

# Prices of dwellings

2009, 1st quarter

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## Prices of dwellings went down in the January-March

*According to preliminary data prices of old dwellings are went down in the first quarter. Prices went down in the whole country by 0,7 per cent and in Greater Helsinki area prices went down by 2,0 per cent from previous quarter. In the rest of the Country prices went up by 0,5 per cent. From previous year prices went down by 5,3 per cent in the Whole Country. In Greater Helsinki area prices went down by 7,2 per cent and in the rest of the Country 3,7 per cent.*

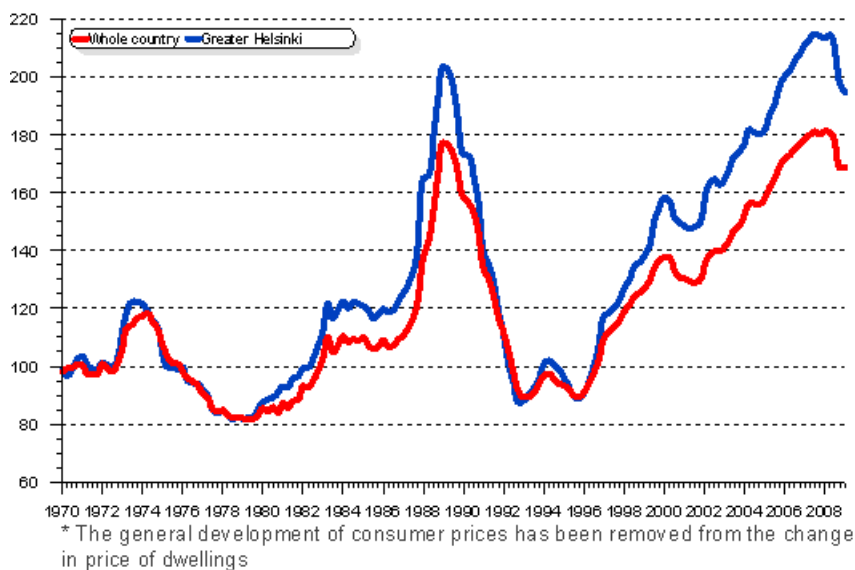
The price for old dwelling per square metre was in January–March EUR 1,831 in the whole country, EUR 2,683 in Greater Helsinki and EUR 1,447 in the rest of Finland. These data derive from the statistics on the prices of dwellings compiled by Statistics Finland on the basis of the Tax Administration's data. The preliminary data comprise roughly two-thirds of completed transactions in dwellings in old blocks of flats and in terraced houses,

Statistics Finland has revised the statistics on the prices of dwellings. The revised statistics provide a timelier than before description of the prices of old dwellings, as the year 2005 has been adopted as the base year of the statistics (the previous base year was 2000). In connection with the adoption of the new base year the weight structure of the index has been revised to correspond to the most recent stock of dwellings in housing corporations by type of dwelling, number of dwellings, size, location and price level. As a result of the weight structure revision, the average transaction prices of old dwellings per square metre have changed in 2005–2008 when compared with previously published data

In general the price level has changed only slightly, but in Helsinki the average price of an old dwelling in a block of flats is some EUR 150 lower in the new index than in the old index. In the new index the weight of blocks of flats in the fringes of Helsinki has increased from before when compared with central Helsinki. As prices per square metre in the fringe areas are lower than in central Helsinki, the average price level of all of Helsinki is lower in the new index. See also the link 'Revisions in these statistics' in the left-hand navigation bar on the home page of the statistics

In the first quarter of 2009, the prices of dwellings in new blocks of flats and terraced houses fell by 0,4 per cent from the previous quarter in the whole country. In Greater Helsinki the prices went up by 1.0 per cent and in the rest of Finland went down by 1,2 per cent. The average price per square metre of new dwellings was EUR 2,738 in the whole country, EUR 3,414 in Greater Helsinki and EUR 2,494 in the rest of Finland. From previous year the prices in new blocks of flats and terraced houses went down by 3,7 per cent. In Greater Helsinki the prices went down by 6,1 per cent and in the rest of country 2,4 per cent. The data are based on the price information of the largest building contractors and estate agents.

**Real price index of dwellings in old blocks of flat quarterly I/1970 — I/2009, index 1970=100**



During the year 2008, the prices of old dwellings rose on average by 1.4 per cent in the whole country, 1.3 per cent in Greater Helsinki and 1.6 per cent in the rest of Finland. The number of housing transactions decreased considerably. In 2008, 70,245 housing transactions were made which is over 14 per cent less than the year before. The total value of housing transactions was EUR 8.7 billion, which is around EUR 1.1 billion less when compared with the previous year. Around one third of them was made in the region of Uusimaa and their value was around 47 per cent the total sum.

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## ***1. Prices of blocks of flats unchanged in first quarter***

According to preliminary data prices of old blocks of flats an average remained unchanged in the whole country from previous quarter. In Greater Helsinki prices went down by 1,5 per cent and in the rest of the country prices went up by 1,6 per cent. Average price per square metre in old blocks of flats was in whole Country EUR 1,831, in Greater Helsinki EUR 2,708 euro and in the rest of country EUR 1,419. From previous year prices went down by 5,0 in whole Country, in Greater Helsinki by 6,7 per cent and in the rest of country by 3,1 per cent. The information is from Statistics Finland's quarterly house price statistics based on data from the Tax Authorities. Preliminary data comprise roughly two-thirds of completed transactions in dwellings in old blocks of flats and in terraced houses.

In Helsinki prices went down by 2,2 per cent. In Espoo-Kauniainen prices went up by 0,9 per cent and in Vantaa by 0,1 per cent. In Greater Helsinki prices of multiple room apartments went down by 2,9 per cent. In Tampere prices went down by 0,8 per cent and in Oulu by 0,1 per cent. In Turku prices went up by 4,9 per cent and in Kuopio by 1,0 per cent. In Lahti prices went up by 2,4 per cent and in Jyväskylä by 0,9 per cent from previous quarter.

The prices of dwellings in new blocks of flats went down in whole country by 1,6 per cent, in Greater Helsinki prices went up by 1,9 per cent and in the rest of country prices went down by 4,0 per cent from previous quarter. In Greater Helsinki average price of square metre was EUR 3,630 and in the rest of the country EUR 2,712.

From the year before the prices of dwellings in new blocks of flats went down in the whole country by an average 4,9 per cent. In Greater Helsinki prices went up by 6,1 per cent and in the rest of Country by 4,0 per cent. The data are based on the price information of the largest building contractors and real estate agents.

## ***2. Prices of terraced houses went down in first quarter***

According to preliminary data prices of old blocks of flats went down by an average 1,6 per cent in whole country, in Greater Helsinki by 3,0 per cent and in the rest of Country 0,8 per cent from previous quarter. Average prices of dwelling in old terraced house was EUR 2,635 in Greater Helsinki and EUR 1,479 in the rest of the Country.

In Helsinki prices went down by 2,6 per cent, in Espoo-Kauniainen by 4,8 per cent and in Vantaa by 1,1 per cent. In Tampere prices went down by 1,1 per cent, in Oulu by 3,2 per cent, in Jyväskylä 0,5 per cent and in Turku by 2,3 per cent. In Kuopio prices went up by 1,7 per cent, in Lahti by 2,7 per cent from previous quarter.

From the year before the prices of dwellings in old terraced houses went down in the whole country by 5,8 per cent. In Greater Helsinki prices went down by 8,1 per cent and in the rest of Country by 1,7 per cent.

The prices of dwellings in new terraced houses went up in the whole Country by 1,6 per cent. In Greater Helsinki prices went down by 2,4 per cent and in the rest of country went up by 2,5 per cent. The average price of dwelling was EUR 2,957 in Greater Helsinki and EUR 2,254 in the rest of Country.

From the year before the prices of dwellings in new terraced house went down in the whole Country by 1,8 per cent. In Greater Helsinki prices went down by 6,1 per cent but in the rest of Country went up by 0,3 per cent.

### 3. The number and propotion of first-housing transactions declined

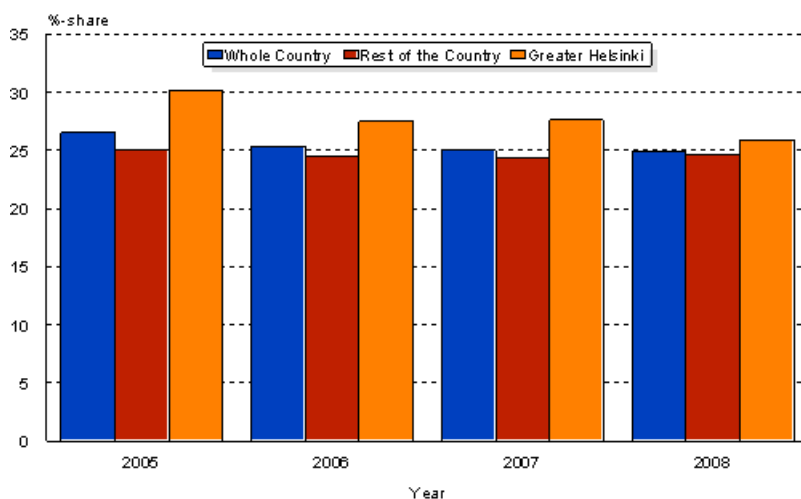
In 2008, 17 409 first-time housing transactions were made, which is lesser than year before. In Greater Helsinki area there were 4, 584 first-time housing transactions and in the rest of the Country 12,907.

First time dwellings accounted for 24,9 per cent of all housing transactions. In the Helsinki area the proportion was 25,9 per cent and in the rest of the Country 24,6 per cent. Compared to the year before the share of first-housing transactions share of all transactions was almost unchanged in the whole country. In Greater Helsinki area the share of first-housing transactions went down by 1,7 per cent compared to year 2007.

The average prices for old non-subsidised first-time housing transactions per square metre was EUR 1,909 in the whole Country. In the Greater Helsinki area the prices per square metre were EUR 2,910 and in the rest of the Country EUR 1,554.

In figure 1 shows the development of the numbers of first home dwellings in relations to all housing transactions from 2005 to 2008.

#### 1. The proportion of first-time housing transactions of all transactions in Finland in 2005–2008



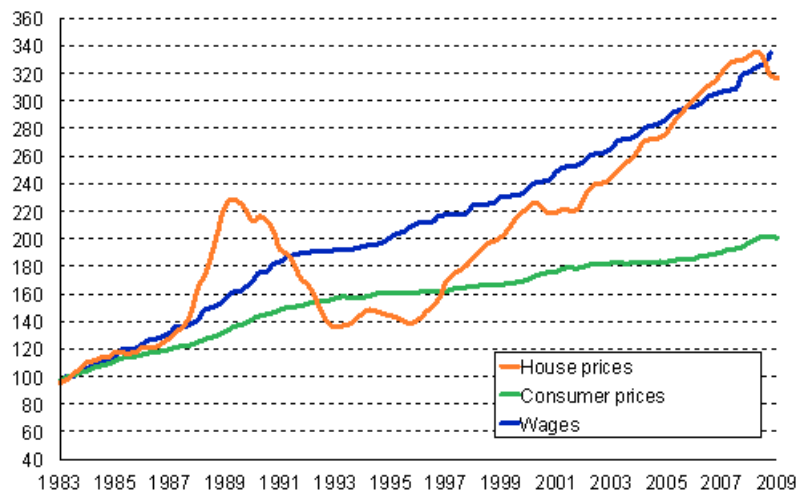
## 4. Changes in House Prices, Wages and Consumer Prices

From 1983 the prices of dwellings in old houses have risen about 320 per cent. In the same time period wages went up almost by the same token and consumer prices 200 per cent. House market "overheated" from 1987 to 1989, when house prices went up extremely 72 per cent. In the same period wages went up 25 per cent. During depression of the begin of 1990s house prices went down nearly 40 per cent. In the same time wages went up by 19 per cent. Buying power to get a dwelling by earned income was largest year 1995. (see figure x).

The house prices began to go up in year 1996. During last year of 1990 the house prices went up nearly 50 per cent. Year 2001 the house prices temporarily went down by nearly one per cent. After that the house prices have risen to mid-2008. From 1996 to 2008 the house prices went up by 121 per cent. At the same time wages went up by 53 per cent and consumer prices 24 per cent.

During this decade buying power to get a dwelling by earned income has declined rapidly. "The price bubble" in house market was created 2006, when, house price curve has risen above wage curve (1983=100). House prices went down during 2008 and "the price bubble" of house market is melted down. Decline of house prices have overhauled house market.

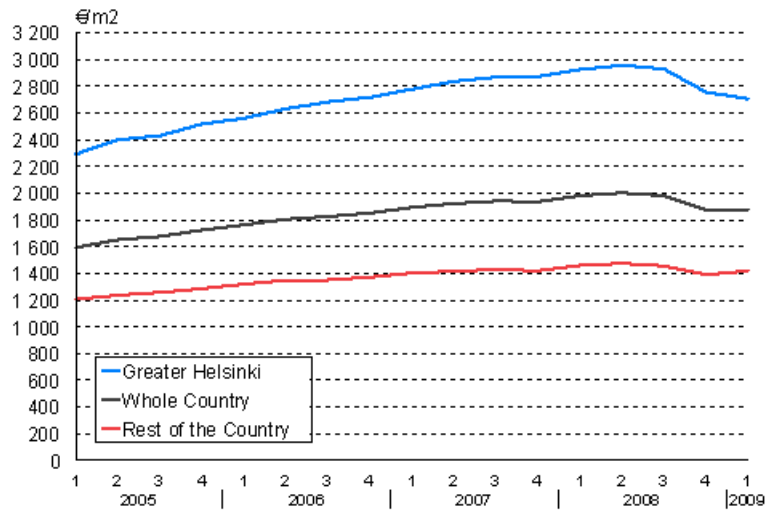
### 2. Changes in House prices, Wages and Consumer prices



Preliminary data for year 2009

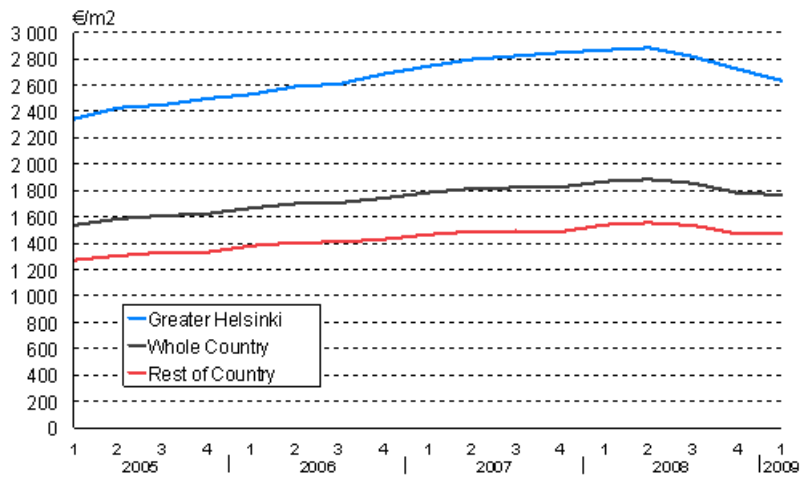
# Appendix figures

## 1. Average prices per square metre of dwellings in old blocks of flats from year 2005



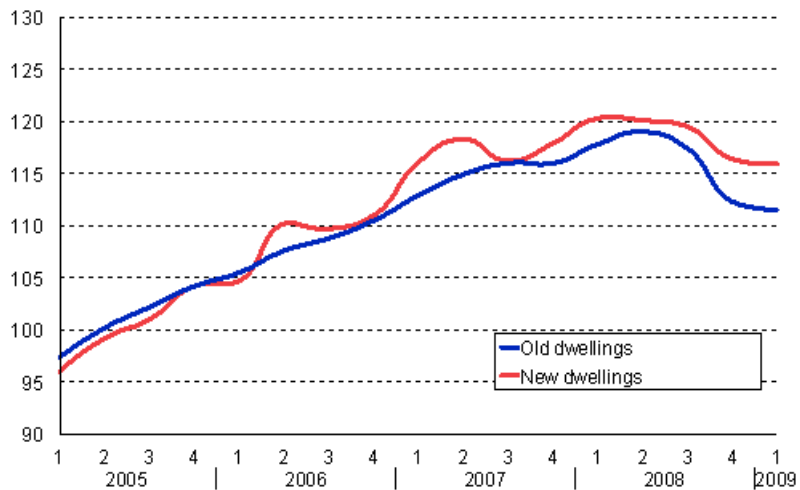
Preliminary information for 2009

## 2. Average prices per square metre of dwellings in old terraced houses from year 2005



Preliminary information for 2009

### 3. Price development of old and new dwellings



\* Preliminary information for 2009



# Quality Description

## 1. Relevance

### 1.1. Information content and purpose of use

Quarterly statistics on housing prices describe the unencumbered prices per square metre of old and new dwellings in housing companies, and year-on-year and quarterly changes in them. The statistics contain data classified by area - old dwellings also by sub-area - type of building and number of rooms from the examined quarter and from a longer period of time. The purpose of the statistics is to provide information about developments on the housing market to all interested parties.

### 1.2. Concepts, classifications and data

The data and the data suppliers

*Old dwellings:* The data of the statistics on dwelling prices are based on the price information gathered by the National Board of Taxes for asset transfer tax calculation purposes. The real estate register of the National Board of Taxes and Statistics Finland's data file on the dwelling stock, which is derived from the Population Register Centre's register of buildings and dwellings, are also exploited as data sources for these statistics.

*New dwellings:* The data of the statistics on dwelling prices are based on information Statistics Finland re-ceive via a private price monitoring service about transactions in new dwellings made by the largest real estate agents and building contractors

Used concepts:

*Dwelling:* A dwelling refers to a room or suite of rooms that is equipped with a kitchen, kitchenette or cooking area and is intended for year-round habitation.

*Price per square metre of dwelling:* The statistics are compiled from data on unencumbered prices, in other words prices inclusive of debt portion. The published price concept is price per square metre (€/m<sup>2</sup>).

*Floor area of dwelling:* The floor area (m<sup>2</sup>) of a dwelling is calculated from the inner surfaces of the walls enclosing it. The floor areas of auxiliary spaces (utility space, walk-in wardrobe, etc.), bathroom, hobby room, fireplace room, sauna in dwelling, washroom and changing room, and rooms used as working space if no hired employees work in them are also included in the floor area of a dwelling. Garage, cellar, sauna space in unoccupied basement, unheated storage space, balcony, porch, veranda, vestibule and unoccupied attic space are not included in the floor area of a dwelling.

*First home:* First home transactions refer to the transactions entitled to first-time homebuyer's exemption from the asset transfer tax ([www.vero.fi](http://www.vero.fi))

*Old/new dwelling:* An old dwelling refers to a dwelling that has not been completed in the examined year or the year before it. Respectively, a new dwelling refers to a dwelling completed in the statistical reference year or the year before it that is sold for the first time.

*Type of building:* The dwellings in the statistics are classified into blocks of flats and terraced houses. The data on terraced houses also cover detached houses whose tenure is based on ownership of housing company shares.

*Type of financing:* Dwellings financed with ARAVA subsidised housing loans and price controlled HITAS dwellings are not included in the non-subsidised dwelling category used in the statistics.

*Number of rooms:* A room is defined as a space with one or more windows that has a floor area of at least seven square metres and mean height of at least two metres. A hall, porch, bed recess or other similar space is not regarded as a room. Kitchen is not included in the number of rooms. Dwellings with at least three rooms are classified into room number category 3+.

*(Nominal) price index:* Describes price change compared to the base year (old dwellings 2005, 2000, 1983 or 1970 and new dwellings 2005) of the index concerned.

*Real price index:* Describes real price change compared to the base year (old dwellings 2005, 2000, 1983 or 1970 and new dwellings 2005) of the index concerned. Real price index is calculated by dividing the point figure of the nominal price index by the point figure of the consumer price index of the corresponding point in time and base year.

*Distribution parameters:*

Q1 (lower quartile) = 25% of the prices per square metre are lower than or equal to the lower quartile.

Med (median) = Middle price of prices per square metre arranged in size order.

Q3 (upper quartile) = 75% of the prices per square metre are lower than or equal to the upper quartile.

Classifications:

*Regional division, old dwellings:* The statistics use diverse area combinations, such as Greater Helsinki Area, satellite municipalities around the Greater Helsinki Area, regions and urban sub-areas. The Greater Helsinki Area comprises Helsinki, Espoo, Vantaa and Kauniainen, which in statistics is included in Espoo. The satellite municipalities are Hyvinkää, Järvenpää, Kerava, Kirkkonummi, Nurmijärvi, Riihimäki, Sipoo, Tuusula and Vihti. Regions are defined according to the decision of the Council of State of 26 February 1998. The urban sub-areas are formed of postal code areas using price level and location as the criteria. Details of the used regional classifications are appended to this publication and can be found on Statistics Finland's website.

*Regional division, new dwellings:* Due to the low number of transactions statistics on the prices of new dwellings are compiled according to less detailed regional division than statistics on the prices of old dwellings. The classification used in the statistics on the prices of new dwellings also takes into consideration the needs of the Consumer Price Index, hence the regional classification uses the division into major regions. The area categories are (1) Whole country, (2) Greater Helsinki Region (same as with old dwellings), (3) Rest of Finland (Whole country exclusive of Greater Helsinki Region), (4) Rest of Uusimaa (exclusive of Greater Helsinki Region), and Itä-Uusimaa and major regions: (5) Southern Finland, (6) Western Finland, (7) Eastern Finland and (8) Northern Finland.

## 2. Methodological description

The calculation method of the indices for old dwelling prices 2000=100 and new dwelling prices 2005=100 combines the classical classification approach and regression analysis (so-called hedonic method). The index aims at answering the question how much more/less a typical dwelling in a housing company costs now compared to before. Monitoring average price changes will not necessarily provide an adequate answer, since average prices change also because the composition of dwellings sold at different times varies. For example, the relative shares of different types of dwellings vary from quarter to quarter. The method aims at distinguishing better than before the true price developments from price effects arising from compositional changes.

Because location, type of building and number of rooms are the most important price determinants, the composition of sold dwellings is first standardised for these variables by classification. The regional classification has been constructed so as to be geographically meaningful and as homogeneous as possible in respect of price levels. In the statistics on old dwelling prices the largest municipalities are divided into several sub-areas, and the smallest municipalities where few transactions take place have been combined. In the statistics on new dwelling prices the regional classification has been formed according to six sensible geographical entities because due to the low number of observations in the data a more detailed classification cannot be used. In respect of both old and new dwellings, the dwellings within an area have been stratified by type of building into dwellings in blocks of flats, and dwellings in terraced and detached houses. Dwellings in blocks of flats have been classified further by number of rooms into dwellings with one room, dwellings with two rooms and dwellings with three or more rooms. Old dwellings in terraced houses have been divided by number of rooms into two categories — dwellings with fewer than, and dwellings with at least three rooms. New dwellings in terraced houses form one category.

The used classification does not necessarily homogenise the data sufficiently. Factors affecting price, such as micro-location, floor area, year of completion, and so on, are not controlled for by the classification.

The available data contains information on these characteristics, which can be used for adjusting the average price of a given category in the comparison period so that the obtained average price adjusted for quality takes into account compositional changes within the category in the base and comparison periods. The following regression equation model are specified:

### Regression model for average square metre

$$(1) \quad \ln(p_{ij}) = \beta_0 + \sum_{i=1}^{L_1} \beta_i A_{ij} + \gamma_1 (\text{pinta\_al } a_{ij}) + \gamma_2 \sqrt{(\text{pinta\_al } a_{ij})} + \delta_1 (2005\text{-valm.wuosi})_{ij} + \delta_2 \sqrt{(2005\text{-valm.wuosi})_{ij}} + \sum_{k=1}^3 \omega_k \text{huone}_{ijk} + \eta_1 RT_{ij} + \eta_2 (RT)_{ij} * (\text{huone3})_{ij} + \varepsilon_{ij}$$

The notation of model is standard

$\ln(p_{ij})$

is the logarithmic price per square metre of dwelling floor area of dwelling i in location j

$A_i$

is the micro area indicator (postal code areas in large urban centres and municipality indicators in combination areas). In model 1 the variable 'huone' indicates the number of rooms, RT indicates terraced house dwelling and (RT)\*(huone3) is the interaction term for a terraced house dwelling with at least three rooms..

The models are estimated using ordinary least squares (OLS) for each location separately. The models were not estimated for each class, because this would have lead to degrees-of-freedom problems. The functional form is standard semi-log and the square roots of dwelling floor area and, in respect of old dwellings, of construction year are included as explanatory variables to capture non-linear price effects. The 'huone' indicators are naturally strongly correlated with dwelling-floor area, but they are included for technical reasons, namely in this way it is guaranteed that the sum of residuals in the base period (year 2000) are zero in all index classes.

Let denote estimates of the model parameters,

$b_0, b_1, \dots, b_{L_1}, g_1, g_2, d_1, d_2, n_1, n_2, n_3, h_1, h_2$

in the index class of i by vector

### Estimator vector of model in class i

$b_0^i$

and the sample characteristics (construction year, size, postal code area indicator) of the dwellings in the base and comparison periods respectively.

### Average price vector for base period

$\bar{x}_0^i$

### Average price vector for comparison period

$\bar{x}_1^i$

Then within each class the quality adjustment due to differences in construction year, dwelling floor area and location according to postal code area can be written as:

### Quality adjustment in index class i

$b_0^i (\bar{x}_0^i - \bar{x}_1^i)$

The quality adjustment works in the following way: If, for example, the average construction year of old dwellings is older in the comparison period than in the base period, the index must be corrected upwards, because otherwise lower prices due to earlier construction year would be wrongly interpreted as price fall. The size of the adjustment depends on the difference in the average construction year of the dwellings and on the estimated construction year coefficients in the regression.

The overall index point-number for the whole country is obtained via aggregated price changes in every index class and price adjustmentst so callede log-Laspeyres formula

### Log-Laspeyres Index Formula

$$(2) \quad \log La_0^1 = \exp\left(\sum_{i=1}^N w_0^i \ln\left(\frac{\bar{P}_1^i}{\bar{P}_0^i}\right)\right) \exp\left(\sum_{j=1}^N w_0^j b_0^j (\bar{x}_0^j - \bar{x}_1^j)\right)$$

In model (2) is N number of index classes,

### Geometric price ratioiin class i

$$\frac{\bar{P}_1^i}{\bar{P}_0^i}$$

and

### The weight in clas i

$$w_0^i$$

Geometric prices are calculated for observations' prices per square metre via the following formula:

### Geometric average prices

$$(3) \quad \bar{P}_j^i = \sqrt[N_{ij}]{\prod_{k=1}^{N_{ij}} P_{jk}^i}$$

The weights for old dwellings are derived as value-shares of the stock of apartments in 2005.

### Calculation of weights

$$(4) \quad w_0^i = \frac{(\overline{ala}_0^i * n_0^i) * \bar{P}_0^i}{\sum_{i=1}^N (\overline{ala}_0^i * n_0^i) * \bar{P}_0^i}$$

,where

### Average dwelling-floor area of the dwellings in class i in year 2005

$$\overline{ala}_0^i$$

and

### Number of dwellings in the class concerned

$$n_0^i$$

and

### **Average price of class concerned in year 2005**

$\bar{P}_0^i$

## **3. Correctness and accuracy of the data**

### 3.1. Reliability of the statistics

The statistics on the prices of old dwellings are based on the asset transfer tax data of the National Board of Taxes, which cover the transactions of all dwellings whose tenure is based on ownership of housing company shares. All transactions of old housing company dwellings are not included in the statistics, because the purchaser is allowed two months to pay the asset transfer tax. Many purchasers pay the tax more quickly than this and in transactions intermediated by real estate agents the tax is paid at the time of transaction.

When the statistics are published they cover approximately two-thirds of all transactions made in the latest statistical reference quarter. Statistics Finland receives the data on the remainder as they arrive at the National Board of Taxes. The quarterly data are updated retrospectively so that the final data for a given year are published with the data for the first quarter of the year following it.

The statistics describe the housing company share market by area relatively reliably. However, the number of included transactions should be taken into consideration. If few transactions have been made, a couple of deviating cases may affect the average price for an area significantly.

The statistics on the prices of new dwellings are based on data obtained from the largest real estate agents and building contractors and is a final when first published.

### 3.2. Accuracy of the statistics

Cases with missing information about transaction price or floor area, or with exceptionally high or low price due to contract within family or error in data entry are not accepted into the statistics. The acceptable ranges of prices per square metre in statistics 2008 and 2009 are: €/m<sup>2</sup> 1,200–9,000 for the Greater Helsinki Area, €/m<sup>2</sup> 800–6,500 for Tampere, Turku, Jyväskylä, Kuopio, Oulu, Vaasa and the satellite municipalities surrounding the Greater Helsinki Area, and €/m<sup>2</sup> 500–5,000 for other areas.

Confidence interval of 95% has been calculated with the bootstrap method for the housing price index of old dwellings. For the whole country, the confidence interval is  $\pm 0.7\%$ , for the Greater Helsinki Area  $\pm 1.4\%$  and for the rest of the country  $\pm 0.8\%$ .

### 3.3. Use of the parameters of the statistics

Because the index takes into account changes in the distribution of year of completion (for old dwellings only), floor area and location of dwellings sold at different points in time, and their effects on prices, the average prices of the statistics vary differently from the price index. This has been done because the price index and the average price are each useful measures for different situations.

*The price index* endeavours to measure as accurately as possible how much more/less an average dwelling in a housing company costs now than it did before. *The average price*, in turn, describes the prevailing price level for sold dwellings without considering whether they are older, newer, larger or smaller than dwellings sold before.

## **4. Timeliness and promptness of published data**

### 4.1. Publication frequency and measurement period of the statistics

Quarterly statistics on housing prices are compiled per quarter and published one month from the end of the examined quarter

### 4.2. Preliminariness of the statistics

When the statistics are published they cover approximately two-thirds of all transactions in the latest statistical reference quarter. Statistics Finland receives the data on the remainder as they arrive at the National Board of Taxes.

The quarterly data are updated retrospectively so that the final data for year t are published with the data for the first quarter of the year following it.

## ***5. Accessibility and transparency of the data***

A latest data release will be published from the statistics on Statistics Finland's website on the publication date of the quarterly statistics on dwelling prices. The entire publication can be ordered as a printed paper version or an electronic pdf version. Data concerning dwelling prices can also be found from Statistics Finland's web pages and database service.

The essential metadata have been described in this document, which is incorporated into the quarterly publication of statistics on dwelling prices. This document is also available on Statistics Finland's web pages.

This statistics covers only dwelling transactions in housing company shares. Especially in the Greater Helsinki Area, there are numerous real estate transactions that are not included in these statistics. Data on real estate transaction prices by municipality are available from the National Board of Survey (Tel.: +358 40 801 1204).

## ***6. Comparability of the statistics***

### ***6.1. Comparability with other data***

When these statistics are compared with data from other producers the source of the basic data should be considered. Statistics Finland's data derive from comprehensive files of the National Board of Taxes, and thus cover exhaustively all completed transactions.

### ***6.2. Comparability over time***

Statistics compiled from the asset transfer tax data of the National Board of Taxes and classified according to these current quarterly statistics are available on the prices of old dwellings starting from the year 1987. Older data are available going back to 1970. The statistics for the 1970 to 1986 period are based on data provided by real estate agents and the used classification is much less detailed than the one used since 1987. For the prices on new dwellings time series have been calculated since 2002.

## ***7. Coherence and consistency***

Statistics Finland published prices statistics of corporation flats and price statistics of real estate prices quarterly. Besides the data published by Statistics Finland, real estate agents, credit institutions and banks also publish information concerning dwelling prices and their development. More on differences between the published data under section 6.1. above.

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Source: Prices of dwellings, Statistics Finland