STATISTICS DENMARK

Documentation of statistics for
Harmonized Index of Consumer Prices (HICP) 2014

1 Introduction

The Harmonized index of consumer prices (HICP) is compiled by all European Union Member States and Norway, Iceland and Switzerland. The purpose of the harmonized consumer price indices is to be able to estimate the development in the countries' consumer prices on a comparable basis. HICP is used both by the Commission and by the European Central Bank in connection with the valuation of the price development in the individual countries in connection with the implementation and monitoring of the 3rd phase of the EMU. All the European Union Member States and Norway and Iceland have compiled HICP since January 1997.

2 Statistical presentation

HICP shows the development of prices for goods and services bought by private households in Denmark. Thus, the index also covers foreign households' consumption expenditure in Denmark, but not Danish households' consumption expenditure abroad. The index shows the monthly changes in the costs of buying a fixed basket of goods, the composition of which is made up in accordance with the households' consumption of goods and services.

2.1 Data description

HICP shows the development of prices for goods and services bought by private households in Denmark. Thus, the index also covers foreign households' consumption expenditure in Denmark, but not Danish households' consumption expenditure abroad. The index shows the monthly changes in the costs of buying a fixed basket of goods, the composition of which is made up in accordance with the households' consumption of goods and services.

HICP can best be characterized as a fixed weight index of a Laspeyres-type. The prices, which form part of the HICP, are the prices which the consumers are actually paying, i.e. including VAT and taxes and after deduction of any subsidies. The only exceptions to this are the expenses for rent where the total rent, i.e. the own share of expenses plus any housing benefits, is included.

The weights are calculated on the basis of data from the national accounts on final consumption expenditure of households in Denmark, distributed among 70 commodity groups. For each of these, a further division is made by using the detailed information on consumption expenditure of Danish households from the Household Budget Survey. The weights were last adjusted in connection with calculating the index for January 2014, and are based on private consumption expenditure in 2012. The weights are updated on a yearly basis.

The Harmonized Index of Consumer Prices with Constant Taxes (HICP-CT) is calculated using the exact same prices and weights as used for the HICP. The exact same index formulas and structure of aggregation is used. The only difference is the concept of prices. In the HICP-CT the tax rates are kept constant since December last year in the calculations. In a given month the current tax rates are subtracted from the consumer price and the tax rates from December last year are added instead. The HICP-CT is then calculated using the prices with tax rates kept constant. The HICP-CT has been produced as an experiment in most EU countries since 2006. The index has been estimated backwards till December 2002. The purpose of the HICP-CT is to give an estimate of the price developments given that all tax rates are kept constant. If all tax rates in a given year are unchanged since December last year, HICP and HICP-CT will show exactly the same development. Differences in the development between HICP and HICP-CT therefore give an indication of the influence of changed tax rates on price changes. The HICP-CT is calculated with 2005=100 as index reference period and weights used are the same as used for the HICP. HICP-CT is calculated using the exact same sources as used for the HICP. The only difference is the concept of prices. In the HICP-CT the tax rates are kept constant since December last year in the calculations. Information on the tax rates are coming from the Net Price Index.

2.2 Classification system

COICOP (Classification of Individual Consumption According to Purpose) is an international classification of consumption goods and services.

2.3 Sector coverage

The household sectors purchase of goods and services in Denmark and foreigners purchase of goods and services in Denmark.

2.4 Statistical concepts and definitions

Consumer price: The price paid by the consumer, i.e. including VAT and taxes and after deduction of any subsidies.

Price index: Explanations of other concepts regarding index calculations can be found in the publication (in Danish) Index calculations.

2.5 Statistical unit

Groups of consumer goods and services. The concrete division of goods and services can be seen in the document "Vægtgrundlag" at the following link: Groups of goods and services.

2.6 Statistical population

The population consists of the goods and services, which are included in the consumption expenditure of domestic households and private foreign visitors to Denmark.

2.7 Reference area

Denmark.

2.8 Time coverage

2000-

2.9 Base period

2000=100

2.10 Unit of measure

Index values and rates of percentage changes.

2.11 Reference period

The prices are collected monthly during the period from 7th to 15th.

2.12 Frequency of dissemination

The HICP is published monthly.

2.13 Legal acts and other agreements

The collection of prices for the compilation of HICP is authorized by law based on Council Regulation No 2494/95 of 23 October 1995. The compilation of HICP takes place on a parallel with the consumer price index and the net price index, for which prices are collected with authorization

by *Notice of Act on the calculation of a net price index.*

The following Council and Commission Regulations are enacted for the compilation of HICP:

1. Council Regulation No 2495/95 of 23 October 1995 concerning the general rules and principles for the calculation of HICP.
2. Commission Regulation No 1749/96 of 9 September 1996 concerning rules for quality adjustments, update of the sample, and calculation formula, among others.
3. Commission Regulation No 2214/96 of 20 November 1996 concerning the calculation of sub-indices of the HICP.
4. Commission Regulation No 2454/97 of 10 December 1997 concerning minimum standards for the quality of the weightings employed.
5. Council Regulation No 1687/98 of 20 July 1998 concerning extension of the coverage of goods and services in HICP and fixing the price and consumer concepts for HICP.
6. Council Regulation No 1688/98 of 20 July 1998 concerning the geographic and population coverage of the HICP.
7. Commission Regulation No 2646/98 of 9 December 1998 concerning minimum standards for the treatment of tariffs ("composite prices") in the HICP.
8. Commission Regulation No 1617/99 of 23 July 1999 concerning minimum standards for the treatment of insurance in the HICP.
9. Commission Regulation No 1749/99 of 23 July 1999 concerning the calculation of sub-indices of the HICP.
10. Council Regulation No 2166/1999 of 8 October 1999 concerning minimum standards for the treatment of products in the health, education and social protection sectors in the HICP.
11. Commission Regulation No 2601/2000 of 17 November 2000 concerning the timing entering purchasing prices into the HICP.
12. Commission Regulation 2602/2000 of 17 November 2000 concerning minimum standards for the treatment of price reductions in the HICP.
13. Commission Regulation No 1920/2001 of 28 September 2001 concerning minimum standards for the treatment of service charges proportional to transaction values in the HICP and amening Regulation No 2214/96.
14. Commission Regulation No 1921/2001 of 28 September 2001 concerning minimum standards for revision of the HICP and amending Regulation No 2602/2000.
15. Commission Regulation No 1708/2005 of 19 October 2005 laying down detailed rules for the implementation of Council Regulation No 2494/95 as regards the common index reference period for the harmonized index of consumer prices, and amending Regulation No 2214/96.
16. Council Regulation No 701/2006 of 25 April 2006 laying down detailed rules for the implementation of Regulation No 2494/95 as regards the temporal coverage of price collection in the harmonized index of consumer prices.
17. Commission Regulation No 1334/2007 of November 2007 amending Regulation No 1749/96 on initial implementing measures for Council Regulation No 2494/95 concerning harmonized indices of consumer prices.
18. Commission Regulation No 330/2009 of 22 April 2009 laying down detailed rules for the implementation of Council Regulation (EC) No 2494/95 as regards minimum standards for the treatment of seasonal products in the Harmonized Indices of Consumer Prices (HICP)
19. Commission Regulation No 1114/2010 of 1 December 2010 laying down detailed rules for the implementation of Council Regulation (EC) No 2494/95 as regards minimum standards for the quality of HICP weightings and repealing Commission Regulation (EC) No 2454/97
20. Commission Regulation No 93/2013 of 1 February 2013 laying down detailed rules for the implementation of Council Regulation (EC) No 2494/95 concerning harmonized indices of consumer prices, as regards establishing owner-occupied housing price indices
21. Commission Regulation No 119/2013 of 11 February 2013 amending Regulation (EC) No 2214/96 concerning harmonized indices of consumer prices (HICP): transmission and dissemination of sub-indices of the HICP, as regards establishing harmonized indices of consumer prices at constant tax rates

2.14 Cost and burden

The total response burden imposed on the reporting of data for the consumer price index, the index of net retail prices and the European Union's harmonized consumer price index is estimated at 2078 hours or 0.578 mill. Dkr.

2.15 Comment

More information is available by contacting Prices and Consumption, Statistics Denmark.

3 Statistical processing

The HICP is calculated on the basis of 23,000 prices collected from approx. 1,600 shops, companies and institutions throughout Denmark. Most prices are by far collected monthly. The data material received is examined for errors, both by computer (using the so called HB-method) and manually. The different goods and services, which are included in the HICP, are first grouped according to approx. 500 elementary aggregates for which elementary aggregate indices are calculated. The elementary aggregate indices are mainly calculated as geometric indices. The elementary aggregate indices are weighted together into sub-indices that are in turn aggregated into the total HICP.

3.1 Source data

HICP is compiled on the same basis as the consumer price index, i.e. on the basis of a sample of 23,000 prices collected from approx. 1,600 shops, companies, and institutions all over the country. The prices are collected by letter, by the use of price lists for major chain stores, etc., or by means of price collectors visiting the individual shops. Some prices are also obtained via the Internet. Most prices are by far collected monthly. For goods and services, where the prices typically change less frequently, prices are collected more rarely, for instance quarterly or biannually. The index weights for the detailed indices (elementary aggregate indices) are calculated on the basis of data from the national accounts on final consumption expenditure of households in Denmark, supplemented by detailed information from the Household Budget Survey. HICP-CT is calculated using the exact same prices and weights as used for the HICP. The exact same index formulas and structure of aggregation is used. The only difference is the concept of prices. In the HICP-CT the tax rates are kept constant since December last year in the calculations. In a given month the current tax rates are subtracted from the consumer price and the tax rates from December last year are added instead. The HICP-CT is then calculated using the prices with tax rates kept constant.

3.2 Frequency of data collection

Most prices are by far collected monthly. For goods and services, where prices typically change less frequently, prices are collected more rarely, for instance quarterly or biannually.

3.3 Data collection

For clothing and fresh food, etc., prices are collected by price collectors who visit the individual shops. For the remaining groups of goods and services, prices are mainly obtained from the shops via mailed forms with the information requested. In addition, list prices of major grocery chain stores are used. Finally, Statistics Denmark obtains information on prices concerning a number of selected goods and services by telephone or via the Internet.

3.4 Data validation

The data material received is examined for errors, both by computer (using the so called HB-method) and manually.

3.5 Data compilation

The different goods and services, which are included in the HICP, are first grouped according to approx. 500 elementary aggregates for which elementary aggregate indices are calculated. The elementary aggregate indices are mainly calculated as geometric indices. The elementary aggregate indices are weighted together into sub-indices that are in turn aggregated into the total HICP.

3.6 Adjustment

In calculating a price index it is assumed that the baskets of goods that are compared are identical, also with respect to the quality of the goods. Consequently, in the case of changes in quality the prices should, in principle, be adjusted for this. Mainly indirect quality adjustment methods are being applied in the HICP in connection with changes in the sample. This means that the quality difference between a good leaving and entering the sample is not calculated directly. The price development of comparable goods in the sample is instead calculated, and it is assumed that the price development between the good leaving and entering the sample is equal to the calculated. A remaining price difference between the good leaving and entering the sample is implicitly assumed to be due to a quality difference and is not included in the calculation of the price index.

As the value of the actual changes in quality is not known, it is naturally difficult to calculate estimates for a possible bias, due to the chosen methods of quality adjustment.

4 Relevance

The HICP is generally viewed as a reliable statistic based on the views of users.

Important users are among others The European Central Bank, The EU Commission, The Ministry of Finance, The Ministry of Economic Affairs and the Interior, The Danish Central Bank and private banks and other financial organizations.

4.1 User Needs

The users of HICP are primarily the European Central Bank, the European Commission, the Ministry of Economic and Business Affairs, and the Nationalbank. As HICP has been calculated on a comparable basis in all countries, the figures are primarily used where there is a need for comparing the development in consumer prices.

4.2 User Satisfaction

Feedback is given at a yearly meeting held with the most important users.

Eurostat is checking on a continuous basis whether Statistics Denmark is in compliance with the requirements in the HICP regulations.

User satisfaction surveys have not been carried out.

4.3 Data completeness rate

The Danish HICP is in complaince with the EU-regulations regarding the HICP. Eurostat is producing reports with conclusions regarding the compliance and these reports are available here: Compliance monitoring.

5 Accuracy and reliability

No calculation has been made of the uncertainty connected with sampling in the HICP as the sample is not randomly drawn, but the quality of the HICP is accessed to be high.

In addition to the "general" uncertainty connected with sampling, there are a number of sources of potential bias in the consumer price index. One source is the consumers substitution between goods and shops and another source is changes in the sample (se chapter regarding "Non-sampling error").

5.1 Overall accuracy

The overall reliability of the HICP is estimated to be high based on the views of users.

The accuracy of the total HICP is judged by Statistics Denmark to be within plus/minus 0,1 index points.

5.2 Sampling error

No calculation has been made of the uncertainty connected with sampling in the consumer price index as the sample is not randomly drawn.

Outlets in the sample is to a large extent selected based on turnover so that firms with a high turnover are being preferred compared to firms with a low turnover (cut-off sampling). Representative goods for the different goods and services are being selected according to expenditure measured by e.g. the Household Budget Survey. Kiwi fruits and melons are for example representative goods for the group exotic fruits.

The particular goods in the sample including brand and product weight are being selected by the price collector or data provider.

5.3 Non-sampling error

In addition to the "general" uncertainty connected with sampling, there are a number of sources of potential bias in the HICP, which can be grouped as follows:

Substitution between goods: Bias due to substitution between goods is a result of the fact that for different reasons (changes in income and in relative prices or preferences), consumers substitute between different goods, although an unchanged composition of consumption is assumed in the calculation of the price index. The HICP is calculated as the weighted arithmetic average of the most detailed price indices (elementary aggregate indices) with their respective budget shares used as weights. At this level of the index calculation no allowances are therefore made for the consumers' substitution between different groups of goods and services (elementary aggregates). However, the elementary aggregate indices are mainly calculated as geometric indices. Thus, it is assumed that the consumers' budget shares remain unchanged. For these groups a certain substitution has thus been recognized in the index.

Substitution between shops: This type of bias arises when consumers for the same commodity change from shops with high prices to shops with lower prices. The HICP is calculated monthly on the basis of price information from the same shops. If, e.g. greater shares of the consumers' expenditure from July until August is accounted for by discount shops with lower prices, this will not in itself have an impact on the index. Only when a shop has been included for at least two months in succession are the prices from there included in the index calculation.

Changes in quality: In calculating a price index it is assumed that the baskets of goods that are compared are identical, also with respect to the quality of the goods. Consequently, in the case of changes in quality the prices should, in principle, be adjusted for this. As the value of the actual changes in quality is not known, it is naturally difficult to calculate estimates for bias, due to lack of quality adjustment. Methods for quality adjustment are being prepared, both nationally and at European Union level in connection with the calculation of the European Union harmonised HICP.

New commodities: The sample for the HICP is continuously updated, but for practical reasons often with a certain time lag. This means that new products are frequently not included in the compilation of the index when they are first introduced on the market, and not until prices have been available for two months in succession. Furthermore, at the beginning of a product's lifetime it is often impossible to obtain any information about sales. Finally, a great deal of uncertainty is associated with the task of defining whether it is actually a new product or just improved versions/varieties of already existing products.

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 statistical uncertainty is not calculated, but the quality of the consumer price index is accessed to be high based on the views of users.

The level of quality is among other things dependent on the size and composition of the sample, the methods used for quality adjustments in connection with changes in the sample and the data editing of the collected data.

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 HICP is published on the 10th or the first working day thereafter, following the month in which the data was collected.

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

6.1 Timeliness and time lag - final results

The Danish HICP is published on the 10th or the first working day thereafter, following the month in which the data was collected.

6.2 Punctuality

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

7 Comparability

The Danish HICP can be compared directly with other countries' HICPs. Using the HICPs it is possible to compare the inflation rates between different countries directly.

The Danish HICP is also related to the national consumer price index.

From January 2001, the only difference between the national consumer price index and the HICP is the coverage of goods and services, as owner-occupied dwellings is only recorded in the consumer price index and not in the HICP.

From January till December 2000, the only difference between the national consumer price index and the HICP is that both owner-occupied dwellings and private hospitals are only recorded in the consumer price index and not in the HICP.

Before January 2000, there are differences in calculation and methodology between the two indices as well as several differences as regards their coverage of goods and services.

7.1 Comparability - geographical

The Danish HICP is directly comparable with HICPs from other European countries that have been compiled according to the same EU regulations.

7.2 Comparability over time

In principle, the statistics are fully comparable over time. When making comparisons over longer periods, however, account should be taken of the fact that due to the weight changes and the continuous update of the sample, it is not the same basket of goods and services that is compared.

Before January 2001 was private hospitals not included in the HICP. Before January 2000, there are several differences as regards the coverage of goods and services over time.

7.3 Coherence - cross domain

The statistics can be compared directly with other countries' HICPs. The Danish HICP is also related to the national consumer price index. From January 2001 the only difference between the national consumer price index and the HICP is the coverage of goods and services, as owner-occupied dwellings is only recorded in the consumer price index and not in HICP. From January till December 2000, the only difference between the national consumer price index and the HICP is that both owner-occupied dwellings and private hospitals are only recorded in the consumer price index and not in the HICP. Before January 2000, there are differences in calculation and methodology between the two indices as well as several differences as regards the coverage of goods and services.

7.4 Coherence - internal

The data are consistent.

8 Accessibility and clarity

The total HICP is published by Statistics Denmark in *Nyt fra Danmarks Statistik* (News from Statistics Denmark). Statistics are also available from Statbank Denmark and on Price indices. The HICP of all Member States is also published by Eurostat in *Statistics in Focus/Economy and Finance* and on Eurostat.

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

Press release, in Danish.

8.5 Publications

Publications.

8.6 On-line database
- Detailed HICP 1996-
- Detailed HICP-CT 2002-
- Yearly indices 1996-

8.7 Micro-data access

Access to micro data, where the individual firms are not identifiable, may be granted on ad hoc basis.

8.8 Other

Access to not published detailed elementary aggregate indices may be granted on request.

8.9 Confidentiality - policy

The procedures are in accordance with Statistics Denmark's policy on confidentiality.

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8.10 Confidentiality - data treatment

It is not necessary to apply confidentiality at the level of publication.

8.11 Documentation on methodology

A full methodological description is available on [Documentation](#) (in Danish only).

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 Martin Birger Larsen, tel. +45 3917 3459, e-mail: mbl@dst.dk

9.1 Contact organisation

Statistics Denmark

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