STATISTICS DENMARK

# Documentation of statistics for Pigs 2017 Quarter 2

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## 1 Introduction

The stock of pigs shows the total number of pigs in Denmark. The statistics are published quarterly and are primarily used as base for forecasts of pigs for slaughter and forecasts for the total number of pigs. The Statistic are used in connect with different economic and environment estimations and analyses. The stock of pigs have been estimated after different methods since 1915.

## 2 Statistical presentation

The statistics are publics every quarter in the Stat Bank, as "Pigs total" and " Sows total" . The unit of measure is number of pigs in thousand number. The stock of pigs is divided into 10 sub-groups. Four of these sub-groups make up a classification of the stock of breeding sows; one group comprising piglets with sows and a classification of weaners according to weight. The data series with the total stock of pigs (pigs, total) are seasonally adjusted. The pig survey is a sample survey, The population includes all active farms in Denmark and is integrated in the Statistical Business Register (ESR), which is kept by Statistics Denmark, and which is registered with pigs in the Central Livestock Register (CHR). Survey date is the 1st of each quarter.

### 2.1 Data description

The pig surveys are a estimation of the total number of pigs in Denmark. The survey is conducted quarterly and at the first day in every quarter. The population includes all active farms in Denmark and is integrated in the Statistical Business Register (ESR), which is kept by Statistics Denmark, and which is registered with pigs in the Central Livestock Register (CHR). Survey date is the 1st of each quarter. The data series with the total stock of pigs (pigs, total) is seasonally adjusted.

### 2.2 Classification system

The stock of pigs is divided as **total number of pigs** and** total number of sows**. The stock of pigs is divided into 10 sub-groups: - Boars for service - Pigs for breeding (over 50 kilo) - Sows (gilts) to farrow for the first time - Other sows to farrow - Barren sows - Sows with litters - Piglets at sows - Weaners under 50 kilo - Pigs for slaughtering, 50 kg and over - Boars and sows for slaughter

### 2.3 Sector coverage

All holdings in Denmark.

## 2.4 Statistical concepts and definitions

Other Sows to Farrow: Other sows to farrow.

Boars for Service: Boars for service.

Sows with Litters: Sows with litters.

Sows to Farrow for the First Time: Sows to Farrow for the first time.

Barren Sows: Barren sows.

Sows and Boars for Slaughtering: Sows and boars for slaughtering.

Pigs (over 50 kg) for Breeding: Pigs (over 50 kg) for breeding.

Pig: The term "pig" means domestic animals of the species Sus scrofa domesticus.

Pigs, total: The total number of pigs in Denmark.

Sows, Total: The total number of sows.

## 2.5 Statistical unit

The number of pigs is in 1000 animals.

## 2.6 Statistical population

The total number of pigs in Denmark

## 2.7 Reference area

Denmark.

## 2.8 Time coverage

The statistics cover the period from first quarter 1998 and onward. Older time series are described under Comparability over time.

## 2.9 Base period

Not relevant for this statistics.

## 2.10 Unit of measure

The unit of measure is number of pigs in 1000 number.

### 2.11 Reference period

Survey date is the 1st of each quarter. (on January the 1st, on April the 1st, on July the 1st and on October 1st).

### 2.12 Frequency of dissemination

The statistics are published quarterly.

### 2.13 Legal acts and other agreements

Law on Statistics Denmark §8 secures the legal base for collecting the data.

The statistic falls under EU Regulation (EC) No 1165/2008 of the European Parliament and of the Council of 19 November 2008 concerning livestock and meat statistics.

### 2.14 Cost and burden

The response burden is estimated at DKK 600,000 in 2014.

### 2.15 Comment

Other information please contract Statistic Denmark.

## 3 Statistical processing

Data for the pig survey is collected by means of web questionnaires or by means of the system to system solution ArgoSofts Winsvin. A sample of 2.500 holding with pigs according to the livestock register is selected. The answers are validated for unrealistic values and next the sample is extrapolated to the total population of all farms with pigs. The survey is a sample survey divided into groups (strata) by the size of pigs on the single holding. All holdings with 2.000 pigs or more are included in the survey.

### 3.1 Source data

The pig survey is a sample survey, The population includes all active farms in Denmark and is integrated in the Statistical Business Register (ESR), which is kept by Statistics Denmark, and which is registered with pigs in the Central Livestock Register (CHR). A sample of 2.500 holding with pigs according to the livestock register is selected. The survey is divided into groups (strata) by the size of pigs on the single holding. All holdings with 2.000 pigs or more are included in the survey. The information comes from the questionnaires. Data collection takes place via electronics questionnaires on http://www.Virk.dk . Other used the system-to-system PigVision or http://WinPig.Net (AgroSoft) .

### 3.2 Frequency of data collection

Data is collected quarterly.

### 3.3 Data collection

Data collection takes place via questionnaires. When the basic data are entered, they are subject to error editing, and if we have any questions, contact is made by phone to reduce the number of observation errors. Online form and instructions can be found on the information page (in Danish) Informationssiden.

### 3.4 Data validation

The statistics go through an validation process which falls into three steps:

1. In connection with the online reporting it is secured that all questions are answered.
2. In the next step all the basic data are entered a database where they are subject to an error editing system. Errors are corrected, sometimes after telephone contact with the farmers.
3. In the last step the results are analysed, and extreme development are identified. In this step it is often possible to find a very few but rather big mistakes which for one or any reasons have been overlooked in the first two steps.

### 3.5 Data compilation

The statistics go through an error detection process.

1. In connection with the online reporting there is a simple validation where we point out to the farmer that he should to be aware of some of the data might be wrong.
2. In the next step all the answers are treated in a system, where the data are subject to a validation, a plausibility check with the data from last census. Errors are corrected immediately, sometimes after telephone contact with the farmers.
3. The collected data are processed with SAS program CLAN. In connection with enumeration/analyses various lists are done and it is possible to see extreme developments - big increases or decreases - are identified. In this step it is possible to find a few but rather big mistakes which for one or any reasons have been overlooked.
4. At last the enumerated data are distributed over the various groups of pigs and geographically and then compared with last quarter and year.

In case of non-response the farm is excluded from the sample and the extrapolation is increased accordingly for stratum where non response occurs. The non-response is about 5-10 per cent.

### 3.6 Adjustment

No adjustment of data as early mention in Data validation and Data compilation.

## 4 Relevance

The pigs survey is of great interest to EU, the Ministry of Environment and Food, The Danish Association of Slaughterhouses and others farmer´s organizations, but also students and interested people in general. The most important purposes of pig surveys are to provide a basis base for forecasts of pigs for slaughter. The statistics are used in financially and environment studies. There are no examination of the uses satisfaction, but the impression is, that most users are satisfied with the statistics.

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### 4.1 User Needs

The pig survey is of great interest to EU, the Ministry of Environment and Food, The Danish Association of Slaughterhouses and others farmer´s organizations, but also students and interested people in general. The most important purposes of pig surveys are to provide a base for forecasts of pigs for slaughter. The statistics are used in financially and environment studies.

### 4.2 User Satisfaction

There is no examination of the uses satisfaction, but the impression is, that most users are satisfied with the statistics.

### 4.3 Data completeness rate

This statistics affected by demands from EU in 1165/2008.

## 5 Accuracy and reliability

The greatest factor of inaccuracy is updating and matching of the different registers. The relative standard deviation - sampling errors - for pigs is 0.5 per cent to 1.5 per cent. A maximum of 2 per cent has to be observed to meet EU's requirements. As part of a quality assessment statistical errors are calculated for all variables.

### 5.1 Overall accuracy

Coverage: The population includes all active farms in Denmark and is integrated in the Statistical Business Register (ESR), which is kept by Statistics Denmark, and which is registered with pigs in the Central Livestock Register (CHR). In order to ensure that the population is up to data Statistics Denmark regularly makes register merges with IACS and every quarter with the Central Livestock Register (CHR). The assumption is that if a farm applies for single payment or reports livestock to the livestock register it must be expected to be active in agriculture and should accordingly be marked as such in the register of Statistics Denmark.

### 5.2 Sampling error

The standard deviation - sampling errors - for pigs is 0.5 per cent to 1.5 per cent. A maximum of 2 per cent has to be observed to meet EU's requirements. As part of a quality assessment statistical errors are calculated for all variables.

The sample surveys cover 2,500 holdings. When the holdings are selected, they are divided into 24 strata according to the total number of pigs at the holding. The number of pigs is information from the last survey in which the holding has participated. If a holding has 3,000 pigs or more, it will always be in the pig survey. All the other holdings are selected randomly for the first time, and then the holding will be included in the sample at a maximum of 8 times. The selection method is optimum, i.e. the strata of the total sample are divided so that the variance of the estimated total number of pigs is minimized.

### 5.3 Non-sampling error

The farmer has to count the pigs at the first day in the quarter.

The are a little more uncertainty about when a female pig over 50 kilo is count as a female pigs for breeding or as a pig for slaughtering.

An other source to mistake, can be that the farmer "forgot" to include pigs from all his farms, especially from renting farms.

The split of pigs below and respectively a live weight of 50 kg can be a little uncertain as in the farm the pigs is normally spilt a live weight of 30 kg.

### 5.4 Quality management

Statistics Denmark follows the recommendations on organisation 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 Working Group on 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 Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

### 5.6 Quality assessment

The information is reliable and provides a good basis for preparing forecasts.

### 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

Final figures are published.

## 6 Timeliness and punctuality

The figures are usually published without delay in relation to the scheduled data, however with some exceptions in 2012 and 2013.

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### 6.1 Timeliness and time lag - final results

The survey results are published quarterly, about 6 weeks after the survey date.

### 6.2 Punctuality

The statistics are usually published without delay in relation to the scheduled date, however with some exceptions in 2012 and 2013.

## 7 Comparability

The pig surveys have been conducted in their present form since April 1974, but the number of pigs have been conducted at varying points in time and frequency since 1915.

### 7.1 Comparability - geographical

Data for all EU countries can be found in the Eurostat database . The statistics are produced following principles of an EU regulation so the results are comparable. Statistic Denmark delivers every half year figures to the statistical office of EU, Eurostat.

### 7.2 Comparability over time

The most important changes took place in 1933 when pigs were classified to 10 groups, compared to 5 groups previously, and pigs were no longer classified according to age but according to their weight.

From 1 July 2011 the number of units in the population was reduced form all holdings (about 46,000) to all holdings with pigs (about 5,500).

In 1946 the survey was extended to include all Denmark, compared to only rural municipalities previously.

Over the years that followed the classification of pigs has seen minor changes.

In 1974 the census method and the census groups were changed to comply with an EC Directive.

From 1980 when the number of sampling units were reduced from 10,000 to 5,000 it has not been possible to publish regional figures.

From 1 January 1998 the groups of piglets under 20 kg and weaners 20-50 kg were altered to sucking pigs with sows and weaners under 50 kg.

From 1 January 2004 the number of sampling units were reduced from 5,000 to 3,500.

From 1 July 2011 the number of sampling units were reduced from 3,500 to 2,500.

The number of sampling units was extraordinary 2,800 at the 1 April 2012.

From 1 July 2011 the number of units in the population was reduced from all holdings (about 46,000) to all holdings with pigs (about 5,500).

### 7.3 Coherence - cross domain

Every year the Agricultural and Horticultural Survey is public and there is it possible to find figures on the total number of pigs. See Stat Bank Husdyrbestanden efter område, enhed og art Husdyrbestanden efter areal, enhed og art Husdyrbestanden efter enhed og besætningsstørrelse . There are some different in the figures in the two surveys because of different samples and populations. See the Quality Declaration for Agricultural and Horticultural Survey for more information.

### 7.4 Coherence - internal

Not relevant for this statistics.

## 8 Accessibility and clarity

New figures for January and July are published in a news letter New from Statistics Denmark, and all figures can be found in the Statbank. SVIN.

### 8.1 Release calendar

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

### 8.2 Release calendar access

The Release Calender can be accessed on our English website: Release Calender.

### 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.

### 8.4 News release

The figures are published in news release, NYT from Statistics Denmark. Svinebestanden.

### 8.5 Publications

Data are public in Statistisk Tiårsoversigten and Statistical Yearbook.

### 8.6 On-line database

New quarterly figures are published in Statbank SVIN: Number of pigs, quarterly figures by type

### 8.7 Micro-data access

There is no micro-data access.

### 8.8 Other

Two times a year Denmark must deliver data to Euro stat. There a delivered some aggregated data, which are not public national.

For figures for all countries in EU see Eurostats databank.

The figures between the countries can be compare as the figures are produces after the same instructions and principles.

### 8.9 Confidentiality - policy

In the compilation of the herd of pigs, the confidentiality policy of Statistics Denmark is followed Datafortrolighedspolitik.

### 8.10 Confidentiality - data treatment

These statistics are not published on a level of detail that necessitates confidentiality". In the compilation of the herd of pigs, the confidentiality policy of Statistics Denmark is followed Datafortrolighedspolitik.

### 8.11 Documentation on methodology

Published in *Stikprøveundersøgelser i Danmarks Statistik* (Sample surveys conducted by Statistics Denmark). A method updating is described in a special paper.

### 8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

## 9 Contact

The administrative placement of this statistics are in the division of Food Industries. The person responsible is Mona Larsen, tel. + 45 39 17 33 99, e-mail: mla@dst.dk

### 9.1 Contact organisation

Statistics Denmark

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