STATISTICS DENMARK

**Documentation of statistics for
Sales of housing cooperatives 2025**

1 Introduction

The purpose of the statistics for cooperative housing is to monitor the price development in the property value of the cooperative housing units traded. The statistics has been produced since November 2023 and covers the period from 2015Q1 and onwards and it is comparable throughout the entire period.

2 Statistical presentation

The statistics for cooperative housing is a quarterly price index for the property value of the cooperative housing units traded. The statistics contains price indices to describe the price development over time and numbers for the use of different valuation principles. The statistics includes all traded cooperative housing units that have been registered through http://www.andelsboliginfo.dk. This registration has been mandatory for the cooperative housing associations since June 1st 2021.

2.1 Data description

The statistics for cooperative housing monitors the price development in the property value of the cooperative housing units using and index and other key figures.

The price index monitors the price development for the physical cooperative housing unit for which a shareholder obtains the right of use, and not the the price development for the price share certificate itself. The price index is, a far as possible, cleaned of effects of the fact that the cooperative housing associations may have different yearly rents and that some associations may contain private housing as well. Furthermore, the price index is corrected for changes in the value the individual cooperative housing unit due to e.g. home improvements or improper maintenance which is not reflected in the total property value. The index is further corrected for effects of changes the valuation method.

The remaining key figures contain the distribution of valuations principles for the calculation of the value of the cooperative housing unit based on the traded unit as a percentage.

2.2 Classification system

Price Index (EJ99) is compiled for:

- All Denmark (the entire country)
- Subregion: City of Copenhagen

Key figures for valuation methods (EJEN99) are compiled for:

- All Denmark (the entire country)
- Capital Region of Denmark
- Copenhagen Muinicipality
- Frederiksberg Municipality
- Subregion: Copenhagen Suburbs
- The rest of the country (the entire country excluding the Capital Region)

The key figures show the distribution of valuation methods used to calculate the share value, based on traded cooperative dwellings, expressed as percentages. Valuation methods are reported according to: - Public property assessment - Market value as assessed by an appraiser - Acquisition price - Undisclosed

2.3 Sector coverage

Not relevant for these statistics.

2.4 Statistical concepts and definitions

Dwelling in housing cooperatives: The dwelling that you, as a cooperative owner, have the right to use as a member of a cooperative housing association.

Acquisition price: The whole properties owned by the housing cooperative are valued as the price the housing cooperative paid the for property at the time of foundation. Added to this are improvements on the property. The principle is primarily used for new properties , where the value of the property has not yet increased and where the acquisition price is an expression of the market value as a rental property.

Public property assessment: The whole properties owned by the cooperative housing association are valued according to the most recently used public property assessment according to the principles set out by the Tax Authorities. The public property assessment has not been updated since 2012 and they will no longer be updated.

Market value as assessed by an appraiser: The whole properties owned by the cooperative housing association are valued at the market value as assessed by a real estate appraiser. An appraiser is a real estate agent who is specially trained in this field. The housing cooperative must pay for this valuation.

2.5 Statistical unit

The statistical unit is a cooperative housing unit.

2.6 Statistical population

The statistics includes all traded cooperative housing units that have been registered through andelsboliginfo.dk in accordance with the key information form.

2.7 Reference area

Denmark.

2.8 Time coverage

The statistics covers the period 2015- to the present.

The geographical breakdown begins in Q1 2022 for the price index (EJ99) and in Q3 2021 for the valuation principles (EJEN99).

2.9 Base period

For figures that are published as an index, the index reference period is 2022 = 100.

2.10 Unit of measure

Index and percentage.

2.11 Reference period

The date (quarter) for the board approval of the sale or the date of signature of the transfer agreement if there is no board approval.

2.12 Frequency of dissemination

Quarterly.

2.13 Legal acts and other agreements

According to the promulgation of the obligation to provide information connected to the sale of cooperative housing units etc. and of the obligation of the board to provide a form filled out with central key figures. By this promulgation it has been made mandatory to report the sales prices and characteristics of the cooperative housing units. The purpose is for Statistics Denmark to be able to fulfill the demands put forward in the EU regulation (nr. 2016/792).

2.14 Cost and burden

The burden of reporting the data for the reporting units is 0.5 million DKK.

2.15 Comment

Additional information can be requested by contacting Statistics Denmark or on the website of [Sales of Real Estate Property](#).

3 Statistical processing

Key figures on cooperative housing associations and cooperative housing units are reported to Statistics Denmark through http://www.andelsboliginfo.dk on a quarterly basis. The collected data is validated by Statistics Denmark and enriched with data from the Danish Buildings and Dwellings Register which is validated. Finally, price indices and the distribution of valuation principles are calculated.

3.1 Source data

Information on sales of individual cooperative housing units comes from quarterly reports. For the period 2015Q1 to 2021Q2 sales data is collected using a voluntary sample through the sector for cooperative housing. Sales data from 2021Q3 and onwards is collected through [andelsboliginfo.dk](#) where reporting is mandatory by law.

For the cooperative housing associations themselves, data originates from yearly reports through [andelsboliginfo.dk](#), which has been mandatory since 2014.

3.2 Frequency of data collection

Quarterly.

3.3 Data collection

Data for this statistics is gathered electronically fra administrative registers at [andelsboliginfo.dk](#) and the Buildings and dwellings Register.

3.4 Data validation

The reports from andelsboliginfo.dk can be deficient and the data is only validated scarcely at andelsboliginfo. The purpose of andelsboliginfo is to support the cooperative housing associations with their reporting duties of the unit transactions. It is the associations' responsibility that the key figures are reported correctly. The reported data belongs to the associations and they are responsible for the quality of the data. Andelsboliginfo does have some checks to ensure that the reported figures are sensible. When Statistics Denmark receives data from andelsboliginfo extensive controls are made on 11 selected variables that are essential for the calculation of the statistics. On avereage 12 pct. of the observations are deemed unfit for inclusion in the calculations. To avoid exclusion of all 12 pct. of the sales imputations and corrections are made. This effort is focused on three essential variables. The methods to impute and correct depends on the variable, but generally five methods are used:

1. Replacement with a value from a different register
2. Calculation of the variable using other variables, that forms a theoretic identity (eg. area=unit value/association value pr. m2)
3. Correction of 10-, 100- and 1000 reporting errors by comparison with other variables that are usually strongly correlated with the erroneous variable
4. Replacement with a value from an almost perfectly correlated variable
5. Adoption of the most frequent value from the associations other accounts When then corrections are completer all checks are run again for all the variables that have been either corrected/imputed and the distribution is reassessed. Then the price concept is calculated as follows: Price concept=F2*distribution+Z18-Z3, Where F2 is the property value of the association by the used valuation principle, Z18 is the sales price and Z3 is the unit's share value. The price concept must be within set thresholds. The data correction for 2015Q1 – 2021Q2 is more limited in order to keep as many observations as possible as the data for this period is based on a smaller sample. The data correction from 2021Q3 and onwards is more thorough as the data comes from the mandatory reports on andelsbolig.info.

3.5 Data compilation

Combining sales data and association data: Firstly, the information on sales of individual cooperative housing units with information on the cooperative housing association as a whole. There is no single correct way of making this combination so pragmatic solutions are chosen that includes as many sales a possible. Furthermore, it is prioritized to use the newest information on the association as possible. The following rules are applied:

- The combination is conducted on the basis of the accounting period which is combined with the sale
- The accounting period lies between 0 and 24 months before the date of the sale
- If there are several accounting periods within 0-24 months before the sales data, the newest information is chosen

Loan information (to include interest swap as an explanatory variable): According to law, the credit institutions must report the information in January along with the publication of the loan or financial agreement in question. I.e., in January 2022 the loans of December 31st 2022 are reported. When a new loan is reported in the system it is automatically attached to the information about the cooperative housing association as a whole. The following rules are applied:

- The sales that have taken place in e.g. 2022 combined with the loans reported by December 31st 2021. I.e. sales from 2022 are combined with loans reported by December 31st 2021. Identification of duplicated sales from 2021Q3 and onwards (through http://www.andelsboliginfo.dk):

If a sale matches the address of one or more sales, where the dates of sale are within 30 days of each other, these checks are run in this prioritised order to decide which sales to keep. If the first check is undecided it moves on to the next, etc.:

1. The sale where the most essential variables overall passes the consistency check
2. The sale with most individually passed the consistency checks
3. The sale where the most variables are within the threshold values
4. The sale with the most filled in variables in total
5. The sale with the newest date of sale

Identification of duplicate sales in the periode 2015Q1-2021Q2 (sample data): Sales data for the period 2015Q1 – 2021Q2 has been gathered from several sources and thus, the same sales could have been reported to Statistics Denmark multiple times. If the address and the date of sale is the same but the sales prices does not match the observations are excluded as it is not possible to be sure which information is correct.

Hedonic price index: Statistics Denmark has chosen use a hedonic regression for the calculation of the price index for cooperative housing. This is different from the method used for the calculation of the house price index where the property values can be used to control for differences in the quality of the housing units. This is not an option for cooperative housing. The development of a hedonic price index involves both regression and construction of quality corrected price indices. This approach is suitable when the prices must be corrected for several conditions as is the case for cooperative housing. The chosen hedonic method is the rolling time dummy (RTD) method and it is described further in 6.2.2 in the [Technical manual on Owner-Occupied Housing and House Price Indices](#).

3.6 Adjustment

When calculating a price development you want to compare the price of the exactly same item in two different periods. The challenge with cooperative housing units is that they are very different and, thus, calculating a price development is not easy. To accommodate this hedonic regression is the chosen method. With hedonic regression an observable price can be related to a range of variables and estimate their effects on the price. E.g. a 0/1 dummy can be used to see if there "exclusively is cooperative housing unit in the housing association" and a variable specifying the "share of rented squaremeters in the association". By giving these variables the average value in all observations you can construct a price index corrected for the effects of a disproportionate large or small share of the cooperative housing units in the quarterly turnover.

No seasonal correction is made.

4 Relevance

The statistics are relevant for banks and the financial sector, estate agents, politicians and actors in the cooperative housing sector who use the figures for analyses of price developments and assessments of regulation in the housing market. As there used to be limited statistics on cooperative housing, the statistics contribute to a more transparent housing market.

4.1 User Needs

The cooperative housing sales statistics are in high demand among banks, the financial sector, real estate agents, politicians, and stakeholders in the cooperative housing market. While the owner-occupied housing market is well covered by existing statistics, far less data is available for cooperative housing. These statistics therefore help shed light on price developments and create a more transparent housing market, enabling both consumers and policymakers to make better-informed decisions. In turn, the statistics can strengthen housing market stability and help prevent future housing bubbles.

Cooperative housing accounts for around 7 percent of all dwellings in Denmark, totaling approximately 200,000 units nationwide. In Copenhagen, they make up more than one-third of apartment buildings, making the market both large and significant—especially since many young people begin their housing careers in a cooperative unit before moving on to owner-occupied housing. Price developments in the cooperative housing market therefore have a broad impact on the rest of the housing market.

However, the figure of approximately 200,000 cooperative dwellings is indicative only, as BOL101 also includes units owned by private cooperative housing associations, which often comprise a mix of cooperative units, rental units, and commercial premises. This means the total number is typically overestimated.

4.2 User Satisfaction

User satisfaction is not investigated systematically for this statistics. An expert committee for house sales statistics has been established to discuss and evaluate statistics on the house sales area.

4.3 Data completeness rate

No seasonal correction is made.

5 Accuracy and reliability

The precision of the calculated price development depends on the hedonic regression which ensures the quality correction of the cooperative housing units sold and on the collected data. The development in the choice of valuation principles in the data from 2015 and onwards is assessed to be fairly accurate.

The statistics for cooperative housing is based on information from http://www.andelboliginfo.dk which is a register of sold cooperative housing in Denmark. Thus, the reliability of the preliminary figures is assessed to be acceptable.

5.1 Overall accuracy

The ability of the statistics for cooperative housing to precisely describe the true price development depends on model assumptions and the uncertainty of the date sources.

The price development for cooperative housing units is calculated using a hedonic regression where there is limited information on the individual cooperative housing units and the associated cooperative housing association. Using this method the price is modeled as a function of e.g. size, age and geographical location as well as information on the association.

For the period 2015Q1 - 2021Q2 the statistics is not revised as no new data is collected for this period.

5.2 Sampling error

For the period 2021Q3 and onwards the survey is based on mandatory reports from andelsboliginfo.dk and thus, there is no sampling error.

For the period 2015Q1 - 2021Q2 the statistics is based on a voluntary survey and some sampling error is to be expected. The development in the valuation principles is assessed to be accurate.

5.3 Non-sampling error

Some reports on andelsboliginfo.dk may be reports of previous sales but with slightly different data. These duplicates are identified and only the sale with the most accurate data is kept for the calculation. Duplicates are when two or more sales with identical addresses have sales dates within 30 days of each other. In total 0,6 pct. of the reported sales are duplicates.

The reported data can be erroneous, as very little data validation is carried out at andelsboliginfo.dk, The purpose of the website is to support the cooperative housing associations' obligation to report at transfers of cooperative housing units. It is the cooperative housing associations' responsibility that the key figures are correctly calculated and reported. The data belongs to the cooperative housing associations and they are responsible for the data quality. When Statistics Denmark receive the data from andelsboliginfo.dk extensive controls are carried out on the information to be used in the statistics for cooperative housing. 11 essential variables have been selected to receive the most attention.

The address (e.g. street name and postal code) along with the cooperative housing associations' central business register ID can be reported erroneously with can cause problem when connecting the sales information with the association information and information from the Dwellings and Buildings Register. Thus, these sales will not be included in the calculation of the price index. This presents an element of error on the calculated price development in comparison to the actual price development.

For the period 2021Q3 and onwards the data comes from mandatory reports through andelsboliginfo.dk. It is possible that some sales are not reported or they may reported too late to be included in the calculation of the most recent quarter.

The price index for cooperative housing units is calculated as a hedonic priceindeks using a rolling time dummy (RTD). This method assumes that the coefficients for the different characteristics are unchanged in four consecutive quarters. When the prices of the characteristics are limited to being unchanged, the quality adjusted price development between two periods is caught by a time dummy that takes on the value 0 i period 1 and 1 in period 2.

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 calculation of the price index for cooperative housing units is complicated by the fact that cooperative housing units with different characteristics are sold from quarter to quarter

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

Data is only revised if new information on co-operative housing sales is received for already published periods.

Please note that the entire price index series will be affected if the price index for 2022 changes, as 2022 serves as the reference year (2022 = 100).

6 Timeliness and punctuality

The statistics on cooperative housing publishes preliminary quarterly figures two months after the end of the reference period. It has not been decided when the figures are final. The statistics on cooperative housing is published without delay with regards to the planned publications.

6.1 Timeliness and time lag - final results

The statistics on cooperative housing is published without delay with regards to the planned publications.

6.2 Punctuality

The statistics are published without delay in the pre-announced release date.

7 Comparability

Comparable house sales statistics for all EU member states can be found on the [Eurostats website](#) where figures are published around 100 days after the end of a quarter (reference period).

7.1 Comparability - geographical

Comparable house sales statistics for all EU member states can be found on the [Eurostats website](#) where figures are published around 100 days after the end of a quarter (reference period).

7.2 Comparability over time

The statistics on cooperative housing was first published as an official statistics i november 2023. Previous publications have been experimental and they have been replaced by the official statistics i Statbank tables.

7.3 Coherence - cross domain

There are no other statistics on cooperative housing in Denmark.

7.4 Coherence - internal

I EJEN99 the distribution of valuation principles sums to 100 within each quarter.

In EJ99 the information for on-family houses and apartment is gathered from EJ55. Based on the published indices (one decimal) a rescaling is carried out so that 2015 = 100. This means that the price development based on the index level 2015 = 100 can deviate with +/- 0,1 percentage points compared to the index level with 2006 = 100 in EJ55.

8 Accessibility and clarity

The statistics for cooperative housing is published on a quarterly basis in the Statbank and yearly in Nyt fra Danmarks Statistik along with the publication of the 4th quarter.

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

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.

8.2 Release calendar access

The Release Calender can be accessed on our English website: Release Calender.

8.4 News release

The statistics for housing cooperatives are published yearly in News from Statistics Denmark.

8.5 Publications

None.

8.6 On-line database

In the StatBank, these statistics can be found under the subject Sales of real property in the following tables:

- EJ99: Price index for housing cooperatives and owner-occupied housing
- EJEN99: Key figures for housing cooperatives by valuation method

8.7 Micro-data access

Microdata is only made available through Research Services.

8.8 Other

Not available.

8.9 Confidentiality - policy

Data Privacy Policy in Statistics Denmark is followed.

8.10 Confidentiality - data treatment

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

8.11 Documentation on methodology

Documentation on methodology for this statistics are not available in English. For more information see the Danish site.

- Technical manual on Owner-Occupied Housing and House Price Indices (2017)

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, Economic Statistics. The contact person is Jakob Holmgaard, tel.: + 45 2487 6456, and e-mail: JHO@dst.dk.