

**Documentation of statistics for  
Sales of Real Property (Monthly) 2018 Month 04**

## **1 Introduction**

The purpose of the statistics for sales of real property is to analyze the monthly number of sales and the price trends for specified categories of real property.

The statistics are primarily used for monitoring the economic business cycle. The statistics are comparable from 2006 onwards.

## **2 Statistical presentation**

This statistic is a monthly statement of sales of one-family houses and owner-occupied flats in ordinary free trade, calculated as price index and number of sales.

### **2.1 Data description**

The statistics are compiled as monthly price index for one-family houses and owner-occupied flats nationwide. The statistics also contains the following key figures; · Number of sales in the price calculation · Average price per property (dkk 1000) · Purchase sum in percent of taxable value · Estimated number of sales

The statistics does not include a total price index for one-family houses and owner-occupied flats.

### **2.2 Classification system**

The statistics are grouped in one-family houses, owner-occupied flats and weekend cottages. However, the figures for weekend cottages are only available for 2006-2011.

### **2.3 Sector coverage**

Not relevant for this statistics.

## **2.4 Statistical concepts and definitions**

SPAR-value: The sales price divided by the appraisal (SPAR = Sales Price Appraisal Ratio)

Ordinary free trade: Comprises sales between parties who are not members of the same family and sales, which are not considered as a partial gift.

Number of sales in the price calculation: All sales, which meet the following conditions are included in the price calculations:

- No special conditions are occurring, as for instance partial property sold, more than one property sold, seller is a public authority, sales information is missing or the price is exorbitant.
- The buyer is a private person.

Estimated number of sales: The estimated number of sales based on the delay pattern of the previous year. The number of sales is enumerated because the statistics is compiled before the total number of sales for the period has been registered.

Average price per property: Calculated as an arithmetic average of the sales included in the price calculation.

Purchase sum in per mille of taxable value (spar-value): The average price in per mille of the average appraisal.

## **2.5 Statistical unit**

The statistical unit is a registered property in connection with sales.

## **2.6 Statistical population**

The population covers all sales of the included types of real properties.

## **2.7 Reference area**

Denmark.

## **2.8 Time coverage**

2006- to present.

## **2.9 Base period**

The index reference period is 2006=100.

## **2.10 Unit of measure**

The statistics covers price indices and number of sales. Values are shown in 1.000 DKK

### **2.11 Reference period**

In connection with sales, the contract date is used as accrual period in the statistics. If the contract date is unknown, date of the deed is used instead.

### **2.12 Frequency of dissemination**

Monthly.

### **2.13 Legal acts and other agreements**

The legal authority to collect data is provided by the Act on Statistics Denmark, section 6, as subsequently amended (most recently by Act no. 599 of 22nd of June, 2000).

### **2.14 Cost and burden**

The statistics are based on administrative records. Therefore there is no direct burden to the compilation of these statistics. Data comes from the electronic land registration system for registration of ownership of real properties.

### **2.15 Comment**

Additional information can be required by contacting Statistics Denmark.

## **3 Statistical processing**

Data concerning the registration of ownership of real properties is collected on a weekly basis from the electronic land registration system via the Tax Authorities. The data is checked for errors by the Tax Authorities and Statistics Denmark. The sales of real properties in the reference period are added together and sorted by categories of real properties. Then key figures and monthly price indices are calculated.

### **3.1 Source data**

In connection with registration of sales of real properties the information is collected from the electronic land registration system to the Tax Authorities. Every week Statistics Denmark receives information about each transaction from the Tax Authorities.

### **3.2 Frequency of data collection**

Data is collected on a weekly basis from the electronic land registration system.

### **3.3 Data collection**

Data is collected from the Tax Authorities.

### **3.4 Data validation**

Data from the electronic land registration system is checked for errors by the Tax Authorities. When Statistics Denmark receives data, the data is checked for errors in each variable for statistical use. This includes checking for valid dates etc. Furthermore observations are being removed from the price calculations if there are special conditions. For more information see the variable 'number of sales in the price calculation' under 2.04.

### **3.5 Data compilation**

The sales of real properties in the reference period are added together and sorted by categories of real properties. Then key figures and monthly price indices are calculated.

### **3.6 Adjustment**

To the extent that quality differences are reflected in the appraisal, the spar-value correct the price index for these quality differences. The method is internationally accepted and known as the SPAR method (Sales Price Appraisals Ratio).

## **4 Relevance**

There is a great interest for the published numbers among users, which follows the currently economic business cycle. The statistics of sales of real properties are relevant for the banking- and financial sector, real estate agents, politicians, researchers and the news media. The users consider the statistics for sales of real properties as an important economic indicator. The statistics have a high profile in the press and among other professional users.

### **4.1 User Needs**

The statistics is, among other things, used for monitoring short-term economic trends. Estate agents and other interested parties use the statistics to follow developments in the number of sales and prices for different types of real property on a nationwide level.

### **4.2 User Satisfaction**

There is not gathered knowledge of user satisfaction for this statistic. However, in 2013 a contact group consisting of internal and external experts in this area was established. The primary task of the contact group is to discuss and evaluate the published results as well as planned developments in the area. The contact group also debates the current trends and issues around price index for real properties.

### **4.3 Data completeness rate**

Not relevant for this statistics.

## **5 Accuracy and reliability**

There is no sampling error in the final figures, but the price indices are still subject to some degree of uncertainty. This is due to the fact that the same houses are not sold in each period which makes it necessary to control for quality differences between sold houses. No matter of how this quality correction is done it will always contains some degree of uncertainty. The statistical uncertainty in the calculation of housing prices is explained [here](#). Bias on the preliminary price indices is close to 0, while the average deviation is about 0.5 for the monthly figures.

### **5.1 Overall accuracy**

The final figures contains almost all transactions of real estates and the number of sales is therefore likely to have a high precision. However, the final price indices are subject to some degree of uncertainty. This is due to the fact that there is variation in what properties there are transacted in each period. So even though the actual sales prices are known, the price development depends on the quality and number of transacted properties. This leads to a statistical uncertainty, which is important to take into consideration when using this statistics. The quality correction is done by calculation the spar-value for each single property, which is the price divided by the appraisal (Sales Price Appraisal Ratio-method). However, the spar-value has two limitations: Firstly, two identical properties with the same quality and comparable location is not necessary sold at the same price at a certain time, since the market is not perfectly transparent. For example can one seller get a higher price if he can wait for the 'right buyer'. There is always an element of uncertainty in the transacted price. Secondly, two identical properties does not necessarily have the same appraisal-value. The preliminary figures are subject to some uncertainty. This is due to the fact that the calculation is done before all transactions have been registered into the electronic land registration system. The actual period is based on approximately 75 percent of all transactions in this period. The second time the period is published approximately 90 percent of all transactions is included in the calculation. Bias shows if the revisions of the price indices in averages is under- or overestimated. Bias is calculated as the average of the monthly deviations in percentage points. Deviation shows how close the first publication of a period is to the final version. Bias and deviation of price developments are described throughout the published New articles.

### **5.2 Sampling error**

The preliminary price indices are revised since they are based on an incomplete dataset since not all transactions have been registered in the electronic land registration system at the time of when the calculation is done.

### **5.3 Non-sampling error**

The final figures are based on almost all transactions. However, price indices are subject to statistical uncertainty. This is due to the fact that there is variation in what properties that are transacted in each period. So even though the actual sales prices are known, the price development depends on the quality and number of transacted properties. The uncertainty of the quarterly price indices at the nation wide level is +/- 1.1 percentage points for one-family houses and +/- 1.7 percentage points for owner-occupied flats. The uncertainty is higher for owner-occupied flats than for one-family homes because the number of transactions are lower. The uncertainty is higher at regional level than at the nationwide level because the number of transactions are lower. The statistical uncertainty for house price indices is explained [here](#).

The preliminary figures are revised for two reasons: Firstly, there can be sampling errors since the calculations is done before all transactions have been registered into the electronic land registration system. Secondly, the base year of the appraisals is changed once a year in order to include the newest information of changes in the property stock, for example new buildings.

### **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

Properties that are sold at different times are different in terms of size, location and standard. In order to calculate the pure price development between different periods Statistics Denmark uses a method which adjusts for some of these quality differences. For each property the sales price is divided by the appraisal, which is called the 'spar-value'. It is this spar-value that is used in the calculation of the price indices and not just the pure sales price. The method is internationally accepted and is known as the SPAR-method (Sales Price Appraisal Ratio). The SPAR-method is also used in Sweden and the Netherlands.

Analysis made by Statistics Denmark shows that the transactions of properties is typically registered into the electronic land registration system close to the acquisition date, which is the time when the new owners gets the key to their new property. The acquisition date may be relatively long time after the transaction date. The analysis also shows that the period between the transaction-date and the acquisition date is longer for more expensive properties than for cheaper properties. At the same time analysis also shows that expensive properties is more likely to have a relatively lower appraisal than cheaper properties. That is, the appraisals for expensive properties is typically less than the sales price while it is opposite for the cheaper properties where the appraisals typically is higher than the sales price. The preliminary price indices are calculated in a way that adjust for these circumstances in order to keep the bias and deviation as low as possible. The method is described in detail: [here](http://srvcolprod1:25233/File/68edce9a-766a-46a9-a0a2-21f186f36d20).

## 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

The monthly figures are revised 8 times. The calculation is made on the basis of the transactions which have been registered in the electronic land registration system at the time of calculation. The preliminary figures are calculated based on an incomplete set of data since not all transactions have been registered at the time of calculation.

## 6 Timeliness and punctuality

The monthly figures are published about two months after the end of the month (reference period). Punctuality is very high, as delays in the planned release happens extremely rarely.

### 6.1 Timeliness and time lag - final results

The monthly statistics is published approximately 2 month after the reference period and is revised 8 times before the figures are declared as final.

### 6.2 Punctuality

The statistics has since the first release in December 2011 been published to the pre-announced release date.

## **7 Comparability**

The monthly statistics for sales of real properties have been published since December 2011 with figures from 2006 onwards. Similar statistics can be found in most other countries.

### **7.1 Comparability - geographical**

There are comparable statistics for sales of real properties in most countries, including all the Nordic countries.

### **7.2 Comparability over time**

The monthly figures have been published since December 2011 with figures from 2006 onwards. By comparison over longer periods, the quarterly or annual figures are normally used.

### **7.3 Coherence - cross domain**

Read an analysis of a comparison of different house price statistics in Denmark: [dst.dk/analyser](https://dst.dk/analyser). However, this analysis is only available in Danish.

### **7.4 Coherence - internal**

Not relevant for this statistics, as the data comes from a single data source.

## **8 Accessibility and clarity**

The monthly statistics for sales of real properties is published in [News from Statistics Denmark](#). See more on statistics [webpage](#).

### **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. Theme publications etc. may be published at other times of the day. The National Statistician can decide that such publications may be released before their official publication time, e.g. to the media and other stakeholders.

#### **8.4 News release**

The monthly statistics for sales of real properties are published in News from Statistics Denmark.

#### **8.5 Publications**

Information on sales of real properties are included in the Statistical Yearbook and Ten-Year review. The statistics had its own annual [Publications](#) from 1923 to 1983, except for the period 1937-1950.

#### **8.6 On-line database**

The monthly sales of real properties is published in [Statbank](#) under the topic 'prices and consumption', Real Estate, where the following tables are available with monthly figures: · EJEN13: Key figures for sales of real properties · EJEN14: Price index for sales of real properties

#### **8.7 Micro-data access**

Access to Statistics Denmark's register for sales of real properties is available via [Data for research](#). The basic material since 1992 is stored in Statistics Denmark. For particular extract of individual properties, we refer to the data distributors on [OIS.DK](#).

#### **8.8 Other**

It is possible to buy [service task](#), with more informations than in the News from Statistics Denmark or in the StatBank.

#### **8.9 Confidentiality - policy**

[Data Privacy Policy](#) in Statistics Denmark.

#### **8.10 Confidentiality - data treatment**

The statistics is not published on such a detailed level that individual properties can be identified.

#### **8.11 Documentation on methodology**

No further documents are available in English.

#### **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 Jakob Holmgaard, tel. +45 39 17 31 24, e-mail: [jho@dst.dk](mailto:jho@dst.dk)

## **9.1 Contact organisation**

Statistics Denmark

## **9.2 Contact organisation unit**

Prices and Consumption, Economic Statistics

## **9.3 Contact name**

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Responsible for the statistics

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