

COMMISSION IMPLEMENTING REGULATION (EU) 2021/1949**of 10 November 2021****on the principles for estimating dwelling services for the purposes of Regulation (EU) 2019/516 of the European Parliament and of the Council on the harmonisation of gross national income at market prices (GNI Regulation) and repealing Commission Decision 95/309/EC, Euratom and Commission Regulation (EC) No 1722/2005****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2019/516 of the European Parliament and of the Council of 19 March 2019 on the harmonisation of gross national income at market prices and repealing Council Directive 89/130/EEC, Euratom and Council Regulation (EC, Euratom) No 1287/2003 (GNI Regulation) ⁽¹⁾, and in particular Article 5(3) thereof,

Whereas:

- (1) The principles for estimating dwelling services are one of the issues defined in Commission Delegated Regulation (EU) 2020/2147 ⁽²⁾ on the list of issues to ensure the reliability, exhaustiveness and comparability of the gross national income at market prices ('GNI') data to be addressed in every verification cycle.
- (2) For data on GNI to be reliable, exhaustive and comparable, the principles for estimating dwelling services need to be clarified.
- (3) GNI aggregates and their components should be comparable across Member States and should comply with the relevant definitions and accounting rules of the European system of accounts 2010 ('ESA 2010') ⁽³⁾.
- (4) Commission Decision 95/309/EC, Euratom ⁽⁴⁾ and Commission Regulation (EC) No 1722/2005 ⁽⁵⁾ should therefore be repealed.
- (5) The measures provided for in this Regulation are in accordance with the opinion of the European Statistical System Committee referred to in Article 8 of Regulation (EU) 2019/516,

HAS ADOPTED THIS REGULATION:

Article 1

For the purposes of Regulation (EU) 2019/516 the principles for estimating dwelling services, as set out in this Regulation, shall apply.

⁽¹⁾ OJ L 91, 29.3.2019, p. 19.⁽²⁾ Commission Delegated Regulation (EU) 2020/2147 of 8 October 2020 supplementing Regulation (EU) 2019/516 of the European Parliament and of the Council by defining the list of issues to be addressed in every verification cycle (OJ L 428, 18.12.2020, p. 9).⁽³⁾ Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p. 1).⁽⁴⁾ Commission Decision 95/309/EC, Euratom of 18 July 1995 specifying the principles for estimating dwelling services for the purpose of implementing Article 1 of Council Directive 89/130/EEC, Euratom on the harmonization of the compilation of gross national product at market prices (OJ L 186, 5.8.1995, p. 59).⁽⁵⁾ Commission Regulation (EC) No 1722/2005 of 20 October 2005 on the principles for estimating dwelling services for the purpose of Council Regulation (EC, Euratom) No 1287/2003 on the harmonisation of gross national income at market prices (OJ L 276, 21.10.2005, p. 5).

Article 2

1. Member States shall apply the stratification method based on actual rentals in order to compile the output of dwelling services.

Member States shall use tabular analyses or statistical techniques to derive pertinent stratification criteria.

2. To compile imputed rentals, Member States shall make use of actual rentals due for the right to use an unfurnished dwelling under contracts relating to privately-owned dwellings.

They may also make use of rentals for furnished dwellings if scaled down so as to exclude payments for the use of the furniture.

Member States with a small private rental sector may exceptionally make use of duly increased public rentals in order to enlarge the basis for imputed rentals.

Article 3

In exceptional cases, and when duly justified, Member States may apply other objective methods, such as the user-cost method.

No justification shall be required for use of the user-cost method in compiling the output of owner-occupied dwellings, provided that the following conditions are met:

- (a) privately rented dwellings must represent less than 10 % of the dwelling stock; and
- (b) if (a) is fulfilled and the share of the total rented dwellings – market and non-market – in the total dwelling stock exceeds 10 %, the disparity between market and other paid rentals must exceed a factor of three.

Article 4

Member States using a base year approach shall extrapolate a given base year figure using appropriate quantity, price and quality indicators.

Article 5

For dwelling services, Member States shall apply the detailed principles in Annex to estimate output, intermediate consumption and transactions with the rest of the world.

Article 6

Decision 95/309/EC, Euratom and Regulation (EC) No 1722/2005 are repealed.

Article 7

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 10 November 2021.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX

Principles to be applied by Member States for the estimation of output, intermediate consumption and transactions with the rest of the world, regarding dwelling services**1. OUTPUT OF DWELLING SERVICES****1.1. Basic methods**

In national accounts, by convention, the output of dwelling services comprises not only the services produced by rented dwellings but also those provided by owner-occupied dwellings. With regard to the valuation of output of dwelling services, the European System of Accounts established with Regulation (EU) No 549/2013 (ESA 2010) stipulates in paragraph 3.75 of Annex A, that 'the output of services of owner-occupied dwellings is valued at the estimated value of rental ⁽¹⁾ that a tenant would pay for the same accommodation, taking into account factors such as location, neighbourhood amenities, etc. as well as the size and quality of the dwelling itself. In principle, several methods are available for estimating the value of services produced by owner-occupied dwellings:

- the stratification method based on actual rentals, which combines information on the housing stock, broken down by various strata, with information on actual rentals paid in each stratum,
- the user-cost method, where separate estimates are made of intermediate consumption, consumption of fixed capital, other taxes less subsidies on production and net operating surplus. The output of dwelling services is the sum of these components,
- the self-assessment method, where owner-occupiers are asked to estimate a potential rental for their property,
- administrative assessment methods, where a potential rental is determined by third parties, e.g. by government for fiscal purposes.

The stratification method based on actual rentals is the preferred method. This method can also be used for estimating the value of all actual rentals from a sample of actual rentals and for estimating the value of dwelling services from dwellings let at a zero or low rental (see Section 1.4.1 for detail).

The user-cost method should be applied only under certain conditions and only for those strata of the housing stock where actual rentals are missing or statistically unreliable.

The self-assessment method should not be used due to a largely subjective influence on the estimate which leads to substantial uncertainties in the results.

Administrative assessment methods, especially when related to taxation, may produce biased results. However, sometimes results from objective assessment methods may be available for some strata. It is acceptable to use the results when the objectivity of the method and the comparability of the results can be demonstrated.

The stratification method uses information about actual rentals from rented dwellings to obtain an estimate of the rental value of the stock of dwellings. This may be interpreted as a grossing-up procedure based on a price times quantity approach. A stratification of the housing stock is required to obtain a reliable estimate and to include relative price differences properly. Subsequently, the average actual rental per stratum is applied to all dwellings in that particular stratum. If the available information is derived from sample surveys, this grossing-up relates to both a part of the rented and all owner-occupied dwellings. The detailed procedure to determine a rental per stratum is usually carried out for a base year and is then extrapolated to the current years.

The rental to be applied to owner-occupied dwellings in the stratification method is defined as the private market rental due for the right to use an unfurnished dwelling. The rentals for unfurnished dwellings from all private market contracts should be used to determine imputed rentals. Private market rentals that are at a low level due to government regulation should be included.

⁽¹⁾ For consistency with ESA 2010 the term 'rental' is used throughout this text.

If the information source is the tenant, it may be necessary to correct the observed rental by adding any specific rental allowance, which is paid directly to the landlord. If the sample size for the observed rentals as defined above is not large enough, also observed rentals for furnished dwellings may be used for imputation purposes, provided they are adjusted for the furniture element. Exceptionally, also increased rentals for public-owned dwellings may be used. Low rentals for dwellings let to relatives or to employees should not be used (see Sections 1.2.3 and 1.4.1 for details).

The stratification method may be used also for grossing up to all rented dwellings. The average rental for imputation as described above may not be suitable for some segments of the rental market. For example, scaled-down rentals for furnished dwellings or increased public rentals may not be appropriate for the respective actually rented dwellings. Especially, in the case of the actually rented dwellings that are furnished, the furniture cost is in fact part of the rental and it should be included in the calculations for the output. Separate strata for actually rented furnished or social dwellings combined with appropriate average rentals can overcome this problem.

In principle, the rental should exclude charges for heating, water, electricity, etc. Where the data sources do not allow this, coherence between the rentals and intermediate consumption must be ensured (see Section 2 for details).

Where for certain strata of owner-occupied dwellings a representative actual rental is missing, this can be overcome in most cases by applying extrapolation or regression techniques.

An alternative to the standard stratification method which relies on extrapolating average rentals per stratum is the use of hedonic regression methods. Briefly, such methods use the sample data for rented dwellings to determine a price of each dwelling characteristic (size, location, presence of a balcony, etc.). Output is obtained by multiplying each characteristic of (a representative sample of) the dwelling stock with the hedonic price of this characteristic. Regression methods permit an enlarged number of variables to be taken into account and can be particularly effective when for some strata observed rentals are missing.

Obviously this does not solve the problem in the extreme case of all dwellings being owner-occupied or in the absence of a developed rental market. As an objective assessment for such cases the user-cost method should be applied. The user-cost method should only be applied to owner-occupied dwellings.

Details of the user-cost method

The user-cost method should only be applied when the stratification method based on actual rentals cannot be used because the rental market is unrepresentative.

By convention, this is considered to be the case when the following conditions are met: (1) the volume measure (number of dwellings or square meters of dwellings) of privately rented dwellings represents less than 10 % of the total volume measure (number of dwellings or square meters of dwellings) of dwellings; and (2) if (1) is fulfilled and the share of the total rented dwellings – market and non-market – in the total dwelling stock exceeds 10 %, the disparity between market and other paid rentals exceeds a factor of three. Even when both conditions apply, a Member State may still choose to use the stratification method provided that the results are of sufficient quality. When the conditions are not met, the stratification method should be used unless it can be demonstrated that no representative market rentals are available for significant parts of the dwelling stock and that the user-cost method produces more comparable results. If justified, the user-cost method can be applied for all or parts of the dwellings stock. When deciding on the split of the dwelling stock into the parts for which the user-cost method or the stratification method is applied, factors such as data limitations and the country specific situation should also be taken into account.

Under the user-cost method, the output of dwelling services is the sum of intermediate consumption, consumption of fixed capital (CFC), other taxes less subsidies on production and net operating surplus (NOS). For owner-occupied dwellings, no labour input is recorded for work done by the owners ⁽²⁾. Experience suggests that CFC and NOS are the two largest items, each representing 30 to 40 % of output.

⁽²⁾ It is conceptually possible that owner-occupiers, individually or collectively, employ housekeepers without involving other statistical units such as housing corporations or management service companies. Where this situation occurs, output according to the user-cost method should include an allowance for compensation of employees.

CFC should be calculated based on a perpetual inventory model (PIM) or other approved methods. A separate estimate for the owner-occupied residential buildings should be available.

The net operating surplus should be measured by applying a constant real annual rate of return of 2,5 % to the net value of the stock of owner-occupied dwellings at current prices (replacement costs). The real rate of return of 2,5 % is applied to the value of the stock at current prices since the increase in current value of dwellings is already taken account of in the PIM. The same rate of return should be applied to the value of the land at current prices on which the owner-occupied dwellings are located.

The value of land at current prices may be difficult to observe annually. Ratios of land value to the value of buildings in different strata may be derived from an analysis of the composition of the costs of new houses and associated land.

Principle 1:

To compile the output of dwelling services Member States shall apply the stratification method based on actual rentals, either by direct extrapolation or by means of econometric regression. In respect of owner-occupied dwellings, this implies the use of actual rentals for similar rented dwellings. In the justified and exceptional case where actual rentals are missing or statistically unreliable, other objective methods, like the user-cost method, may be employed. No additional justification is required for compiling the output of owner-occupied dwellings with the user-cost method provided that two conditions are met: (1) privately rented dwellings represent less than 10 % of the dwelling stock; and (2) if (1) is fulfilled and the share of the total rented dwellings – market and non-market – in the total dwelling stock exceeds 10 %, the disparity between market and other paid rentals exceeds a factor of three.

1.2. Stratification of the housing stock

1.2.1. Factors affecting the rental level

A first set of variables determining the level of rentals concern the characteristics of the dwelling and the building. To start with, the size of a dwelling will be important, both in terms to the area and the number of rooms. The bigger the dwelling, the higher will be the rental. At the same time, the rental per square metre tends to fall with the size of a dwelling. However, for some categories of dwellings (e.g. flats in capital cities) there may be a U-shaped relation between the price per square metre and the size of the dwelling. Another important factor will concern the amenities of a dwelling. These may cover variables like the existence of a bathroom, a balcony/terrace, special flooring or wall covering, an open fire, central heating, air-conditioning, special glazing and other noise or thermal insulation measures; the layout of the dwelling is also relevant. With regard to the building, certain facilities may have an influence like a garage, a lift, a swimming-pool, a (roof-) garden or the position of a dwelling within the building. The type of the building (detached, semi-detached house, flat), the architecture, the age, or the number of dwellings in a building may also affect the rental.

A second set of variables relate to environmental characteristics. A well-known factor is the rental difference between a comparable dwelling in a city and a remote location. The distance to an economic centre or the form of the landscape (flat land, mountainous) may not be negligible factors. In addition, neighbourhood factors like the view, surrounding green areas, transport facilities and access, shops and schools or the reputation and security of a district tend to have an influence on the actual rental.

Another set of variables may be summarised as socio-economic factors. For instance, in most Member States rentals are influenced by general government regulations like rental restrictions or subsidies. Further, the age of the tenancy agreement, the type of contract (temporary, permanent), the number of inhabitants per dwelling (flat-sharing community), the type of owner (government, housing association, private, employer) or the rental policy of the landlord may also affect the rental.

Obviously, several additional variables may have an influence on rentals. But to collect all the abovementioned factors could lead to overburdened questionnaires. Therefore the use of capital values for stratification purposes may be considered. The rationale behind the use of the capital value of a dwelling is that it reflects all its important characteristics. The capital value can thus be considered as an implicit stratification factor. Using the ratio of the capital value to actual rental may be regarded as a feasible approach, especially in those Member States where the rented dwellings represent a minor part of the housing stock. Provided the ratio is stable, such a method would enable the rental value to be determined for those dwellings which only feature in the owner-occupied sector. In

addition, capital values do not exclude the use of 'physical' stratification criteria; they may be combined. In this situation, capital values are assumed to reflect the missing 'physical' stratification criteria. In any case, capital values to be used in the rentals calculation have to be based on an objective assessment established for an up-to-date reference year.

In practice the stratification differs from one Member State to another in respect of both the number of strata and the precise criteria used to define them. Although at first sight this may cause some concern, it should be stressed that certain basic criteria, like the size and the (geographical) location of a dwelling are used almost everywhere. Moreover, the aptness of other features will vary between Member States and Member States themselves are in the best position to determine significant criteria.

Principle 2:

For stratification purposes, Member States shall use important features of the dwellings. These may relate to the characteristics of the dwelling and the building, to environmental characteristics of the dwelling or to socio-economic factors. In addition, the use of up-to-date capital values is acceptable for stratification purposes, if these are based on an objective assessment.

1.2.2. Selection of stratification criteria

Given the various characteristics affecting the rental of a dwelling, the first task is to investigate those variables having a significant impact. One way of detecting significant variables is to produce a tabular analysis of the statistical information available. To obtain an objective measure of assessment, the variance of the actual rentals within a stratum would seem to be useful. This would create an incentive for possible improvements to the stratification by choosing strata in order to minimise the within-stratum variance. It is therefore recommended that the variance per stratum is calculated at least in those cases where the stratification affects the level of both actual and imputed rentals.

A more sophisticated approach is offered by advanced statistical techniques like (multiple) regression analysis. Such a technique allows the influence of individual variables to be assessed, so that the variation in rentals can be assigned to certain characteristics. Briefly, the explanatory power of a variable can be quantified via the correlation coefficient. As a by-product, it enables the characteristics to be ranked according to their importance. This helps to determine where to stratify in greater detail. Combining the most important variables, using multiple regression techniques, shows their overall explanatory power. The use of advanced statistical techniques to select important variables is considered to be an efficient way of stratifying the housing stock. In addition, regression analysis can be used directly for estimating the rentals, e.g. in the form of hedonic models. The technique is also a useful tool for estimating the average rental for strata where there are no corresponding observations in the rented sector (empty strata).

A further advantage of selecting stratification criteria on the basis of an advanced statistical technique is that it avoids the need to prescribe uniform criteria for all Member States. To obtain a comparable result, it is sufficient to establish a ranking of the most important criteria in each Member States and to stipulate the required overall level of explanatory power. Obviously, such a regression analysis depends largely on the available statistical information. However, even in a situation of restricted statistical information, this could be an incentive for future improvements.

Given that the information about the different variables affecting rentals mainly depends on the development of basic statistics, the possibility of using advanced statistical techniques may be restricted at present. Therefore a standard method is recommended, i.e. Member States shall apply all significant criteria as derived from tabular analyses. As a minimum, the size, the location and at least one other important feature of a dwelling have to be used to stratify the housing stock; this stratification should produce a minimum of 30 cells. The breakdown of the housing stock has to be meaningful and representative of the total stock of dwellings. An advanced statistical technique may be used to determine the important explanatory variable(s) for selecting the strata.

In practice, however, a Member State may prefer to use fewer variables, or variables other than those prescribed by the standard method. This is acceptable, as long as a (multiple) regression analysis proves an acceptable level of explanatory power. To guarantee comparable results, a correlation coefficient of at least 70 % is recommended as a threshold. This threshold value would be acceptable in the context of a large sample, with zero and cheap rentals as well as outliers having been removed.

Principle 3:

Member States shall use tabular analyses or statistical techniques to derive significant stratification criteria. As a minimum, the size, the location and at least one other important feature of a dwelling have to be used. A minimum of 30 cells are to be produced and at least three size classes and two types of location shall be distinguished. The use of fewer or other variables is acceptable if it has been proved previously that the (multiple) correlation coefficient reaches 70 %.

1.2.3. Actual and imputed rentals

Imputed rentals are determined based on observed actual rentals. For imputation purposes, the rental is defined as the price due for the right to use an unfurnished dwelling. In order to meet this definition, observed rentals may have to be adjusted.

Charges for heating, water, electricity, etc. should be excluded from the rentals, although it may sometimes be difficult to separate them out in practice. To be in line with the valuation rules of the ESA 2010, the output of dwelling services should be at basic prices.

With regard to observed rentals, certain public supports are probably important. For instance, a specific household as a consumer is entitled to a general government transfer (e.g. housing benefit) but which, for administrative reasons, is paid directly to the landlord. Depending on the information source, the observed rental may differ. If the information source is the tenant, it may be necessary to correct the observed rental by adding back any specific rental allowance.

In addition, the use of actual rentals for imputation purposes requires the clarification of several fundamental questions having an impact on the harmonisation of the data. The first point relates to the question of whether use should be made of all actual rentals or only those from new contracts, for the imputation procedure. Depending on the purpose, different theoretical arguments can be put forward supporting actual rentals paid according to new contracts, contracts signed in the construction year or 'average' contracts. Applying the general rule, i.e. to use rentals of similar dwellings, it does not seem acceptable to limit the basis of imputation to rentals from new contracts. Given that 'average' rentals are used for the rented sector, the same should apply for owner-occupied dwellings. In addition, a different solution would probably pose great difficulties in many Member States when applying the stratification method. Briefly, the conclusion is that the average actual rentals from all contracts should be used to calculate imputed rentals. Consequently, private market rentals that are at a low level due to government regulation should also be included when calculating the average rentals.

The second question concerns the problem as to whether rentals of public-owned dwellings can be used for imputation purposes. Given that owner-occupied dwellings are mostly privately owned, in principle, only actual rentals from the private sector should be used for imputation purposes. However, if not enough observations of actual rentals of privately-owned dwellings are available to constitute a sufficient basis for the imputation, exceptionally, rentals of public-owned dwellings may be used, provided they are appropriately increased to serve as proxies for private market rentals.

A further question relates to the use of rentals from furnished dwellings to enlarge the basis for imputed rentals. In principle, the basis for imputing a rental value for owner-occupied dwellings is unfurnished rentals. Therefore, rentals for furnished dwellings cannot be used directly. In order to avoid imputing the wrong level of rental, they should be scaled down to exclude the payment for the use of the furniture.

Principle 4:

For imputation purposes, the rental shall be understood as the rental due for the right to use an unfurnished dwelling. If the information source is the tenant, it may therefore be necessary to correct the observed rental by adding back any specific rental allowance, which for administrative reasons is paid directly to the landlord. To compile imputed rentals, actual rentals from all contracts shall be exploited relating to privately-owned unfurnished dwellings. If necessary for statistical reasons, rentals of public-owned dwellings may, exceptionally, be used, provided they are appropriately increased to serve as proxies for private market rentals. Similarly, rentals from furnished dwellings may be included in the imputation basis after deduction of the rental differential between furnished and unfurnished dwellings.

1.3. Sources for the base year estimate and methods of extrapolation

1.3.1. *Housing stock*

An essential element of the calculation according to the stratification method is the information on the stock of dwellings. This information serves as a reference universe for extrapolation procedures. In general terms, the housing stock consists of all buildings or parts thereof which are used as dwellings. More details are given in the section on special problems. The major sources used to establish such a housing stock are housing censuses, administrative building registers or population censuses. The base year figure is then updated to arrive at the current year estimate.

With regard to the base year housing stock, housing censuses seem to be the least problematic and the most complete, especially when carried out together with a population census. Administrative building registers depend largely on legal procedures, which may cause uncertainties, for instance, about whether extensions, improvements, conversions and demolitions of dwellings are recorded properly. Using the information provided by households in a population census as the basis of the housing stock may cause problems because the results tend to underestimate second homes which are not occupied at the census date.

Principle 5:

For the compilation of the base year housing stock, Member States shall exploit either a housing census or a population census or an administrative building register as an initial basis. Since a housing census usually provides the highest degree of completeness, the use of administrative building registers and population censuses requires intensive and thorough checks to obtain exhaustiveness.

1.3.2. *Actual rentals*

The second fundamental element for the calculation of the output of dwelling services, according to the stratification method, concerns the actual rentals paid in the rented sector. Information on actual rentals in the base year may be derived from a census (e.g. population census) or from a sample survey such as a household budget survey or a specific rental survey. In the first case, actual rentals are probably covered in total and the calculations only have an impact on the level of imputed rentals. In the case of sample surveys, the calculations affect the level of both actual and imputed rentals. Obviously a census gives a broad basis for reliable information. But household budget surveys are normally also considered as fairly reliable, especially with regard to essential goods. However, differential non-response is known to be a general problem with this type of survey. If housing is considered as more of a luxury than as an essential item, this problem would have an undesirable impact on the results of the calculation, and should be offset. Another problem of a household budget survey, at least in some Member States, concerns its small sample size that may restrict the possibility of stratifying the rentals. In any case, available supplementary sources should be exploited as far as possible. This may, for instance, be the case in Member States where a high proportion of housing is under public control and housing agencies have to present accounts. Further, as an on-going task to improve the results, alternative sources, like specialised rental surveys, should be investigated.

Principle 6:

Member States shall exploit the broadest and most reliable sources to derive actual rentals per stratum, for example a population census or a household survey. Alternative sources should be assessed to improve the reliability and exhaustiveness, and particularly the stratification.

1.3.3. *Extrapolation of base year results*

Only few Member States have the annual information needed to carry out a full recalculation of the output of owner-occupied dwellings each year afresh. In most Member States the results for a given year are taken as the benchmark and subsequently updated to estimate the current year figure by means of indicators. The update may be made by applying a combined indicator to the (total) base year output, or by separately extrapolating the housing stock and the rental per stratum. Although similar results could be expected in general, structural shifts, e.g. in the relationship between rented and owner-occupied dwellings, may cause differences. In addition, a separate calculation would permit plausibility checks.

With regard to the indicators used, the quantity index is mostly derived from the output of the construction industry. The price indicator, on the other hand, is often based on the price index of rentals paid from the consumer price index. This may cause distortions in those cases where the assumption that imputed rentals follow the movement of the total is not justified, for instance, due to public rental controls. For the extrapolation of imputed rentals, it therefore seems preferable to use, as in the base year, a price index reflecting the movement of privately rented dwellings. Further, attention has to be drawn to the fact that price indices will normally exclude price increases due to quality changes. The price indices therefore have to be supplemented by a quality indicator reflecting improvements.

Finally it seems useful to minimise the impact of structural changes on the results by restricting the extrapolation period. Taking account in this respect of the periodicity of the relevant basic statistics, it seems appropriate to carry out a benchmarking of the housing stock every 10 years, i.e., the normal interval for population censuses. In addition, the benchmarking of the price element (rental per stratum) should be carried out at least every five years, i.e., the usual periodicity for household budget surveys.

Principle 7:

If it is not possible to carry out complete re-estimation of the output of dwelling services annually, Member States may extrapolate a given base year figure using appropriate quantity, price and quality indicators. The extrapolation of the housing stock and the average rental shall be carried out separately for each stratum. The extrapolation procedure shall distinguish between the calculations for actual and for imputed rentals. If necessary, the number of strata used for extrapolation may be less than that used for the base year calculation. To extrapolate the imputed rental for owner-occupied dwellings, in general, a price index reflecting private rentals shall be applied. In any case, the benchmarking of the housing stock should not exceed 10 years and that of the price element should not exceed five years, or similar quality should be achieved by appropriate other methods.

1.4. Special problems

1.4.1. *Rental-free and cheap dwellings*

When collecting data on actual rentals, sometimes zero or very low values will be observed. In the case of rental-free dwellings this leads to the strange situation that the dwelling service is actually provided but without a (visible) payment. It seems appropriate in such cases to adopt the solution that the observed actual zero rental be corrected. An analogous solution would appear logical for cheap dwellings.

Apart from interventions by general government, there are other reasons why rental-free or cheap dwellings may be observed. One example is an employee occupying an employer-owned dwelling at a reduced or zero rental. This may concern all kinds of employees, including housekeepers or guardians. In this case the actual rental has to be corrected and the difference between the actual and comparable rental will be treated as remuneration in kind (see paragraphs 4.04 to 4.06 of Annex A to ESA 2010). Another possibility is that dwellings are let at a zero or very low rental to relatives or friends. In this case the correction may be obtained by simply reclassifying those dwellings from the rented to the owner-occupied sector. Further, a similar correction seems appropriate in the case of lump sum payments by tenants, i.e., where the tenant makes a pre-payment of the rental for a longer than normal period.

Principle 8:

The actual rental observed in the case of rental-free and cheap dwellings shall be corrected to include the full dwelling service. Neither zero rentals nor cheap rentals shall be used to calculate imputed rentals, on an uncorrected basis. Therefore, for calculating both the actual and imputed rentals, corrections should be made in order to ensure that the value of output reflects the full dwelling service provided.

1.4.2. *Holiday homes*

Holiday homes cover all kinds of leisure-time dwellings like the nearby weekend-house which is used for short periods many times a year or the more distant resort-home which is used for longer periods but only few times a year. At first sight the case of rented holiday homes seems no problem, since the actual rental paid is taken as a measure for output. However, if the actual rentals collected are on a monthly basis, the extrapolation to the yearly total may lead to over-estimates if no supplementary information on the average occupation time is included.

To calculate an imputed rental for owner-occupied holiday homes, the most logical approach is to stratify these properties and to apply the appropriate average annual rental for actually rented similar accommodation. The annual rental implicitly reflects the average occupation time. In the case of difficulties, a substitute method may be applied, i.e., to collect information on holiday homes in one stratum and to apply the average annual rental for actually rented holiday homes to the owner-occupied ones. Thirdly, it is acceptable to use the full annual rental for ordinary dwellings, in the same stratum of location, where holiday homes account for a very minor part of the housing stock or where they cannot be separated from other dwellings. Even in the case of resort homes these procedures seem reasonable when taking into account that they are always available to the owner and will also be used free of charge by his or her friends or relatives.

In exceptional cases of missing or statistically unreliable actual rentals for certain strata of holiday homes, other objective methods, like the user-cost method, may be employed. In the cases where the user-cost method is entirely used as the only feasible method for this dwelling type, a justified assumption on the average occupation time has to be applied in order to ensure comparability, unless it can be considered that the holiday homes are always available to the owner throughout the year. In the case where an assumption on the average occupation time is justified, attention has to be drawn to the need of ensuring plausible results in the sense that all the costs are covered by the output under the user-cost method. This can be achieved by making an adjustment for reflecting the average occupation time only to the net operating surplus.

Principle 9:

Holiday homes cover all kinds of leisure-time dwellings like the nearby weekend-house or the more distant resort-home. To estimate the output of holiday homes the annual average rentals of similar facilities shall preferably be used. The annual rental implicitly reflects the average occupation time. Although stratification would seem desirable, holiday homes may be grouped in one stratum. If holiday homes account for a very minor part of the housing stock, the full annual rental of ordinary dwellings, in the same stratum of location, may be used. In the justified exceptional case of missing or statistically unreliable actual rentals for certain strata of holiday homes, other objective methods, like the user-cost method, may be employed.

1.4.3. Time-sharing accommodation

In the case of time-share, a real estate agent sells the right to stay for a fixed period each year in a certain dwelling located in a tourist area and takes care of the administration of this property. The right is guaranteed by a certificate, which is issued after the initial payment. This certificate may be traded at the current price. Periodic payments are further due to cover administrative costs.

From this description it follows that the initial payment should be treated as an investment since the certificate issued is similar to a share. This is supported by the fact that at least in one Member State's law the purchaser acquires a real right. Thus it would seem useful to include the initial payment under intangible assets in the national accounts. Further, it would seem logical to consider the rental-free accommodation service as a dividend in kind paid by the real estate agent.

The fundamental problem is that a service is actually provided by the time-share accommodation which is not included in the output of the economy. Logically this requires a correction. To start with, the proposal to accept the periodic payment as a proxy implicitly means that no correction is made for the accommodation service, since the periodic payment covers a different service, namely management costs. Another theoretical possibility would be to consider the initial payment as a prepayment of the service provided and to distribute it over the relevant periods of occupation. Apart from the statistical problems of putting this model into practice, there seems to be a contradiction in legal terms since the implicit interpretation is a purchase of a service and not the acquisition of an asset.

A further possibility consists of deriving a proxy from annual actual rentals for similar (self-catering) accommodation facilities. This solution is supported by the fact that time-share accommodations are located in tourist areas and coexist with actually rented holiday apartments. In the case of difficulties, the two other methods proposed for holiday homes are also acceptable for time-share properties. The imputed rental should be on a net basis, to avoid double-counting charges covered by the periodic payment.

Principle 10:

With regard to time-share accommodation, the same procedures shall be applied as for holiday homes.

1.4.4. Spare room lodgers

In most Member States a large number of students are accommodated in spare rooms. Often this extends to other younger people or those who are employed in a job which involves being away from home. If the room is a part of a rented dwelling, i.e. is sublet, no major problems seem to exist. The spare room rental can be considered as a contribution to the actual main rental, i.e., a transfer between households. However, if the room is a part of an owner-occupied dwelling it would be double counting to include both the rental that the lodger pays as well as the imputed rental in its entirety. Probably the correct solution would be to take the actual rental paid by the lodger for the percentage of the dwelling he or she occupies and to impute a rental for the rest. However, this may not be practicable to implement. Instead one could consider the rental as a transfer involving the sharing of the expenses of the dwelling. This would be similar to the first case in so far as the actual spare room rental is considered as a contribution to the imputed main rental. As a consequence of this treatment, a correction will be due if the household sector is broken down by groups.

A further point is how to deal with subletting various rooms. In this case, it is suggested that the term spare room lodgers only applies when the owner or the main tenant him/herself also continues to occupy the dwelling. Otherwise, the subletting should be considered as a separate economic activity (dwelling service or pension).

Principle 11:

Rentals paid for spare rooms within a dwelling shall be considered as a contribution to the main rental as long as the owner or the main tenant continues to occupy the dwelling.

1.4.5. Empty dwellings

First, a rented dwelling is always considered as occupied even if the tenant chooses to live elsewhere. Secondly, in line with the general solution agreed for holiday homes and time-share accommodation, the annual rental implicitly reflects the average time of occupancy. The problem of empty dwellings is therefore restricted to non-rented dwellings which are not used by the owner, i.e., which are available to be sold or rented. In such cases no dwelling service is provided, so a zero rental should be inserted.

The necessary information to determine whether a non-rented property is empty or not can be based on the declaration of the owner or neighbours. In the absence of such information, the existence of furniture may be used as an indication that the property is occupied. In contrast, unfurnished dwellings can be considered as empty, since it is difficult to imagine that a dwelling service is being provided. Empty dwellings should also include dwellings which are repossessed following defaults of payments, or which are empty for a short period because a housing agency does not immediately find a new tenant. A borderline case is an empty dwelling which is fully furnished and can be used by the owner immediately. Here one might argue that no dwelling service is provided as long as it is not actually occupied by the owner. But since it is comparable to the case of a rented but empty dwelling, it seems appropriate to insert a rental. Therefore, furnished owner-occupied dwellings are generally regarded as occupied.

An empty dwelling may still incur costs, like current expenditure on maintenance, electricity, insurance premiums, taxes, etc. These should be included under intermediate consumption, other taxes on production, etc. As in the case of an enterprise not producing any services, this may lead to a negative value added.

In the cases where the user-cost method is used, empty dwellings should be correctly distinguished from the rest of the dwelling stock so that the value of the output is not affected implicitly in the calculations by considering all cost components such as the consumption of fixed capital and net operating surplus. At first sight, the case of empty dwellings in the context of social housing may cause some concern due to the similar implicit effect on output through the sum-of-costs approach that is relevant for the non-market sectors providing social housing. However, the impact in this case is expected to be highly insignificant. Moreover, the empty dwelling in the context of social housing can always be considered as occupied since it is available to be used by the owner (general government or non-profit institutions serving households) for the purpose of providing the function of social protection.

Principle 12:

For a non-rented dwelling, which is available to be sold or rented, a zero rental shall be inserted. A furnished owner-occupied dwelling in general shall be treated as an occupied dwelling.

1.4.6. Garages

Since garages are a part of gross fixed capital formation, it is appropriate not only to include the service of the rented ones in the output of the economy but also to calculate an imputed output for owner-occupied garages. In both cases the garage represents an element of comfort of the dwelling like any other facility. This should include car ports and parking places since they probably have the same function.

Paragraph 3.75 of Annex A to ESA 2010 states that ‘for garages located separately from dwellings, which are used by the owner for final consumption purposes in connection with using the dwelling, a similar imputation is to be made.’

Usually there are more owner-occupied dwellings than rented dwellings with a garage. To include this structural difference properly, the best way seems to use the existence of a garage as a stratification criterion.

Principle 13:

Garages and parking places used for final consumption purposes provide services to be included in dwelling services.

2. INTERMEDIATE CONSUMPTION

Intermediate consumption has to be consistent with output. In line with the classification of individual consumption according to purpose (COICOP), charges for heating, water, electricity, etc. as well as most of the maintenance and repair associated to housing should be recorded separately and hence excluded from output of dwelling services.

In practice, however, various charges as well as maintenance and repair may have to be considered to be part of the rental service on the ground that they cannot be separated out. The level of GNI should not be affected, if a gross treatment is carried out consistently for intermediate consumption and output.

With respect to repair and maintenance, three categories should be distinguished. First, improvements to existing fixed assets that go well beyond the requirements of ordinary maintenance and repairs are included in gross fixed capital formation (paragraph 3.129 of Annex A to ESA 2010).

Second, expenditure on ordinary maintenance and repairs that an owner-occupier incurs on the decoration, maintenance and repair of the dwelling not typically carried out by tenants is treated as intermediate consumption in producing dwelling services (paragraph 3.96 of Annex A to ESA 2010).

Finally, cleaning, decoration and maintenance of the dwelling as far as these activities are also common for tenants are excluded from production (paragraph 3.09 of Annex A to ESA 2010). Expenses related to these activities should be recorded directly as final consumption of households. Paragraph 3.95 of Annex A to ESA 2010 states that household final consumption expenditure includes the materials for small repairs to and interior decoration of dwellings of a kind typically carried out by tenants as well as owners.

This means that, for owner-occupied dwellings, intermediate consumption should cover the same types of ordinary maintenance and repairs as would normally be regarded as intermediate consumption by the landlord for similar rented dwellings. Expenditure on repairs and maintenance of a type typically undertaken by tenants rather than landlords should be treated as household final consumption expenditure for both tenants and owner-occupiers.

Intermediate consumption of ordinary maintenance and repairs related to owner-occupied dwellings may be derived from direct statistical sources such as household budget surveys. When the ratio of intermediate consumption to output for owner-occupied dwellings is very different from the ratio for the rented sector, the reasons for this should be investigated. When the difference is caused by differences in quality, for example a different level of ordinary maintenance for otherwise similar dwellings, imputed rentals should be adjusted accordingly.

Intermediate consumption should include financial intermediation services indirectly measured (FISIM) in accordance with Chapter 14 of Annex A to ESA 2010. This includes intermediate consumption of households in their capacity as owners of dwellings in relation to dwelling loans.

As stated in Section 1.4.5, empty dwellings can lead to intermediate consumption. As a general point, it is stressed that double-counting of intermediate consumption in the case of employer-owned dwellings should be avoided.

Principle 14:

Intermediate consumption shall be established in line with the definition of output of dwelling services. In general both items should exclude charges for heating, water, electricity, etc. If for practical reasons a different treatment is preferred, this is acceptable as long as the levels of GDP and GNI are not affected.

3. TRANSACTIONS WITH THE REST OF THE WORLD

According to ESA 2010 (paragraphs 1.63 and 2.29 of Annex A, non-resident units are considered as notional resident units in their capacity as owners of land or buildings on the economic territory of the country, but only in respect of transactions affecting such land or buildings.

This means that the service provided by a dwelling owned by a non-resident is included in the output of the economy where the dwelling is located. In the case of an owner-occupied dwelling of a non-resident, an export of dwelling services is then to be recorded, and the corresponding net operating surplus is recorded as primary income paid to the rest of the world (paragraphs 3.173 and 4.60 of Annex A to ESA 2010).

With regard to residents owning dwellings abroad, paragraph 3.75 of Annex A to ESA 2010 states that 'the rental value of owner-occupied dwellings abroad, e.g. holiday homes, should not be recorded as part of domestic production, but as imports of services and the corresponding net operating surplus as primary income received from the Rest of the World.'

In general few problems arise if the property owned by a non-resident is actually rented to a resident, since a monetary flow will be observed and included in the balance of payments. Dwellings owned and occupied by foreign residents would have to be identified separately. The nationality of an owner-occupier is not sufficient to separate a resident from a non-resident. Holiday homes owned by foreign residents will probably matter most and it would be useful to obtain an agreement about the number of non-resident owners between the Member States concerned. However, there is a general lack of information on non-resident owner-occupiers. Information about residents owning holiday homes abroad is even scarcer. To avoid inconsistencies, a Member State deducting a primary income for dwellings occupied by non-resident owners should at the same time add a primary income for dwellings abroad owned and occupied by residents.

A special issue in this regard relates to time-share properties. Since for the same accounting period such a property may be occupied by residents of different countries, a direct allocation to the country of origin seems almost impossible. Comparable results may be obtained using a more feasible approach. First, the (imputed) value added generated by time-share accommodation is allocated to the country of origin of the owning company. Subsequently the owning company may be asked to provide information on the countries of origin of the time-share owners, which may serve as a distribution key.

Principle 15:

According to ESA 2010, all dwellings on the economic territory of a Member State contribute to its GDP. The net operating surplus received by non-residents as owners of land and buildings in that Member State is to be recorded as property income to the rest of the world and therefore to be deducted from GDP during the transition to GNI (and vice versa). This net operating surplus shall be understood as the net operating surplus from actual and imputed renting of dwellings. A Member State deducting a property income for dwellings occupied by non-resident owners should at the same time add a property income for dwellings abroad owned and occupied by residents.
