STATISTICS DENMARK

# Documentation of statistics for Producer price index for renovation and maintenance 2019

*Statistics Denmark*
*Sejrøgade 11*
*DK 2100 København Ø*

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## 1 Introduction

The purpose of these statistics give the development in the producer prices of refurbishment and maintenance tasks performed by Danish construction and craftsman companies. I.e. the prices of services incl. the producer's direct costs and their profits excl. VAT. The statistics has been produced since 2017 with data for 2014 and onwards.

## 2 Statistical presentation

The producer price index for refurbishment and maintenance shows the yearly trends in the prices related to housing in Denmark. The prices are related to the first commercial transaction excluding VAT. The first commercial transaction refers to the transaction between the requester and the producers, excl. VAT. The index reflects price changes for the production of refurbishment and maintenance services, i.e. the price the household pays a company to perform a standard refurbishment and maintenance task, for instance a carpenter changing a window frame.

### 2.1 Data description

The purpose of the Producer price index for refurbishment and maintenance is to track changes in prices of refurbishment and maintenance tasks performed by Danish construction and craftsman companies. The price concept is the price of a refurbishment or maintenance task incl. the producer's costs and profits, excl. VAT and further costs not directly related to the task. The statistics is published on a yearly basis and both indices and percent developments are provided.

### 2.2 Classification system

The index covers refurbishment and maintenance work by firms in NACE Rev. 2 Section F (construction). The activities are grouped into so-called CPA-groups, in accordance with the Statistical Classification of Products by Activity in the European Economic Community, 2008 version. For the producer price index for refurbishment and maintenance the following groupings are published: - Electrical installation - Plumbing, heat and air-conditioning installation - Carpentry - Building completion - Roofing - Bricklaying

### 2.3 Sector coverage

This statistics covers activities related to refurbishment and maintenance within the residential building sector.

### 2.4 Statistical concepts and definitions

Producer price: The price paid by a contractor or household for a refurbishment or maintenance job.

### 2.5 Statistical unit

Prices.

## 2.6 Statistical population

The population is prices for refurbishment and maintenance tasks carried out by artisans.

## 2.7 Reference area

Denmark.

## 2.8 Time coverage

2014-

## 2.9 Base period

2015 = 100.

## 2.10 Unit of measure

Index and percentage change.

## 2.11 Reference period

The statistics refer to the calendar year.

## 2.12 Frequency of dissemination

Yearly.

## 2.13 Legal acts and other agreements

The legal authority to collect data is provided by the Act on Statistics Denmark, section 8, as subsequently amended (most recently by Act no. 599 of 22 June, 2000).

## 2.14 Cost and burden

The response burden has yet to be calculated, but it is assessed that the reporting units spend less than one hour on their response.

## 2.15 Comment

Further information is available at the subject page or by contacting Statistics Denmark.

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## 3 Statistical processing

For the producer price index for refurbishment and maintenance approximately 3,000 prices are collected from selected companies in Denmark. Prices are collected digitally. The producer price index for refurbishment and maintenance is calculated in a hierarchical system, where the first calculation is made on the most detailed level. These elementary indices are calculated as geometric Jevons Indices. The elementary indices are subsequently weighted together as aggregated arithmetic Laspeyres price indices.

### 3.1 Source data

The producer price index for refurbishment and maintenance are calculated on the basis of prices reported by selected companies within the area of civil engineering.

### 3.2 Frequency of data collection

Yearly.

### 3.3 Data collection

For the producer price index for refurbishment and maintenance the prices are collected through an electronic reporting form, which is sent to relevant contacts within the selected companies.

### 3.4 Data validation

The first validation of the reported prices takes place when data arrive to Statistics Denmark. Here they are auto tested for unusual developments. If the change in prices is greater than a predetermined threshold value, then these prices will be checked manually by the staff and will only be accepted if the reporting company can verify the change. When all prices are in the system, a validation report will be generated. This report includes information on all price changes and measures the effect of these on the elementary aggregates. The final validation is a qualitative inspection of the calculated index tables.

### 3.5 Data compilation

The producer price index for refurbishment and maintenance are calculated in a hierarchical system, where the collected prices are divided into groups identified by kind of activity. These groups are then aggregated into so-called elementary aggregates for which basic prices can be calculated as geometric Jevons Indices. Elementary indices are calculated on the basis of basic prices between two or more periods. The developments of the basic prices are therefore equal to the total price change for a given group of activity. Following this the elementary indices are weighted together as aggregated price indices. These are calculated as aritmetic Laspeyres indices.

Weights: Weights are assigned to every elementary index and are used for weighting the elementary indices together to aggregated indices. The current weights are based on information from Teknologisk Institut.

Estimates for non-response: Non-response is negligible.

### 3.6 Adjustment

No corrections are made beyond what has already been described.

## 4 Relevance

Producer price index for refurbishment and maintenance is used in the Danish national accounts as deflator for the constant price calculations.

### 4.1 User Needs

The producer price index for refurbishment and maintenance is used in the Danish national account statistics as deflators for constant price calculations, i.e. calculation of the actual economic development in Denmark within the construction sector.

### 4.2 User Satisfaction

The statistics was published for the first time in November 2017, so no measures to determine user satisfaction has been developed yet.

### 4.3 Data completeness rate

The statistics fulfill the current requirements.

## 5 Accuracy and reliability

The producer price index for renovations and maintenance measures the development in the prices of renovations and maintenance works. The statistics is based on 3,000 prices from six activity groups. For each trade the largest businesses are selected for reporting. For each trade there is a coverage of at least 30 pct. or more. Price developments from the larger businesses weigh more than price developments from smaller businesses. As there are large differences between the trades, they are treated separately with separate samples. Only the final numbers are published, there are no revisions.

### 5.1 Overall accuracy

The producer price index for renovations and maintenance is based on 3,000 prices, incl. producer profits, from six activity groups (electrical installation, plumbing, heat and air-conditioning installation, carpentry, painting, roofing and bricklaying). For each trade the largest businesses, according to turnover, are selected for reporting using a top-down approach to achieve the highest possible coverage. For each trade there is a coverage of at least 30 pct. Price developments from the larger businesses weigh more than price developments from smaller businesses. Each of the businesses are requested to select their most representative activities, i.e. the services sold most often within a given trade. The yearly non-response rate is minimal and is not considered to be a significant source of error. It is thus assumed that the price development in the sampled businesses represents the price development of the entire population within each trade. The weights used for calculating the index is based on information from the Danish Technological Institute about the refurbishment and maintenance activities performed by construction and craftsmanship businesses.

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## 5.2 Sampling error

The sample for each industry for the producer price index for refurbishment and maintenance are collected to achieve as high turnover coverage as possible. The collected prices represents the prices on unique activities which are used in a weighted aggregation of the index. The sample error is therefore only related to the possibility that the sample population experience a different trend in the price development than the total population. This issue is not expected to be a significant problem.

## 5.3 Non-sampling error

The statistics is based on 3,000 prices for six trades within the construction industry. The statistics is calculated using the construction tasks and their respective prices reported by the businesses. All tasks represent activity codes selected within each trade. For each activity code the coverage is deemed to be sufficient to ensure representativity for the refurbishment and maintenance tasks to be measured in the index.

There is a risk that the reporting businesses incorrectly keep their price for a given renovation activity fixed over a longer period of time. These types of issues are allieviated by continuously investigating whether prices, that have remained fixed for the past 13 months, and then contactnig the reporting businesses in question.

Measurement error can occur if the reporting units make mistakes during the reporting or if the have difficulties when pricing their activities. Mistakes are corrected if found by Statistics Denmark, whilst the reporting businesses are asked to give their best estimate of the price as they are the ones who have the best prerequisites for doing so.

## 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

A comprehensive quality assessment is based on a combination of assessing turnover coverage, the number of companies and prices in the sample and the quality of the collected prices, including the pricing methods used. Overall the Producer price index for renovation and maintenance. is assessed to be of a high quality and representative for the price development of the activities in question performed by Danish workers. The assessment rests upon the data collection that the index is based on. This data contains 3,000 prices divided onto 29 activity codes. Within each trade, the largest businesses, according to turnover, are selected (top down) to achieve the highest turnover coverage possible. The trades that are covered by the index are quite different, especially with regards to the number of businesses. In trades with very few businesses and monopoly-like conditions it takes relatively few businesses to get a high coverage. Whereas, there are also trades with many business which requires a higher number to achieve the coverage needed. Thus, a benchmark for the quality of the sample across all trades cannot be made. The quality of the statistic is being continually monitored and improvements are made where it is assessed that the quality can be levered. Conducting quality work therefore includes making replacements within- and increasing the sample with more respondents. Asking existing respondents to report more prices, or use better pricing methods to define and calculate prices.

### 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

No revision. The figures are final when published.

## 6 Timeliness and punctuality

The statistics are published yearly, approximately four month after the end of the reference period. Publications are released on time, as stated in the release calendar.

### 6.1 Timeliness and time lag - final results

The statistics are published yearly, approximately four month after the end of the reference period.

### 6.2 Punctuality

The statistics are usually published without delay in relation to the scheduled data.

## 7 Comparability

The statistics follows international standards and is therefore comparable with similar statistics from other European countries.

### 7.1 Comparability - geographical

The statistics follows international standards and is therefore comparable with similar statistics from other European countries.

### 7.2 Comparability over time

The statistics has been produced in its current form since 2017.

### 7.3 Coherence - cross domain

The statistics are related to the statistics on construction cost index.

### 7.4 Coherence - internal

Not relevant for this statistics.

## 8 Accessibility and clarity

These statistics can be found in the StatBank, under the subject producer price index for construction. Find out more under: http://dst.dk/en/Statistik/emner/priser-og-forbrug/erhvervslivets-priser/producentprisindeks-for-byggeri-og-anlaeg

### 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 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

### 8.4 News release

NYT is published.

### 8.5 Publications

None.

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### 8.6 On-line database

The statistics are published in the StatBank under the subjects Producer price index for construction in the following tables:

- PRIS91: Producer price index for renovation and maintenance by type of work, unit and time

### 8.7 Micro-data access

Micro-data is not disseminated.

### 8.8 Other

None.

### 8.9 Confidentiality - policy

Data Confidentiality Policy at Statistics Denmark.

### 8.10 Confidentiality - data treatment

Producer price index is only published on an aggregated level, thus discretion does not apply for this statistics.

### 8.11 Documentation on methodology

There is no methodological documents available.

### 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 these statistics is in the division of Prices and Consumption. The person responsible is André Pedersen Ystehede, tel.: + 45 39 17 31 63, e-mail: apy@dst.dk.

### 9.1 Contact organisation

Statistics Denmark

### 9.2 Contact organisation unit

Prices and Consumption, Economic Statistics

### 9.3 Contact name

André Pedersen Ystehede

### 9.4 Contact person function

Responsible for the statistics

### 9.5 Contact mail address

Sejrøgade 11, 2100 Copenhagen

### 9.6 Contact email address

apy@dst.dk

### 9.7 Contact phone number

+45 39 17 31 63

### 9.8 Contact fax number

+45 39 17 39 99