is made for the input structure on the basis of the technical coefficients in the supply and use tables from previous years.

The input structure for general government (non-market output) is generally based on the breakdown in the central and local government accounts, which was much more detailed in the mid-1980s than it is now. This detailed breakdown of intermediate consumption was originally based on these detailed accounting plans combined with special information on defence, for example. For the major revision of the national accounts, the input structure was analysed in detail in the light of activity in the individual public industries. This was in the nature of a plausibility check, since, as already mentioned, there had been no fresh, detailed statistical information on the structure of public purchases of goods and services since the mid-1980s. In the current year, input structure is estimated on the basis of the technical coefficients from previous years.

3.22 Private households with employed persons (NACE P)

3.22.1 Introduction

NACE P, which is defined on the basis of a grouping of producer units, consists of only one of the national accounts' 130 industries. As Table 93 shows, it accounted for 0.1% of the value added of the Danish economy in 1995.

Table 93 NACE P's contribution to the gross value added of the economy

Industry	Output	Intermediate consumption	Value added at basic prices
950000 Private households with employed persons	1 235	0	1 235
Total NACE P	1 235	0	1 235
Percentage of the economy	0.1	0	0.1

3.22.2 Statistical sources

All 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 economic activity consisting of work in private homes is either included under "industrial cleaning" or under general government. The latter applies if, for example, a local authority employs someone to look after children in the children's own home, pays the person in question and then reclaims that payment from the parents.

The level is calculated on the basis of a one-off survey, which for 1992 consisted of extending the EU-harmonised labour force survey (LFS), which in Denmark is now called *Arbejdskraftundersøgelsen* (AKU), 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.

The level established for 1992 was projected for the following years, using the consumer price index for cleaning assistance minus taxes (the "net price index"), assuming that the volume remained unchanged.

Table 94 Statistical sources underlying the calculation of value added for NACE P

National accounts industry/ DK-NACE industry	Source
950000 Private households with employed persons	One-off survey, net price index

3.22.3 Method of calculation

The 1992 benchmark is projected using the price index and assuming that volume remains unchanged.

3.22.4 Breakdown of output by product

The output value is allocated to a single product.

3.22.5 Intermediate consumption by product

By definition, there is no intermediate consumption in this industry.

3.23 Treatment of international organisations

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.

3.24 Taxes on products excluding VAT

3.24.1 Introduction

Table 95 Taxes on products excluding VAT, 1995

DKK million	To general government	To the EU	Taxes on products excluding VAT, total
Taxes on products excluding VAT	58 617	2 320	60 937
Percentage of GDP			6.0

3.24.2 Principles underlying the estimation and periodisation

As required by the ESA 95 paragraphs 4.26-4.27, taxes on products 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 *Told&Skat* with an indication of the period of the transactions to which they relate. Taxes on products excluding VAT are thus recorded on an accrual basis.

Denmark thus bases its figures 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.

In contravention of the fundamental principle of accruals in the SNA 93 and the ESA 95, in 2000 the Council approved an amendment to the ESA 95 Regulation which prevents countries from including the tax revenue which gives rise to provisions for losses on bad debts or is written-off as a result of bankruptcies, etc. in the estimate of the "government deficit", i.e. net lending/net borrowing of general government. This approved amendment gives countries a certain amount of flexibility as regards the way in which uncollectable taxes are accounted for in the accounting system, provided the effect on the "government deficit", i.e. the net lending/net borrowing of Sector S.13, general government, remains the same. The least radical solution, which Denmark intends to apply, is simply to count the tax revenue which has not been collected in as a capital transfer from general government to the debtor sectors. In this way, the change in the national accounts may be limited to a simple entry in the capital account and the accrual principle remains intact in all other respects.

The Regulation on the recording of taxes and social contributions in the national accounts (2516/2000) does not, however, in any way affect the fact that those taxes on products which are included in the estimate of GNI have to be estimated on an accrual basis and included regardless of the possibility of their remaining unpaid as a result of bankruptcy. As from 2000, Denmark has continued to comply with the logical and system-consistent accrual principle and has chosen to implement the Regulation by means of a single entry in the capital account.

All in all, the Danish national accounts therefore continue to treat taxes and contributions to social security schemes as they have always done with the exception of a single extra entry in the capital account. The Regulation on the treatment of taxes, etc. has no special consequences for the supply and use tables or the symmetrical input-output tables.

3.25 VAT

3.25.1 Introduction

Table 96 VAT 1995

DKK million	To general government	To the EU	Taxes on products excluding VAT, total
VAT	96 317	0	96 317
Percentage of GDP			9.5

3.25.2 Principles underlying the estimation and periodisation

As required by the ESA 95 paragraphs 4.26-4.27, VAT is 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 the tax assessed. Tax assessments are recorded by *Told&Skat* with an indication of the period of the transactions to which they relate. VAT is thus recorded on an accrual basis.

Denmark thus bases its figures 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.

In contravention of the fundamental principle of accruals in the SNA 93 and the ESA 95, in 2000 the Council approved an amendment to the ESA 95 Regulation which prevents countries from including the tax revenue that gives rise to provisions for losses on bad debts or is written-off as a result of bankruptcies, etc. in the estimate of the "government deficit", i.e. net lending/net borrowing of general government. This approved amendment gives countries a certain amount of flexibility as regards the way in which uncollectable taxes are accounted for in the accounting system, provided the effect on the government deficit remains the same. The least radical solution, which Denmark intends to apply, is simply to count the tax revenue which has not been collected in as a capital transfer to the debtor sectors in the capital account.

The Regulation on the recording of taxes and social contributions in the national accounts (2516/2000) does not, however, in any way affect the fact that those taxes on products which are included in the estimate of GNI have to be estimated on an accrual basis and included, regardless of the possibility of their remaining unpaid as a result of bankruptcy. As from 2000, Denmark has continued to comply with the logical and system-consistent accrual principle and has chosen to implement the Regulation by means of a simple entry in the capital account. Those countries which base their figures on "cash data", i.e. information on taxes actually paid, must, on the other hand, include an allowance to ensure that the taxes on products to which general government is entitled but which are not paid are included in their estimate of GDP either as taxes on products or as an addition to value added at basic prices.

All in all, the Danish national accounts therefore continue to treat taxes and contributions to social security schemes as they have always done with the exception of a single extra entry in the capital account. The Regulation on the treatment of tax, etc. has no special consequences for the supply and use tables or the symmetrical input-output tables.

As mentioned in Section 1.1.3, the Danish national accounts differ from the ESA 95 as regards the treatment of the EU's own resources from VAT, the "third own resource". According to the ESA 95, paragraph 4.14, this income should be counted as a tax collected directly by the EU from residents in Member States (D.211). In the Danish national accounts it is counted differently in that the total VAT revenue is considered to be paid to the national general government sector S.13. The EU's VAT-based own resource is then counted as a current transfer (D.74) from central government to the EU.

This difference has no effect on the estimate of GNI as based on the definitions in the ESA 79, where taxes on production and imports minus subsidies to and from the rest of the world are not included in the transition from GDP to GNP. It does, however, affect GNI as estimated on the basis of the ESA 95 definitions. When the reports under the GNP Directive switch to being based on the ESA 95, a correction will be made to the GNI questionnaire for this definitional difference.

3.25.3 Comparison and analysis, theoretical versus actual VAT resources

Compared with some countries, the Danish VAT system is very simple in that there are only two rates, a standard rate of 25 % in 1995 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 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 there is virtually no uncertainty resulting from the use of differential rates. Theoretical VAT resources are defined as the VAT revenue which would be produced if all actors in the economy paid VAT as the legislation states that they should. 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 2 750 or so products in the (supply and) use tables. Actual VAT revenue is equal to VAT assessed on an accrual basis, as described in Section 3.25.2. 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 2 750 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 and, presumably, in various other countries. 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 know the size of the deduction for outgoing VAT connected with bad debts. Based on, *inter alia*, banks' provisions and losses, Denmarks Statistik has cautiously estimated those bad debts at just under 2 % of VAT revenue. This percentage remains 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 much 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, which normally use the statutory rates and not actual rates for this calculation, 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 97 Comparison of theoretical and actual VAT revenue, 1992-97

Year	Theoretical VAT revenue, with statutory rate (1)	Theoretical VAT revenue with deduction for debtors (2)	Actual VAT revenue (VAT assessments) (3)	Percentage difference between theoretical and actual VAT I ((1)-(3))/(3)-1) x 100	Percentage difference between theoretical and actual VAT II ((2)-(3))/(3)-1) x 100
1992	90 733 289	89 063 796	84 216 510	7.74	5.76
1993	92 681 000	90 975 670	85 777 027	8.05	6.06
1994	100 115 021	98 272 905	93 019 195	7.63	5.65
1995	104 916 436	102 985 974	96 317 002	8.93	6.92
1996	110 429 776	108 397 868	103 320 000	6.88	4.91
1997	117 543 388	115 380 590	109 340 000	7.50	5.52

In 1995, the difference between theoretical and actual VAT was greater in percentage terms than the average for the years shown, but it was smaller in 1996. This is possibly due to the accession of Austria, Sweden and Finland to the EU on 1 January 1995, which may have led to a shift in the period for VAT on imports from those countries with the change from the rules for VAT on imports from third countries to the general VAT on goods imported from the three countries in question. With the change from one tax system to another, there is a change in the transaction date on which the central government claim arises, from the date of import to the date of sale of the final product. In 1995, Austria, Sweden and Finland together accounted for a good 16% of Denmark's imports of goods. In any event, this would appear to be a one-off phenomenon. Over the six-year period as a whole, the percentage difference between theoretical and actual VAT has remained reasonably constant.

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 the 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 the correct one. 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 8 599 million in 1995. The national accounts estimate of deductions for bad debts of just under 2% may account for DKK 1 930 million of this difference. In addition, VAT corresponding to the explicit allowances for work in the black economy and underreporting etc. account for DKK 1 287 million. Of these DKK 1 287 million, DKK 617 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 5 382 million for 1995. There are several possible reasons for this residual amount:

- larger deductions for bad debts than estimated;
- timing differences (shift in the period), in particular for 1995;
- less work in the black economy and underreporting than estimated;
- VAT evasion in industries where hidden activity is covered indirectly by a price x quantity calculation;
- implicit correction for VAT evasion in certain sole proprietorships;
- inaccuracies in the national accounts supply and use tables;
- inaccuracies in the national accounts interpretation of VAT legislation.

It is important to note that the residual should not be interpreted as meaning that the allowances added in for VAT fraud without complicity are insufficient. The criterion for deciding what should be included in the estimate of GNP is the amounts which the purchasers have actually paid. There are no grounds for claiming that the explicit allowances made for the underreporting of sales in retail trade, restaurants, hairdressers, etc., have been undervalued.

Below, we discuss the above factors individually.

1) As already stated, we cannot rule out the possibility that the deductions for bad debts are larger than the estimated just under 2%, particularly in years when the economy is depressed. But 1995 was a boom year, and it is not likely that this factor is one of the reasons for the residual.

2) As already mentioned, the difference between theoretical and actual VAT revenue was larger in 1995 than for the period as a whole. One possible explanation is a shift in the period in which the VAT falls due on goods imported from Austria, Sweden and Finland. This time difference may possibly explain up to DKK 1.5 billion of the residual. 1995 was known to be a year of substantial stock-building, whereas 1993, when the Single Market came into force for EU 12, was a year when stocks were very much run down.

3) The possibility that the national accounts allowance for work in the black economy and underreporting, etc. is too large because the activity has already been included in regular "legitimate" output may be one reason for the residual. It is possible that a share of the untaxed activity is genuinely exempt according to the VAT legislation, and that it is therefore legally tax-free. In this case, the calculated theoretical VAT percentages on products - before the allowance - are too high. It seems unlikely, however, that this factor is one of the main reasons, since there are very few exceptions in the VAT legislation where the industries in question are concerned.

4) 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 examples are agriculture etc. and the letting of dwellings, but the latter is not liable for VAT, and so it is only agriculture that is relevant here. The black economy in agriculture etc, which is implicitly covered in the national accounts, may help to explain part of the residual.

5) In addition, in industries where there are explicit allowances for the black economy, it may happen that the national accounts *implicitly* capture some of it if, for example, the owners of businesses route some of their private consumption through the business's accounts so that it appears to the tax

authorities to be intermediate consumption. This kind of tax swindle must be assumed to occur primarily in small, one-man businesses. The incentive is obvious, since in such cases the owner avoids both income tax and VAT on part of his own private consumption. The tax accounting figures (SLS-E), which are typically used as a basis for the calculations for small enterprises, do not cover those which have annual turnover of under DKK 500 000 or those which have not been operating throughout the year. According to the tax legislation, such enterprises do not have to submit the SLS-E form. In the national accounts calculations, these exempt businesses are represented via a grossing up of the accounts of enterprises in the same stratum. To the extent that intermediate consumption is more likely to be overstated in those enterprises for which there is grossing up than in those for which there are accounts available, the national accounts implicitly capture this tax swindle and give an accurate picture of the value added created. It seems likely that this factor is one reason for the residual.

6) Inaccuracies in the national accounts supply and use tables may in principle 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 private consumption in households and the construction of dwellings, are too high, so that the theoretical VAT imputed is too high as well. In the revised national accounts as published in 1997 and later years, the calculations for both private consumption in households and housing construction are based on robust statistical sources, however, and there is no other indication that the two demand components have been over-estimated. But it is clear that there is a certain amount of statistical uncertainty about the square metre prices used for the calculation of the value of new housing construction. The possibility that these prices are too high cannot altogether be ruled out. The square metre prices used are estimated centrally on the basis of fairly comprehensive price figures collected in 1993-1994 and projected with the help of productivity-corrected indices of construction costs.

7) 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, a great deal of care is taken to ensure that the calculation reflects VAT legislation right down to the smallest detail. In doubtful cases, Danmarks Statistik has consulted the Ministry of Taxation about the interpretation of special rules in the legislation. But the possibility cannot be ruled out, of course, that there are subtleties in the VAT legislation of which the national accounts statisticians have simply been unaware, and which may give rise to inaccuracies in the calculation of theoretical VAT revenue. However, the special rules in the VAT legislation relating to expenditure on the acquisition, running and maintenance of private vehicles are implemented in full and at the most detailed level in the national accounts.

3.26 Subsidies on products

3.26.1 Introduction

Table 98 Subsidies on products 1995

DKK million	From general government	From the EU	Subsidies on products, total
Subsidies on products	9 673	9 168	18 840
Percentage of GDP			1.9

The table below shows subsidies on products in the national accounts for 1995.

Table 99 Subsidies on products, 1995, by scheme

Subsidy scheme	**DKK million**
EU-schemes, total	**9 168**
Export subsidy schemes	4 137
Net loss on products, connected with intervention	121
Subsidy on the production of skimmed milk, etc.	808
Aid per hectare	4 101
Danish schemes, total	**9 673**
Municipal housing for pensioners, etc.	6
Refuse disposal and incineration	179
Municipal theatres, orchestras, cinemas, etc.	350
Statsskovvæsenet [Danish Forestry Commission]	226
DSB (*De Danske Statsbaner)* [Danish State Railways]	5 603
Telestyrelsen [National Telecom Agency]	12
Municipal buses and other transport	704
Other subsidies on products to public enterprises	681
Central government subsidies to regional theatres	56
Consultants to associations, agriculture	138
“Housing package” – subsidies for repairs and maintenance	405
Other subsidies on products to private enterprises	1 312
Subsidies on products, total	**18 840**

3.26.2 Recording principles and periodisation

Subsidies on products are recorded as required by the ESA 95 paragraph 4.39 on an accrual basis, i.e. when the product transaction which gives rise to the subsidy occurs.

Under an EU recommendation, hectare support is counted as a product subsidy, even though this runs counter to the logic underlying the breakdown of subsidies into subsidies on products and other subsidies on production. One characteristic of hectare aid is precisely the fact that it is not linked to a product. Consequently, the sales value of the crops covered by such aid schemes is increased by the amount of the aid when output is valued at basic prices.

Under the ESA 95 paragraph 4.35 c), government subsidies to public corporations to cover their deficits are treated as subsidies on products. According to the previous national accounts system, the SNA 68 (ESA 79), such subsidies were considered not to be linked to a product, i.e. they were other production subsidies.

For the calculation of subsidies to public corporations such as *De Danske Statsbaner* (DSB), an estimate of the consumption of fixed capital is included, to arrive at the deficit covered by central government. This deficit coverage is not directly observable in central government accounts, since total central government payments to the DSB include both a subsidy (D.31) and an injection of capital into a quasi-corporation (F. 513) to finance capital formation etc. To pick out the subsidy share, therefore, we have to calculate the net operating deficit, i.e. take account of depreciation on the capital stock as well as imputed pension contributions of civil servants. The latter also represent a subsidy to public corporations with this type of employees. Whereas there is a certain amount of uncertainty about the estimate of the subsidy as a result of the assumptions made when the consumption of fixed capital and the imputed pension contributions of employees having the status of civil servants are calculated, there is no corresponding uncertainty about GDP/GNI, which depends solely on estimates of the income from tickets etc, about which there is virtually 100% certainty.