



Calculation SGM

How we do it in Denmark

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Abstract

The typology of agricultural holdings has been used in Denmark since 1980. The typology is based on calculated Standard Gross Margins (SGM) for individual enterprises. The typology makes it possible to classify all agricultural holdings according to type of farming and economic size.

SGM calculations in Denmark are based on results from Agricultural Account Statistics and Horticultural Account Statistics. SGMs are calculated according to the rules laid down in Commission Decision 85/377/EEC and later amendments. It is described how to calculate fodder balance coefficients. A procedure to control the calculated SGMs on regional level is also introduced.

SGMs are normally calculated as a 3-year average. The intention is to avoid economic results from one year to influence the SGM in an unwanted manner. Denmark has good experiences from improving this rule. Gross margins from the latest 15 years are used as observations in a linear regression analysis. The predicted value for the year in the middle of the three years period is used as a substitute for the 3-year average. The method seems to stabilise SGM over time. To ensure a smooth development over time in SGM for each enterprise Denmark furthermore calculates new SGMs every year.

Preface

This working paper was originally prepared as a contribution to a workshop in EUROSTAT on 16th June 1999, "Typology in the candidate countries". The document was presented at the workshop along with contributions from Germany and United Kingdom. Three different ways to calculate Standard Gross margins were presented. The content in this paper is mainly subjects of practical issues connected with the SGM calculations.

This working paper does not go into details with definitions of SGM. References for this purpose is Commission Decision 85/377/EEC and later amendments. This reference is necessary for understanding the basic principles and rules for calculating SGMs. However, an important part of the definitions is shown in annex II. The intention in EUROSTAT is to prepare a kind of manual for SGM calculation.

Statistics Division, June 2000.

Vøgg Løwe Nielsen

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Use of SGMs in Denmark

The typology of agricultural holdings has been used in Denmark since 1980. The typology is based on calculated SGMs – Standard Gross Margin - for individual enterprises. The Danish Institute of Agricultural and Fisheries Economics (SJFI) uses the typology in the Danish *Agricultural Account Statistics* and *Horticultural Account Statistics*. Accounts collected for these statistics are also used by DGVI in Brussels. The sample selection plans are mainly based on tables with the population classified according to type of farming and ESU-size – European Size Unit. Before preparing the final statistical reports a weighting factor is connected with each account. The calculation of weights is also based on data from typology tables.

The typology system is an *excellent tool in the selection and weighting procedures*. It helps to present representative statistics. In the final statistical reports we present group results where the headings are type of farming. Users of the statistics accept these results very well. We also present group results according to size of farming using the ESU. However, the experience shows that this definition of size of farm is difficult to explain to users of the statistics.

Statistics Denmark who takes care of the structural statistics for agriculture also uses this typology.

Data source for SGM calculation

The data source for the SGM calculation is the 2300 accounts collected for our national accounting statistics. Each account is converted into a gross margin account in a computer based econometric model resulting in *Economics of Agricultural Enterprises*. In these statistics all outputs, costs, labour input, maintenance etc from each farm are distributed to specific enterprises. Results from full-time farms are published in a special report. Tables 1 and 2 show results for wheat for the two regions in Denmark. Accounts from full-time farms as well as part-time farms are used in the SGM calculations.

The outputs for most of the enterprises are specified in the original accounts and can be converted directly. For coarse fodder productions standard outputs are estimated according to data from macro economic registrations about the harvest at a regional level. Some rules make it possible to assume estimation of coarse fodder output according to the level of fertilisers used on the farm. The common assumption is that more fertilisers yield lead to higher outputs.

TABLE 1. Wheat, regions and the whole country, physical data and capital input

	Islands	Jutland	----- Denmark -----	
			1997/98	1996/97
Number of holdings	13049	22644	35693	36137
Number of accounts	458	839	1297	1351
Ha per holding	21,7	16,2	18,3	17,9
Crop yield, hkg per ha	75,6	67,5	71,0	69,6
Product price, DKK per hkg	88	90	89	96
Labour input, hours per ha	19,1	20,0	19,6	20,5
	----- DKK per ha -----			
CAPITAL INPUT				
Stocks	2960	2190	2525	2718
Equipment	5234	4973	5087	5039
Buildings	17079	15366	16112	16075
Land incl. stocks in ground	19250	15730	17263	17341
Total	44253	38259	40987	41173

TABLE 2. Wheat, regions and the whole country

	Islands	Jutland	----- Denmark -----	
			1997/98	1996/97
	----- DKK per ha -----			
ENTERPRISE OUTPUT				
Grain	6666	6073	6331	6663
Straw	366	446	411	404
Compensation payment	2116	2141	2130	2155
General subsidies	21	30	26	24
Total	9169	8690	8898	9246
COSTS				
Seeds	421	404	411	403
Fertilizers	733	687	707	719
Manure	224	420	335	316
Crop protection	547	574	562	541
Energy	209	218	214	214
Contract operations	473	571	529	511
Drying and stocking	11	10	11	15
Other costs	69	83	77	75
Calculated interest, stocks	118	88	101	109
Total	2805	3055	2947	2903
Gross margin	6364	5635	5951	6343

Most of the specific costs are collected as one entry for all enterprises in the original accounts. The model distributes the specific costs among the enterprises. The distribution is based on estimated key figures reflecting the average cost per unit. The key figures are es-

estimated every year in a multiple linear regression analysing model with data input from all accounts. For seed, fertilizers etc the crop areas are used as independent variables.

Table 3 shows the distribution of DKK 70.000 of fertilizers among individual crops on a farm.

TABLE 3. Fertilizers distributed among individual crops, 70.000 DKK.

	Wheat	Barley	Sugar beet	Potatoes	Total
1. Area, ha	30	20	20	5	75
2. Estimated key figures for fertilizers, DKK per ha	850	790	700	1400	-
3. Key figures for fertilizers, DKK total for the farm	25500	15800	14000	7000	62300
4. Enumeration of fertilizers costs, DKK	28652	17753	15730	7865	70000

Row three in table 3 is the result of multiplying the number of ha with the key figure in row two. The total fertilizer costs using these average amount of fertilizers are DKK 62300. However, the farmer has actually used fertilizers worth DKK 70000. Row four is then calculated by regulating figures in row three relatively; for wheat $25500/62300*70000$.

Forms with the SGM calculation

The gross margin for each crop and livestock enterprise is calculated according to the rules laid down in Commission Decision 85/377/EEC and later amendments. Most of the SGM calculations are quite simple. Many figures are transferred from the data source form to the layout for the SGMs. Meanwhile, there is work to do. Some enterprises in the data source have to be added together and some have to be split up. For other pigs, for instance, data source results have to be altered from slaughtered pigs to annual heads, etc.

In table 4 and 5 the SGM calculations for wheat and dairy cows are shown. The figures show the last three years used for SGM"1996". For livestock enterprises the same SGMs are used in both regions.

SGMs for horticultural enterprises are calculated in a different way, but still based on account results. The *Horticultural Account Statistics* contains results for type of horticultural farming where nearly 100 pct of the production comes from a specific kind of crop. Example: for the type of farming *Vegetables in greenhouse* 97 pct of the output is from vegetables. The total values of outputs and specific costs are reduced by the values related to the 'foreign' crops, and the remaining outputs and specific costs per farm are converted to results per ha. The composition of vegetables included is not decided when the SGM is calculated. We trust that the selected accounts have the right composition of the relevant crops.

TABLE 4. SGM"1996" for wheat

	----- 1995 -----		-----1996-----		-----1997 -----		-3-year average-	
	Islands	Jutland	Islands	Jutland	Islands	Jutland	Islands	Jutland
GROSS OUTPUT PER HA								
Quantity, hkg	79,80	70,40	73,40	66,70	75,60	67,50	76,27	68,20
Price per hkg, DKK	97,04	99,60	92,86	98,11	88,17	89,97	92,77	95,94
Value per ha, DKK	7744	7012	6816	6544	6666	6073	7075	6543
Byproduct – straw, DKK	409	512	359	439	366	446	378	466
Compensatory payment, DKK	2159	2190	2165	2191	2137	2171	2154	2184
Total output, DKK. per ha	10312	9714	9340	9174	9169	8690	9607	9193
SPECIFIC COSTS PER HA								
Seeds, DKK	407	428	400	405	421	404	409	412
Fertilizers, DKK	767	704	752	694	733	687	751	695
Crop protection, DKK	526	528	539	543	547	574	537	548
Miscellaneous, DKK	72	92	80	97	80	93	77	94
Total costs per ha, DKK	1772	1572	1771	1739	1781	1758	1775	1750
SGM per ha, DKK	8540	7962	7569	7435	7388	6932	7832	7443
SGM per ha, ECU (7,52606)	1135	1058	1006	988	982	921	1041	989

Fodder balance coefficients

When the SGMs are used to calculate the total SGM for a single farm it is assumed that the SGMs from the areas with coarse fodder are zero and the variable costs of fodder production are deducted when calculating the SGM of grazing livestock. This is the normal balance situation. However on some farms there are situations with surplus or deficit of coarse fodder production. The Commission Decision 85/377/EEC describes rules to handle this imbalance between the areas with coarse fodder and the number of grazing livestock. The relation $R = (\text{SGM from grazing livestock} / \text{SGM from coarse fodder})$ is estimated. If this coefficient is greater than or less than the threshold values we have an unbalanced situation. The consequence is that SGMs for coarse fodder always have to be calculated and when a normal situation is observed the SGMs for fodder crops are set to zero.

In Denmark the thresholds are estimated in the following manner. Based on accounts from the three-year period in question we calculate the total SGM from grazing livestock and the total SGM from areas with coarse fodder. The relation R_a between the SGMs is assumed as an average situation. The threshold $R_d = (\text{coarse fodder deficit})$ is set as the double of the average situation and the threshold $R_s = (\text{coarse fodder surplus})$ is set as half of the average. The method is quite simple, but seems to function very well. The coefficients when calculating SGM "1996" are shown in table 6.

TABLE 5. **SGM"1996" for dairy cows, the whole country**

	1995	1996	1997 3-year average	
GROSS OUTPUT PER COW				
<i>Increase of meat</i>				
Quantity, heads	0,41	0,43	0,42	0,42
Price per head, DKK	4184	3415	3412	3670
Value, DKK	1707	1472	1433	1537
<i>Other main product, milk</i>				
Kg	6678	6761	6964	6801
DKK per kg	2,35	2,37	2,38	2,37
Value, DKK	15725	16045	16591	16120
<i>Byproduct, new born calves</i>				
Quantity, heads	1,07	1,07	1,05	1,06
Price per head, DKK	824	678	714	739
Value, DKK	878	728	749	785
Compensatory payments, DKK	0	48	35	28
Total output, DKK per cow	18310	18293	18808	18470
SPECIFIC COSTS PER COW				
<i>Replacement</i>				
Quantity, heads	0,41	0,43	0,42	0,42
Price per head, DKK	6522	6009	5869	6133
Value, DKK	2661	2590	2465	2572
<i>Variable costs</i>				
Concentrated feed stuffs, DKK	3262	3158	3197	3206
Coarse fodder, DKK	902	884	834	873
Miscellaneous, DKK	871	840	912	874
Total costs per cow, DKK	7696	7472	7408	7525
SGM per cow, DKK	10164	10821	11400	10945
SGM per cow, ECU (7,52606)	1410	1438	1515	1454
SGM per cow, with purchased coarse fodder, DKK	7611	7755	8142	7836

TABLE 6. **Coefficients for coarse fodder deficit and surplus**

SGM from livestock, mill. DKK.	3741
SGM from areas with coarse fodder, mill. DKK.	1330
R _a coefficient, average situation	2,81
R _d coefficient, coarse fodder deficit	5,6
R _s coefficient, coarse fodder surplus	1,4

SGM calculation control

After SGM calculation for each enterprise a test-program is run to ensure the validity of the SGMs. The SGM coefficients are multiplied by the enterprise units at farm level and the farm SGMs are summarised to homogeneous groups, the type of farming and the size unit. For the same groups it is possible to calculate and summarise the *gross margin* at farm level. Then the results from the two calculation methods are compared. If the comparison does not fit well it is urgent to go back and have a look at the original SGM calculation. In some cases there is a natural explanation for the differences. Table 7 shows results for the accounting year 1997. It is important that results for type of farming are near 1000, calculated as $SGM * 1000 / (\text{gross margin})$.

Comparing between size groups indicates that production on big farms is more effective than on smaller farms. The average ratio between SGM and *gross margin* is calculated as 1,020, but for small farms (4-7 ESU) the ratio is 1,553 and for the biggest farms 0,963. This indicates that the big farms produce more output or have less costs per unit than small farms.

TABLE 7. Comparison of calculated SGM with gross margin

Type of farming	< 4 ESU	4-7 ESU	8-15 ESU	16-25 ESU	26-39 ESU	40-59 ESU	60-99 ESU	100-139 ESU	> 140 ESU	Total
-----per thousand -----										
CROPPING										
Cereals, rape seed, protein crop and set a side	1701	1304	1189	1132	1216	1102	1108	935	922	1100
Mixed cropping	-	2357	1216	1374	1264	1031	1005	1038	964	1058
CATTLE										
Cattle	-	1908	1398	1397	11059	1024	945	927	953	962
Cattle and mixed farming	-	-	-	-	1334	1121	1154	1045	959	1022
Cattle and cropping	-	2193	1276	1427	1116	1189	1114	1145	1041	1137
PIGS										
Pigs		2610	644	1020	798	1014	1055	1104	956	980
Mainly pigs	799	1143	1235	1365	1200	1165	1046	1044	964	1031
HORTICULTURE IN GREENHOUSE										
Mainly vegetables in greenhouse	-	-	6954	2260	1676	1125	1478	1207	908	1000
Mainly pot plants in greenhouse	-	-	2202	-	1998	2257	2256	1915	928	1000
HORTICULTURE IN THE OPEN										
Mainly vegetables in the open	-	1295	1051	1392	1958	1103	1495	-	922	1000
Vegetables and mixed farming	1398	1660	1081	1551	1009	935	1141	976	1264	1165
PERMANENT PLANTATIONS										
Fruit and berries	-	1019	1418	709	1192	765	1013	1005	1422	1000
Nursery	-	-	-	443	362	712	680	708	1328	1000
All types of farming	2072	1553	1209	1237	1163	1076	1014	1005	963	1020

SGM, three-year average or 15-years regression analyses

At present the SGMs have to be calculated every second year as a three-year average according to EU-rules. The intention of using a 3-years average is to avoid the economic results from one year to influence the SGM in an unwanted manner. The gross margin for a single year is affected by the weather and by exceptional prices of the products, etc. The experiences in Denmark are that even using the 3-year average it has consequences in terms of unwanted and unacceptable fluctuations in the SGMs.

Denmark has improved the calculation of the SGMs and the results are still representing the year in the middle of the three years period in question. The gross margin for each crop and livestock enterprise is calculated for the latest 15 years according to the rules laid down in Commission Decision 85/377/EEC and later amendments. The results from wheat and dairy cows when calculating the SGM"96" are shown in figure 1 and figure 2. Furthermore the three-year averages are shown.

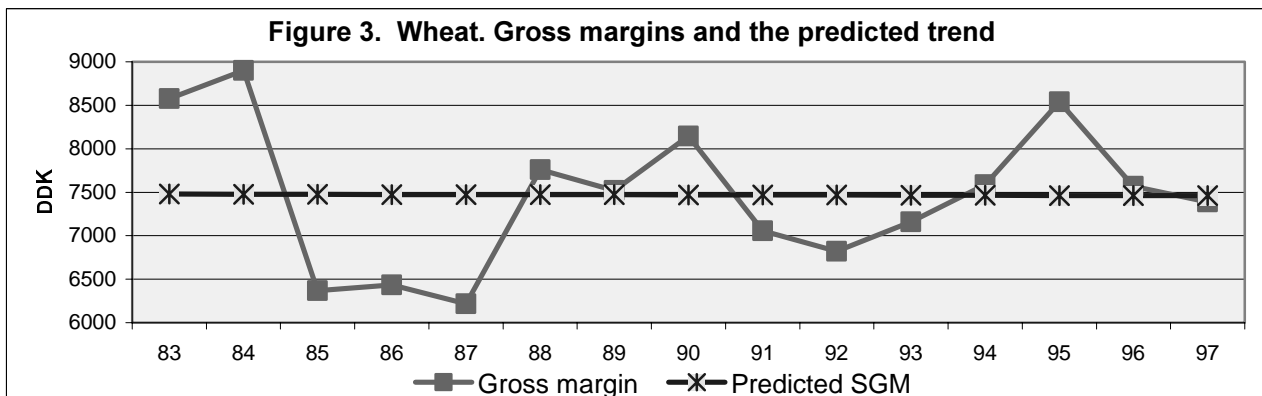
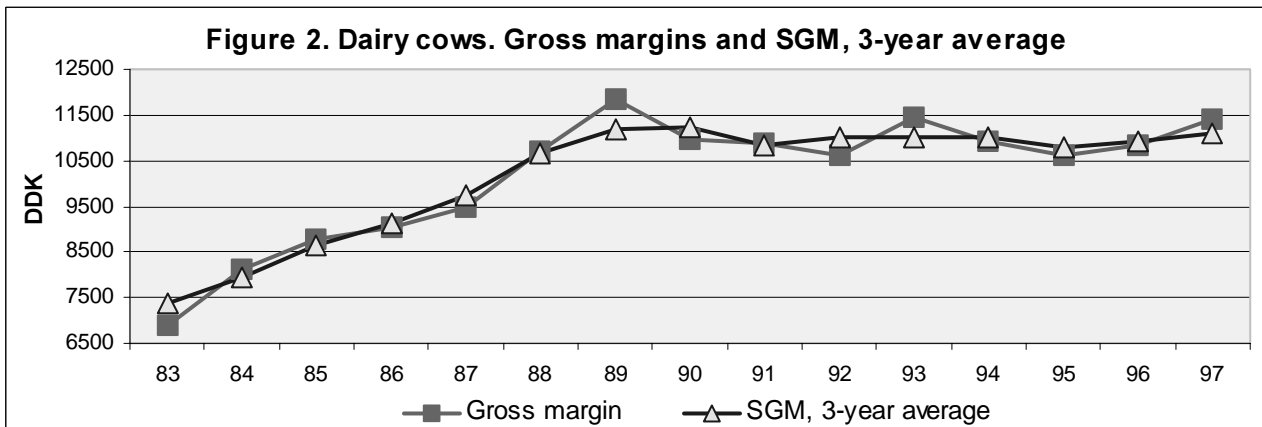
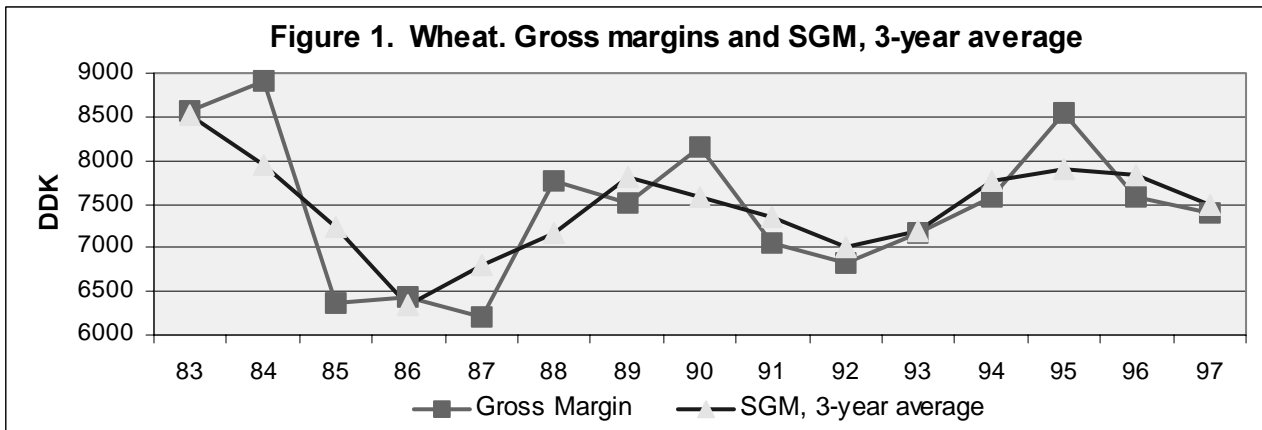
For wheat the three-year averages are intended to smooth out the SGMs when they are compared to the calculated gross margins. In the first part of the period, however, the SGMs for wheat give a poor contribution to the classification according to type of farming as well as to the size classification – over time. In figure 1 we observe that the SGMs increase or decrease drastically from one period to the next. It might have the consequence that some farms move to and from size groups even with the same crop areas and heads of livestock. For dairy cows the three-year average works very well.

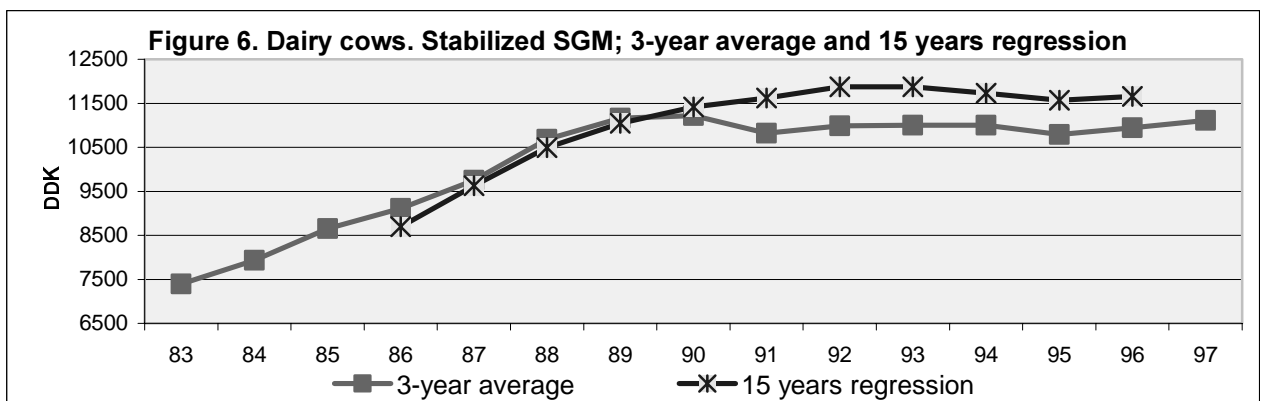
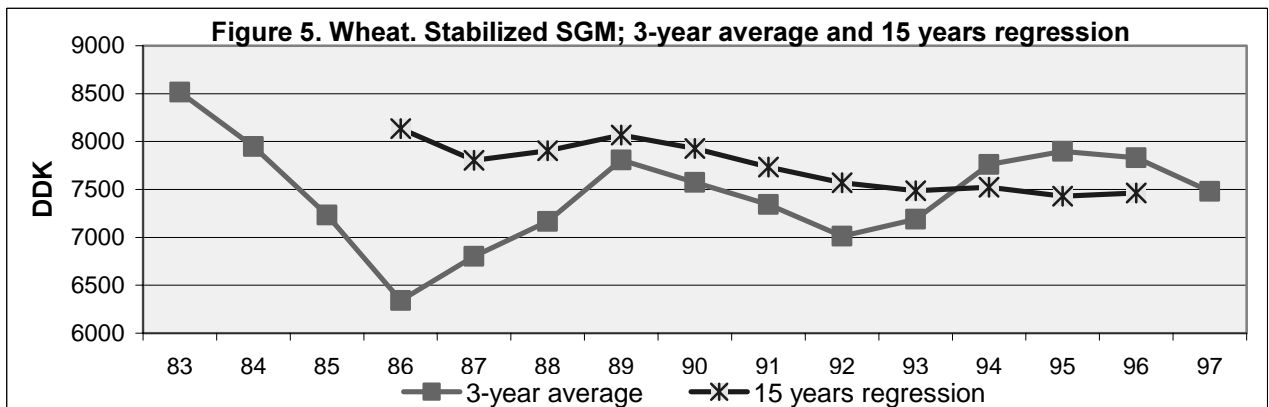
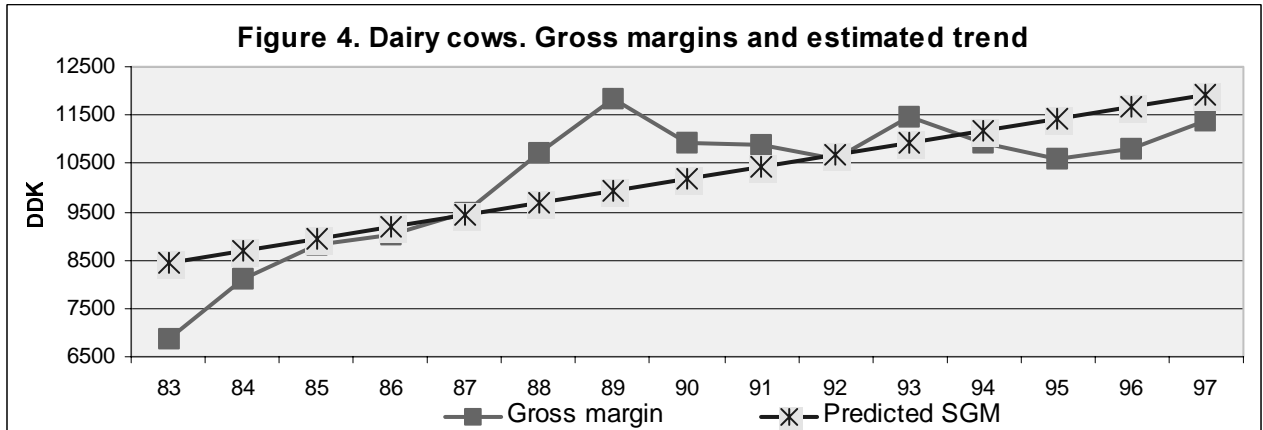
The conclusion is based on these two examples and on other observations connected to crops and livestock enterprises as well. The three-year average is not able to ensure a stable development in the SGMs when the gross margins are going up and down over years.

In an improved method of estimating SGMs, the gross margins from the latest 15 years are used as observations in a linear regression analysis. The parameter estimates are:

	<u>Intercept</u>	<u>X coefficient</u>	<u>Predicted value "96"</u>
Wheat	7479	-1	7462
Dairy cows	8192	247	11656

The predicted values are estimated and shown along with the gross margins in figure 3 and figure 4. The predicted value for 1996 is used for representing the SGM"96". Annex I contains SGM"96" for all actual enterprises in Denmark.





Denmark calculates new gross margins every year. A new regression analysis is therefore also needed. Before the analysis is running, one new observation is calculated and the oldest

observation is discarded. Year after year new results are estimated and it is interesting how they stabilise the SGMs over years. In figure 5 and figure 6 the two methods of smoothing out the gross margins are compared. As expected the regression method reacts more slowly on changes in the gross margin than the method with three-year averages.

The linear regression method has been used in Denmark since SGM'86". Before we adapted this approach we were also searching for alternatives. Averages using five or seven years observations were examined. Meanwhile the method of using a linear regression analysis seems to give the most up-to-date SGMs, which are as near as possible to the period where the structural data have to be classified.

The newest information has to be taken into consideration. From this point of view it can be discussed if new and old observations should be allowed to influence the regression line with equal weights. The regression model could easily be altered so each observation is given a weight. The effect of weighting the observations with the square root of the observation number has been tested. For dairy cows the estimate for SGM'96" is 11492. The difference to the calculated gross margin has thus been reduced. See table 7.

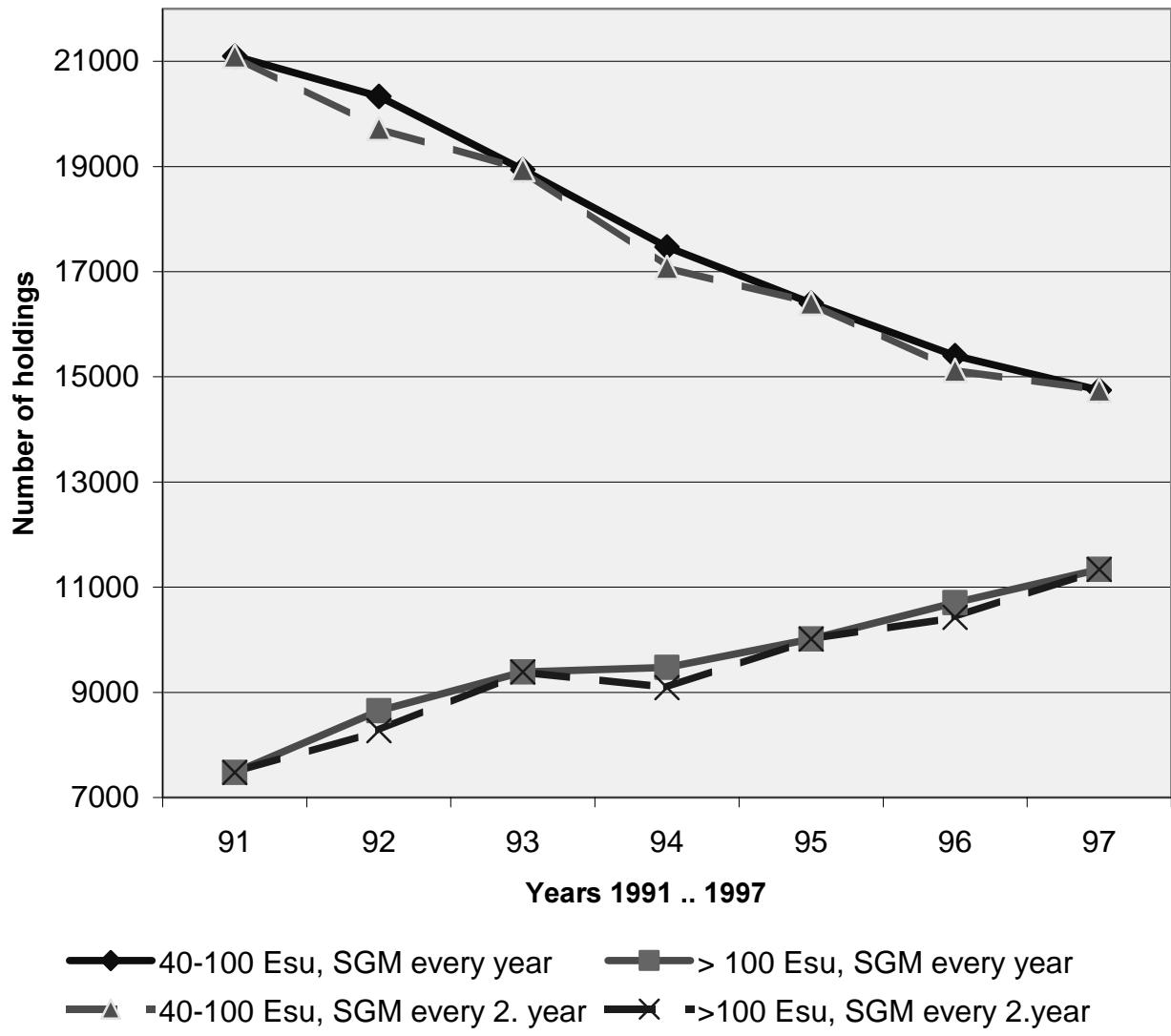
TABLE 7. **Various values of gross margin and SGM for dairy cows**

Gross margin 1996, DKK.	10821
SGM'96" calculated as 3-years average, DKK	10945
SGM'96" as the predicted value from 15 years trend, DKK	11656
SGM'96" as the predicted value from 15 years trend, weighted observations, DKK	11492

SGM calculation every year

As mentioned earlier Denmark calculates new SGMs every year. The new SGMs are used in the Danish *Agricultural Accounts Statistics* and *Horticultural Accounts Statistics* as well. When using new SGMs every second year we observed inexplicable changes in the number of holdings in the size classes. In each ESU size class the trend in number of holdings looked like a staircase. When using new SGMs every year the trends are more reasonable. In figure 8 the number of holdings in size classes 40-100 ESU and more than 100 ESU are compared. For each size class there are two trends in the number of holdings, one with new SGMs every year and one with every second year. These trends are calculated based on a small sample of holdings. A more evident difference between the trends is expected if the calculation were based on the total population.

Figure 8. Number of holdings, size classes 40-100 Esu and over 100 Esu



Annex I. Standard Gross Margins "1996" for the two regions in Denmark, ECU

	Islands	Jutland	
D/01	Common wheat and spelt	991	934
D/03	Rye	729	629
D/04	Barley	801	690
D/05	Oats	685	643
D/06	Grain maize	729	629
D/09	Pulses - total	691	639
D/10	Potatoes	3463	2112
D/11	Sugar beet	1968	1459
D/12	Fodder roots and brassicas	1295	1295
D/13	Industrial plants - total	765	689
D/14a	Fresh vegetables, melons, strawberries - outdoor - open field	845	805
D/14b	Fresh vegetables, melons, strawberries - outdoor - market gardening	6231	6231
D/15	Fresh vegetables, melons, strawberries - under glass	264484	264484
D/16	Flowers - outdoor	23834	23834
D/17	Flowers - under glass	526021	526021
D/18	Forage plants - total	809	809
D/19	Seeds and seedlings	1020	904
D/20	Other crops	490	409
D/21	Fallow land without subsidies	1	1
D/22	Set-aside areas under incentive schemes - fallow land with no economic use	355	355
F/01	Permanent grassland and meadow - pasture and meadow	470	470
F/02	Permanent grassland and meadow - rough grazing	470	470
G/01	Fruit and berry plantations - total	3330	3330
G/05	Nurseries	15449	15449
G/06	Other permanent crops	3330	3330
G/07	Permanent crops under glass	264484	264484
I/02	Mushrooms	16137	16137
R/139	Mushrooms	3753	3753
J/01	Equidae	166	166
J/02	Bovine under one year old - total	78	78
J/03	Bovine one year or over but under 2 years - males	163	163
J/04	Bovine one year or over but under 2 years - females	97	97
J/05	Bovine 2 years old and over - males	159	159
J/06	Bovine 2 years old and over - heifers	102	102
J/07	Bovine 2 years old and over - dairy cows	1549	1549
J/08	Bovine 2 years old and over - other cows	383	383
J/09	Sheep - total	11	11
J/11	Pigs - piglets under 20 kg	69	69
J/12	Pigs - breeding sows over 50 kg.	425	425
J/13	Pigs - others	69	69
J/14	Poultry - broilers	170	170
J/15	Poultry - laying hens	347	347
J/16	Poultry - others	1268	1268
J/19	Other - furred animals	68	68
	<i>Coefficient for livestock, purchased fodder:</i>		
J/01	Equidae	0	0
J/02	Bovine under one year old - total	28	28
J/03	Bovine one year or over but under 2 years - males	123	123
J/04	Bovine one year or over but under 2 years - females	3	3
J/05	Bovine 2 years old and over - males	103	103
J/06	Bovine 2 years old and over - heifers	0	0
J/07	Bovine 2 years old and over - dairy cows	1109	1109
J/08	Bovine 2 years old and over - other cows	172	172
J/09	Sheep - total	0	0
	Threshold for coarse fodder deficit	5,60	
	Threshold for coarse fodder surplus	1,40	
	Conversion rate , DKK/ecu	7,5206	

Annex II. Definition of and principles for calculating SGMs; ¹⁾

1. DEFINITION OF AND PRINCIPLES FOR CALCULATING SGMs

- a) The **gross margin** of an agricultural enterprise means the monetary value of gross production from which corresponding specific costs are deducted.
The **standard gross margin** (SGM) means the value of gross margin corresponding to the average situation in a given region for each agricultural characteristic.
- b) **Gross production** is the sum of the value of the principal product(s) and of the secondary product(s).
The values are calculated by multiplying production per unit (less any losses) by the farm gate price, VAT not included.
Gross production also includes subsidies linked to products, to area and/or to livestock.
- c) **In order to calculate SGMs the following specific costs are deducted from the gross production:**
1. *In the case of crop production:*
 - seeds and seedlings (purchased or produced on the farm).
 - Fertilisers purchased,
 - Crop protection products,
 - Various specific costs including:
 - water for irrigation purposes,
 - heating,
 - drying,
 - specific marketing costs (e.g. grading, cleaning, packaging), and processing costs.
 - specific insurance costs,
 - other specific costs.
 2. *In the case of livestock production:*
 - livestock replacement costs;
 - feedingstuffs:
 - concentrated feedingstuffs (purchased or produced on the farm),
 - coarse fodder;
 - various specific costs including:
 - veterinary fees.
 - costs of natural service and artificial insemination,
 - costs relating to performance testing and the like,

¹⁾Text from Commission Decision 85/377/EEC , annex 1

- specific marketing cost (e.g. grading, cleaning, packaging) and processing costs,
- specific insurance costs,
- other specific costs.

The following are not included in the specific costs to be deducted: costs of labour, machinery, buildings, fuel and lubricants, maintenance and depreciation for machinery and equipment, contract work. However, costs of contract work related to renewal and removal of permanent crops and to crop drying are deducted.

The specific costs are determined on the basis of the delivered to farm prices. VAT not included, minus any subsidies linked to the components of these costs.

d) **Production period**

The SGMs correspond to a production period of 12 months (calendar year or agricultural production year).

For crop products and livestock products for which the period of production is less than or exceeds 12 months, an SGM corresponding to growth or production in 12 months is calculated.

e) **Basic data and reference period**

The SGMs are determined using the factors mentioned in points (b) and (c) above. To this end, compiled form appropriate calculations for a reference period which covers three successive calendar years or agricultural production years. The reference period is the same for all Member States and is fixed by the Commission, in consultation with them.

f) **Units**

1) *Physical units:*

- a) The SGMs for crops are determined on the basis of area expressed in hectares.

For mushrooms, however, the SGMs are determined on the basis of gross production and specific costs for all the annual successive harvests and are expressed per 100 m² of area under crops. For their use in the context of the Farm Accountancy Data Network the SGMs, determined in this way, are divided by the number of annual successive harvests, such number being communicated by the Member States.

- b) The SGMs relating to livestock are determined by head, except for poultry, for which they are determined in terms of 100 head, and for bees, for which they are determined by hive.

2) *Monetary units and rounding:*

The basic data for determining the SGMs and the calculated SGMs are established in the national currencies of the Member States.

The SGMs are then converted into ECU using the average exchange rates for the reference period as defined in point 1 (e) of this Annex. These rates are communicated by the Commission to the Member States. The SGMs may be rounded to the nearest 5 ECU where appropriate.

2. BREAKDOWN OF SGMs

a) **By crop and livestock characteristics**

1. The SGMs are determined for all the agricultural enterprises corresponding to the headings of the Community farm structure surveys in the manner laid down in those surveys.
2. In the case of Member States which supply details additional to the survey headings, the SGMs corresponding to those details are also established along the same lines.

b) **Geographical breakdown**

- the SGMs are determined at least on the basis of geographical units which are compatible with those used for the Community farm structure surveys and for the Farm Accountancy Data network.
- No SGM is determined for enterprises which are not engaged in the region concerned.
- In the case of geographical units for which the Member States forward information indicating whether a holding situated in a less-favoured or mountain area, separate SGMs are supplied for the less-favoured or mountain area and for the other areas of the geographical unit whenever it is appropriate and important that such a distinction should be made.

3. COLLECTION OF DATA AND FREQUENCY FOR DETERMINING SGMs

- a) At least every 10 years the basic data for determining SGMs are renewed on the basis of observations drawn from farm accounts or specific surveys, or compiled from appropriate calculations.
- b) Within the 10 years period between two successive renewals, as provided for under (a), the SGMs are normally updated every two years. Such updating is effected:

- either by renewing the basic data in a manner similar to that specified under (a),
 - or by using a method of calculation by which the SGM may be updated. The principles applying to such a method are laid down at Community level.
- c) The reference periods for data renewal and for updating calculations, as provided under (a), and (b) above, are the same for all Member States and are fixed by the Commission in consultation with them.

These reference periods will as far as possible be linked with the dates of Community surveys on the structure of agricultural holdings.

4. EXECUTION

The Member States are responsible, in accordance with the provisions of this Annex, for collecting the basic data needed for calculating the SGMs and for calculating them, for converting them into ECU and for collecting the data required for applying the updating method, if appropriate.

They will forward available data and results to the Commission in a standard format. This format will be established by the Commission in consultation with the Member States.

5. TREATMENT OF SPECIAL CASES

The following special rules are laid down for the calculation of SGMs for certain types of enterprise:

a) **Grazing livestock and fodder crops**

1. *General rule:*

The method of applying the SGMs for grazing stock and fodder crops depends on the ratio existing between these two groups of characteristics on the holding. The variable costs of fodder crops are deducted when calculating the SGMs of grazing livestock. When applying the Community typology the SGMs of fodder crops are therefore as a general rule treated as being equal to zero.

2. *No grazing livestock:*

(i) **F o d d e r c r o p s w i t h o u t g r a z i n g l i v e s t o c k :**

If there is no grazing livestock on the holding, the fodder crops normally in commercial production are treated in the same way as other crops and the corresponding SGMs are applied to them.

(ii) **P e r m a n e n t p a s t u r e a n d m e a d o w s n o t**

occupied by grazing livestock:

In order to make it possible to classify holdings, a major part of whose area consists of permanent pasture or meadows which are not in commercial production and which at the time of the survey are not occupied by grazing livestock, nominal SGMs, on a flat-rate basis, may be fixed for these characteristics in regions where such cases occur frequently, and applied to these holdings.

3. *Unbalanced fodder situation:*

If there is a deficit or surplus of fodder on the holding, as defined in (I) below, special provisions are applied:

- in the case of a fodder deficit, special SGMs for grazing stock are applied in the manner described in (ii) below,
- in the case of a fodder surplus, the SGMs for fodder crops are applied in the manner described in (iii) below.

(i) for each region a bracket is fixed outside which the holding is considered as having a surplus or deficit of fodder.

There is a fodder deficit on a holding if the ratio $R - \text{SGM grazing stock} / \text{SGM fodder crops}$ exceeds a limit R_s .

(ii) In the case of a fodder deficit ($R < R_D$), all the fodder crops are considered as having an SGM equal to zero. For all types of grazing stock, one part (including, where necessary, fractions of animals) equal to $\frac{R_D}{R}$ is considered as falling under the "normal" system, in which case the normal SGMs are applied; the remaining part $\frac{(R - R_D)}{R}$ is considered as being affected by the fodder deficit and specially fixed SGMs for grazing stock are applied.

(iii) In the case of a fodder surplus ($R < R_s$), a valuation of the surplus part of the area of each fodder crop is made, applying the corresponding SGM to this part. The surplus part corresponds, as a rule, to $\frac{(R_s - R)}{R_s}$. In specific cases however, this surplus part can be defined in relation to a valuation threshold R_V higher than R_s . In the case of a fodder surplus, the normal SGM is applied to each grazing livestock heading.

(iv) The Member States establish the limits RD and RS and, if appropriate, RV for each region and communicate them to the Commission.

- The fodder crops to which the special provisions apply are the following:

D12: forage roots and tubers,

D18: forage plants,

F01: pasture and meadows, excluding rough grazing,

F02: rough grazing.

- The grazing livestock to which the special provisions apply are the following:

J01: equidae,

J02 to J08: cattle,

J09: sheep,

J10: goats

b) **Fallow land**

In order to make it possible to classify holdings which at the time of the survey have only fallow land, nominal SGMs, on a flat-rate basis, may be fixed for this characteristics in regions where such cases occur frequently, and applied to these holdings.

c) **Kitchen gardens**

Since the produce of kitchen gardens is not normally intended for sale, the SGMs are generally regarded as equal to zero. However, for regions where kitchen gardens which make an appreciable contribution to the holding's gross production are common, SGMs may be determined by applying, by analogy, the rules and methods set out in this Annex.

d) **Piglets**

SGMs relating to piglets are taken into account when calculating the total SGM of the holding only when there are no breeding sows on the holding.

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