EUROPEAN COMMISSION
EUROSTAT

Directorate C: National Accounts, Prices and Key Indicators
Unit C-4: Price statistics. Purchasing Power Parities. Housing statistics

Treatment of actual rentals in the HICP (¹)

I. The recommendations

Whereas (²)

The coverage of the HICP means the set of **all transactions** falling within the scope of household final monetary consumption expenditure. The target samples shall have sufficient elementary aggregates to **represent the diversity of items** within the category.

Applying these rules to actual rentals, they shall cover all types of rental properties for housing, i.e. social rents and market rents, new and existing rental contracts.

Recommendation 1: Stratification

The population should be stratified in accordance with those variables which are most correlated with the rental (price) development. There should at least be stratification according to the regional dimension.

Recommendation 2: Consumption segments

The variables

- type of dwelling,
- size category, and
- type of contract

are appropriate for the definition of consumption segments.

Recommendation 3: Sampling

Sampling of rental contracts for housing can be conducted by tracing dwellings, landlords or households. Random sampling with at least partial annual renewal (re-sampling) should be applied.

(¹) The content of this document corresponds to Annex 1 of the document 'HICP/HPI Recommendations', endorsed by the Directors of Macro-Economic Statistics, in June 2015 (DMES/2015/06-03).

(²) See Commission Regulation No 1749/96, Article 2 (3) and Article 8.

Recommendation 4: Replacements of dwellings

When a dwelling is replaced, the replacement should belong to the same stratum and consumption segment and should be as similar as possible to the replaced dwelling with regard to auxiliary variables.

Recommendation 5: Quality adjustments

Price (rent) changes that occur together with tenancy changes should be reflected in the index. If there is no change in quality, direct comparison should be considered as an A-method.

If a quality adjustment is needed, a hedonic approach is considered an A-method and bridged overlap a B-method. When using bridged overlap, targeted mean imputation is preferred. Supported judgmental quality adjustment can be used as B-method under the condition that it is possible to determine the absolute value for the quality change.

Recommendation 6: Secondary residences

Rentals paid by tenants for secondary residences on the basis of long term contracts should be allocated to COICOP 04.1.2, while rentals paid by tenants for short-stay accommodation in secondary residences should be allocated to COICOP 11.2.0.

Suggested implementation

From January 2016 onwards

II. Explanatory text

1. Introduction

The aim of these recommendations is to specify the treatment of actual rentals for housing in the HICP, in particular concerning sampling and quality adjustment, in order to support the requirements of comparability, reliability and relevance of the legal obligations.

The recommendations also give **practical advice** on the identification of consumption segments, the construction of a representative target sample, quality adjustment methods and appropriate replacement strategies.

The treatment of rentals in the HICP is of particular interest since the rental market in European countries is very heterogeneous and determined by different market conditions, for example with regard to the type of rent and the quality of the dwellings. Diverging approaches how to treat rentals have been developed which should be harmonised in order to foster comparability of the HICP.

2. Definitions

The following definitions apply:

- The **rental contract** for the housing service is defined as the product-offer.
- The target sample should be the set of rental contracts within consumption segments.
- The product is the provided service, specified in the contract.
- The **physical** product is the rented dwelling with associated services.

The following methods for **quality adjustment** of replaced dwellings are used for rentals in HICP:

Direct price comparison

The value of the quality difference between provided services of the replaced (first) and the replacement (second) contract is assessed to be zero.

Bridged overlap

Overall mean imputation: the price change for a replacement contract is assessed to be equal to all non-replaced contracts in the relevant stratum, e.g. consumption segment, elementary product group, elementary aggregate.

Targeted/Class mean imputation: the price change for a replacement contract is assessed to be equal to that of a subset of the observations used in the overall mean imputation.

Hedonics

The value of the quality change between the replaced and the replacement contract is assessed as the value of characteristics by which the two dwellings differ, computed from a regression equation.

<u>Supported judgmental quality adjustment</u>

The value of the quality change between the replaced and the replacement contract is assessed by judgement of some assigned person(s), based on supporting instructions and information.

<u>Repairs and maintenance:</u> cover activities that have to be taken **regularly** in order to **maintain** the dwelling in good working order, and do not change the dwelling's performance, capacity or expected service life ([3]). They can be seen as a countermeasure for wear-and-tear. They do not induce an improvement in quality compared to the former condition of the dwelling.

<u>Modernisation:</u> implies an **increased quality** of the dwelling or the house, covering activities like

- major renovations,
- improvements,
- reconstruction and
- enlargements

of existing dwellings and houses. It is not only a countermeasure for wear-and-tear but leads to an improved quality, e.g. in terms of insulation, new heating system, installation of a new air conditioning system, complete renovation of kitchen or bathroom, etc.

3. Coverage

According to Commission Regulation No 1749/99, Annex II, actual rentals are all rentals paid by tenants, i.e. the rentals the tenant pays to the landlord regardless of any social benefits the tenant receives from public authorities. Rentals normally include payment for the use of the land on which the property stands, the dwelling occupied, the fixtures and fittings for heating, plumbing, lighting, etc., and, in the case of a dwelling let furnished, the furniture.

Rentals do not include charges for water supply (04.4.1), refuse collection (04.4.2) and sewerage collection (04.4.3); co-proprietor charges for caretaking, gardening, stairwell cleaning, heating and lighting, maintenance of lifts and refuse disposal chutes, etc. in multi-occupied buildings (04.4.4); charges for electricity (04.5.1) and gas (04.5.2); charges for heating and hot water supplied by district heating plants (04.5.5).

Actual rentals shall cover **all** types of rental properties for housing, i.e. for **social rents** and **market rents**, **new** and **existing** rental contracts.

In COICOP, actual rentals are defined as follows:

([3])   Commission Regulation 1749/1999 Annex II.

04.1.1 - Actual rentals paid by tenants

04.1.1.0 Actual rentals paid by tenants

Includes:

- rentals actually paid by tenants or subtenants occupying unfurnished or furnished premises as their main residence
- payments by households occupying a room in a hotel or boarding house as their main residence

Excludes:

- *garage rentals (04.1.2.2)*
- *accommodation services of educational establishments and hostels (11.2.0.3)*
- *retirement homes for elderly persons (12.4.0.2)*

04.1.2 - Other actual rentals

04.1.2.1 Actual rentals paid by tenants for secondary residences

Includes:

- rentals actually paid for secondary residences

Excludes:

- *accommodation services of holiday villages and holiday centres (11.2.0.2)*

04.1.2.2 Garage rentals and other rentals paid by tenants

Includes

- payment for the use of a garage to provide parking in connection with the dwelling. The garage does not have to be physically contiguous to the dwelling, nor does it have to be leased from the same landlord.

Excludes:

- *payment for the use of garages or parking spaces not providing parking in connection with the dwelling (07.2.4)*

This shows that actual rentals are meant to cover expenditures for a **housing service**, including a room in a hotel or boarding house if the purpose is to occupy it as a main residence. Excluded are rentals or payments for **accommodation services** in holiday centres and villages. These should be classified in COICOP 11.2.0:

11.2.0   Accommodation services

11.2.0.1 Hotels, motels, inns and similar accommodation services

11.2.0.2 Holiday centres, camping sites, youth hostels and similar accommodation services

11.2.0.3 Accommodation services of other establishments

Excludes:

- *.....*
- *rentals paid by households for a secondary residence for the duration of a holiday (04.1.2)*

A difficult issue is the question where to classify **expenditures on secondary residences for the duration of a holiday**. According to the current explanatory notes of COICOP it should be allocated to 04.1.2, while all other expenditures concerning accommodation services for holiday purposes are allocated to 11.2.0.

This classification issue has been interpreted and treated differently across NSIs. A consequence is that sub-indices are not fully comparable between countries. There is a strong need for a harmonised treatment of actual rentals for secondary residences. Major users of the HICP pointed out that the price development of pure rentals should be measured, i.e. excluding expenditure for holidays.

The following guideline should be followed:

- Rentals actually paid for short-stay accommodation for the duration of a holiday (covering both main and secondary residences) on the basis of a short term contract should be allocated to 11.2.0.
- Rentals actually paid for secondary residences on the basis of a long term contract[4] should be allocated to 04.1.2.

4. Consumption segments

Following Regulation 1334/2007, consumption segments (CS) means a set of transactions relating to product-offers which, on the grounds of common properties, are deemed to serve a common purpose in the sense that they

- are marketed for predominant use in similar situations,
- can largely be described by a common specification, and
- may be considered by consumers as equivalent.

For housing services with the associated rental contracts (product-offers) and dwellings (the physical product), the consumption purpose in the sense of *predominant use in similar situations* cannot be easily distinguished since, in the broadest sense, all dwellings serve the purpose of habitation. However, considering just one segment would clearly not respect the requirement of specified segments since consumers would not regard all dwellings *as equivalent*.

Although a single and uniform proposal for defining CS may not be possible for all Member States, CS based on the type of dwelling (apartment/row house/free-standing house), size category (small, medium and large dwellings) and on whether the rent is a social rent or a market rent are good proxies to determine a common specification of segments which may be considered as equivalent by potential tenants.

The definition of CS determines the replacement cases, for which quality adjustment for differences in dwelling characteristics has to be conducted. The delineation of CS needs to reflect national preferences and circumstances.

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[4] Typically on an annual basis

5. Stratification

Stratification can improve the efficiency of the sample. To reach this aim, strata should be set up within which the development of rental prices is relatively homogeneous while the differences of price development between the strata are relatively large. It is recommended to stratify the sample at least according to the regional dimension, using a sufficiently detailed breakdown of locations, and to include all geographical divisions of the country into the sample. The established strata should be weighted in pursuant of their expenditure share.

5.1 Sample frame

Generally, there are three possible ways to sample contracts of rented dwellings using either:

   a) A list of dwellings (addresses), or

   b) a list of households (tenants), or

   c) a list of landlords.

A **list of dwellings** can in many countries be obtained from the land registry offices or ideally from a dwelling census. The practical advantage of applying a list of dwellings is that the data source often contains information on some of the consumption segments variables such as type of dwelling and size in addition to geographical position, region type or even micro-location. On the other hand, the data base will often not contain the information on whether the residential property is rented or owner-occupied. Hence, the drawn sample would have to be filtered. A further difficulty is that the list might only contain information concerning the buildings and not on the particular dwellings.

A **list of households** might be a practical solution because the sample frame could be obtained from the national register of residents. On the basis of this data, it may be possible to apply random sampling. A further advantage would be that the drawn sample can be expected to be of good quality as the dwellings in the sample are heterogeneous – due to the random selection they would automatically cover different dwelling types, locations etc. The main drawback of using a household list is that the sample frame would only contain some regional information but does normally not provide information on further stratification variables or CS variables which may be important. Furthermore, there might be no information whether the dwelling is rented or owner-occupied. So the drawn sample would have to be filtered before it can be used as target sample for the rental market. In situations where tenants are traced we can expect more complex replacement situations, while sampling by dwellings would imply more temporal stability of the sample.

The approach of following a sample of tenants is permitted (if appropriate quality adjustment methods are used) since it proved to be a very cost effective method in some countries.

To apply a **list of landlords** as a sample frame has the practical advantage that in the case of property rental companies or municipal housing societies, several dwellings can be observed by contacting only one company or institution. A list of such companies may be obtained from a business register, from local commercial registers or simply the "yellow pages" in the

phonebook. However, this approach has several drawbacks; private persons who rent a dwelling to the household sector are neglected; companies who rent buildings or the like to the business sector are not of interest for the HICP compilation; the sample would first have to be carefully defined before assigning the observations to the corresponding consumption segments and strata. In some cases, the list does not even contain information on the region of the dwelling if only the region where the company is located is included. In addition to these practical difficulties, there is the objection that a sample of dwellings which is selected from large property rental companies is of a lower quality since the dwellings of one and the same company might be too homogeneous with respect to rental developments. Thus, the variance of price developments might be too low within the dwellings of one firm.

All in all, the different approaches to sample frames have various advantages and disadvantages and it seems that no "ideal" way can be proposed. The choice of a sample frame depends much on the **national circumstances** and on the **availability of data**.

5.2 Selection of sample units within the selected strata

Having determined the stratification, sample units have to be drawn within the relevant strata.

The precondition of *random sampling* is the availability of a complete list of units within the corresponding stratum ([5]). A practical difficulty is that the list on which the selection of the sample units is based might not include information on all stratification variables. The use of random sampling is in principle the only way of ensuring the absence of potentially disturbing uncontrolled selection bias.

As to *purposive sampling*, the selection of those sample units which are considered to show a typical price development for the particular stratum is based on the judgemental decision of the statistician. The statistician decides whether a unit is included in the sample or not. A precondition for purposive sampling is that the price statistician has a general idea of the rental market within the respective stratum. Those variables could be considered as auxiliary information, which have not been applied for the definition of the consumption segments or for stratification but nevertheless have an impact on the rental price development. The disadvantage of purposive sampling is that the decisions on the unit selection strongly depend on the decision maker. It is therefore not always verifiable whether the decision of including a certain unit is really based on the criterion of representativity, or whether the sample is rather a result of 'convenience sampling', which means to select those units for price observation with the least effort or costs.

Cut-off sampling, for the selection of sampled units within the strata, seems to be less appropriate when the sampling frame is based on

  a) a list of dwellings or
  b) a list of households.

([5]) If the rental market in a country is very small, since a large majority of all households are owner occupiers, it might be very difficult to obtain a complete a list of rented dwellings or tenants or landlords. In this case purposive sampling might be advisable.

Cut-off sampling should only be considered when the sample frame is based on a list of landlords and market conditions are characterised by few and dominating landlords ([6]).

Given that the rental market is fairly stable over time it seems not to be necessary to draw a completely new sample each year. It would be sufficient to refresh the sample following a predefined sampling calendar.

Regardless of the method chosen, an adequate coverage of **new and existing contracts, social rents and rental agreements with private landlords** has to be ensured.

6. Replacement and quality adjustment

The following **replacement approaches** are possible for rentals:

Tracing tenants: in the case of a household (tenant) sample used for the monthly collection of rentals, it is necessary to follow the tenant and to take the new contract referring to the dwelling where the tenant moved in as replacement.

Tracing dwellings: in the case of a dwelling sample, the sampled dwellings should preferably be kept fixed (until a resampling takes place, e.g. in the context of annual reviews) and the contract referring to the new tenant of the dwelling should be taken as replacement.

The need of quality adjustment will in general occur when there is a replacement situation, either when tenant changes in a given dwelling or in the case of replaced dwellings for a given tenant. But quality adjustment can also be an issue during on-going occupation of the dwelling by the same tenant.

In practice, it can be difficult to distinguish between regular repair and maintenance on one hand and modernisation on the other hand. One potential indicator might be that regular repair and maintenance is carried out by tenants, while modernisation is carried out by the owners. Ultimately, this distinction would have to be done by each NSI in face of what the market perceives as modernisation and what is a mere repair of an existent dwelling.

For rents, quality adjustment methods are classified as follows (case-by-case):

a) Quality adjustment during the occupation of dwelling

1) Regular repairs and maintenance serve only to maintain the quality of the dwelling and do not induce an improvement in quality compared to the former condition of the dwelling. Direct comparison should therefore be considered as an A-method. Bridged overlap is classified as a C-method.

([6])   An example would be regulated rentals for student apartments. In some countries this segment is dominated by a few so called 'welfare and service organisations' with a general target to provide accommodation for students. Under such circumstances a cut-off sampling with a threshold of for example 50 per cent would be sufficient for selecting landlords (organisations) in a first step of sampling. The criterion could be the number of square meters offered in total, or the number of dwellings. The underlying assumption is that the price setting mechanism for rentals in this segment is basically the same.

Reasoning: it is assumed that repairs and maintenance are equally distributed over time among the population of dwellings and the quality improvements implied by them are fairly similar – relative to the total quality of the dwelling – among dwellings and over time. Quality improvements via repairs and maintenance and quality decreases via wear-and-tear should then basically cancel out over time. Hence, disregarding the quality decreases via wear-and-tear and also disregarding the quality improvements via repairs and maintenance provides in general an overall balanced result over time.

2) A modernisation (major changes) implies an increased quality of the dwelling. In this case a hedonic approach is considered as an A-method, bridged overlap and supported judgmental quality adjustment as B-methods.
Reasoning: A modernisation will change some of the characteristics of the dwelling and the new rental price should not be compared directly with the previous. Bridged overlap can be justified because the landlord has to determine the rental price of the modernised dwelling in accordance with the level and development in the current market prices (assumed not to be a regulated contract for the dwelling) within the corresponding stratum. The preferred solution when using bridged overlap should be targeted mean imputation. Supported judgmental quality adjustment can be used if it is possible to determine an explicit monetary value for the change in quality.

b) Quality adjustment when tenant changes (dwelling fixed)

1) Price (rental) changes occurring at the same time tenancy changes should be reflected in the index. Where no quality change occurs direct comparison should be considered as an A-method. Bridged overlap is classified as a C-method.
2) Where repairs and maintenance are carried out on the occasion of tenant changes, direct comparison should be considered as an A-method, based on the same reasoning as used for a) 1).
3) Where modernisation is carried out, hedonic approach is considered as an A-method, and bridged overlap and supported judgmental quality adjustment as B-methods. See a) 2) for reasoning.

c) Quality adjustment due to replaced dwelling (tracing dwellings or tenants)

Dwellings have to be replaced due to elementary modernisations, demolition, rededication, non-response or in tracing tenant situations. Hedonic quality adjustment is classified as an A-method, provided that there is sufficient variety in the price-determining characteristics used in the hedonic regression. If applying the matched model approach bridged overlap, preferably using targeted mean imputation, with prices of non-replaced rental contracts of the same stratum is classified as a B-method.