

# Options for the organisation of rent surveys

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## Summary

Rents constitute a significant share of households' consumption expenditure and hence have a considerable weight in most Consumer Price Indices. In countries using the rental equivalence approach (and rent survey) to estimate the housing costs of owner occupiers, the quality of the rent survey is even more important issue.

Given this importance, there exists astonishingly little research on the design and quality issues of rent surveys and the CPI.

The purpose of this paper is to sketch two basic survey designs for statistics on rents, "dwelling-based" and "household-based" approaches. Pros and cons as well as requirements of auxiliary data (sampling and post-stratification frames) of the two alternative approaches are analysed. Statistics Finland re-design of the rent survey serves as an empirical example.

Paper is organised as follows: In the first section we briefly consider the different statistical designs for rent surveys and their general advantages and disadvantages. Section 2 deals with the Statistics Finland redesign project from the point of view of costs and organisational issues. Section 3 describes the statistical techniques used in the new system of rent statistics.<sup>2</sup> Section 4 concludes.

## 1. Options for rent survey design

### 1.1. Sampling frames

For most consumption segments in the CPI the process to select an elementary product to be priced is rather straightforward: there exist some form of sampling frame for the products and some form of sampling frame for the outlets where the products to be priced will be found. Even if the latter frame would not exist, it is often possible to utilise geographic samples and judgmental selection of outlets based on local price collectors' observations.

As it comes to rent surveys, the situation is often more complex. There may not exist complete register of dwellings which could distinguish whether the dwelling is occupied by the owner or whether the dwelling is being rented out. There may be possibilities to use partial frames, e.g. dwellings rented by institutions or municipalities. If no relevant information on the use of dwellings is available, the alternative way to get information on rents is to use household-based sample survey to obtain the information. As a last resort one could think of using asking prices for available rental dwellings as a proxy for all rental contracts<sup>3</sup>

To summarise, possible sampling frames for rent statistics can be distinguished as follows:

#### **Dwelling-based frames:**

- Complete register over rented dwellings
- Partial frames based on institutional providers of rented dwellings (municipalities et.c.)
- Knowledge of geographic areas where rented dwellings are located

<sup>2</sup> The project was awarded first price in Statistics Finland 2005 internal quality competition.

<sup>3</sup> It can be argued, that the proper concept for a CPI would be just the "available" rents, i.e. current asking prices. In this paper we however the price movement of the whole stock of rented dwellings as a proper target.



- Sample of newspapers or like to obtain asking prices (list prices).

#### **Household-based frames:**

- Complete register of all dwellings (that can be used as a sampling frame for household surveys)
- Complete population register (that can be used as a sampling frame for household/individual surveys)
- Complete population register including information on the form of tenure (authors have never encountered this type of register)
- Register covering part of the population with information on the form of tenure (e.g. register over persons receiving housing allowance)

The cost and quality implications of different sampling frames are rather evident. The optimal way to draw a sample would be to use a complete register of all rented dwellings, stratified and optimised according to the user needs. This would minimise the data collection costs and give full coverage. If partial household-based frames are used, the data collection will be well targeted - only rented dwellings will be surveyed - but the coverage will be limited and serious risk of bias arise. For example, if only institutional (e.g. municipal) rented dwellings are surveyed, the result may be that only subsidised/regulated rents will be covered.

Using only asking prices as a proxy for all existing contracts is not very satisfactory for at least two reasons: For the first, publicly offered rents may cover only a subset of (current) rental markets and, for the second, rental contracts are often long term, fairly rigid contracts and hence the current offered prices are not necessarily a good proxy for the cost of the whole stock of rented dwellings.

For the use of household-based frames the key problem is that such frames seldom have information on the form of tenure. Hence, in order to get information on rents, also the owner occupiers would be surveyed, just to find out that they own their dwelling. Such an approach applied as a stand-alone rent statistics would hardly be economically feasible. However, if there exists household surveys covering other areas as well, the situation may be different, as will be described later on in section 2.

In some cases it might be possible to use information based on payments of housing allowance or some other form of housing-related social benefit for rent statistics. The risk would be that the results are biased with respect to the total markets as the recipients of the subsidies are not necessarily a representative sample of the whole rental markets.

### *1.2. Data collection and correction of non-response*

Basically, for all types of samples there exists the possibility to use mailed questionnaires or in-house interviews for data collection. If population register is used as a frame, there exists a possibility to use telephone interviews<sup>4</sup> instead of in-house interviews.

Non-response is typically higher in postal surveys, especially in cases where the questionnaire has to be targeted to a dwelling with no information on the person living in that dwelling. Using in-house interviews reduces non-response but tends to increase costs. It can also be assumed that non-response is not harmless, i.e. that it distorts the true sample distributions.

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<sup>4</sup> The Finnish labour force survey is carried out this way.



Non-response is always a problem that should be corrected explicitly in the estimation stage of the survey. A straightforward non-response correction would be to use the sampling frame as a post stratification frame and correct for differences in non-response of certain types of dwellings or individuals. A more elaborate version of this would be to use other auxiliary information and calibrate the sample weights to that information<sup>5</sup>. Unfortunately, this type of non-response correction can be applied only if there exists at least some information on the structure of the dwelling stock.

### 1.3. Options for index design and quality adjustment

There are two different options to implement the comparison over time for rent surveys: The first option is to use standard CPI matched model -approach, i.e. follow the rent of the (exactly) same dwellings over time and compile the index based on "rent relatives" of subsequent periods.

The other option is to compile a quality-adjusted (or "mix-adjusted") average price from the (independent) samples of dwellings for each of the periods and compare the results<sup>6</sup>.

From quality adjustment point of view, both approaches are generally acceptable as the set of dwellings compared is held fairly constant by design

## 2. The re-design project of Statistics Finland rent statistics

### 2.1. The old rent statistics

The old system of rent statistics of Statistics Finland was constructed as follows:

#### 1. Quarterly Statistics:

- Aim: to provide sub-indices for the CPI
- Sampling frame: Register over dwellings - rented dwellings (Official registers, administrated by the central authority of population registers in Finland) and register over rented dwellings financed or co-financed with "state housing services loans" (administered by the "State housing loans fund).
- Estimation frame: Combined on the basis of the two sampling frames
- Sample size: 4 000 dwellings each quarter, rotating panel
- Non-response rate: 60 per cent (net sample size about 1 600 each quarter)

#### 2. Annual statistics

- Aim: to serve as a general, official rent statistics (geographic dimension important, some administrative uses as a benchmark in conflicts between tenant and landlord; was also used as a benchmark for the follow-up of the rent regulation) and as a quality check to CPI sub-indices.
- Sampling frame: In addition to the above, total data on the housing allowance recipients (administered by the Finnish social insurance institution)
- Estimation frame. Combine on the basis of the three sampling frames.
- Sample size: 12 000 dwellings (non-subsidised) and the total data on recipients of housing allowance (some 200 000 price observations)
- Non response-rate: 60 per cent, register data no non-response
- Time reference: Cross sectional survey 2nd quarter (sampled households) and approximately beginning of the year (register data)

<sup>5</sup> These are standard methods in survey sampling and estimation and there is no need to deal with them in any detail here. To apply the methods it is advisable to consult a skilled survey statistician.

<sup>6</sup> This is the way house price indices are typically being compiled



There were two basic shortcomings in the old system of rent statistics. The first shortcoming was the cost. The production process of the survey was fairly old-fashioned with lots of manual work in the organisation of postal surveys, reminders to non-respondents et.c. The increasing non-response rate increased the costs as most of the questionnaires were sent out in vain, without no response.

The other shortcoming was the frequency of the survey. The European Union HICP regulations suggest that the data collection for the HICP should be done on a monthly basis unless it can be justified to do it less frequently.

On the other hand, from the general quality point of view<sup>7</sup>, the old system of rent statistics performed what it was designed to perform, produced an annual statistics and quarterly sub-indices for the CPI.

## 2.2. *The re-design of the rent statistics*

In order to streamline the production process and to enable production of a monthly indicator for rents, Statistics Finland launched a project<sup>8</sup> to re-design the rent statistics

The key innovation in the project was to start using an existing sample survey, the monthly LFS, as a platform for collecting information on rents. The Finnish LFS is a rotating household panel with a sample size of approximately 12 000 persons every month. The non-response rate is low, around 9 per cent. Data is collected mainly through CATI<sup>9</sup>-interviews.

To use LFS data collection as a platform for other statistics is of course somewhat controversial. The LFS produces some of the key economic indicators and the quality of its data collection is a critical issue. The main risk considered was that the increased response burden - because of the new questions on rent - would increase the non-response to the LFS.

To avoid increase in non-response the questions on rents were placed into the questionnaire as a separate part after the ordinary LFS modules and respondents are given a possibility to reject the part of questionnaire relating to rents. The risk was tested using a sub-sample of the LFS data and as no indications of increased non-response was found, the project was continued.

In addition to field tests to show the general feasibility of the approach, the integration of the rent survey to the LFS required a number of cost-benefit analyses, administrative negotiations and decisions on the sharing of cost between different departments of Statistics Finland.

The LFS sample covers the whole population without regard the form of tenure. In order to distinguish the owner-occupiers from those tenants, a question on the form of tenure was placed as the last question in the "ordinary" LFS. This screening-question is however posed only to the first "wave" of the LFS panel. For subsequent interviews, the rent questions are targeted only to those respondents that were identified as tenants - about one third of the population - in the first interview.

The part covering rents has 7 - 10 questions relating to rent, other housing related fees and properties of the dwelling. On average, the introduction of the rent-related

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<sup>7</sup> The estimation system in the old survey (detailed stratification and sufficient number of observations) probably corrected the non-response bias fairly well.

<sup>8</sup> The work started in November 2002, data collection was initiated in February 2003, first Monthly indices were used in February 2004. The first re-designed annual statistics, covering the years 2003 and 2004 was released in March 2005.

<sup>9</sup> CATI - Computer Aided Telephone Interview



questions to the LFS increased the interviewing time by (2,5 - to be checked) minutes for those respondents that rent their dwelling.

### 1.3. Costs of the project and production costs of the new and old statistics

The structure of the new system of rent statistics is as follows:

#### 1. Monthly CPI sub-indices:

- Aim: to provide sub-indices for the CPI
- Sampling frame: Central population register (the LFS Sample)
- Estimation frame: Register over dwellings - rented dwellings (Official registers, administrated by the central authority of population registers in Finland)
- Sample size (after non-response): 1500 renters a month, sub-indices compiled as 3-month rolling averages, i.e. approximately 4500 renters each quarter, rotating panel
- Non-response rate: 9 per cent
- Time reference: 3-month rolling average (continuous data collection)

#### 2. Quarterly rent statistics

- Aim: to provide general quarterly rent statistics for monitoring of the rental markets
- Sampling frame: Central population register (the LFS Sample)
- Estimation frame: Register over dwellings - rented dwellings (Official registers, administrated by the central authority of population registers in Finland)
- Sample size (after non-response): approximately 4500 renters each quarter, rotating panel
- Non-response rate: 9 per cent
- Time reference: quarterly average

#### 3. Annual statistics

- Aim: to serve as a general, official rent statistics (geographic dimension important, some administrative uses as a benchmark in conflicts between tenant and landlord; was also used as a benchmark for the follow-up of the rent regulation) and as a quality check to CPI sub-indices.
- Sampling frame: In addition to the above, total data on the housing allowance recipients (administered by the Finnish social insurance institution)
- Estimation frame. Combined on the basis of the central register of the dwellings and register over state-subsidised dwellings
- Sample size: 17 500 renters after non-response (The LFS-based data) and the total data on recipients of housing allowance (some 200 000 price observations)
- Non response-rate: 9 per cent, register data no non-response
- Time reference: The calendar year

Table 1 summarises the labour input used to the production and development of rent statistics 2001 - 2006. About 2,5 FTE - years were invested to the development work. The standard production of the old statistics required in practice 1 FTE-years of work. In addition to the labour costs, mailing and printing of the questionnaire were a considerable costs as well as the fees for the register data used<sup>10</sup>. The output was one annual rent statistics and four CPI sub-indices.

The operating costs of the new statistics is some 55 working days. Mailing and printing costs disappeared and there were some savings related to the more effective use of register data. The new cost element, cost for the interviewing time, is

<sup>10</sup> The register data is derived from other authorities' information systems. Although the data itself is free of charge, the data processing costs and delivery costs that incur to the "owner" of the data are to be borne by Statistics Finland.



considerable but the cost is still some 40 percent less than the mailing and printing costs associated with the old system. The output is 12 CPI sub-indices, 4 quarterly rent statistics and 1 annual rent statistics.

On the whole, the investment on development work was very lucrative. Using Statistics Finland accounting standards the total cost for the operation of the old system was around € 155 000 a year. The new system - that produces essentially more output - costs some € 65 000 a year.

**Table 1: Labour input (working days) on rent statistics and produced rent statistics 2001 - 2006**

Year	Human resources used		Output - published statistics on rents	
	Production	Development	Rent statistics	CPI sub-index releases
2001	195	0	1	4
2002	182	0	1	4
2003	147	129	1	4
2004	49	282	5	12
2005	55	73	5	12
Estimate 2006	55	0	5	12

### 3. OSF Quality Description - Annual and quarterly rent statistics, monthly CPI rent indices

Numbering of headings in this section follows the standard Statistics Finland "Official Statistics Quality Description" - framework. This the information provided to users of rent statistics.

"OSF" stands for "Official Statistics of Finland". It is a label used for all statistics which are being published in Finland<sup>11</sup> as official statistics. "OFS" is also a "quality certificate" in the sense that all OFS statistics have a structured user documentation, good quality assurance systems in their production and dissemination etc.

#### 1. Relevance

##### 1.1. Information content and purpose of use

The statistics on rents describe the annual, quarterly and monthly (three month rolling averages) levels and changes of rents for the rental dwelling stock. The statistics contain data on rents for the reference year classified by area, type of financing, number of rooms and year of construction. The statistics also include information about the development of rents over a longer time span.

The purpose of the statistics on rents is to provide information on trends on the rental markets for all those interested in them.

##### 1.2. Concepts, classifications and data

#### The data and the data suppliers:

The data of the annual statistics on rents are compiled from the interview data collected for the quarterly statistics on rents and from the data in the Social Insurance Institution's Housing Allowance Register. Statistics Finland's data on the dwelling stock, obtained from the Building and Dwelling Register of the Population Register Centre, and data on migration and popu-

<sup>11</sup> Statistics Finland is not the only producer of official statistics in Finland; the "OSF"-label and quality standard may be applied to statistics produced by other agencies insofar the statistics they produce has a more general relevance and fulfils the quality requirements.

lation structure are also exploited in the compilation of these annual statistics. The data concerning the Autonomous Territory of the Åland Islands are compiled by Ålands statistik- och utredningsbyrå, ÅSUB.

The quarterly statistics, as well as monthly three-month rolling averages used in the CPI are based on the interview data collected as a part of the monthly LFS.

### Concepts:

*Rented dwelling:* A rented dwelling refers to a dwelling the tenant occupies on the basis of a tenancy agreement, whereby the tenant pays rent for the right of use of the dwelling and the related amenities. The data published in the statistics concern those tenancies only where the tenant has exclusive tenure over the entire dwelling. The statistics do not include such rented dwellings whose rent for some reason, such as family relationship, is well below the market level, nor do they extend to student dwellings, sheltered accommodation or old people's homes.

*The concept of rent:* In these statistics the concept of rent includes separately payable water and heating charges, but not compensations paid for the use of amenities such as sauna or laundry room. Telephone and electricity charges are also excluded. The published average rents have been calculated per square metre of dwelling per month (€/m<sup>2</sup>/month). The given average rents per square metre are weighted geometric averages per square metre.

*Number of rooms:* The concept of number of rooms excludes kitchen. The room number category of 3h+ refers to dwellings with at least three rooms.

*Type of financing:* A government-subsidised dwelling refers to a dwelling built with a government-subsidised housing loan, whose rent is determined on the cost coverage principle. Most government-subsidised dwellings are owned by local government. Non-subsidised dwellings are other than government-subsidised dwellings.

*New tenancy:* In the annual statistics a new tenancy refers to a tenancy that has started during the statistical reference year. Thus, in the 2004 annual rent statistics new tenancies refer to tenancies started during 2004.

### Distribution parameters:

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

Median = The middle rent of all rents per square metre arranged in size order.

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

### Classifications:

*Regional classification:* The statistics use diverse combinations of geographic areas, such as Greater Helsinki Area, satellite municipalities surrounding the Greater Helsinki Area, major 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 have been combined into the major regions of Southern Finland, Western Finland, Eastern Finland and Northern Finland complying with the NUTS2 regional division of the European Union. 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 annexed to this publication and can be found on Statistics Finland's website.

## 2. Methodological description



In practice, the calculation of indices for rent levels, i.e. indices for average rents per square metre and changes in them, can be distinguished in the calculation of annual rent statistics. Rent level indices are calculated from weighted average rents. Quality adjustment is applied in calculating changes in rents.

### Calculation of average rents per square metre

Average rents of rented dwellings per square metre describe the going rent levels for dwellings of different sizes and types. As the calculation is based on exhaustive register data for the dwellings receiving housing allowance, and on interview data for other dwellings, the observations are weighted with stratum weights.

The calculation takes place in two stages. First, geometric mean rents per square metre are calculated according to the classification categories of the interview sampling frame (by area, number of rooms and type of financing) with the following formula

$$\bar{x}_s = \exp \left( \frac{\sum_{h=1}^H \sum_{j=1}^{n_h} \frac{N_h}{n_h} ala_{hj} \ln(neliövuokra_{hj})}{\sum_{h=1}^H \sum_{j=1}^{n_h} \frac{N_h}{n_h} ala_{hj}} \right),$$

in which

$\bar{x}_s$  = average rent per square metre in category s

H = number of strata in category s

$n_h$  = number of dwellings of stratum h included in the statistics

$N_h$  = number of dwellings of stratum h included in the frame

$N_h/n_h$  = stratum weight

$neliövuokra_{hj}$  = rent of dwelling j of stratum h

$ala_{hj}$  = area of observation j of stratum h in square metres

Average rents for levels beyond the (micro)classification described above are calculated with the formula:

$$\bar{x} = \frac{\sum_{s=1}^S ala_s \bar{x}_s}{\sum_{s=1}^S ala_s},$$

where S is the number of categories and  $ala_s$  is the total area of rented dwellings in a category according to the rental dwelling stock data.

### Index calculation

The intention of the rent index is to describe how much more or less people have to pay, on average, for a rented dwelling of the same quality during the reference period in comparison to the base period. The measurement of trends in housing rents would be easy if dwellings of exactly the same quality were rented during each period, because average rents could then be used direct to measure price development.

However, as the dwellings rented at different points of time are dissimilar, changes in average rents per square metre do not depict pure price trends but are also influenced by the characteristics of rented dwellings. It is not appropriate to compare the rents of dissimilar dwellings direct. The index calculation employs methods aiming to ensure that the reported *price changes* do not reflect structural changes in the stock of rented dwellings.

In the index calculation, price indices are first calculated for relatively small strata of the rental dwelling stock. After this, the value of the index and the percentage changes can be calculated at the desired aggregate level, e.g. the whole country. There are 46 geographical areas and the dwellings within each area are divided into five sections (A-E) according to the data source and rental market segment:

A. Government-subsidised

B. Old non-subsidised, data source interview  
(= tenants receive housing allowance)

C. Old non-subsidised, data source interview  
(= tenants do not receive housing allowance)

D. New non-subsidised, data source Housing Allowance Register (= tenants receive housing allowance)

E. New non-subsidised, data source interview  
(= tenants do not receive housing allowance)

This produces 230 strata, for which price changes are calculated:

- from the same dwellings for government-subsidised (A) and old non-subsidised tenancies receiving housing allowance (B);
- for new non-subsidised tenancies receiving housing allowance (D), changes are calculated by category in detailed classes (postal code area, number of rooms, area, year of construction) and change at the area level is obtained as Laspeyres' chain index;
- changes for the interview data (C and E) are calculated with regression models.

Logarithmic rent per square metre is used as the dependent variable in the regional regression models. Besides the micro-strata, the influence of postal code area is controlled, and the explanatory variables used in the models are area of dwelling and its square root, age of dwelling and its square root, type of building and number of rooms, as well as a dummy variable indicating the time the data relate to.

Price indices for the whole country and other aggregate areas are obtained by aggregating the changes of each stratum with Laspeyres' index formula

$$P_t^{t+1} = \frac{\sum_{h=1}^H w_h^t P_h^{t+1}}{\sum_{h=1}^H w_h^t P_h^t}$$

where

$P_h^t$  = average rent per square metre  $p$  in stratum  $h$  in base period  $t$  (comparison period,  $t+1$ )

$w_h$  = aggregation weight of stratum  $h$ , which is the area of dwellings of the rental dwelling stock in stratum  $h$  in square metres.

The frame of the rental dwelling stock (from which the aforementioned aggregation weights are obtained) that is used for calculating the annual statistics is formed from the Population Register Centre's Building and Dwelling Register by drawing from it all dwellings that are indicated in it as being permanently occupied, are not in institutional use (student dwellings, sheltered accommodation or old people's home), and are occupied by the tenant on the basis of a tenancy agreement. New tenancies in the frame were identified with the Population Register Centre's data on the population structure. Dwellings receiving housing allowance could be identified through the Social Insurance Institution's Housing Allowance Register.

The estimation frame of the 2004 rent statistics contains a total of 743,403 dwellings, of which 315,908 are government-subsidised and 427,495 non-subsidised. The structure of the frame is depicted in Figure 4.

*Figure 4. The estimation frame of the 2004 rent statistics.*



**ARAVAT**  
(Government-subsidised)  
315 908

**VAPAARAOITTEISET**  
(Non-subsidised)  
427 495

<p><b>A</b> Arava, ei saa asumistukea (Gov.-subs., receives no housing allowance) 192 523</p>	<p><b>E</b> Vanhat vapaarahoitteiset vuokrasuhteet, ei saa asumistukea (Old non-subsidised tenancies) 238 369</p>	
<p><b>ASUMISTUKEA SAAVAT</b> (Recipients of housing allowance)</p>		
<p><b>B</b> Arava, saa asumistukea (Gov.-subs., receives housing allowance) 123 385</p>	<p><b>C</b> Vanha vapaarahoitteinen saa asumistukea (Old non-subsidised, receives housing allowance) 62 829</p>	
	<p><b>D</b> Uusi vapaarahoitteinen, saa asumistukea (New non-subsidised, receives housing allowance) 29 593</p>	<p><b>F</b> Uudet vapaarahoitteiset vuokrasuhteet, ei saa asumistukea (New non-subsidised tenancies, receives no housing allowance) 96 704</p>

### 3. Correctness and accuracy of the data

#### 3.1. Reliability of the statistics

The data for the statistics derive from the interviews for the quarterly rent statistics and from the Social Insurance Institution's Housing Allowance Register. The interview data are obtained in connection with the monthly Labour Force Survey and are based on random sampling.

Use of the Housing Allowance Register improves the reliability of the statistics because the register covers exhaustively all dwellings where the tenant receives housing allowance. However, in assessing the reliability of the statistics it should be noted that there are certain problems in linking the Housing Allowance Register to (the Building and Dwelling Register of) the Population Information System, especially in respect of pensioners and students. Moreover, although the Population Information System is exhaustive, all the data in it are not necessarily always up-to-date.

From the point of the reliability of the statistics it is also important to understand that the Housing Allowance Register only contains information about the rents of the dwellings that receive housing allowance, not the entire stock of rented dwellings. The data on housing allowances cover approximately 200,000 dwellings, and the rent level for 530,000 dwellings is estimated from 17,600 items of data obtained with interviews.

With view to the reliability of the statistics, it has been decided that average rents per square metre and dispersion figures will not be published for categories with fewer than 20 observations.

#### 3.2. Control parameters of the statistics

The statistics are compiled using such parameters of rents per square metre with which cases clearly deviating from the market level, such as tenancies based on employment/family relationships, and erroneous data can be eliminated. Parameters for rents per square meter have been set for government-subsidised and non-subsidised dwellings as follows:

Rents exceeding EUR 12 per square metre in the Greater Helsinki Area and EUR 11 per square metre elsewhere in the country have been removed from the data on government-subsidised dwellings. For government-subsidised dwellings, the lowest inclusion limits for rents per square metre were set at EUR 5.5 in the Greater Helsinki Area, EUR 5 in the satellite municipalities and major towns, and EUR 4.5 in the rest of the country.



For non-subsidised dwellings, the upper inclusion limits of rents per square meter are EUR 31 in the Greater Helsinki Area, EUR 23.5 in the satellite municipalities and major towns, EUR 18.5 in other municipalities with a population of over 20,000 and EUR 17 in other municipalities with a population of under 20,000. The lower inclusion limit for the rents of non-subsidised dwellings is first set at EUR 3.5 per square metre, and the lowest 8 per cent of the remaining observations are then removed by category. A further final checking elimination is then done with the rent limits set at EUR 6.5 for the Greater, Helsinki Area, EUR 5.0 for the satellite municipalities and major towns and EUR 4.5 for the rest of the country.

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

The annual rent statistics are published yearly at the turn of February/March and the published data are final. Quarterly Statistics are published approximately 4 weeks after the end of the reference period.

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

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

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

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

Besides annually, Statistics Finland also publishes statistics on rents quarterly. The compilation of the quarterly statistics deviates in certain respects from that of the annual statistics.

The clearest difference between the two sets of statistics is that in addition to interview data, the annual statistics also utilise data from the Housing Allowance Register, which are not used in the quarterly statistics. Thus, the basis of the data for the annual statistics is considerably broader than the one for the quarterly statistics.

Another factor influencing the comparability of the statistics is the used definition of new tenancy. In the annual statistics a new tenancy refers to a tenancy that has started during the year the statistics examine, i.e. in the 2004 statistics new tenancies mean those entered into during the year 2004. In the quarterly statistics, a new tenancy refers to one that has started within less than 12 months from the reference month of the Labour Force Survey. In other words, data obtained from the 1st quarter of 2004 on a tenancy entered into in, e.g. October 2003, is interpreted as relating to a new tenancy in the quarterly statistics, but is regarded as concerning an old tenancy in the annual statistics, i.e. one not entered into during 2004.

In consequence of the above, the figures in the quarterly and annual statistics may deviate slightly. The figures in the annual statistics can be regarded as more accurate.

Due to the larger number of observations, the annual statistics provide more exhaustive data than the quarterly statistics. The annual statistics include certain towns on which data cannot be published quarterly due to low number of observations. In addition, the annual statistics give data classified by year of construction, and more accurate data on new tenancies.

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

Along with the revision of the rent statistics, which took effect from the beginning of 2004, the inquiry and the processing of the statistics were reviewed as follows:

Reference point of time: The old rent statistics described the situation in April of the reference year. The revised rent statistics describe the situation for the whole reference year.

Inquiry data: The interview data obtained in connection with the Labour Force Survey replace the previously used questionnaire inquiry data. The interview data improves the coverage of non-subsidised dwellings. However, due to reasons connected with the Labour Force Survey the sample now concentrates more on larger dwellings and the dispersion of the rents of smaller dwellings is now greater than in the old statistics.



Control parameters: The control parameters used in the validation of data on deviant observations have been altered to some extent. The new control parameters are explained under section 3.2.

Average rents per square metre: In connection with the revision, geometric mean was introduced in place of arithmetic mean in both annual and quarterly rent statistics in the measuring of average rents per square meter. This change is defensible because the geometric mean reduces the influence of extreme observations and it can, therefore, be regarded as a better measure in calculating average rents. According to test calculations with the rent statistics data, depending on the area/category the geometric mean produces approximately two to five per cent lower average rents per square metre than the arithmetic mean. It should be borne in mind that when comparing rent statistics over a longer time period, the statistics prior to 2004 were produced using arithmetic means rather than geometric means.

New tenancies: In the revised annual rent statistics, a new tenancy refers to a tenancy started in the year the statistics examine. In the old rent statistics (because of the time when the inquiry data were collected) a new tenancy referred to a tenancy started within less than 12 months before April of the reference year, e.g. in the 2003 statistics during the period from 1 April 2002 to 31 March 2003.

It should be noted that the year-on-year change in the 2004 rent statistics is not comparable to the old 2003 rent statistics. Tables from the 2003 rent statistics produced with the revised method are obtainable from Statistics Finland.

## 4. *Conclusions*

- to come

## *References*

- to come