



An
Phríomh-Oifig
Staidrimh

Central
Statistics
Office

Standard Report on Methods and Quality for Census of Industrial Production (CIP)

2019

Standard Report on Methods and Quality

on

Census of Industrial Production (CIP)

This documentation applies to the reporting period:

2019

Last edited: 23:08:2021

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1 Overview

The Census of Industrial Production, which is an annual survey, comprises two separate but closely related annual inquiries, namely:

- (i) the **Census of Industrial Enterprises** required under Council Regulation (EC, Euratom) No 295/2008 which covers those enterprises which are wholly or primarily engaged in industrial production;
- (ii) the **Census of Industrial Local Units** which covers all industrial local units.

An enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.

A local unit is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place.

The Census is collected by post and electronic survey forms. A permanent up to date register is kept of all local units and enterprises known to be involved in industrial production. An 'enterprise' questionnaire is sent to all enterprises whose activity is primarily industrial. The type of 'enterprise' questionnaire depends on the size of the enterprise. The most detailed form (form F) is generally sent to all enterprises with twenty or more persons engaged.

A less detailed form, form C, is sent to enterprises with between three and twenty persons engaged. In previous years the cut-off point was thirteen persons engaged. Enterprises with less than 3 persons engaged are not sent a survey form but rather administrative data is used in conjunction with ratio extensions to estimate a return for such enterprises.

In the case of multi-location enterprises, a 'local unit' questionnaire is sent to each local unit with three or more persons engaged which was in production during the year. For the majority of local units, this questionnaire is the standard form L. In a small number of exceptional cases, a single form L is issued to cover several local units operated by the same enterprise. Census questionnaires are sent out in May of the year following the Census reference year.

In relation to local units involved in NACE Division 36 (Water collection, treatment and supply) a W form is used. This reflects the difference in activity type of these firms.

All returns are scrutinised clerically for internal accuracy. They are compared with returns for previous years and in some instances with returns to other industrial inquiries. Local unit and enterprise returns relating to the same enterprise are examined together for consistency. A further set of consistency checks is carried out in the computer processing of the data. Substantial queries arising from these scrutiny operations are referred to the respondent by telephone or in writing.

The Census has been conducted since 1926 with data available from 1985 onwards.

2 General information

2.1 Statistical Category

Primary statistical survey.

2.2 Area of Activity

Industry – Census of Industrial Production.

2.3 Organisational Unit Responsible, Person to Contact

Business Statistics - Data Collection Unit

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2.4 Objectives and Purpose; History

The primary focus of CIP is the collection of information on enterprises and local units that are wholly or primarily engaged in industrial production (manufacturing, mining, quarrying, sewerage, waste management and the supply of electricity, gas, steam and water).

The purpose of the CIP is to provide structural data about the industrial sector of the economy. Data are collected on variables such as turnover, purchases, stocks, capital assets, labour costs and nationality of ownership classified by industrial sector, by size category of persons engaged, by size category of turnover.

The first CIP survey took place in 1926.

2.5 Periodicity

This survey is carried out annually.

2.6 Client

Nationally, the survey is carried out under Statutory Instrument no 572/2017 while at EU level the survey is carried out under Council Regulation (EC EURATOM) NO 295/2008.

2.7 Users

- Eurostat for creation of EU aggregates
- National Accounts for GDP calculation methods, Regional Accounts, Environmental Accounts and Input/Output Supply and Use publications
- Other CSO (e.g. Monthly Industrial Production for weights, Quarterly Accounts Inquiry to Industry for grossing factors)
- Economists/statisticians for use in modelling particular sectors of economy (e.g. NACE Codes, Regions)
- Micro data analysts such as Sustainable Energy Authority Ireland/Economic Social Research Institute for specific analysis and creation of models and reports

- General public.

2.8 Legal basis Statutory instrument

This is a statutory survey under S.I. No. 572/2017.

Implementing Commission Regulation

Regulation (EC) No 295/2008 of the European Parliament and of the Council of 11 March 2008 concerning structural business statistics (recast) Text with EEA relevance, published in the Official Journal of 9/4/2008.

Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains Text with EEA relevance, published in the Official Journal of 30/12/2006.

3 Statistical Concepts, Methods

3.1 Subject of the Statistics

Accounting variables such as turnover, purchases, stocks, capital assets, labour costs are collected from a census of all Industrial Local Units and Industrial Enterprises.

3.2 Units of Observation/Collection Units/Units of Presentation

An enterprise is defined as the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision making especially for the allocation of its current resources.

A local unit is defined as an enterprise or part thereof situated in a geographically identified place.

The survey is made up of a census of industrial enterprises and local units between NACE codes 05 – 39, the census is drawn from the Business Register. In 2019, there were 18,599 enterprises known to the CSO to have been engaged in industrial activity.

The regional classifications are based on the Nomenclature of Territorial Units (NUTS) classification used by Eurostat. The boundaries were amended on 21st of November 2016 under Regulation (EC) No. 2066/2016 and have come into force from 2018. The new breakdown has three regions the counties constituting each of the regions are listed below

Northern & Western Region

Cavan, Donegal, Leitrim, Monaghan, Sligo, Galway City, Galway County, Mayo and Roscommon

Southern Region

Clare, Limerick City & County, Tipperary, Carlow, Kilkenny, Waterford City & County, Wexford, Laois, Cork City, Cork County, Kerry

Eastern & Midland Region

Dublin City, Dun Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Meath, Wicklow, Louth, Laois, Longford, Offaly, Westmeath

For information the previous regions were Southern and Eastern (SE) and Border, Midlands and West (BMW) regions.

The counties constituting each of the previous two regions are listed below:

BMW Region: Cavan, Donegal, Galway, Laois, Leitrim, Longford, Louth, Mayo, Monaghan, Offaly, Roscommon, Sligo, Westmeath

SE Region: Carlow, Clare, Cork, Dublin, Kerry, Kildare, Kilkenny, Limerick, Meath, Tipperary, Waterford, Wexford, Wicklow

3.3 Data Sources

Survey responses and administrative data.

3.4 Reporting Units/Respondents

Respondents – Industrial enterprises employing 3+ persons.

Administrative data is used for industrial enterprises with less than 3 persons engaged and also used for enterprises who received a survey form but failed to respond.

3.5 Type of Survey/Process

Data is collected by a combination of a postal survey, electronic survey forms and limited use administrative data.

3.6 Characteristics of the Sample/Process

3.6.1 Population and Sampling Frame

The survey population is made up of all industrial enterprises/local units coded to NACE section B, (Mining and Quarrying) NACE Section C (Manufacturing), NACE Section D (Electricity, Gas, Steam and Air conditioning supply) and NACE Section E (Water supply, Sewerage, Waste management and Remediation activities).

The sampling frame/register is the CSO's Central Business Register. Every March a file is taken from the business register containing the relevant enterprise/local units and this file is uploaded into the processing system.

3.6.2 Sampling Design

Not applicable as survey is a census.

3.7 Survey technique/data transfer

A permanent up-to-date register is kept of all local units and enterprises known to be involved in industrial production. The register is maintained from the CSO Central Business Register, administrative and public utility records, announcements in the press, business journals, field personnel contacts, etc.

The Census of Industrial Production is an electronic survey primarily but has a postal survey option also. Eforms account for approx. 80% of returns. The survey forms are printed in the Printing section of the CSO and posted out to respondents for self-completion. Forms are sent out in batches, typically from May onwards each year.

Respondents are sent a number of reminders throughout the year, encouraging them to complete the forms in a timely manner.

3.8 Questionnaires (incl. Explanations)

There are four types of questionnaires used in the CIP.

An 'enterprise' questionnaire is sent to all enterprises whose activity is primarily industrial. The type of 'enterprise' questionnaire depends on the size of the enterprise. The most detailed form (Form F) is generally sent to all enterprises with twenty or more persons engaged. A less detailed form (Form C) is sent to enterprises with between three and nineteen persons engaged.

In the case of multi-location enterprises, a 'local unit' questionnaire is sent to each local unit which was in production during the year. For the majority of local units, this questionnaire is the standard Form L. In a small number of exceptional cases a single form L is issued to cover several local units operated by the same enterprise.

In relation to local units whose activity is the collection, treatment and supply of water (NACE division 36), a W form is used. This reflects the difference in activity types of these firms.

Forms can be accessed by following this link [CIP Forms](#).

3.9 Participation in the survey

This is a statutory enquiry and therefore participation is compulsory under S.I. No. 572/2017.

3.10 Characteristics of the Survey/Process and its Results

The CIP is a census so no grossing or weighting is applied to the data. Micro enterprises (employing less than 10) typically represent about 86% of all enterprises in the CIP however they account for 4% of turnover. The response rate for the 2019 survey was 43.2% which represented 54.2% of total employment. The principal variables collected are; turnover, exports, purchases, fuel, additions to capital assets, sales of capital assets, indirect taxes, employment, earnings, other labour costs.

After estimation, imputation and ratio extension procedures have been run; results are aggregated for enterprises and local units. In the publication, there are a number of derived variables published, these include

- **production value** – The production value is defined as turnover, plus or minus the changes in stocks of finished products, work in progress and goods and services purchased for resale, minus the purchases of goods and services for resale, plus capitalised production, plus other operating income (excluding subsidies).
- **intermediate consumption** - Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital; the goods or services may be either transformed or used up by the production process.
- **Gross value added** - Gross value added is the value of output less the value of intermediate Consumption.

Data is published by activity, geographic code, turnover and employment.

3.11 Classifications used

In accordance with EU legislation, the NACE REV. 1 classification was used to classify activities from 1991 to 2001. From 2002 onwards results are classified by NACE Rev 1.1. From 2008 onwards, results are classified by NACE Rev 2. A correlation table showing the relationship between headings of the old and new classification is available. Each 4 digit class in NACE REV 2 relates to a specific form of economic activity, e.g. *manufacture of basic pharmaceuticals products* (NACE 2110). The scope of the Census extends to NACE sections B, C, D and E, namely:

Section B:	Mining and quarrying
Section C:	Manufacturing
Section D:	Electricity, gas, steam and air conditioning supply
Section E:	Water supply; sewerage, waste management and remediation activities

The traditional category Transportable Goods Industries used in industrial statistics is equivalent to NACE sections B and C. The manufacturing Industries grouping includes only section C.

To view the classification, please see

[Classifications](#)

For Geographic coding, the classification used is the Nomenclature of Territorial Units for Statistics (NUTS) Level 2. It was established by Eurostat more than 30 years ago in order to provide a single uniform breakdown of territorial units for the production of regional statistics for the European Union. The NUTS regulation showing the classification is available at

[Nuts Legislation](#)

3.12 Regional breakdown of results

Results are broken down by NUTS2 regions at local unit level. Results are not broken down by region for enterprises because enterprises are geographically coded to the same region as the largest local unit within an enterprise hence data that is provided at enterprise level would typically be coded to the major population centres thus distorting the results.

4 Production of the Statistics, Data Processing, Quality Assurance

4.1 Data capture

Data once returned receives a receipt date and is scrutinised. The postal survey forms are scanned and verified using Teleforms software. This data and the Eforms data is then transferred to the in-house IT system (DMS). A copy of the scanned image is stored on the network, for postal forms. Edits are run after the data is scanned/transferred and any issues or discrepancies that arise with the data are checked and corrected where necessary.

From 2003 onwards, C forms (2 page questionnaire – sent to enterprises employing less than 20) were scanned, verified and data captured while from 2005 onwards F forms (eight page questionnaire – sent to enterprises employing 20 or more) were scanned, verified and data captured. Please see section 3.8 for link to the various questionnaires.

The returns are compared with returns for previous years and in some instances with returns from other industrial inquiries.

4.2 Coding

The statistical units in the Census (local unit and enterprise) are coded to the NACE class relating to their principal industrial activity during the Census year. In the case of local units, this is determined on the basis of detailed information provided on their production of industrial products. The activity classification of enterprises is based on the NACE codes of the constituent local units.

An enterprise that operates several industrial local units coded to different NACE classes is classified to the activity which accounts for the highest proportion of the total value added to the enterprise.

The CSO's Central Business Register is used to activity code the enterprises.

4.3 Data Editing

Local unit and enterprise returns relating to the same enterprise are examined together for consistency. A further set of consistency checks is carried out in the computer processing of the data. Within the in-house Lotus Notes system, there are both macro and micro edits checks used to ensure the veracity of the data key variables include turnover by NACE, Purchases, Gross Value Added, Labour costs and Employment.

Substantial queries arising from these scrutiny operations are referred to the respondent by telephone or in writing. For the larger enterprises, known as "key firms" which number approximately 120 enterprises, returns are compared with Balance of Payments data to ensure consistency. In addition, an amount of these key firms will be compared with data (where available) from the Revenue Commissioners Corporation Tax returns, again to ensure consistency.

Once all data checks have been carried out, a file will be handed over one month prior to the Eurostat deadline (October – T+10) for early estimates data while data will be handed over five months prior to the Eurostat deadline (June- T+18) for final data so that these deadlines can be met.

In the period prior to the Eurostat deadline, a number of SAS procedures are run to ensure that the data is clean and that no confidential data can be transmitted.

These SAS procedures include running a number of programs that Eurostat would run on the data transmitted so as to reduce the number of validations that might ensue post-transmission.

Additionally, there are other consistency checks such as

1. Compare results for Turnover (Enterprise) and Gross Output (Local unit) at 2 digit level
2. Compare results for Turnover with Monthly Industrial Production (MIP) and PRODCOM at 2 digit level i.e. examine for each NACE 2 digit level the aggregated returns from both Monthly Industrial Production and PRODCOM against CIP so as to ensure consistency between all Industrial Inquiries.

(PRODCOM is a system for the collection and dissemination of statistics on the production of manufactured goods. The title comes from the French "PRODUCTION COMMUNAUTAIRE" (Community Production) for mining, quarrying and manufacturing: sections C and D of the Statistical Classification of Economy Activity in the European Union (NACE Rev 2))
3. Compare Turnover with PRODCOM at company level
4. Compare results for Earnings and Employment with Quarterly Accounts Inquiry to Industry at 2-digit level
5. Compare results for Stocks and Capital Assets with Quarterly Accounts Inquiry to Industry at 2-digit level

Once satisfied with the quality of the data, imputation and ratio extension procedures can be run.

4.4 Imputation (for non-response or incomplete data sets)

For unit non-response, key firms are estimated based on returns from other Industrial surveys and administrative data sources.

For all other units who did not respond or those units where there is a partial response due to their size, administrative data sources and ratio extensions based on survey respondents are used.

4.5 Grossing and Weighting

Not applicable – Survey is a census.

4.6 Computation of Outputs, Estimation Methods Used

Results are aggregated to 2, 3 and 4 digit NACE at national level depending on the confidentiality of the data; results are generated by way of SAS procedures.

In the case of the final publication, estimation is used for key enterprises who have not responded to the survey, estimation is based on returns to other surveys such as PRODCOM and Monthly Industrial Production etc. Administrative data sources and ratio extensions are used for other non-respondents, please see section 4.4.

4.7 Other quality assurance techniques used

A number of techniques are used in order to improve the quality of the data

1. Amend the questionnaire – a question has been added asking enterprises to provide details on the Cost of Sales and Operating Profit. This allows the section to quickly ascertain the completeness of the data.

2. Training of staff – staff are given training on a regular basis which ensures that they are fully conversant with the survey forms.

3. When the CIP survey population is selected from the Business Register, a detailed analysis is carried out by Industry staff of the new births and if there are issues detected, they are fed back to Business Register.

5. Quality

5.1 Relevance

The Census of Industrial Production is an annual survey that is used both nationally and by the EU. It provides data about the structure on the Industrial sector within Ireland and allows for time series to be generated.

5.2 Accuracy and Reliability

5.2.1 Sampling effects, Representativity

Census – no sampling effects

5.2.2 Non-Sampling Effects

5.2.2.1 Quality of the data sources used

Census of all enterprises that are wholly or primarily engaged in industrial production. Census is taken from the Business Register.

5.2.2.2 Register Coverage

As this survey is a census with the industrial units being obtained from the Business Register (BR), all companies in the relevant NACE groups are surveyed.

However there may be some multiple listings (duplicated) when the sample is first taken from Business Register. They are removed from the sample when discovered.

5.2.2.3 Non-response (Unit and Item)

Unit non-response: The response rate for the 2019 survey was 43.2% which represented 54.2% of total employment.

Item non-response: Where a part of the form is not completed, the enterprise will be contacted to complete the details on the survey form. However, data is not available on the number of item non-responses.

5.2.2.4 Measurement errors

Measurement Error is not formally calculated for this survey.

- a respondent may give incorrect data;
- the form/questionnaire may lead to the recording of wrong values. Examples include – missing product details, product details are not clear enough, wrong contact details etc.

The solution was to

- compare data at local level - examine previous returns.
- build in edit checks
- train staff so that they have good knowledge of the enterprises/ local units they are responsible for
- monitor the design of questionnaire – changes are made if necessary

5.2.2.5 Processing errors

Forms are sent by post to Industrial Enterprises. The returned forms are scanned and verified. There is also the option of manual data entry. Edits are run on each return. Types of processing errors include scanning in incorrect data, incorrect verification.

The system produces lists of errors for each type of error. These are then analysed – records are corrected as appropriate.

5.2.2.6 Model-related effects

Using ratio extensions from responding enterprises to estimate for non-respondents may have an effect on data quality but this is not quantifiable.

5.3 Timeliness and Punctuality

5.3.1 Provisional results

Under EU regulation, early estimates data must be sent to Eurostat by 44 weeks after the end of reference period. Typically, there is a response rate of around 45% of enterprises which represents approximately 60% of all employment.

5.3.2 Final results

Under EU regulation, final data must be sent to Eurostat by T+18 months. In 2019, the response rate was for the 43.2% of all enterprises which represented 54.2% of total employment.

For 2019 data, there are currently four tables produced on CSO's website with the local unit tables to follow at a later date. Of the tables to relate to local units, tables include details of activity for each industrial sector, in each county and region and the summary of activities by persons engaged and nationality of ownership. In terms of enterprise data, tables are provided on persons engaged, turnover and nationality of ownership.

2019 data is available at CSO website, please see

[Enterprises Industrial](#)

[Enterprises Manufacturing](#)

Transmission of data

CSO Ireland transmits the aggregate data and the metadata required, including confidential aggregate data, to the Commission (Eurostat) in accordance with the existing community provisions on transmission of data subject to statistical confidentiality. Those Community provisions shall apply to the treatment of the results, in so far as they include confidential data.

5.4 Coherence

Consistency checks are done with Monthly Industrial Production, Prodcorn, Quarterly Accounts Inquiry to Industry (QAI) and Balance of Payments and Corporation Tax data. These checks primarily apply to the larger enterprises. Where there are inconsistencies, these cases are investigated by all parties and a common treatment agreed.

5.5 Comparability

Comparisons are done with

- Previous Year/s data
- Balance of Payments data

- Quarterly Accounts Inquiry to Industry data,
- Monthly Industrial Production data (at local unit level)

In terms of those local units whose activity is collection, purification and distribution of water, there was a change in the survey form in 2004. As well as increasing the number of respondents in this sector the changes to the form will result in a break in the series in relation to some of the derived variables, in particular net output. This is caused by a change in the calculation of this variable.

In terms of historic data, CIP data relating to NACE Rev 1/1.1 is available from 1991 to 2007 while data relating to NACE 70 is available from 1979 – 1990. Due to the major change in the activity classification between NACE 70 and NACE Rev 1, comparisons are difficult over time but a concordance file between the two classifications is available which does allow for some comparison.

Data from other EU member states is directly comparable with CIP data and is available on the Eurostat website at:

[Eurostat Data](#)

5.6 Accessibility and Clarity

5.6.1 Assistance to Users, Special Analyses

The questionnaires are available here: [Forms](#)

Further background information available here: [Survey Information](#)

Specific user requests are acceded to where possible and where confidentiality issues do not arise. In most cases, users are provided with excel tables listing the required data. In a number of cases, access is granted to the micro data using the Officer of Statistics mechanism.

As detailed in section 5.3.2, data for 2008 onwards is on CSO's website.

5.6.2 Publications

5.6.2.1 Releases, Regular Publications

Electronic Release - Structural Business Statistics, Business in Ireland and PxStat tables on the CSO website.

5.6.2.2 Statistical Reports

Statistical Yearbook of Ireland

5.6.2.3 Internet

Final data can be found at:

[Enterprises Industrial](#)

[Enterprises Manufacturing](#)

Local unit data will be published at a later date.

Historical Data on the CSO's database

Data is related to local units from 1991 – 2007, principal variables are number of local units, gross output, net output, industrial inputs, wages & salaries and persons engaged, breakdown is by NACE Rev 1/NACE Rev 1.1.

[Archived Tables](#)

5.6.3 Confidentiality

All information supplied to the CSO is treated as strictly confidential. The Statistics Act 1993 sets stringent confidentiality standards: Information collected may be used only for statistical purposes, and no details that might be related to an identifiable person or business undertaking may be divulged to any other government department or body.

6 Additional documentation and publications

As part of the EU regulation underpinning the CIP, data is transmitted to Eurostat at T+10 and T+18, this data is published on Eurostat's website at:

[Structural Business Statistics On Eurostat](#)