7. Overview of the allowance for exhaustiveness

7.0 Introduction

7.0.1 Geographical coverage

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

7.0.2 General approaches to exhaustiveness

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

In the Danish national accounts, there are two types of allowance for the black economy. First of all, there are estimates for the *work that is hidden* to the public authorities in order to avoid taxes. In these cases, both the seller and the buyer of a product will typically know that the production is not reported to the tax authorities, and the price will be below market price. Secondly, there are allowances for the *under-reporting and the associated VAT fraud* that companies take advantage of. In these cases, buyers do not necessarily know that the production is not declared. In any industry, there is only one type of allowance in order to avoid the risk of double counting. This would probably be the case if both types of allowance were introduced in a given industry since a significant part of the extra profits made by taking advantage of under-reporting will be spent on hiring black labour. The allowances for the black economy are additions to output and value added. There are no corrections to intermediate consumption.

The latest benchmark survey for the black economy was made in 2004 with reference to the year 2003, which was partly financed by the EU[18]. The values from the benchmark study are extrapolated using various methods, one important source being annual supplementary questions in the LFS regarding hours worked in the “black” economy. The methods are described in detail below.

As recommended in Commission Decision (98/527/EC, Euratom) Statistics Denmark has made calculations on the basis of the supply-use tables that compare theoretical and actual VAT revenue for the period 2005-2012. The results of the calculations are shown in chapter 3.28 and generally the difference between theoretical and actual VAT revenue were relatively low and constant over the period.

7.1 Allowance for exhaustiveness in the production approach

7.1.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

Comparison of employment data with demographic sources

The latest comparison between employment data and national accounts data was undertaken in 1994 with 1991 as reference year. The comparison was made in relation to the implementation of the Commission Decision (94/168/EC, Euratom) of 22 February 1994 on measures to be taken for the implementation of Council Directive 89/130/EEC, Euratom on the harmonization of the compilation of gross national product at market prices ("exhaustiveness decision").

Demand-side employment (point of view of the enterprises) is the employment underlying the estimate of GDP using the output approach, i.e. employment in those producer units which are covered by the estimate of the industries' gross value added. For 1991 the employment underlying the estimate of the industries' value added before the allowances for activity in the black economy was employment according to the ERE [establishment-related employment] statistics.

[18] The study is described in detail in the report ”Underground production in Denmark” by Statistics Denmark from 2004.

Supply-side employment is demographic employment figures reported by households in the form of population censuses and labour force surveys. Since Denmark has not carried out traditional population censuses since 1970 but has switched to register-based estimates, only one demographic source was available, namely the EU-harmonised Labour Force Survey (LFS).

Denmark validated the GNI estimate with the help of employment data by comparing the ERE and the LFS statistics. The report entitled "*Validering af den beskæftigelse, som ligger til grund for nuværende BNI-beregninger*", ["Validation of employment underlying the current GNP calculations"], which Denmark sent to the Commission in 1994 as required by the exhaustiveness decision, discusses the methods used, including conceptual corrections, for the comparison of the statistical sources in question.

Table 7.1 gives the main results of this comparison.

Table 7.1 Comparison of employment data from the demand side and from the supply side, 1991

	Self-employed etc.	Employees	Total
	pers.		
ERE			
Calculated man-years (annual FTEs)	239 000	1 946 000	2 185 000
+ employment< 10 hours	0	25 000	25 000
+ certain primary self-employment	30 000	0	30 000
+ secondary VAT payers	30 000	0	30 000
Corrected FTEs	299 000	1 971 000	2 270 000
LFS			
Calculated FTEs	288 000	2 038 000	2 326 000
LFS – ERE	-11 000	67 000	56 000
	pct.		
% of LFS	-3.8	3.3	2.4

Description of allowances according to types of non-exhaustiveness (N1-N7)

Allowances for exhaustiveness are made for the following N-types:

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

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

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

N3 adjustments cover values for farmers’ output for own consumption etc. They are available from agricultural statistics and are assumed to cover farm-gate sales as well, most of which presumably come under the “black” economy (N1). The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by ESA2010. Table 7.1 shows the adjustments by industry. Total adjustments to value added amount to 78 mio. DKK.

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

N7 covers adjustment for production for own final use by market producers and wages and salaries in kind (“fringe benefits”).

There are no adjustments for N4 Registered legal person is not included in statistics (they are included in N5). Adjustments for N6 Mis-reporting by the producer are included in N1.

Implicit adjustments

For agriculture etc. and dwellings, output is estimated, using a price times quantity calculation. This captures the value of underreporting and work in the black economy implicitly, since the method ensures that all output in these areas is covered. The same goes for letting of non-residential premises, where the output value is estimated from the expenditure side.

For dwellings work in the hidden economy is also implicitly captured. Based on assumptions, an "of which" estimate for the black economy has been made. Assuming that black letting of dwellings primarily relates to the letting of holiday homes and that this takes place on average one week per year, a value of 221.783 mio. DKK has been arrived at. Implicit adjustments are not shown in the TAE tables.

7.1.2 Adjustments made for the different types of non-exhaustiveness

The tabular approach exercise (TAE) has been carried out in order to document existing explicit exhaustiveness adjustments. Firstly, existing explicit adjustments have been identified. In that process, delimitation between exhaustiveness adjustments and other adjustments had to be made. To be consistent with the process tables, we carried out the two exercises in parallel. The result is that all adjustments to primary statistics are documented – whether as N-types in the TAE or other adjustments in the process tables.

Implicit adjustments are not shown in table 3a. The reason is that we would lose the consistency between the process tables and the TAE.

Table 7.2 shows the result of the TAE in the form of table 3A which summarises the N-type adjustments (value added by sector and nace rev.2 21 (groups)). For the full TAE exercise please refer to annex 6:

Table 7.2 Summary of TAE (table 3A), 2012

	N1	N2	N3	N4	N5	N6	N7	Total	Percent of GDP
	DKK mill.								pct.
S11	-	-	-	-	570	-	14 041	14 611	0.78
S12	-	-	-	-	-	-	-	-	-
S13	-	-	-	-	-	-	0	0	0.00
S14	9 522	2 859	78	-	1 298	-	382	14 139	0.75
S15	-	-	-	-	-	-	-	-	-
Nace A	13	-	33	-	-	-	31	77	0.00
Nace B	-	-	-	-	0	-	32	32	0.00
Nace C	104	-	45	-	136	-	3 913	4 198	0.22
Nace D	-	-	-	-	-	-	160	160	0.01
Nace E	-	-	-	-	1	-	28	29	0.00
Nace F	2 989	-	-	-	166	-	1 037	4 192	0.22
Nace G	977	1 930	-	-	569	-	2 377	5 854	0.31
Nace H	174	-	-	-	74	-	562	810	0.04
Nace I	1 454	-	-	-	65	-	221	1 740	0.09
Nace J	314	-	-	-	181	-	1 736	2 232	0.12
Nace K	-	-	-	-	-	-	-	-	-
Nace L	-	-	-	-	52	-	161	212	0.01
Nace M	27	-	-	-	393	-	3 711	4 131	0.22
Nace N	15	-	-	-	214	-	269	498	0.03
Nace O	-	-	-	-	-	-	14	14	0.00
Nace P	39	-	-	-	-	-	12	51	0.00
Nace Q	56	-	-	-	-	-	63	119	0.01
Nace R	355	-	-	-	-	-	39	395	0.02
Nace S	1 901	928	-	-	18	-	55	2 903	0.15
Nace T	1 104	-	-	-	-	-	-	1 104	0.06

The adjustments as presented in the table are mainly made at the detailed level using the supply use tables (SUT), which contain information at product level for explicit adjustments for the "black" economy (N1), illegal

activity (N2), production of output for own final use (N3) and fringe benefits and production of capital goods for own final use (N7). This makes it possible to extract the detailed information at industry level.

Adjustments for N5 cannot be identified in the SUT. These adjustments for the value threshold are made at the industry level and have no explicit product breakdown.

The sector dimension has been obtained in different ways depending on the N-type. N1, N2 and N3 adjustments are assumed to be carried out in the household sector (S14) only. For N5 information is used from the accounting statistics. For N7 information from the tax authorities is used.

7.1.3 Exhaustiveness methods

This section has a more detailed description of the explicit exhaustiveness adjustments by N-type. At the end of the section, there is a description including an estimate of the implicit adjustments.

Adjustments for N1 Producer should have registered

Adjustments for N1 cover output in the "black" economy. There are two types of allowance for the black economy. First of all, there are estimates for the *work that is hidden* to the public authorities in order to avoid taxes. In these cases, both the seller and the buyer of a product will typically know that the production is not reported to the tax authorities, and the price will be below market price. Secondly, there are allowances for the *under-reporting and the associated VAT fraud* that companies take advantage of. In these cases, buyers do not necessarily know that the production is not declared. In any industry, there is only one type of allowance in order to avoid the risk of double counting. This would probably be the case if both types of allowance were introduced in a given industry since a significant part of the extra profits made by taking advantage of under-reporting will be spent on hiring black labour. The allowances for the black economy are additions to output and value added. There are no corrections to intermediate consumption.

Table 7.3 shows all allowances for the black economy (N1), i.e. underreporting and associated VAT-fraud and hidden economy divided by industry and product. The basic price equals the purchasing price and the allowances for production equals the allowances for value added. The total adjustment for N1 is 9.522 mio. DKK or 0,51 percent of GDP in 2012.

Table 7.3 N1 Producers should have registered, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
A	Tel. interviews extrapolated	Fishing	13	-	18
C	Tel. interviews extrapolated	Building materials	42	-	42
C	Tel. interviews extrapolated	Toys and jewellery	5	-	5
C	Tel. interviews extrapolated	Bakeries	26	-	26
C	Tel. interviews extrapolated	Paper and stationary	10	-	10
C	Tel. interviews extrapolated	Furniture	10	-	10
C	Tel. interviews extrapolated	Clothing	10	-	10
F	Tel. interviews extrapolated	Construction	2 989	-	2 989
G	Tel. interviews extrapolated	Car repair	337	-	337
G	Indicator method	Under reporting and associated VAT-fraud	640	-	640
H	Tel. interviews extrapolated	Taxies etc.	10	-	10
H	Tel. interviews extrapolated	Freight transport	164	-	164
I	Indicator method	Under reporting and associa. VAT- and tips fraud	1 454	-	1 454
J	Tel. interviews extrapolated	Software services	314	-	314
M	Tel. interviews extrapolated	Accounting/bookkeeping	27	-	27
N	Tel. interviews extrapolated	Cleaning in companies	15	-	15
P	Tel. interviews extrapolated	Teaching	39	-	39
Q	Tel. interviews extrapolated	Health services	56	-	56
R	Tel. interviews extrapolated	Theater, concerts	355	-	355
S	Tel. interviews extrapolated	Repair of household machines	1 034	-	1 034
S	Discrepancy method extrapolated	Underreporting and ass. VAT fraud (hairdressers)	868	-	868
T	Tel./discrepancy extrapolated	Private households with employed persons	1 104	-	1 104
Total			9 522	-	9 522

The following describes the three different methods as indicated in table 7.3 used for the benchmark year 2004 and the extrapolation.

Telephone interviews

These adjustments are based on benchmark estimates from 2004 that are extrapolated using annual information from supplementary questions regarding *hours worked in the black economy* in the Danish Labour Force survey.

The main source behind the benchmark estimates of the *hidden work* was more than 10,000 telephone interviews, which have been carried out in connection with the Danish Labour Force Survey (LFS) in the first two quarters of 2004. As mentioned, the estimates stemming from the telephone interviews are primarily used in industries, where *hidden work* is believed to be the dominant underground activity.

The information from the telephone interviews is valued at "black" prices, which are the actual transaction prices and therefore the market values. The respondents were asked about the value of the black work. In cases when they did not give this information, the value has been imputed.

Industries where telephone interviews have been used are indicated in table 7.3

Discrepancy method

The idea behind the discrepancy methods is to confront information from the supply side with ditto from the demand side. It is assumed that income/production is not always registered whereas expenditure would usually be registered. When the figures on the demand side are higher than on the supply side, the discrepancy must be the production that is not registered on the supply side.

A well-known discrepancy method used for national accounts purposes is to confront registered production in a given industry with the expenditure estimates from the consumer surveys. The method is used to make an annual estimate of the allowance for under-reporting and the associated VAT fraud in *hairdressing salons and beauty parlours* and part of the *hidden production of cleaning services for private household*s as indicated in table 7.3.

Indicator method

The indicator method is used to estimate the value of under-reporting in the national accounts industries *retail trade of food* and *restaurants* because under-reporting is thought to be the dominant black activity in these industries. In addition, an allowance is made for *tips in restaurants* that are not declared to the tax authorities.

The adjustments are based on a set of indicators, which are estimated using information collected in the economy. These indicators are used to make annual estimates for the allowance to turnover for under declaration and to tips that are not declared.

The basic idea behind the indicator method is that information collected in the economy can be used directly to estimate the value of under-reporting. Naturally, the tax authorities get valuable pieces of information when carrying out their unannounced raids. In addition to this, personal interviews carried out by Rezaei (2003, 2004)[19] is used to identify in which industries the under-reporting takes place, and what the value of the under-reporting is. Rezaei's study focuses solely on immigrants who own a firm or who are employed. His sample is not representative for the whole population and must be used with caution. Based on these sources of information, a set of indicators that reveal the hidden share of turnover in different industries can be constructed.

Adjustments for N2 Illegal activity

Statistics Denmark includes three types of illegal activity (N2): Prostitution, drugs and smuggling of alcohol, tobacco, soft drinks and sweets. This is in line with the decision made by the GNI Committee, and the

[19] Rezaei, Shahamak (2003). Det dual arbejdsmarked i et velfærdsstatsligt perspektiv – et studie af dilemmaet mellem uformel økonomisk praksis og indvandreres socio-økonomiske integration.Delrapport 1. RUC, Roskilde.

Rezaei, Shahamak (2004). Det duale arbejdsmarked i et velfærdsstatsligt perspektiv – et studie af dilemmaet mellem uformel økonomisk praksis og indvandreres socioøkonomiske integration. Delrapport 2. RUC, Roskilde.

methodology used is also in line with the recommendations of the GNI Committee (GNIC230). Also in line with the GNI committee recommendations, there are no adjustments to the transition from GDP to GNI.

According to ESA2010, illegal activity is included in the production boundary. Illegal activity differs from the black economy in that the activity is illegal in itself. The black economy is illegal in the sense that the evasion of taxes etc. makes it illegal, but the activity is not illegal as such.

Table 7.4 below shows the amounts estimated for illegal activity. The total adjustment amounts to 2.859 mill. DKK or 0,15 percent of GDP

Table 7.4 Adjustments for N2 Illegal activity, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
G	Price times volume	Retail trade marg. (smuggling and drugs)	1 398	-	1 398
G	Price times volume	Whole sale trade marg. (smuggling and drugs)	532	-	532
S	Price times volume	Prostitution services	928	-	928
Total			2 859	-	2 859

No explicit corrections have been made for *double counting*. First of all only trade margins are included. This means, that there is no risk that values already included in imports are included again. Secondly, there is not sufficient information for corrections due to for example money laundering. It is not unlikely, that part of the income generated by illegal activities is laundered in other industries by routing the income to these industries and hereby increasing turnover. Thirdly, it is not unlikely that some expenses on prostitution are already included as expenses in bars and clubs. No corrections have been made for that, however the estimates for prostitution are expected to be on the lower side.

The three types of illegal activity will be described in more detail below.

Smuggling

Smuggling is defined as: *Imports of goods for reselling not subject to payment of Danish taxes and duties. The goods may have been imported subject to or not subject to duties paid abroad.* Smuggling includes smuggling of alcohol, tobacco, soft drinks and sweets, and the estimates are made as quantities times prices. The estimates are to a large extent based on information from the Ministry of Taxation, which regularly publishes reports on cross-border trade including smuggling[20]. It is assumed that any intermediate consumption or gross fixed capital formation related to the smuggling activity is already accounted for. Therefore, the trade margins, as described below, account for total value added related to smuggling.

Smuggling of alcohol includes beer and wine. The smuggled beer and wine is mainly sold at small groceries because it is difficult for them to obtain favourable prices at the whole-saler because they only purchase small amounts.

For *beer* it is assumed that the smuggled quantity is 5 per cent of the quantities subject to duties for 2012. Annual information on prices for a bargain box of beer south of the Danish border (Germany) is from German border shops' advertisements in Denmark. These prices are used for the import value. For the illegal sales price in Denmark, the price of a bargain box of beer in Denmark is used. The difference between the two is the trade margin.

For *wine* it is assumed that the smuggled quantity makes up 1 per cent of the quantities subject to duties. A benchmark price for a bargain box of 6 bottles of wine of standard quality south of the Danish border (Germany) in 2006 is used for the import value. The price is extrapolated using the German consumer price index for wine. For the illegal sales price in Denmark, the price of a bargain box of 6 bottles of wine in Denmark is used. The difference between the two is the trade margin.

[20] Reports have been published in 2000, 2001, 2004, 2006, 2007, 2010, 2012, 2014 and 2015. They are named "Rapport om grænsehandel".

For *tobacco* only very limited information is available. It is assumed that the quantity (number of cigarettes) of smuggled cigarettes is 1 per cent in 2012 of quantities subject to duties. It is also assumed that the majority of smuggled cigarettes come from Eastern Europe and are mainly sold at pubs and large workplaces. The import price is based on prices in Poland and the illegal sales price in Denmark is assumed to be well below the Danish legal price. The market for smuggled tobacco is declining as the Danish consumption of cigarettes is declining.

In Denmark there is an illegal market for *soft drinks*, as soft drinks are subject to product taxes (product taxes on soft drinks are abolished as from 2014) and prices therefore a higher than in fx Poland and Germany. The information on quantities is from the Ministry of Taxation. It is assumed that the major part of smuggled soft drinks comes from Poland and the Polish retail price is used for the import price. For the illegal sales price in Denmark, observed prices in small "kiosks" in Copenhagen extrapolated using the consumer price index are used.

Sweets and chocolates are also subject to duty in Denmark. It is assumed that the smuggled amounts in 2012 are a little less than 3 percent of total consumption. Smuggled sweets and chocolates are mainly from Germany. Therefore, import prices are based on prices in Germany and the illegal sales prices are based on bargain prices in Danish Supermarkets. Smuggled sweets and chocolates are sold in small kiosks or groceries.

Table 7.5 shows value added, household final consumption expenditure and imports of smuggled goods. The values shown for the different products are at retail prices and the value shown for tourist expenditure (part of private consumption expenditure) is the total value at import prices.

Table 7.5 The impact of smuggling on GDP and GNI, 2012

	Tobacco	Beer and wine	Sweets, soft drinks and chocolate
	DKK mll.		
Output	4 826	15 919	45 731
Intermediate consumption	0	0	0
Household consumpt. Expendit.	76 168	192 462	149 837
Imports	71 342	176 543	104 106
Gross operating surplus	4 826	15 919	45 731
VA/GDP	4 826	15 919	45 731
GNI	4 826	15 919	45 731

Prostitution

Prostitution is compiled from the supply side, but a demand side estimate has been made for a benchmark year. The supply side estimate is based on number of prostitutes, divided into 5 types of prostitution and multiplied by prices. The number of prostitutes is based on a report from the Danish Centre for research on social vulnerability. The number of prostitutes are divided between resident prostitutes (prostitutes that stay in the country for one year or more), who produce services as domestic production and prostitutes that stay less than one year on tourist visas, who produce imported services. Prices are based on adds from newspapers and the internet. The demand side estimate (which was only made for three benchmark years) is based on a study also from the Danish Centre for Research on Social Vulnerability, which has asked a number of men on the number of visits to prostitutes. The number of visits was then multiplied by an average price per visit estimated on the basis of adds. Comparing the supply and the demand side estimates revealed that the demand side estimates were about 500 mill. DKK higher than the supply side estimates for the benchmark years 2002-2004. However, all sources indicate, that the supply side information is more reliable than the demand side information.

It is assumed that expenses on intermediate consumption are already partly accounted for elsewhere in the system. Some of the expenses may be part of household consumption expenditure, and in principle should be reclassified to intermediate consumption, but this is most likely insignificant and within the margin of error of the estimates.

Table 7.6 below shows the impact of prostitution on GDP.

Table 7.6 The impact of prostitution on GDP and GNI, 2012

	Street	Clinic	Individuals working from home	Escort	Club	Total
	DKK mill.					
Output	33	636	65	167	27	928
Intermediate consumption	0	0	0	0	0	0
Household consumpt. Expendit.	66	766	78	201	33	1 144
Imports	33	129	13	34	6	215
Gross operating surplus	33	636	65	167	27	928
VA/GDP	33	636	65	167	27	928
GNI	33	636	65	167	27	928

Drugs

It is assumed that there is no production of *drugs* in Denmark, only trade in drugs. Value added from the sale of drugs is estimated from the demand side. Estimates from the supply side based on seizured amounts have also been made as a one-off exercise but are not used because they are too fluctuating. The demand side is estimated as the average quantities consumed per drug user multiplied by the number of drug users and again multiplied by import- and retail prices respectively. The difference between consumption valued by import and retail prices then makes the trade margin which is equal to value added. The total number of drug users is made up by the number of "hard" users and the number of recreational users. Information on the number of hard users is taken from a report from the National Board of Health and information on the number of recreational users is based on assumptions on seizures from a report by the police on organised crime in Denmark and assumptions on average consumption by recreational users. Information on the number of hard users is available on a regular basis from the above mentioned report – estimates are available for 2001, 2003, 2005 and 2009. Between those benchmark years the number is extrapolated. Prices are based on information from the above mentioned report from the police on organised crime in Denmark. For import prices (=basic prices), so called" whole-sale prices" are used and for retail-prices, so-called "street prices" are used. It is assumed that any intermediate consumption and gross fixed capital formation related to the trade of drugs is already accounted for elsewhere in the national accounts.

Table 7.7 shows the impact of trade in drugs on value added, household consumption expenditure and import. The values shown for the different drugs are at retail prices and the value shown for tourist expenditure (part of private consumption expenditure) is the total value at import prices.

Table 7.7 The Impact of illegal drug trafficking and production on GDP and GNI, 2012

	White heroin	Brown heroin	Cocaine	Amphe-tamine	Ecstasy	Cannabis	Total
	DKk mill.						
Output	510	264	676	265	9	140	1 864
Intermediate consumption	0	0	0	0	0	0	0
Household consumpt. Expendit.	852	511	1 235	416	15	242	3 271
Imports	343	247	558	151	6	102	1 407
Gross operating surplus	510	264	676	265	9	140	1 864
VA/GDP	510	264	676	265	9	140	1 864
GNI	510	264	676	265	9	140	1 864

Adjustments for N3 Producer not obliged to register

N3 adjustments cover values for farmers' output for own consumption etc. They are available from agricultural statistics and are assumed to cover farm-gate sales as well, most of which presumably come under the "black" economy (N1). The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by ESA2010. Table 7.8 shows the adjustments by industry. Total adjustments to value added amount to 78 mio. DKK.

Table 7.8 N3 Producer not obliged to register, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKK mill.		
A	Agricultural statistics	Own consumption of eggs and milk	33	0	33
C	Agricultural statistics	Own consumption cattle and pigs	45	0	45
Total			78	0	78

Adjustments for N5 Registered entrepreneur not included in statistics

Adjustments for N5 cover allowances for activity in enterprises below the value threshold of the Accounts Statistic. There are additions to output and intermediate consumption resulting in a total adjustment of value added of 1.869 mio. DKK or 0,1 percent of GDP. Table 7.9 shows the adjustments to output, intermediate consumption and value added by industry.

Table 7.9 N5 Registered entrepreneur not included in statistics, 2012

Industry	Adjustment method	Adjustment for	Gross output	Intermediate consumption	Value added
			DKk mill.		
B	Grossing up using general enterprise statistics	Value threshold	1	1	0
C	Grossing up using general enterprise statistics	Value threshold	366	231	136
E	Grossing up using general enterprise statistics	Value threshold	3	2	1
F	Grossing up using general enterprise statistics	Value threshold	0	283	-283
G	Grossing up using general enterprise statistics	Value threshold	1 114	545	569
H	Grossing up using general enterprise statistics	Value threshold	196	122	74
I	Grossing up using general enterprise statistics	Value threshold	167	102	65
J	Grossing up using general enterprise statistics	Value threshold	468	287	181
K	Grossing up using general enterprise statistics	Value threshold	0	0	0
L	Grossing up using general enterprise statistics	Value threshold	107	56	52
M	Grossing up using general enterprise statistics	Value threshold	1 010	617	393
N	Grossing up using general enterprise statistics	Value threshold	494	279	214
S	Grossing up using general enterprise statistics	Value threshold	47	29	18
Total			4 421	2 553	1 869

The adjustments are made as part of the processing of the account statistics and are made at the industry level (not product level). Based on the general enterprise statistics that contains turnover figures for all enterprises and includes information on whether each enterprise is covered by the industrial accounts statistics a grossing-up factor is calculated for each combination of DK-Nace-industry/ESA2010-institutional sector. A more detailed description can be found in chapter 3.

Adjustments for N7 Not all required data are asked

Adjustments for N7 cover adjustments for wages and salaries in kind (fringe benefits) and the production of capital goods for own final use (excluding own-account software and own-account R&D).

Total adjustments to gross output and value added are 14.423 mio. DKK or 0,77 percent of GDP in 2012. Table 7.10 shows the adjustments by industry. Below there is a description of the adjustments for fringe benefits and production of capital goods for own final consumption.

Table 7.10 N7 Not all required data are asked, 2012

Industry	Adj. method	Adjustment for	Gross output	Intermediate consump.	Value added
			DKK mill.		
A		Fringe benefits (car and pc) + capital goods for own final use	31	0	31
B		Fringe benefits (car and pc) + capital goods for own final use	32	0	32
C		Fringe benefits (car and pc) + capital goods for own final use	3 913	0	3 913
D		Fringe benefits (car and pc)	160	0	160
E		Fringe benefits (car and pc)	28	0	28
F		Fringe benefits (car and pc) + capital goods for own final use + value added on construction materials	1 037	0	1 037
G		Fringe benefits (car and pc) + capital goods for own final use	2 377	0	2 377
H		Fringe benefits (car and pc) + capital goods for own final use	562	0	562
I		Fringe benefits (canteens, car and pc) + capital goods for own final use	221	0	221
J		Fringe benefits (news paper, telephone, car and pc) + capital goods for own final use	1 736	0	1 736
K		Fringe benefits (car and pc) + capital goods for own final use	0	0	0
L		Fringe benefits (car and pc) + capital goods for own final use	161	0	161
M		Fringe benefits (car and pc) + capital goods for own final use	3 711	0	3 711
N		Fringe benefits (car and pc) + capital goods for own final use	269	0	269
O		Fringe benefits (car and pc)	14	0	14
P		Fringe benefits (car and pc)	12	0	12
Q		Fringe benefits (car and pc)	63	0	63
R		Fringe benefits (car and pc) + capital goods for own final use	39	0	39
S		Fringe benefits (car and pc) + capital goods for own final use	55	0	55
Total			14 423	0	14 423

Capital goods for own final use

Capital goods for own final use are compiled using information from the industrial account statistics using the variable "Own-account work" at industry/sector level. In order to comply with ESA2010, a mark-up for gross-operating surplus is added to arrive at market-prices.

Wages and salaries in kind

Allowances to compensation of employees are imputed for payments in kind to employees covering the following eight products:

1) free car
2) free telephone
3) canteen subsidies
4) free housing
5) free health insurance
6) free newspaper
7) free pc
8) employee stock options

Except for employee stock options, the allowance for payments in kind affects either output or intermediate consumption:

- As an addition to output if it is produced by the enterprise
- As a reallocation from intermediate consumption to compensation of employees if it is purchased by the enterprise

The adjustment to output is made to take into account that fringe benefits produced by the unit itself are not included in output from account statistics. Therefore, an allowance for the missing output is added. This allowance is not relevant when the fringe benefits are purchased. In these cases, a reallocation is made from intermediate consumption to compensation of employees.

Table 7.11 shows how the seven types of fringe benefits affect compensation of employees and either output or intermediate consumption

Table 7.11 Allowances for benefits in kind on compensation of employees, output and intermediate consumption, 2012

	Compensation of employees	Output	Intermediate consumption
	DKK mill.		
Free car	6 261	5 851	409
Free telephone	1 803	0	1 803
Canteen subsidies	5 324	5 324	0
Free housing	458	458	0
Free health insurance	1 324	0	1 324
Free news paper	459	0	459
Free pc	842	610	231
Total excl. stock options	16 470	12 243	4 226
Employee stock options[1]	971		
Total incl. stock options	17 441		

[1] Value of stock options in the non-financial sector (S.11)

In 2012, the total amount of allowance to compensation of employees was DKK 17 441 million. Free cars and subsidies to canteens are by far the most important, accounting for DKK 6 260 million and 5 324 million respectively. The total amount of allowance to output was DKK 12.243 million or 0,65 percent of GDP in 2012 and the total adjustment to intermediate consumption was DKK 4.226 million.

The value of *free cars* is taxable and as from income year 1994 has been reported by employers on the salary information forms, together with wages and salaries in cash. The value is estimated in terms of standard rates which reflect realistic market prices, such as the rental payments for a similar car if it was leased with a service agreement plus fuel costs etc. The tax authorities calculate the taxable value as 25 % of the price of the car. In the national accounts we use instead 29 %. One might legitimately wonder how these rates can claim to be market rates when it is generally considered to be a great financial advantage for individuals to have a company car instead of a normal private car. The answer is simple. Earnings in the form of fringe benefits are taxed on the basis of the value of consumption, whereas earnings in cash are taxed on the basis of income and not the post-tax consumption potential which corresponds to that income – i.e. a much greater amount for the same consumption potential. Even with a realistic assessment of the value of fringe benefits, this asymmetry in the tax system means that, all other things being equal, there is a great advantage in receiving wages or salaries in kind rather than in cash if the goods in question are ones which would have been acquired anyway.

In the national accounts, the tax values are used for the value of free cars, as reported on the information forms to the tax authorities.

The value of *free telephones* is likewise reported on the information forms to the tax authorities in terms of standard rates which are a realistic reflection of market prices. In recent years, high speed internet has become more widespread. As these are a part of free telephones and because there is a limit (DKK 2 500) on the taxable value, we introduce a mark-up of 20 % on the values reported on the information forms in order to properly reflect the value of free telephones. In 2012, the total value of free telephones was DKK 1 803 million.

The value of *canteen subsidies* is not taxable income provided that the employees pay a minimum price for a meal which (more or less) covers the costs of the raw materials. The value of the employer subsidy for the running of canteens is consequently not reported to the tax authorities. The source for the national accounts estimate is a benchmark based on a survey from 1994. The 1994-values are inflated with the price index for the canteen industry as well as the growth in total employment.

The value of *free housing* is reported on the information forms in terms of standard rates which are a realistic reflection of market prices. As for cars, it is the values for tax purposes which are used in the national accounts. In 2012, the total value of free housing was DKK 458 million.

The value of *free newspapers* is based on a survey from 1998 indicating the number of employees who have newspapers paid for by their employer. The value of a free newspaper is calculated as the average price of a one year subscription of a major newspaper (9 newspapers are included). The total value of free newspapers was DKK 459 million in 2012.

The value of *free pc* is not reported on the information forms. Instead we use information on the rise in the number of households having access to a pc at home. We assume that half of the increase can be attributed to pc's paid for by the employer. For the year 2003 and forwards the tax authorities make their own assessment on the number of home pc's paid for by an employer. In 2003 and onward we therefore use the average of the two numbers as an estimate of the number of new home pc's paid for by an employer. The price of the pc's paid for is assumed to reflect the market price for a new pc. Furthermore we set the amortisation of a pc to three years. The total value of *free pc* in 2012 was DKK 842 million.

The value of *free private health insurance* (i.e. health insurance associated to the employees' free time and not to the production process) is based on data from a private nongovernmental organisation who publish records of privately held insurances paid by firms. The total value of *free private health insurance* in 2012 was DKK 1 324 million.

The value of *employee stock options* is principally based on data from the Danish tax authorities on values of stock option salaries that have been reported taxable in our calculation year. However, to impute the value at the accrual basis and not at the time of taxation, the national accounts value is imputed using information on quotation prices and various suppositions, e.g. the earliest date attainable for an employee to cash in his/her stock option coincides with the time of legal acquisition (which is based on a Danish Supreme Court ruling). The notion that a typical stock option programme lasts 7-8 years with a vesting period of 2-3 years is also utilized in the imputation. The value of *employee stock options* in Denmark's non-financial sector was DKK 971 million in 2012.

7.2 Allowance for exhaustiveness in the expenditure approach

All allowances for exhaustiveness are described in section 7.1 for the production approach. The allowances are made in the supply-use (SU) frame-work and in the SU-tables, there is a product for each allowance, which ensures, that supply equals use for that allowance. So if the allowance is compiled from the supply side, use is defined using that entity and vice versa.

7.2.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

See 7.1.1

7.2.2 Adjustments made for the different types of non-exhaustiveness

See 7.1.2

7.2.3 Exhaustiveness methods

See 7.1.3

7.3 Allowance for exhaustiveness in the income approach

Allowances for exhaustiveness in the income approach are made to wages and salaries (black wages and salaries and fringe benefits) and gross operating surplus (all remaining value added ends up in gross operating surplus and mixed income).

Fringe benefits are described in section 7.12 and black wages are described in chapter 4.

7.3.1 Identification of types of non-exhaustiveness (for which adjustments are needed)

See 7.1.1

7.3.2 Adjustments made for the different types of non-exhaustiveness

See 7.1.2

7.3.3 Exhaustiveness methods

See 7.1.3