STATISTICS DENMARK

Documentation of statistics for
Gross Fixed Capital Formation, Interest and Debt in Agriculture
2014

1 Introduction

The purpose of the statistics is twofold:

1. To estimate the gross fixed capital formation in the agricultural sector, broken down by farm building types, equipment and land reclamation.
2. To estimate the interest payment and liabilities in the agricultural sector, broken down by type of loans and liabilities.

Statistics on fixed capital formation have been compiled in Statistics Denmark since 1947. Estimates on debt have been compiled back to 1937 and on interest payment back to 1981/82 (In Statistics Denmark).

2 Statistical presentation

The statistics cover gross fixed capital formation and interest and debt in agriculture. These surveys have previously been defined as two separate surveys, but are from 2004 one statistical product. The reason for merging is same data source and similar estimation methods. Both statistics show economic situation for a calendar year, which are accounting years for most farms. The survey doesn't cover horticultural holdings and farms specialized in fur production. The reason for excluding the first one is lack of comprehensive data source, and fur-farms are not within the definition of agriculture according to EU-concepts. The Statistics cover by the used definition 93-95 per cent of total agricultural activity as defined in Economic Accounts for Agriculture.

Gross capital formation in agriculture

The survey on fixed capital formation shows investments in farm buildings and other agricultural structures, broken down by stables for cattle, stables for pigs and other farm buildings/structures, shows machines and other equipment. Finally the survey shows land improvements and all variables are measured at current as well as at constant prices. The statistics are used for calculation of depreciations and net capital formation. The GCFC in farm buildings are from 2004 distributed into stables for cattle, stables for pigs and other agricultural structures using the distribution of Standard Gross Margin og the single sample holding. Before the distribution was recorded in the accounts. Regarding machines and other equipment, data in the accounts are broken down into field machinery/equipment, stable machinery/equipment and general machinery/equipment. However, only total GFCF in machinery and equipment are published. The calculation of GFCF in constant prices is based on indices for agricultural capital goods, also compiled for Agricultural Price indices, however, indices for buildings are corrected by productivity in the building construction sector. In practice the current development in indices on buildings are deducted by one per cent point. Attention shall be given to the fact, that fixed capital formation is not the same as total capital formation, which includes changes in stocks and livestock. The compiling of depreciations was changed from 1999 after task force studies. Depreciation is liniar based on actual values of the structures. Regarding equipment, the lifetime for structures are 12 years. Regarding buildings the lifetime is from 20 to 30 years, depending on type of building, and the depreciation share is different in the period for depreciation. The annual net investments for agriculture is the GFCF minus depreciations and reflects if the capacity in agricultural production is increasing or decreasing. On Land improvement net investments is the same as gross investments, because depreciations is not compiled according to international principles.

Interests and debt in agriculture

The survey on interest and debt shows interest of bond loans, loans in foreign currency, bank loans and other liabilities, inclusive debt regarding intermediate consumption etc. The debt part shows actual value of the respective types of loan and other liabilities at the end of the year. Leasing is not

covered in the survey, because it is treated as intermediate consumption. The results includes interest and debt related to not agricultural assets and activities, primarily dwellings. The reason for the inclision is that most farmers accounts includes the private sphere. In the economic accounts for agriculture the FISIM (Financial Intermediate Services Indirectly Measured) is deducted from interest and included in the intermediate consumption. In the present results on interest this element is not taken on board and data is the "full" interest. From 2004 cash-credit is taken as short term debt, compared to previous years, where this item was included in the long term debt together with bond loans. It has not been possible to recalculated according to the redefinition.

Common elements in the surveys

The surveys is based on approximately 10.000 accounts from farms, using the general farm accounting system and/or providing accounts to Danish Farmers Advisory Service (DAAS). The relevant data including classification codes are delivered to Statistics Denmark from DAAS. The data are seen as a sample and results are estimated by combining this sample and the Farm Structure Survey. The survey on fixed capital formation dissimilates results broken down by type of investment, by type of farm, by age of farmer and by economic size groups, and results on interest and debt in a similar way. Regional results are not estimated. The resulting statistics on gross fixed capital formation are grouped by type of capital formation, principal type of farming and age of the farmer. As principal farm types are defined Cereal grower, Mixed cropping, Cattle production, Pig production and Other farms

2.1 Data description

The statistics describe trends in agricultural financial activities. This development is important to get a better understanding of the agricultural sectors situation in the long run. There can be large fluctuations in agricultural performance, due to price fluctuations and the whims of nature. The financial activity describes the long term, where one can see whether the capital stock is being worn down or improved. An important prerequisite for growth. Furthermore, it can be assessed whether the industry is able to keep a healthy economy over several years and whether the industry as a whole has a reasonable opportunity to pay off his debts.

2.2 Classification system

Agriculture, Forestry & Fishery

A Agriculture, Forestry & Fishery

01.00.0 Agriculture & Horticulture

2.3 Sector coverage

The agricultural sector, i.e.. including horticulture.

2.4 Statistical concepts and definitions

The statistics cover gross fixed capital formation and interest and debt in agriculture. These surveys have previously been defined as two separate surveys, but are from 2004 one statistical product. The reason for merging is same data source and similar estimation methods.

Both statistics show economic situation for a calendar year, which are accounting years for most farms. The survey doesn't cover horticultural holdings and farms specialized in fur production. The reason for excluding the first one is lack of comprehensive data source, and fur-farms are not within

the definition of agriculture according to EU-concepts.

The Statistics cover by the used definition 93-95 per cent of total agricultural activity as defined in Economic Accounts for Agriculture.

Gross capital formation in agriculture

The survey on fixed capital formation shows investments in farm buildings and other agricultural structures, broken down by stables for cattle, stables for pigs and other farm buildings/structures, shows machines and other equipment. Finally the survey shows land improvements and all variables are measured at current as well as at constant prices. The statistics are used for calculation of depreciations and net capital formation.

The GCFC in farm buildings are from 2004 distributed into stables for cattle, stables for pigs and other agricultural structures using the distribution of Standard Gross Margin og the single sample holding. Before the distribution was recorded in the accounts. Regarding machines and other equipment, data in the accounts are broken down into field machinery/equipment, stable machinery/equipment and general machinery/equipment. However, only total GFCF in machinery and equipment are published.

The calculation of GFCF in constant prices is based on indices for agricultural capital goods, also compiled for Agricultural Price indices, however, indices for buildings are corrected by produtivity in the building construction sector. In practice the current development in indices on buildings are deducted by one per cent point.

Attention shall be given to the fact, that fixed capital formation is not the same as total capital formation, which includes changes in stocks and livestock.

The compiling of depreciations was changed from 1999 after task force studies. Depreciation is liniar based on actual values of the structures. Regarding equipment, the lifetime for structures are 12 years. Regarding buildings the llifetime is from 20 to 30 years, depending on type of building, and the depreciation share is different in the period for depreciation.

The annual net investments for agriculture is the GFCF minus depreciations and reflects if the capacity in agricultural production is increasing or decreasing. On Land improvement net invenstment is the same as gross investments, because depreciations is not compiled according to international principles.

Interests and debt in agriculture

The survey on interest and debt shows interest of bond loans, loans in foreign currency, bank loans and other liabilities, inclusive debt regarding intermediate consumption etc.The debt part shows actual value of the respective types of loan and other liabilities at the end of the year. Leasing is not covered in the survey, because it is treated as intermediate consumption.

The results includes interest and debt related to not agricultural assets and activities, primarely dwellings. The reason for the inclision is that most farmers accounts includes the private sphere.

In the economic accounts for agriculture the FISIM (Financial Intermediate Services Indirectly Measured) is deducted from interest and included in the intermediate consumption. In the present results on interest this element is not taken on board and data is the "full" interest.

From 2004 cash-credit is taken as short term debt, compared to previous years, where this item was included in the long term debt together with bond loans. It has not been possible to recalculated according to the redefinition.

Common elements in the surveys

The surveys is based on approximately 10.000 accounts from farms, using the general farm accounting system and/or providing accounts to Danish Farmers Advisory Service (DAAS). The relevant data including classification codes are delivered to Statistics Denmark from DAAS. The data are seen as a sample and results are estimated by combining this sample and the Farm Structure Survey.

The survey on fixed capital formation dessiminates results broken down by type of investment, by type of farm, by age of farmer and by economic size groups, and results on interest and debt in a similar way. Regional results are not estimated.

The resulting statistics on gross fixed capital formation are grouped by type of capital formation, principal type of farming and age of the farmer. As principal farm types are defined Cereal grower, Mixed cropping, Cattle production, Pig production and Other farms 1.2 Statistical Concepts The two surveys are compiled by similar methods, by relating population and sample.

Population: The population is made up by farms which according to the latest Farm Structure Survey (Compiled by Statistics Denmark) cultivate an area of at least 5 hectares or have an corresponding agricultural production. In 2005 the number of farms of this size amounted to around 47,000 in Farm Structure Survey. The holdings are distributed by 5 main types of farming, by 6 ages groups and 7 SGM-groups (Standard Gross Margin is an economic size indicator), and 210 subgroups are formed. Where no age on farmer is recorded, the holdnings area allocated randomly to age groups.

Horticultural and specialized fur animal farms are not included.

Sample The dataset with account information, received from Danish Farmers Advisory Service is distributed according to the same criteria as the population. By this, numbers on population and sample constitute the keys for compiling the totals.

From 2004 data on investments in farm building is not longer broken down by building type (stables for cattle, stables for pigs, other farm buildings). The distribution to these variable, necesarry for compiling depreciations, is estimated (by Statistics Denmark), based on relations between SGMs-cattle, SGMs-pigs and SGMs-other activities.

The accounts data is roughly validated before compiling. The validation exercise exclude 3-5 per cent of the account as outlayers.

Variables

In the gross capital formation survey the GFCF in building are recorded for stables for cattle, stables for pigs and other stables or structures. Equipment and machinery is recorded broken down on crop related, livestock related or general equipment and machineries.

In the survey on interests and debt the information are recorded in debt on Credite institute loans, loans in foreing currencies, bank loans, Cash Credit loans and other loans or debt. The interests are recorded according to the type of debt.

Estimation of totals For estimating the totals, averages of all variables in every subgroup are multiplied by the number of holding within the subgroups. Furthermore, from 2004 the estimates are adjusted by different SGM-level in population and sample per subgroup. If no sample, but population, in a subgroup, the averages from subgroup on the above level are used for estimation, adjusted by different SGMs. This correction has also been used from 2004.

Classification The compilation are complicated by the fact, that the Farm Structure Survey are

classified according to SGMs-95 values, while the sample data (in 2004) are classified by SGMs-2000 values. To overcome this problem Statistics Denmark has recalculated the SGMs based on 2000-figures to ensure comparable level. However, the classification in farm types are kept to ensure consistency to other results for farm types.

2.5 Statistical unit

Legal entities.

2.6 Statistical population

The subject for the statistic are all Danish agricultural and horticultural holdings

2.7 Reference area

Denmark.

2.8 Time coverage

2005-

2.9 Base period

Not relevant for this statistic.

2.10 Unit of measure

DKK million.

2.11 Reference period

The reference period is calendar year, ending on 31st of December.

2.12 Frequency of dissemination

Annual.

2.13 Legal acts and other agreements

Account data are provided on voluntary basis by the Danish Farmers Advisory Service and are not linked to any specific legal basis.

EU-Parliament and Council Regulation 138/2004 on Agricultural Accounts for Agriculture and Council Directive 130/1989 on information used for compiling National Accounts.

2.14 Cost and burden

Irrelevant in this survey, because data is collected indirectly.

2.15 Comment

None.

3 Statistical processing

Calculated using multiple other statistics, and therefore do not undergo any statistical manipulation

3.1 Source data

The sources are farm accounts data collected by the Danish Agricultural Advisory Service and data from the Farm Structure Survey conducted by Statistics Denmark.

3.2 Frequency of data collection

Yearly.

3.3 Data collection

System to system. Accounts have been collected through the Danish accounting system Ø90. The rest are administrative data.

3.4 Data validation

As the statistic is based on data from Account Statistic for Agriculture and the Farm Structure Survey, please see these specific declarations of content for elaborate documentation on data validation.

3.5 Data compilation

Data from Account Statistic for Agriculture is enumerated based on the Farm Structure Survey.

3.6 Adjustment

Not relevant for this statistic.

4 Relevance

Results are included in the Economic Accounts for Agriculture. The estimations on capital formation, on interest and on debt are an important part in the information regarding the situation in the agricultural sector and can be a background if changes in agricultural politics are discussed.

4.1 User Needs

The main users are agricultural organizations and the EU. Results are included in the Economic Accounts for Agriculture. The estimations on capital formation, on interest and on debt are an important part in the information regarding the situation in the agricultural sector and can be a background if changes in agricultural politics are discussed.

4.2 User Satisfaction

Not relevant for this statistic.

4.3 Data completeness rate

In full compliance.

5 Accuracy and reliability

Concerning the quality of data, there seems to be some errors in specifications on investments, interest and debt. This means lower quality on specifications than on totals and subtotals, which are expected to be valid in the sample. Concerning the artificial distribution on investments in buildings into different types of buildings, the distribution can not be fully correct, even based on analyses and other sources. Caused by the on-off nature of investments, in particular investment in buildings and land improvement, the deviation is high on these data. On interest and debt the deviation is lower, also because of the nature of these data. Margins of statistical error are not calculated.

5.1 Overall accuracy

The overall accuracy is considered to be high, because the sample of app. 10.000 farms is more than app. 25 per cent of the total number of farms. In economic size, the sample comprises 40 per cent of total.

5.2 Sampling error

Not relevant for this statistic.

5.3 Non-sampling error and A4. Unit non-response - rate for U and A5. Item non-response - rate for U

Not relevant for this statistic.

5.4 Quality management

Statistics Denmark follows the recommendations on organization and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Steering Committee for Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Steering Committee for Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

5.6 Quality assessment

The overall accuracy is considered to be high. Concerning the quality of data, there seems to be some errors in specifications on investments, interest and debt. This means lower quality on specifications than on totals and subtotals, which are expected to be valid in the sample. Margins of statistical error are not calculated. Data undergoes extensive quality assurance in the respective statistics, which this statistic is formed based on.

5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the Revision Policy for Statistics Denmark. The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

5.8 Data revision practice

Only final statistics are compiled.

In 2000 the calculation of depreciation was revised back to 1973, as a follow up on comprehensive analyses on the subject.

In 2005, data from 1995 to 2003 were revised, because a mistake in the calculations was deducted.

In 2007, the data on 2005 was revised because the Farm Structure was revised. In 2011 implemented a re-calculation of investments, interest and debt for 2010 and back to 2005 when the calculation was transferred to a new method, based primarily on further processing of data from agricultural accounts statistics. This was done to better coordinate and streamline workflow in agro monetary calculations by Statistics Denmark.

6 Timeliness and punctuality

The date of publication is considered to be punctual. Normally, the statistics are published in October of the following calendar year.

6.1 Timeliness and time lag - final results

Normally, the statistics are published in October of the following calendar year.

6.2 Punctuality

The date of publication may vary by one or two months, depending on data delivery.

7 Comparability

The statistics goes back to 2005. The previous method of compilation makes it difficult to compare over time as particularly new types of loan makes it hard to compare. However, the debt as total stand comparison with the previous statement. The Danish model makes it difficult to compare with other countries, as few other countries have the same access to loaning money with little leverage as in the Danish mortgage system.

7.1 Comparability - geographical

Not compared internationally. No EU act.

7.2 Comparability over time

The statistics are fully comparable back to 1987, when the reference period was changed from crop year to calendar year.

7.3 Coherence - cross domain

The statistics can be compared with statistics drawn up by the Danish Research Institute of Food Economics and statistics from the Danish Agricultural Advisory Centre. Both these statistics, however, are based on another calculation principle.

7.4 Coherence - internal

Not relevant for this statistic.

8 Accessibility and clarity

The statistics are published in *Landbrug* (Agriculture) appearing in the series Statistical News and in the annual publication *Agriculture*.

Part of the statistics are published in *Statistical Yearbook* and *Statistical Ten-Year Review*.

www.statbank.dk

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

8.3 User access

Statistics are always published at 9:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published. Theme publications etc. may be published at other times of the day. The National Statistician can decide that such publications may be released before their official publication time, e.g. to the media and other stakeholders.

8.2 Release calendar access

The Release Calendar can be accessed on our English website: [Release Calendar](#).

8.4 News release

[Investements in Agriculture](#) and [Debt and interests in Agriculture](#).

8.5 Publications

Work in progress.

8.6 On-line database

[Agrimonetary statistics](#).

8.7 Micro-data access

The basic material is stored on electronic means. For further information, please contact the person responsible.

8.8 Other

Not relevant for this statistic.

8.9 Confidentiality - policy

Regarding data confidentiality please see Statistics Denmarks policies on the subject [Confidentiality Act](#).

8.10 Confidentiality - data treatment

Not relevant for this statistic.

8.11 Documentation on methodology

Work in progress.

8.12 Quality documentation

Reports from quality evaluation of products and processes will be available in detail for selected statistics and in summary reports for the Steering Committee for Quality.

9 Contact

The administrative placement of this statistics is in the division of Food Industries. The person responsible is Mads K. Meyer-Dissing, tel. +45 3917 3381, e-mail: mdi@dst.dk

9.1 Contact organisation

Statistics Denmark

9.2 Contact organisation unit

Food Industries, Business Statistics department

9.3 Contact name

Mads K. Meyer-Dissing

9.4 Contact person function

Responsible for the statistics

9.5 Contact mail address

Sejrøgade 11, 2100 Copenhagen

9.6 Contact email address

mdi@dst.dk

9.7 Contact phone number

+45 3917 3381

9.8 Contact fax number

+45 39 17 39 99