

## Chapter 7. Overview of allowances and adjustments for exhaustiveness

### 7.1 Explicit allowances

Starting with the information which comes from the accounts for the institutional units, the Danish national accounts make the following allowances for unrecorded product transactions. In addition, there are, of course, the traditionally imputed figures such as non-market output of general government and NPISHs and the imputed rental value of owner-occupied housing. Fringe benefits are to a certain extent – but by no means completely – covered in business accounts and administrative data (salary information forms).

**Table 131 Explicit allowances in the national accounts**

Explicit allowances	Value, DKK mill.	% of GDP
Farmers' output for own consumption etc.	382	0.04
Own-account production of software and large databases	6 290	0.62
Output of entertainment etc. originals	1 193	0.12
Fringe benefits for employees	6 788	0.67
Hidden activity, underreporting and the corresponding VAT fraud	7 317	0.72
Total	21 970	2.18
GDP	1 009 756	100

#### 7.1.1 Allowances for farmers' output for own consumption etc.

These values are available from agricultural statistics, and are assumed to cover farm-gate sales as well, most of which presumably come under the black economy. The values are based on agricultural selling prices for the products concerned, i.e. they are at basic prices, as required by the ESA 95. Table 132 shows these products and their uses, divided into consumption groups.

**Table 132 Allowances for farmers' consumption of own products**

Product No	Text	Use	Consumption group	Value, DKK mill.
E020100	Cattle for own consumption	Household consumption	1120	22
E020301	Pigs for own consumption	Household consumption	1120	151
E040107	Raw milk for own consumption	Household consumption	1142	184
E040700	Eggs for own consumption	Household consumption	1141	25
Total				382

## 7.1.2 Own output of software and large databases

The sources and methods used for this calculation were described in detail in Section 5.11.3.2.

## 7.1.3 Output of entertainment, literary or artistic originals

The sources and methods used to estimate the value of originals were discussed in Section 5.11.4. Statistics on culture give information on, for example, the royalties/copyrights which certain organisations such as KODA and GRAMEX demand from users and pass on to the artists who hold the copyrights. For loans from libraries, the authors receive "library money", which is also similar to royalties. The output of artistic originals is divided by product as shown in Table 133. The total output is allocated to capital formation.

**Table 133 Allowances for entertainment, literary or artistic originals**

Product No	Text	Use	Value, DKK million
U920011	Originals – "library money"	Gross fixed capital formation	135
U920012	Originals – publishing contracts	Gross fixed capital formation	241
U920013	Originals – KODA	Gross fixed capital formation	173
U920014	Originals – NCB	Gross fixed capital formation	109
U920015	Originals – COPY-DAN	Gross fixed capital formation	311
U920016	Originals – GRAMEX	Gross fixed capital formation	48
U920017	Originals – licence payments from the rest of the world	Gross fixed capital formation	176
Total			1 193

## 7.1.4 Fringe benefits for employees

For 1995, allowances are imputed for payments in kind to employees (fringe benefits) covering the following six products:

- 1) free cars
- 2) free telephone
- 3) canteen subsidies
- 4) free housing
- 5) free travel
- 6) free newspaper.

In 1995, the total amount was DKK 6 788 million. Of these six goods, free cars and subsidies to canteens are by far the most important, accounting for DKK 2 769 million and 3 223 million respectively.

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 were leased with a service agreement plus fuel costs etc. The standard rates are a percentage of the prices of new cars registered within the past three calendar years. The rate is reduced to 75% of the new car price for vehicles older than that. There is also a ceiling for the purchase price taken into account, which approximates to the price of a BMW 5-series model. The vast majority of company cars come below that ceiling. 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.

The value of *free telephones* is likewise 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 national accounts. In 1995, the total value of free telephones was DKK 320 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 here is the harmonised EU labour costs surveys which, as from 1995, are annual. From these figures, the canteen subsidy is calculated in a breakdown into the national accounts' 130 industries, as a percentage of the compensation of employees in cash reported by the survey. This percentage is then applied to the cash figures for each of the national accounts' 130 industries.

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 1995, the total value of free housing was DKK 105 million.

The value of *free travel* includes both free travel for employees in the transport sector and the bonus points earned on business travel and missions etc. which employers generally allow their employees to use for private purposes. In principle, free travel is taxable income, but it does not need to be reported separately on the information forms. It may be assumed that this income in kind essentially avoids tax. The national accounts do not therefore use tax statistics as the source for the estimate but a price x quantity calculation. The price of free travel is based on the price of an air ticket with the same restrictions as apply to the free journeys. In 1995, the estimated value was DKK 179 million.

The value of *free newspapers* is reported on the information forms as standard rates which are a realistic reflection of market prices. As for cars, the national accounts use the tax values. The total value of free newspapers was DKK 192 million in 1995.

Table 134 shows the breakdown of wages and salaries in kind (fringe benefits) over the national accounts' 130 industries. As might be expected, fringe benefits are particularly common within the market service industries and more particularly in wholesaling, where company cars are widely used.

Only in a few cases do the many zeros in the table indicate a genuine zero in the cells in question. They usually mean that the values are under DKK 500 000.

**Table 134 Wages and salaries in kind divided over the national accounts' 130 industries**

Industry	Car	Telephone	Canteen	Housing	Travel	News-papers	Total
<b>(130)</b>	<b>DKK million</b>						
011009	4	1	5	24	0	1	35
011209	4	0	2	1	0	0	8
014000	3	1	5	1	0	0	9
020000	1	1	1	7	0	1	10
050000	2	0	1	2	0	0	6
110000	4	1	2	2	0	0	10
140009	5	1	5	0	0	0	10
151000	16	2	46	0	0	1	66
152000	9	1	14	0	0	1	24
153000	7	1	6	0	0	0	15
154000	2	0	2	0	0	0	5
155000	3	1	19	1	0	1	24
156009	28	2	19	0	0	1	52
158109	10	1	8	0	0	1	19
158120	3	0	15	0	0	0	18
158300	3	0	3	0	0	0	7
159000	12	1	13	1	0	1	28
160000	5	0	3	0	0	0	9
170000	21	1	22	0	0	1	47
180000	13	1	17	0	0	0	31
190000	4	0	4	0	0	0	8
200000	18	2	24	0	0	1	45
210000	24	2	21	0	0	1	48
221200	16	4	19	0	0	3	43
221309	23	3	18	0	1	2	47
222009	47	3	30	0	0	2	83
230000	1	0	2	0	0	0	4
241109	2	0	1	0	0	0	4
241209	5	1	9	0	0	0	16
241500	0	0	2	0	0	0	3
241617	2	0	1	0	0	0	4
242000	0	0	2	0	0	0	2
243000	13	1	6	0	0	1	21
244000	28	3	18	1	3	2	54
245070	15	1	11	0	0	1	28
251122	21	2	22	0	0	1	46
252300	4	0	3	0	0	0	7
252400	13	1	12	0	0	1	27
261126	6	1	10	0	0	0	16
263053	3	0	4	0	0	0	7
266080	23	3	21	0	0	2	49
271000	2	0	4	0	0	0	7
272030	5	1	8	0	0	0	14
274000	3	0	6	0	0	0	10
275000	0	0	1	0	0	0	1
281009	34	3	36	0	1	2	76
286009	27	2	32	0	0	1	63
291000	15	2	36	0	1	1	55
292000	29	3	39	0	1	2	74

293000	6	1	12	0	0	0	20
294009	29	3	34	0	1	2	68
297000	7	1	14	0	0	0	22
300000	5	0	7	0	0	0	12
310000	23	2	26	0	0	1	52
320000	9	1	21	0	0	1	32
330000	26	2	29	0	0	1	58
340000	6	1	15	0	0	0	22
351000	6	1	26	0	1	0	34
352050	3	0	5	0	0	0	8
361000	31	2	43	0	1	1	79
362060	7	1	15	0	0	0	22
370000	1	0	1	0	0	0	2
401000	8	4	25	1	0	2	40
402000	3	0	4	0	0	0	8
403000	1	1	5	0	1	0	8
410000	0	1	3	0	0	1	5
450001	68	7	38	1	1	4	119
450002	85	9	52	1	1	5	153
450003	30	3	30	0	7	2	73
450004	0	0	0	0	0	0	0
501009	96	5	18	1	2	3	125
502000	17	2	28	0	0	1	48
505000	0	0	1	0	0	0	2
510000	892	67	270	7	44	40	1 320
521090	23	2	62	2	1	1	91
522990	21	1	20	0	0	1	43
523000	4	0	7	0	0	0	11
524190	24	1	16	0	0	1	43
524490	64	4	46	1	2	3	120
551009	6	1	17	1	0	0	26
553009	12	1	39	1	0	1	53
601000	0	1	39	0	0	0	40
602100	2	1	34	0	0	0	37
602223	1	0	10	0	0	0	11
602409	24	3	50	0	1	2	81
610000	17	4	28	0	9	2	60
620000	4	1	22	0	21	1	49
631130	12	2	27	0	24	1	67
634000	54	7	18	0	11	4	95
640000	15	13	77	0	7	8	119
651000	31	4	72	8	0	2	118
652000	38	3	23	2	0	2	67
660102	5	1	11	0	0	0	18
660300	35	4	23	2	0	2	67
670000	16	1	25	0	0	1	43
701109	12	2	10	1	2	1	27
702009	11	6	19	6	0	3	45
702040	9	1	13	1	0	0	24
710000	15	1	27	0	2	1	46
721009	15	2	13	0	3	1	34
722000	40	4	22	0	4	3	72
730001	2	0	4	0	0	0	6
730002	0	0	10	0	0	0	10
741100	14	2	13	0	1	1	31
741200	59	7	21	1	1	4	92
742009	62	8	49	2	6	5	132
744000	39	3	30	1	2	2	76
747000	28	1	12	0	0	1	41

748009	69	6	34	3	4	3	120
751100	0	10	69	0	0	6	85
751209	0	2	60	0	0	1	63
751300	0	1	29	0	0	0	30
752000	5	1	87	0	0	0	94
801000	0	4	110	0	0	2	117
802000	0	1	45	1	0	0	46
803000	0	0	30	0	0	0	30
804001	1	0	1	0	0	0	3
804002	0	1	16	0	0	1	17
851100	0	1	117	0	1	1	120
851209	36	5	43	1	0	3	88
853109	0	2	83	0	0	1	87
853209	1	5	139	2	1	3	150
900010	1	0	11	0	0	0	13
900020	3	4	10	0	1	2	19
900030	1	0	3	0	0	0	4
910000	18	15	44	3	1	9	89
920001	15	4	28	2	2	3	54
920002	0	0	15	0	0	0	16
930009	9	1	11	0	0	0	21
950000	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Total	2 769	320	3 223	105	179	192	6 788

### 7.1.5 Work in the black economy, underreporting and the associated VAT fraud

In the national accounts, there are two types of allowance for the black economy, one for hidden activity and one for underreporting and the associated VAT fraud. In any given industry, there is – with a single exception – only one type of allowance. This avoids the risk of double counting, i.e. a given black economy activity being counted both at the employer and again separately for the employees who carry out such activity. The exception is national accounts industry 524490, "other retail sale, repair work", where allowances are added in for both the underreporting of retail activity and work in the black economy linked to the "repair work" sub-branch. At sub-branch level, therefore, it is also a question of either/or when there are allowances for hidden activity/underreporting. The allowances are additions to output and value added, for equal amounts. No corrections are made to the intermediate consumption calculated.

In all cases where there are allowances for underreporting and the associated VAT fraud, the tax evasion is assumed to be *without the buyer's connivance*, meaning, for example, that the individual restaurant customer does not know whether the payment for his meal goes through the cash register or not. It does not mean that the individual is unaware that underreporting occurs to a certain extent in the restaurant branch and that some of the tax savings are passed on to the consumers in the prices they pay.

Allowances are made for *underreporting and the associated VAT fraud* in the following industries:

524490	Other retail sale, repair work
553009	Restaurants
930009	Hairdressing salons.

It is assumed that the producers in the industries in question have demanded the usual purchase price for the goods and services which are not routed through the cash register. In addition to underreporting their turnover, they are also evading VAT by demanding VAT from their customers which is not reported or remitted to the tax authorities. An allowance is therefore calculated with a VAT rate of 25% in addition to the allowance for underreported sales. This ensures consistency between supplies and uses of the products concerned and with the income created by the production of those products. One particular form of underreporting is tips and gratuities, where a further correction is made for the associated VAT fraud.

Part of the value added created by underreported sales and VAT fraud is paid out as "black" wages to the non-registered employees in the producing enterprises. Of a total value added connected with underreporting etc. of DKK 3 084 million in 1995, DK 1 660 million goes to employees in the form of "black" wages – cf. Table 14. The remainder is gross operating surplus and mixed income in the registered enterprises which are responsible for the underreporting.

Allowances are made for *work in the black economy* in the following industries:

050000	Fishing
158120	Bakers' shops
180000	Manufacture of wearing apparel etc.
222009	Printing activities
281009	Manufacture of construction materials of metal
361000	Manufacture of furniture
362060	Manufacture of toys, gold and silver articles, etc.
450002	Repair and maintenance of buildings
450001	Construction of new buildings
502000	Repair and maintenance of motor vehicles
524490	Other retail sale, repair work
602223	Taxi operation and coach services
741200	Accounting, bookkeeping, auditing, etc.
747000	Industrial cleaning
851209	Medical, dental, veterinary activities, etc.
920001	Recreational, cultural, sporting activities (market)
950000	Private household with employed persons.

In all of these cases, the tax evasion is assumed to take place *with the buyer's connivance*, since, unlike in retail trade, restaurants and hairdressers', this is expenditure which the purchasers incur infrequently, in many cases contacting the producer for a quotation for a specific job of work. The producer and the purchaser agree that this price is "off the books", in other words there is an agreement that the work will be carried out in the black economy. The repair and maintenance of buildings would be a typical example.

It is, of course, fairly common for employees in or the owners of firms which are registered for VAT to work in the black economy. In the national accounts, this hidden activity is treated not as underreporting in a registered enterprise but as secondary activity in a "black" unregistered enterprise. Consequently, all those employed in the black economy are considered to be self-employed entrepreneurs, and all the income from such activity is gross operating surplus and mixed income. The exception is industry 950000, Private households with employed persons, where the whole of the value added is by definition compensation of employees. In 1995, this value was DKK 1 235 million – cf. Table 135.

Underreporting is estimated in terms of levels for years 1992-95 on the basis of an analysis of the purchase percentages for the individual enterprises in the relevant industries according to VAT statistics plus information on the extent of work in the black economy taken from a special survey carried out for 1992 in connection with the Labour Force Survey (LFS). High purchase percentages in enterprises other than start-ups with potentially high levels of capital formation are considered to be an indication of underreporting. The standard maximum purchase percentage in this connection is based on the percentages for enterprises which, by virtue of type of ownership etc, may be considered to have reported all their sales and purchases accurately. Account is also taken of the tax authorities' experience with their checks on retail trade, which indicate that turnover not reported is approximately twice the undeclared wages paid to black economy employees. The levels for 1992-1994 are initially projected using changes in output in the corresponding legitimate activities. For 1995, the figures were adjusted downwards somewhat from this initial level, since the results of research based on interview surveys carried out by the Rockwool Foundation's research unit show a



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fall in the number of hours worked in the black economy, possibly as a result of the strong economy in years 1994 onwards.

The allowances for work in the black economy are estimated in terms of levels for 1992 from the above-mentioned special survey linked to the LFS for that year. Detailed documentation on this survey, which was carried out under an EU contract, was sent to Eurostat in 1993. The prices for work in the black economy are, as required for national accounts purposes, actual transaction prices – i.e. "black" prices per hour worked – and not the hourly wages which would have applied if the work had been carried out in the legitimate economy. The 1992 levels are initially projected using changes in the output value of the corresponding legitimate activities. For 1995, the figures were adjusted downwards somewhat from this initial level, since the results of research based on interview surveys carried out by the Rockwool Foundation's research unit show a fall in the number of hours worked in the black economy, possibly as a result of the strong economy in years 1994 onwards.

Table 135 shows all the Danish national accounts' explicit allowances for underreporting, VAT fraud connected with underreporting, tips and gratuities with the associated VAT fraud and work in the black economy, divided by product. For the products shown, the basic price value equals purchase price value. No VAT or other taxes on products are paid, of course. The allowances are added to both output and value added, with intermediate consumption assumed to be declared.

**Table 135 Explicit allowances for underreporting and work in the black economy**

Product No	Text	Value, DKK mill.
H050000	Black-economy output, fishing	12
H150037	Black-economy output, manufacturing	286
H454001	Black-economy output, building repairs	1 487
H454010	Housing construction in the black economy	67
H502000	Black-economy output, repair and maintenance of motor vehicles	354
H524490	Underreporting in the retailing of foodstuffs	1 000
H524491	VAT fraud connected with underreporting in retail trade	250
H527210	Black-economy repairs to household appliances	231
H553000	Underreporting in restaurants	1 038
H553001	VAT fraud connected with underreporting in restaurants	260
H553002	Underreporting connected with tips and gratuities	216
H553003	VAT fraud connected with the underreporting of tips and gratuities	54
H602223	Black-economy output, taxi operation and coach services	149
H741200	Black-economy output, accounting, bookkeeping etc.	86
H747010	Industrial cleaning in the black economy	19
H851400	Black-economy output, healthcare	34
H923110	Black-economy output, live theatrical presentations, concerts, etc.	273
H930210	Underreporting, hairdressing salons	213
H930211	VAT fraud connected with underreporting in hairdressing salons	53
T950000	Private households with employed persons	1 235
Total		7 317

## 7.2 Implicit allowances

No explicit allowances for underreporting are made in agriculture etc, mining and quarrying, dwellings, the letting of non-residential premises, industries where public corporations predominate or general government. In mining and quarrying, financial activity and general government, the black economy is assumed not to exist, since these activities are carried out either by public authorities or by very large entities which are closely monitored by public authorities.

For agriculture etc. and dwellings, output is estimated, as described in Chapter 3, 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. But it is not possible to estimate concealed activity explicitly, neither is it possible to do so for the letting of non-residential premises, where the output value is estimated from the expenditure side.

As explained in Section 3.25.3, the national accounts include an implicit correction for the underreporting of value added which occurs when very small sole proprietorships, which are not obliged to submit SLS-E forms, overstate their intermediate consumption. These are cases where expenditure on private consumption is counted as operating costs in the enterprise.

### 7.3 Validation: comparisons with employment data from demographic sources

In connection with its 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"), Denmark carried out a comparison of supply-side and demand-side employment for reference year 1991.

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. As described in Sections 3.1.1. and 4.1.16, the employment underlying the estimate of the industries' value added before the allowances for activity in the black economy is employment according to the ERE [establishment-related employment] statistics.

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, it has only one demographic source, 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. The comparison relates to 1991.

Table 136 gives the main results of this comparison.

**Table 136 Comparison of employment data from the demand side and from the supply side**

	Self- employed etc.	Employees	Total
<u>ERE</u>			
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
<u>LFS</u>			
Calculated FTEs	288 000	2 038 000	2 326 000
<u>LFS – ERE</u>			
	-11 000	67 000	56 000
% of LFS	-3.8	3.3	2.4

The conceptually-corrected ERE statistics show that the volume of labour in Denmark in 1991 can be put at 2 270 000 FTEs, 299 000 of which were supplied by the self-employed etc. and 1 971 000 by employees. The LFS-based estimate, however, gives 2 326 000 FTEs divided into 288 000 self-employed and 2 038 000 employees. There is thus a difference of 56 000 FTEs in the two estimates, or 2.4%. For the self-employed, the ERE figures are higher than the LFS, probably due to uncertainty in the ERE statistics corrections and the LFS sampling uncertainty. There remains a difference for employees, only some 20 000 of which can be explained by the statistical uncertainty in the LFS.

If we first look at the whole of the economy apart from general government, we see that the LFS has recorded 14 000 more FTEs than the register estimate. Almost the whole of this difference, 11 000, can be explained by the industry "Private households with employed persons". Employment connected with private help in the home is in the vast majority of cases work in the black economy, and this would therefore be a reasonable explanation of the difference here. The national accounts employment estimate for the industry is close to the LFS estimate. In general, hidden activity is unlikely to be captured by the LFS (without specific extra questions), since in many cases it is equivalent to a second job for employees who are otherwise legally employed. The remaining difference of 3 000 excluding general government is considered to be due to the fact that the LFS captures a certain amount of work in the black economy by students, pensioners, etc.

There remains sector S.13, general government, where the difference is 53 000 FTEs. Since 10 000 at the most can be explained by sampling uncertainty in the LFS estimate, it would seem that the LFS indicates slightly higher employment than the register estimate.

A substantial share of this difference may be attributed to the calculation of FTEs based on the contribution to the *Arbejdsmarkedets Tillægspension* (ATP) social insurance scheme, which is used in the ERE statistics. Since the general government sector has a relatively large share of part-time employees, the ATP-calculated FTEs are more uncertain in this sector, in particular. In addition, there is the widespread uncertainty about the allocation to industries. The calculated difference in the two estimates of employment in general government cannot therefore be taken as evidence of the fact that there are some units missing from the register-based statistics. All producer units belonging to institutional units in S.13 are included in the business register. The possibility that there is work in the black economy in producer units owned and controlled by general government must, of course, also be ruled out.

Finally, in the individual industries there are relatively large differences in the two FTE calculations. These virtually cancel each other out, however, and must be ascribed to different industry allocations in the two estimates.

In 1995, the Commission approved the Danish comparison of employment as being totally satisfactory as evidence of the degree of coverage of the GNP estimates. Since the 1994 employment comparison did not throw up any problems with coverage of productive activity in the Danish national accounts, it was decided not to sacrifice resources to updating this comparison, but instead to concentrate them in other areas.