

Standard Report
on
Methods and Quality

For

Pig Survey

This documentation applies to the reporting period:

March 2009 onwards

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1 Overview

The Pig Products survey is a relatively small bi annual survey of 355 specialised pig farms in the country. The purpose of the survey is to estimate the pig population in the state on each of the reference dates, the 1st of June and the 1st of December. The survey is a de facto census of the specialised pig farms who are responsible for the vast majority of pig farming within the state. The Survey is carried out as a postal survey.

The principal outputs are the number of pigs in the state, broken into breeding and other pig categories. The data are used by EU organisations, Government Departments and Semi-state agencies, Farmers organisations and private sector companies.

Whereas the number of pigs on farms has been a subject of farm survey since the mid 1800s, they have been a small section of other agricultural surveys. In 1973, as a result of EU regulation, surveys were carried out in April, June, August and December. From 1998, the survey has been carried out in June & December only.

2 General Information

2.1 Statistical Category

Primary statistical survey.

2.2 Area of Activity

Agricultural statistics.

2.3 Organisational Unit Responsible, Persons to Contact

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2.4 Objectives and Purpose; History

The simple objective is to compile data on the total number of pigs in the country, broken down into breeding stock and fatteners and their respective subcategories. Information in relation to the total number of pigs held on farms has been collected in various farm surveys since 1847. In 1901, data were collected for the first time in relation to the number of female breeding pigs. Pig Farming has undergone an "industrialisation" process from a situation in 1973 where the average pig herd size was 29 pigs to 2007 where the average herd size is greater than 2000 pigs.

From 1975 to 1997 the survey was conducted on a quarterly basis. From 1997 the survey was only conducted in Ireland with the same reference periods as the main livestock surveys (June and December). The number of pig categories increased significantly in 1975 in line with EU legislation.

2.5 Periodicity

Bi-Annual

2.6 Client

General EU & National Requirements

2.7 Users

- Eurostat (the statistical service of European Commission)
- EU Commission
- Department of Agriculture
- Other sections within the C.S.O.
- Semi-State organisations such as Teagasc.

2.8 Legal basis

Council Directive 93/23/EEC of 1 June 1993 on the statistical surveys to be carried out on pig production. Council Directive 97/77/EC of 16 December 1997 amending Directives 93/23/EEC, 93/24/EEC and 93/25/EEC on the statistical surveys to be carried out on pig, bovine animal and sheep and goat production

3 Statistical Concepts, Methods

3.1 Subject of the Statistics

Livestock Numbers

3.2 Units of Observation/Collection Units/Units of Presentation

The survey's unit of observation are breeding pigs broken down into the sub-categories of boars, sows in pig, other sows, gilts, gilts in pig and other pigs based on weight classifications. The units of collection are farms with greater than 100 pigs at the time of the preceding Farm Structure Survey. In addition some farms which normally have greater than this are also included.

A farm is defined in accordance with the definition adopted for the EU surveys as a single unit, both technically and economically, which has a single management and which produces agricultural products. Farms where the agricultural area used was at least 1 hectare (2.47 acres) may be included in the December Livestock Survey. Farms with less than 1 hectare may also be included if they were engaged in intensive production.

Results are presented at State level – the unit of presentation is number of head of livestock.

3.3 Data Sources

None as this is a primary survey.

3.4 Reporting Unit/Respondents

Pig Farms

3.5 Type of Survey/Process

Postal Survey.

3.6 Characteristics of the Sample/Process

3.6.1 Population and Sampling Frame

An independent, stand alone CSO register of pig farms is used, which holds all identifiable specialised pig farms in the state. It is linked to the general CSO farm register by reference number. For respondent management purposes, it is stored electronically within the CSO farm register.

3.6.2 Sampling Design

The survey is a census of the large pig farms (greater than 100 head) responsible for the vast majority of pig farming within the state.

3.7 Survey Technique/Data Transfer

The survey is carried out by post. Follow up to non-response by e-mail, telephone and fax.

3.8 Questionnaire (including explanations)

The questionnaire is a two page questionnaire which is simple in design to allow easy usage.

Please see the following URL to view the survey form =>

http://www.cso.ie/surveysandmethodologies/surveyforms/documents/agriculture/pdf_docs/june_2008_pig_survey.pdf

3.9 Participation in the Survey

The survey is a voluntary survey on respondents.

3.10 Characteristics of the Survey Process and its Results

Data are collected for the following categories of pig

Breeding Pigs

- Boars
- Sows in pig
- Other Sows
- Gilts in pig
- Gilts not yet served

Other Pigs by liveweight

- Pigs under 20 kg
- Pigs 20 – 50 kg
- Pigs 50 – 80 kg
- Pigs 80 – 110 kg
- Pigs 110 kg and above

Results are published for all of the above collection categories with the exception of the 80 – 110 kg and 110 kg and above which are combined.

The response rate to the Survey is between ninety eight and one hundred per cent. As there is no statutory requirement for respondents to make a return, a matched sample methodology is used to estimate non-responses in aggregating results.

3.11 Classifications used

The classifications used are listed at 3.10 above and are based on Eurostat legal requirements.

3.12 Regional Breakdown of Results

A regional breakdown of pig numbers is published as part of the June Crops & Livestock final release. However, the female breeding pig categories listed above are combined, and the other pigs by liveweight

categories are also combined into pigs under 20 kg and pigs greater than 20kg. NUTS2 (Nomenclature of Territorial Units for Statistics) data for all the categories listed at 3.10 above are submitted to Eurostat, however much of the data are marked as confidential. The Nomenclature of Territorial Units for Statistics (NUTS, for the French nomenclature d'unités territoriales statistiques) is a geocode standard for referencing the subdivisions of countries for statistical purposes.

4 Production of the Statistics, Data Processing, Quality Assurance

4.1 Data Capture

Forms are scanned and the dataset is then entered into the Data Management System (DMS) for edit checks etc.

A clean dataset is exported from the Data Management System to SAS for analysis

4.2 Coding

No coding used within survey process.

4.3 Data Editing

Data editing is performed using the DMS. Edit rules focus on difference between current and previous years returns.

4.4 Imputation (for Non-Response or Incomplete Data Sets)

Imputation is not used as the Survey has a greater than 98% response rate.

4.5 Grossing and Weighting

Results are based on a matched sample methodology, so no grossing or weighting is used.

4.6 Computation of Outputs, Estimation Methods Used

The results are based on a matched sample methodology. A series of SAS programmes are run to identify all farmers who responded in the current year and in the previous year. Then, for each category of pig, the percentage change between the two years is calculated. This percentage change is then applied to the published totals for the previous year to come up with estimates for the totals for the current year.

In determining the percentage change for each category of pig, every farm in which the change from one year to the next is outside certain bounds is identified. In certain cases, where the difference is particularly large and deemed to be incorrect, the farm is treated as an outlier and is excluded from the sample for that category of pig. In other cases where difference is large but correct, the farm is excluded from the initial calculation of percentage change. This initial calculation is then adjusted to take account of actual change between farms which are excluded from initial calculation.

The matched sample methodology links to the Census of Agriculture taken every ten years. Matched sample results are subject to revision after each Census. This ensures that pigs held by non-specialist pig producers are captured within the overall figures.

4.7 Other Quality Assurance Techniques Used

- Cross referencing of surveys returns against other surveys within Agriculture division.
- Consistent Macro edits within DMS are performed which compare totals over number of years.
- Consultation with experts within industry to ascertain reasons behind emerging trends.

5 Quality

5.1 Relevance

The information is used at European level to monitor the operation of Irish pig farms. The results are used within the CSO for agriculture and national accounts. They are also used by the government departments, companies and semi state organisation to monitor trends within the industry.

5.2 Accuracy and Reliability

5.2.1. Sampling Effect & representivity

The farms surveyed represent all large pig farms in the state. Farms with smaller numbers of pig numbers are not surveyed. The total number of pigs held on these farms is relatively small, the amount is accounted for in published totals by use of a matched sample methodology whose base years includes these small farms. It is proposed to review this methodology after the next census.

5.2.2. Non-Sampling Effects

5.2.2.1 Quality of the Data Sources used (other than survey register)

No other data sources used in preparation of results.

5.2.2.2 Register Coverage

Register is intended to cover all specialist pig farms. Whereas there is likely to be some minor coverage issues, these are unlikely to effect results due to match sample methodology,

The register of specialist pig farms is updated after each Farm Structures Survey with the addition of farms with greater than 100 pigs. Farm Structures Surveys are carried out at intervals in the period between each complete Census of Agriculture. The last Farm Structures Survey took place in 2007. The Farm Structures Survey is considered a representative sample of all farms in the state and includes new farms obtained from administrative records held by the Department of Agriculture and Teagasc.

Farms are removed from the register if they indicate they are no longer engaged in pig farming.

5.2.2.3 Non-response (Unit and Item)

Farms who fail to respond are removed from the analysis and calculation of percentage change. It should be noted that there is a very high response rate to the survey (greater than 98%).

At item level, as many farms do not contain all categories these are included in analysis as actual zero.

5.2.2.4 Measurement Errors

Measurement errors are not formally calculated for the Survey. The questionnaire is clear and unambiguous and easily understood by respondents.

5.2.2.5 Processing Errors

After measurement errors are eliminated potential for processing errors are limited due to well defined processes within the DMS. Numerous edit checks are performed to ensure reasonableness of the data used in aggregation. Standard operating procedures are maintained to ensure this. Macro edit checks, where totals for each category are compared with previous years are performed on all results to ensure consistency and identify processing errors.

5.2.2.6 Model-related Effects

Model used is a census methodology thus no known model related effects.

5.3 Timeliness and Punctuality

5.3.1 Provisional Results

No Provisional Results.

5.3.2 Final Results

Results from the December survey are published as part of the December Livestock Survey which is published at t+13 weeks after the reference date of the survey.

Initially June survey results are published in a separate release at within t+13 weeks of the reference date.

Data are transmitted to Eurostat on the day of publication of each release.

5.4 Coherence

There are limited administrative/published sources so coherence is difficult to measure. Teagasc surveys are examined for coherence however due to different methodologies and reference dates it is difficult to compare with CSO survey.

5.5 Comparability

As a common legislative framework is in place across the European Union for this survey results are comparable against other European Union countries.

In terms of times series, results are comparable from 1975 to date. However as there has been major consolidation and technological reforms in the pig industry care should be taken in comparing results for the start of the time series with the most recent data.

5.6 Accessibility and Clarity

5.6.1 Assistance to Users, Special Analyses

All assistance within the bounds of maintaining confidentiality is given to users. Decisions on whether to perform special analyses are taken on a case by case basis.

5.6.2 Revisions

Revisions do not usually occur from one survey to the next, but revision may take place due to revisions in methodologies and data collection methods. These revisions are highlighted on the front page of the release.

5.6.3 Publications

5.6.3.1 Releases, Regular Publications

The Pig Statistics release is published on the CSO website and is available in hard-copy.
<http://www.cso.ie/releasespublications/documents/agriculture/current/pigsurvey.pdf>

The data are also uploaded to the CSO databank on the day of release. The data are then used by Eurostat in many datasets available publicly.

5.6.3.2 Statistical Reports

Eurostat produce thematic reports based on this data e.g. "Main stages in the meat food chain in Europe "- Issue number 6/2006.
http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-NN-06-006

The data among other are used by the Bord Bia in their annual report and the Department of Agriculture reports.

5.6.3.3 Internet

As mentioned the data are available from the CSO databank

<http://www.cso.ie/px/pxeirestat/database/eirestat/Agriculture%20Livestock%20and%20Farm%20Numbers/Agriculture%20Livestock%20and%20Farm%20Numbers.asp>

and Eurostat website at

<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>

5.6.4 Confidentiality

All data received are treated as strictly confidential as stated in the Statistics Act 1993. Care is taken to ensure that disclosure of potentially confidential results is avoided.

6 Additional documentation and publications

Much of the data are published by Eurostat in its Statistic In Focus publications.

http://epp.eurostat.ec.europa.eu/portal/page/portal/publications/collections/sif_dif

The entry for this statistic under StatCentral (the portal to Ireland's official statistics) is at

<http://www.statcentral.ie/viewstat.asp?id=154>