

**Documentation of statistics for
Producer Price Index for Services 2014**

1 Introduction

The purpose of the Producer Price Index for Services is to analyze trends in prices relating to the first commercial transaction of each service, i.e. producers' selling prices to other producers (business to business), exclusive of VAT. Quarterly price indices have been calculated by Statistics Denmark since 2006.

2 Statistical presentation

The Producer Price Index for Services is calculated on prices of Danish produced services, relating to the first commercial transaction (business to business), for the domestic market and export.

2.1 Data description

The Producer Price Index for Services is calculated on prices of Danish produced services, relating to the first commercial transaction (business to business), for the domestic market and export.

2.2 Classification system

Nomenclature. *The producer price index for services* is divided by Industry following [Danish Industrial Classifications 2007 \(DB07\)](#). DB07 is based on NACE rev. 2.

2.3 Sector coverage

Not relevant for this statistics.

2.4 Statistical concepts and definitions

Unit value: Actual selling price is calculated by dividing quarterly revenue for a given service, by number of units sold.

Contract pricing: Actual selling price in long term contracts for repeated delivery, to the same customer.

Hourly rate: Hourly list prices for various categories of staff or services, depending on expertise, level of education or seniority.

Model price: A hypothetical or historically sold service. The price is recalculated every quarter by adjusting the factors in the price calculation.

Percentage fee: Actual price of services, as a percentage of a contract, an asset or other products.

Realized hourly rate: Actual hourly prices are calculated by dividing quarterly revenue for a given service, by the number of hours an employee has spent on this during that quarter.

Direct use of prices of repeated services: Actual selling price of relatively uniform services, sold regularly to different customers.

2.5 Statistical unit

Not relevant for this statistics.

2.6 Statistical population

The *Producer Price Index for Services* consists of a number of industry indices. This means that the population includes all companies in the industry for which prices are collected. Each industry therefore has each individual population and sample.

2.7 Reference area

Denmark.

2.8 Time coverage

2006-

2.9 Base period

2010=100

2.10 Unit of measure

Index.

2.11 Reference period

The firms are to report the prices, which were in force as far as possible in the middle of the quarter or the average of the quarter.

2.12 Frequency of dissemination

Quarterly.

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 22nd June, 2000).

Council Regulation (EC) No 1158/2005 of 6 July 2005 amending Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics and Council Regulation (EC) No 1893/2006 of 20 December 2006.

2.14 Cost and burden

The response burden is DKK 42,000.

2.15 Comment

For more information please contact Statistics Denmark at [Producentprisindeks for tjenester](#).

3 Statistical processing

Approx. 1500 prices are collected quarterly from selected companies in Denmark in order to calculate the Producer Price Index for Services. Prices are collected through an electronic reporting form.

The Producer Price Index for Services is calculated in a hierarchical system where the first calculation is made for the most detailed group of commodities, i.e. CPA-groups. These indices are calculated as geometric Jevons indices. The detailed base indices are subsequently weighted together to sub-indices for selected industries. These are calculated as arithmetic Laspeyres indices.

3.1 Source data

The Producer Price Index for Services is calculated on the basis of prices, reported by selected companies who offer various services.

3.2 Frequency of data collection

Quarterly.

3.3 Data collection

Prices are collected through an electronic reporting form, which is sent to the selected companies.

3.4 Data validation

The first validation of price data happens when prices arrive. Here they are tested for unusual changes. The prices that do not pass the threshold value will be checked manually by the staff and accepted only if the firms can verify the change.

When all prices are received, the system generates a list that includes all price changes and a measure of how these affects the elementary aggregates. The last validation is a visual inspection of all index tables.

3.5 Data compilation

Estimates for non-response: Non-response is negligible. If it should happen for any significant goods, imputation techniques are used. In other cases the prices are regarded as unchanged.

Estimates for grossing-up: There is no grossing up.

Type of index: The different services are first grouped in elementary aggregates for which elementary aggregate indices are calculated. The elementary aggregate indices are calculated as geometric indices. The elementary aggregate indices are weighted together into sub-indices and then aggregated into the total producer price index for services. Both sub-indices and total indices are calculated as Laspeyres indices.

Method of weighting and chaining: The weights are based on the supply and use tables from national account for 2010.

Weights: Weights are assigned to every detailed CPA group and used for weighting the base indices together for sub-indices and for the total producer price index for services.

Calculation: The producer price index for services is calculated in a hierarchical system where the first calculation is made for the most detailed group of commodities, i.e. CPA-groups. These indices are calculated as geometric Jevons indices. The detailed base indices are subsequently weighted together to sub-indices for selected industries. These are calculated as arithmetic Laspeyres indices.

3.6 Adjustment

There are no corrections of data beyond what has already been described during data validation and data processing.

4 Relevance

The Producer Price Index for Services is a key business cycle indicator which is used to analyze the socioeconomic development.

4.1 User Needs

Short-term indicator. The Producer Price Index for Services is a key business cycle indicator which is used to analyze the socioeconomic development.

National accounts statistic. In the national accounts statistic the Producer Price Index for Services is used as a deflator for calculations at constant prices, i.e. calculation of the actual economic development in Denmark.

4.2 User Satisfaction

Not relevant for this statistics.

4.3 Data completeness rate

The following industries are included in the population:

- 49.4 Freight transport by road and removal services
- Sum (50.1, 50.2)
- 51 Air transport
- 52.1 Warehousing and storage
- 52.24 Cargo handling
- 53.1 Postal activities under universal service obligation
- 53.2 Other postal and courier activities
- 61 Telecommunications
- 62 Computer programming, consultancy and related activities
- 63 Information service activities
- Sum (69 and 70.2)
- 71 Architectural and engineering activities; technical testing and analysis
- 73 Advertising and market research
- 78 Employment activities
- 80 Security and investigation activities
- 81.2 Cleaning activities

5 Accuracy and reliability

Approx. 1.500 prices are collected from 44 industries. Due to the large differences between industries, each industry is treated individually with its own sample. The sample is a combination of a top-down sample and a judgment sample where the largest companies represent themselves, and smaller companies represent a group. Therefore it is not possible to estimate the size of the sampling error. The price development in the sample represents the price development in the population. The quarterly non-response rate is less than one percent and is therefore not considered to be a significant source of error.

5.1 Overall accuracy

The sample is a combination of a top-down sample and a judgment sample where the largest companies represent themselves, and smaller companies represent a group. It is assumed that the price development in the sample represents the price development in the population (industry).

5.2 Sampling error

The sample is a combination of a top-down sample and a judgment sample where the largest companies represent themselves, and smaller companies represent a group. The sample is therefore not a random sample and it is not possible to estimate the size of the sampling error. The quarterly non-response rate is less than one percent and is therefore not considered to be a significant source of error.

5.3 Non-sampling error

Inaccuracy in weights. The weights are based on the supply and use tables from national accounts for the year 2006.

Quality change bias. As time passes, the services in the sample gets replaced. Because the new services often have different quality than the services that they replace, there is continuous quality adjustment of the index. When replacing services, new services are not included in the index before their prices are observed in two subsequent periods. A bias can arise in cases where price changes coincide with changes in quality. Methods for dealing with quality changes are described in Eurostat's methodology guide for developing Producer Price Index for Services.

Response errors. Errors may occur when an enterprise reports incorrect prices. The reason for this is normally misunderstandings, e.g. change in staff.

Recording errors. Errors may occur when questionnaires are recorded at Statistics Denmark. Such errors are normally spotted by our error checking procedures. Recording errors are not regarded to be important.

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

Approx. 1,500 prices are collected from 44 industries. Due to the large differences between industries, each industry is treated individually with its own sample. The ambition is to cover as much industry turnover as possible. In some industries it is possible to cover a large amount of turnover with a small sample, whereas in others, it is difficult to cover a small amount of turnover even with a large sample. Hence it is not possible to determine a common benchmark across all industries. The quality assessment is therefore a combination of turnover coverage, the number of companies in the sample and the quality of the collected 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

Only final figures are published.

6 Timeliness and punctuality

The statistics are published every quarter. A given quarter is published approx. 2,5 months after a quarter as far as possible on the 15th of the month or the first business day thereafter. The statistics are usually published without delay in relation to the scheduled date.

6.1 Timeliness and time lag - final results

The statistics are published every quarter. A given quarter is published approx. 2,5 months after a quarter as far as possible on the 15th of the month or the first business day thereafter.

6.2 Punctuality

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

7 Comparability

The Producer Price Index for Services can be found as a complete time series from 2006 to present. The statistic follows international standards and is therefore comparable with similar statistics from other European countries.

7.1 Comparability - geographical

Not relevant for this statistics.

7.2 Comparability over time

Since January 2014 the Producer Price Index for Services is based on:

- Danish Industry Code 2007 which is the Danish version of NACE Rev. 2.
- 2010 weights
- Index base 2010 = 100

7.3 Coherence - cross domain

The Producer Price Index for Services is related to the Producer- and import price index for commodities.

7.4 Coherence - internal

Not relevant for this statistics.

8 Accessibility and clarity

Nyt fra Danmarks Statistik (News from Statistics Denmark) and www.Statbank.dk

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

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 fra Danmarks Statistik [Producentprisindeks for tjenester](#).

8.5 Publications

None.

8.6 On-line database

Publishing: [Producer price index for services](#).

8.7 Micro-data access

Questionnaires are stored for the current year and for the previous two years.

8.8 Other

Not relevant for this statistics.

8.9 Confidentiality - policy

The compilation of price index for domestic supply resulting from Statistics Denmark [Data confidentiality policy](#). In practice this means that there is no published figures which individual companies can be identified, unless there are public figures available.

8.10 Confidentiality - data treatment

Confidentiality - Policy. The compilation of the Producer price index for services resulting from Statistics Denmark [Data confidentiality policy](#). In practice this means that there is no published figures which individual companies can be identified, unless there are public figures available.

Confidentiality – Data Treatment. The Statute of Statistics Denmark and a letter explaining terms and conditions, including the confidentiality of individual responses, are sent out to all enterprises participating in the survey.

Treatment of confidential data: Confidential data are treated by suppression.

8.11 Documentation on methodology

No documentation is 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 this statistics is in the division of Prices and Consumption. The person responsible is Rasmus Anker Kristiansen, tel. +45 3917 3532, e-mail rkr@dst.dk

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