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# Owner-occupied housing and the harmonised index of consumer prices

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Owner-occupied housing and the  
harmonised index of consumer prices

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## Foreword

The harmonised index of consumer prices (HICP) was created in the 1990s to serve as the key comparable measure of consumer inflation for the purpose of policymaking within the EU's monetary union. From the outset, the costs of households to live in their own home (owner-occupied housing) have been excluded from the coverage of the HICP.

The European Central Bank (ECB) has, at various points in time, emphasised that the inclusion of owner-occupied housing in the coverage of the HICP is important for monetary policymaking. In July 2021, as a result of the ECB's monetary policy strategy review, new recommendations were addressed to the European Statistical System (ESS) in this regard.

This report reflects the outcome of the work carried out by a dedicated task force of the ESS and of discussions at the ESS Committee in February 2023, as a response to the ECB's recommendations.

Eurostat would like to thank the members of the task force from the national statistical institutes of Denmark, Ireland, France, Italy, Lithuania, Netherlands, Austria, Poland, Portugal and Finland, for their significant contributions. The European Commission's Directorate-General for Economic and Financial Affairs, the ECB and the Organisation for Economic Co-operation and Development (OECD) have been participating as observers to this task force.

# Executive summary

## Introduction

1. The harmonised index of consumer prices (HICP) was created in the 1990s to serve as the key comparable measure of consumer inflation for the purpose of policymaking within the EU's monetary union. From the outset, the costs of households to live in their own home – i.e. owner-occupied housing (OOH) – have been excluded from the coverage of the HICP, due to a lack of consensus on the best way to measure it.
2. The European Central Bank (ECB) has, at various points in time, emphasised that the inclusion of OOH in the coverage of the HICP is important for monetary policymaking. In July 2021, as a result of the ECB's monetary policy strategy review, new recommendations were addressed to the European Statistical System (ESS) in this regard.
3. The Task Force Owner-Occupied Housing (OOH) was created in 2022 with the mandate to assist in the drafting of the ESS response to the ECB recommendations on OOH. The task force concentrated on analysing and assessing the feasibility of various approaches to the measurement of OOH and conducted a survey on this topic among all EU Member States and countries of the European Free Trade Association (EFTA). This report is based on the work done by the task force, and its conclusions.

## Approaches to measuring owner-occupied housing

4. There are a variety of approaches towards measuring OOH, each of them having their own advantages and disadvantages.
5. The net acquisitions approach measures the changes in prices of dwellings and of other goods and services acquired by households in their role as owner-occupiers. The approach, on the one hand, is based on monetary transactions, which corresponds to the conceptual basis of the HICP in this regard. On the other hand, it covers investment expenditures that are beyond the definition of household consumption in national accounts, which is also a foundation of the HICP. In practice, the net acquisitions approach is difficult to implement with the timeliness and frequency of the HICP.
6. The rental equivalence approach aims at measuring the changes in the prices of housing services by imputing a price for the OOH dwelling service which is equal to the rental price of a similar dwelling in the same time period. Conceptually, this corresponds to the national accounts definition of household consumption, but it covers non-monetary transactions, which is not in line with the HICP concept. The rental equivalence approach may not be representative in countries with a small rental market or markets with large structural differences between rented and owner-occupied dwellings.

7. The user cost approach aims at measuring the change in the cost to owner-occupiers of using their dwelling. It covers running costs (e.g. depreciation, maintenance, repair and insurance), but also capital and financing costs (e.g. mortgage interest payments, capital gains, opportunity costs). Some of these elements need imputation or are considered to be beyond household consumption and thus not suitable for a consumer price index. The inclusion of mortgage interest payments could diminish its usefulness for monetary policy purposes.

8. The payments approach measures the changes in payments made by households in relation to the purchase of dwellings and of other housing goods and services. This approach does not require imputations, but has the same disadvantage as the user cost approach as regards the inclusion of mortgage interest payments.

9. EU Member States and EFTA countries have a legal requirement to produce the stand-alone owner-occupied housing price index (OOHPI), which measures OOH based on the net acquisitions approach.

10. In the *European System of Accounts 2010*, the recommended approach for measuring the value of OOH is the rental equivalence approach, while a form of the user cost approach may be used under certain circumstances, in particular when the rental market is small.

11. The task force carried out a survey on the measurement of OOH among all EU and EFTA countries. It showed that 12 countries currently include a measure of OOH in their national consumer price indexes (CPIs), while 18 do not. Five countries use the rental equivalence approach, three use the user cost approach, two use the net acquisitions approach, one the payment approach and one another approach.

12. In the national accounts, 19 countries use rental equivalence, eight user cost and three a combination of the two approaches.

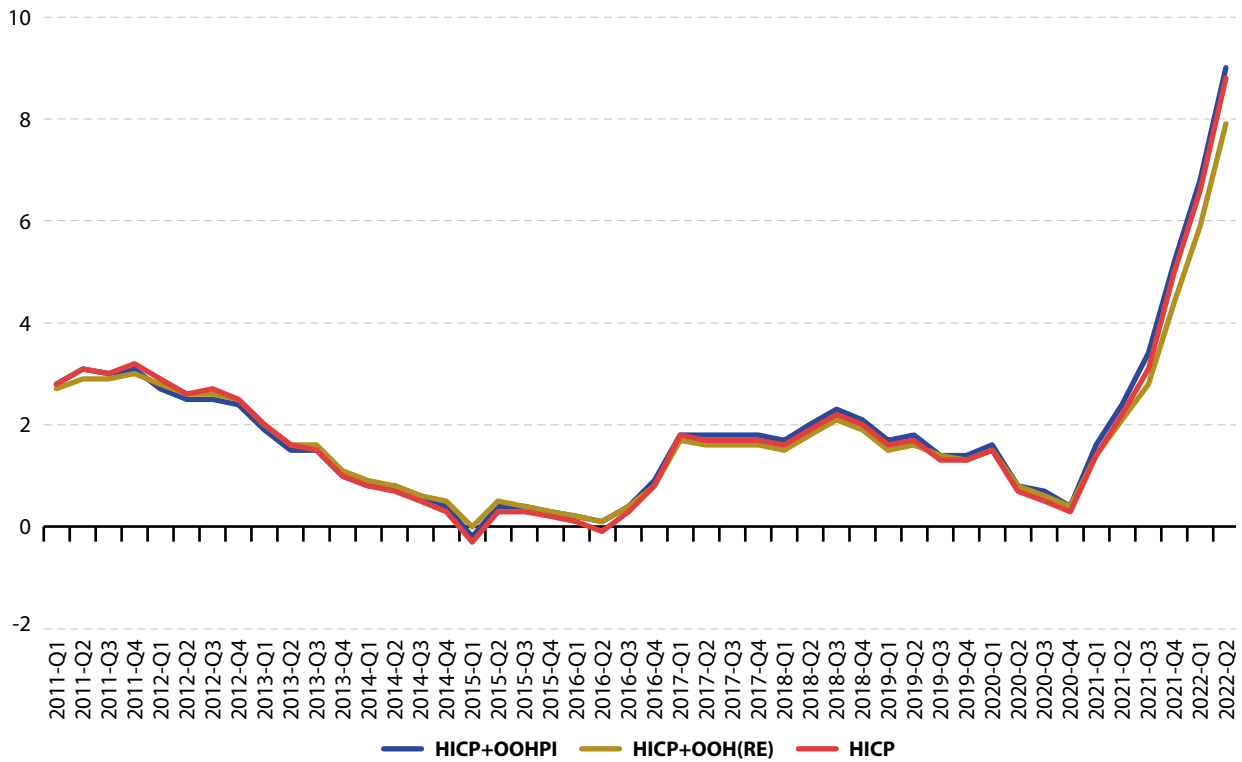
## Experimental calculations combining the HICP with two different measures of owner-occupied housing

13. Using the available data, Eurostat calculated two experimental indices combining the HICP with a measure of OOH. The indices are calculated at a quarterly frequency, for individual countries and for European aggregates. The calculations are based on two approaches: the net acquisitions approach and an approximate rental equivalence approach. For the first, the OOHPI is used for the price index and owner-occupiers' housing expenditures as weights. For the second, the price index for actual rentals from the HICP is used as the OOH price index, while weights are derived from consumption expenditure on imputed rentals from the national accounts.

14. Chart A shows the resulting annual rates of change for the EU, for the two indices and for the HICP. This chart shows that the overall size of the impact of including OOH into the HICP with either of these two approaches is in most periods relatively small.

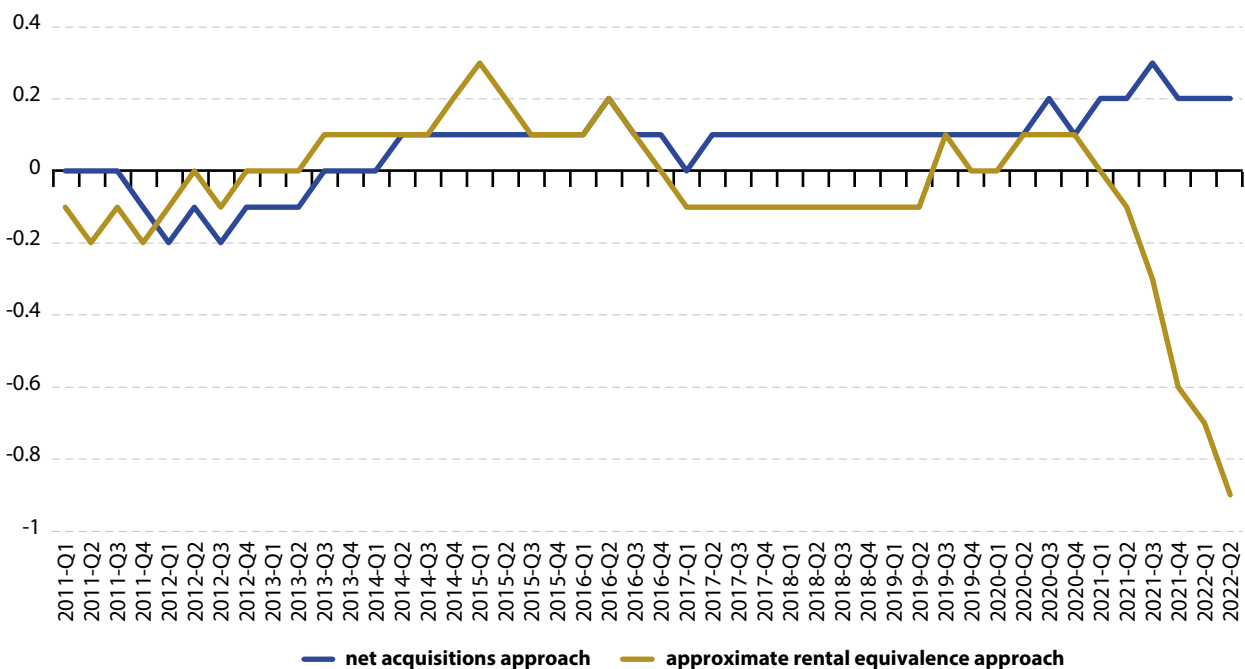


**Chart A: Annual rates of change of HICP, HICP+OOHPI (net acquisitions approach) and HICP+OOH (approximate rental equivalence approach), EU, %**



15. Chart B shows the differences in percentage points between the annual rates of change (rounded to one decimal) for the two combined indices and the annual rate of change of the HICP. It demonstrates that the direction of the impact of including OOH in the HICP is often different. Especially in the most recent quarters with high inflation, the differences between the impacts of the two methods become very substantial.

**Chart B: Difference between annual rates of change of HICP and HICP+OOH, EU, percentage point**



16. The significant differences in the results of the experimental calculations between the various methods, and the need to respect the comparability requirements of the HICP framework regulation, imply that a harmonised approach to include OOH in the HICP would require the selection of a single method of inclusion of OOH in the HICP.

## Survey on owner-occupied housing measurement

17. The survey mentioned above also collected information on countries' views on the appropriateness and feasibility of the net acquisitions, rental equivalence and user cost approaches for their countries.

18. Concerning the net acquisitions approach, a small majority of countries have no objections to the use of the net acquisitions approach, provided the methodological issues can be resolved. However, there is near unanimity among countries that it will not be possible in the foreseeable future to produce the OOHPI with the same timeliness and frequency as the HICP without loss of quality. Also, almost all countries state that the issue of separating consumption and investment components of dwelling purchases is very important but will be difficult to solve, for conceptual and practical reasons.

19. Almost half of the countries assess the rental equivalence approach not to be appropriate or feasible for their country, because of the size and structure of their rental markets or due to insufficient quality of available input data. Some of them have conceptual concerns about including non-monetary transactions in the HICP. The rental equivalence approach is seen, in general, as easy to implement. Slightly more than half of the countries expect it to be possible to produce an OOH price index with the same timeliness and frequency as the HICP without its quality being affected.

20. Most countries consider the user cost approach not to be appropriate or feasible for their country or are not able to evaluate this method considering the lack of national experience with and research into this method. The user cost approach would need house price indices as input and thus the issue of timeliness and frequency should be resolved. In addition, the exclusion of land from these house price indices would be needed for some of the components of the approach.

## Conclusions

21. The task force work showed that there is no consensus among countries on the best method to include OOH in the HICP. There are substantial differences of opinion on conceptual questions. Besides these differences, none of the three approaches investigated currently enable OOH to be included in the HICP in practice without affecting the quality of the HICP.

22. More research on the separation of consumption and investment elements is needed, as are investigations into versions of the rental equivalence and user cost approaches that can be consistently implemented in all countries. In this context, the eventual separation of land from building structures would considerably improve the appropriateness of the OOHPI. Improving the timeliness and frequency of house price indicators, i.e. the house price index (HPI) and the OOHPI, would be important in its own right.

23. The results of the task force work were discussed by the ESS Committee (ESSC) <sup>(1)</sup> in its February 2023 meeting. The ESSC issued the following opinion:

1. "The ESSC acknowledged and expressed its appreciation of the very substantial work carried out by the Task Force on Owner-Occupied Housing and the HICP. The ESSC agreed

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(1) See <https://ec.europa.eu/eurostat/web/european-statistical-system/governance-bodies/essc>



that there are still significant obstacles, of conceptual as well as practical nature, to include owner-occupied housing in the HICP.

2. In view of the significant differences in direction and size of the results, the ESSC did not support the regular publication of the two experimental indicators, considering that this could be misleading and detrimental to the credibility of the HICP. The ESSC agreed that the work carried out by the task force should be made public by Eurostat.
3. The ESSC supported the continuation of the work on the conceptual and practical issues that need resolution before an integration of owner-occupied housing into the HICP could be considered. To this end, it asked Eurostat to present to the ESSC a concrete research agenda. It also asked Eurostat to provide a roadmap for improving the timeliness and frequency of housing price indicators.
4. Key users like the European Central Bank, the Economic and Financial Committee and researchers should be consulted for addressing the policy information needs while continuing to work on the methodological challenges.
5. The ESSC considered that the work to improve housing price indicators is costly and financial support should therefore be envisaged."

# 1

## Introduction

24. On 8 July 2021, the European Central Bank (ECB) published the outcome of their *Monetary Policy Strategy Review*. The review covered all aspects of monetary policy, including the measurement of inflation through the harmonised index of consumer prices (HICP). The issue of the inclusion of owner-occupied housing (OOH) was a major part of the review of the HICP. The ECB made recommendations to Eurostat and the European Statistics System (ESS) in this respect.

25. The ECB recommended a roadmap to include OOH in the HICP. A first stage on this roadmap would be the release by the ESS of an additional, experimental, quarterly index combining the HICP and the existing, stand-alone, owner-occupied housing price index (OOHPI). This composite index would provide significant value added to the ECB.

26. To develop the response to the ECB recommendations, a dedicated ESS task force was created and began work in February 2022. The task force was composed of delegates from the national statistical institutes (NSIs) of Denmark, Ireland, France, Italy, Lithuania, Netherlands, Austria, Poland, Portugal and Finland. The Directorate-General for Economic and Financial Affairs, the ECB and the OECD have been invited as observers. The participating countries provide for a balanced composition in terms of geographical location, share of owner-occupancy in the housing market and methods used for inclusion of OOH in national CPIs. National accounts experts from a number of NSIs and from Eurostat have been participating as well.

27. This report is based on the work done by the task force and the conclusions reached. Section 2 summarises the history of the discussion on including OOH in the HICP. Section 3 discusses the various approaches to measuring OOH on the basis of the available literature – in particular the international CPI manual – and practical experiences of countries. It also includes a description of the OOHPI as an application of one of the approaches, namely the net acquisitions approach. Section 4 describes the methods used in national accounts, for measuring the value of OOH and for estimating the changes in prices and volumes.

28. Section 5 presents the results of experimental calculations that combine the HICP with the OOHPI, and of augmenting the HICP with an approximation for the rental equivalence approach. The results of a survey conducted among NSIs of all EU and EFTA countries are summarised in Section 6.

29. The report closes with conclusions in Section 7.

# 2

## History of owner-occupied housing and the harmonised index of consumer prices

30. The measurement of OOH in the context of the HICP has been a topic of discussion since the start of the development of this inflation indicator in the 1990s <sup>(?)</sup>. Rather than providing an exhaustive account of this discussion, this section aims at providing a historical background for the remainder of the report by focusing on key moments of the debate.

### 2.1. Early discussions (1994–2000)

31. As documented in Astin (2021), the HICP is an index created for the purposes of the EU's monetary union. It was decided – after years of discussion – that a separate harmonised consumer price index providing comparable inflation data across EU Member States should be established, for the purpose of the monetary policymaking of the yet to be established European Central Bank (ECB) and to be used for the convergence criteria determining the accession of countries to the euro area. This new index would exist in parallel to national CPIs, which are heavily used in Member States for the indexation of wages, pensions, social security, etc. With this set-up, the harmonisation of inflation measures for European and cross-country purposes would not affect social policies in Member States <sup>(?)</sup>.

32. The creation of the HICP for the purpose of monetary policy is reflected in the design of the HICP. Most prominently, and most relevant for the OOH debate, it was decided that only monetary expenditures should be included in the coverage of the HICP, and that the *European System of Accounts* (then *ESA 1995*) formed the basis for the delineation of household consumption <sup>(\*)</sup>, leading to the concept of household final monetary consumption expenditure (HFMCE). Therefore, the HICP is not a cost-of-living index, but a cost-of-goods index <sup>(\*)</sup>.

33. Regarding OOH, countries had (and still have) different practices in their national CPIs. Considering its importance in terms of its weight in CPIs and potentially in the HICP, OOH has been a key issue for the harmonisation efforts. The discussions on OOH in the context of the HICP started in 1994 with Task Force II <sup>(\*)</sup>. This task force reviewed the methods applied in national CPIs and identified the main approaches to measure the OOH component in a CPI. These were the acquisitions approach, the user cost approach, which could be implemented either by the rental equivalence or opportunity cost methods, and the payments approach (see Section 3).

34. As opinions in Task Force II were divided on which method to use, it was decided to obtain academic insight on the issue. The most important contribution on this matter arrived in a number of

<sup>(?)</sup> For a comprehensive description of the early discussions on the HICP and OOH see, among others, Astin (2021).

<sup>(?)</sup> These considerations are reflected in the recitals of the regulation constituting the HICP: European Council (1995).

<sup>(\*)</sup> See European Council (1998).

<sup>(\*)</sup> For further discussion, see IMF et al. (2020), Chapter 2.

<sup>(\*)</sup> This task force not only dealt with OOH, but also with other technical issues associated with the design of the HICP.

papers by Peter Hill, which were developed in parallel with the main conceptual design of the HICP (Hill, 1996).

35. This work provided the grounds for discussion in working group meetings and was the backbone of the first discussion on the treatment of OOH that were discussed in the Statistical Programme Committee (SPC) in 1997 <sup>(7)</sup>. The acquisitions approach emerged as the one that would best fit HFMCE – while the scope may be extended to allow for covering investments in housing by households – and that would best serve an indicator that interprets inflation as a monetary phenomenon. As no agreement could be reached on the options of dealing with the net acquisitions approach in the context of the HICP, it was decided to establish a dedicated task force (Task Force XII) to provide a proposal on whether (1) net acquisitions indices on OOH should not be developed; (2) should be developed, but kept separate from the HICP; or (3) should eventually be integrated into the HICP.

36. The final report of Task Force XII was provided in 2000. It brought new insights into the discussion (e.g. treatment of land in the net acquisitions approach) and provided the first empirical evidence on the application of different measures of OOH, in terms of expenditure weights. The report led Eurostat to propose a set of options on OOH to the SPC (Eurostat, 2000).

37. The discussion in the SPC revealed once more that there were clear differences of opinion on how OOH should be treated in the HICP. As no agreement was reached, it was decided to support the development of a net acquisitions index on an experimental basis in each Member State and to decide later, based on a pilot time series, on the suitability of this approach to the HICP.

## 2.2. Development phase (2001–2017)

38. Following the SPC decision in 2000, Eurostat launched a program to develop not only a price index for the OOH, following the net acquisitions approach (the OOHPI), but also a house price index (HPI), which has become an important indicator in its own right. This programme involved grants supporting the compilation of these new indicators, the development of methodological standards to produce them and the possibility of national statistical offices to benefit from technical support in this area.

39. The bulk of the work was carried out in different phases until 2011. Table 1 provides a summary of these phases <sup>(8)</sup>.

**Table 1: Pilot period (2000–2011)**

	First phase	Second phase	Third phase	Fourth phase
<b>Time frame</b>	2001–2003	2006–2008	2008–2009	2010–2011
<b>Number of participants</b>	5	12	26 <sup>(7)</sup>	29 <sup>(7)</sup>
<b>Countries covered</b>	Germany, Spain, Poland, Finland and the United Kingdom	All 5 initial participants plus Greece, France, Italy, Cyprus, the Netherlands, Slovenia and Slovakia	All EU Member States except Malta	All EU Member States plus Iceland and Norway

<sup>(7)</sup> NB: When comparing with today's EU Member States, it should be noted that Croatia joined in 2013 and the United Kingdom left in 2020.

<sup>(7)</sup> The SPC was a committee comprised of the heads of national statistical offices, which has now been replaced by the European Statistical System Committee (ESSC).

<sup>(8)</sup> More information on these phases can be obtained from Marola et al. (2012).

40. The current production system of OOHPIs (and HPIs) is based on the work done during this pilot period <sup>(\*)</sup>. A technical manual on OOHPI and HPI, aimed at providing practical guidance on the compilation of these indicators, was also developed during this period, and benefited from the experience gained during these phases. The current version of this technical manual is available from Eurostat's website (Eurostat, 2017).

41. At the same time, first efforts to produce a legal base for the production of the stand-alone OOHPIs and HPIs began. These efforts led to the adoption of Commission Regulation 93/2013 (Commission, 2013). The requirement to produce these two indices was subsequently incorporated in Regulation 2016/792 on HICP, HICP-CT, OOHPI and HPI (European Parliament and Council, 2016), also referred to as the 'framework regulation'. Section 3.6 describes the OOHPI in more detail.

42. Finally, it should be mentioned that the first ECB monetary policy strategy review took place in 2003 (the ECB's original monetary policy strategy was adopted in 1998). While confirming the HICP as the yardstick for monetary policy purposes, this first review pinpointed the inclusion of OOH in the HICP as a sensitive issue that needed to be addressed to achieve higher cross-country comparability (CambaMendez, 2003).

## 2.3. Recent developments (2018–2021)

43. The latest developments on OOH have been influenced by two reports.

44. Firstly, Commission report 2018/768 (Commission, 2018) evaluated the suitability of the OOHPI for integration into the HICP coverage, as required by Regulation 2016/792. The Commission concluded that the OOHPI was, yet, unsuitable for integration into the HICP, highlighting two main issues that need to be addressed:

- improving the frequency and timeliness of OOHPIs so that they meet HICP standards;
- separating the investment component and the consumption component of the acquisition of a dwelling.

45. The report concluded that the Commission would pursue the methodological work required for the integration of the OOHPI into the HICP coverage.

46. Second, the latest ECB's *Monetary Policy Strategy Review*, which was completed in 2021, produced recommendations towards the inclusion of OOH in the HICP (ECB, 2021a). In its report, the ECB considered that the net acquisitions approach is the preferred method for including OOH.

47. Moreover, while appreciating the work done by the ESS in developing OOHPIs, the ECB also recommended a roadmap to include OOH in the HICP (ECB, 2021b). The key elements of the ECB's conclusions are as follows:

- the ECB retains the HICP as the target index for monetary policy;
- the ECB supports the use of the net acquisitions approach to measure OOH in a way that is consistent with the concepts of the HICP;
- the ECB requests that the ESS start producing a quarterly combined index of the HICP and the OOHPI;
- the ECB invites the Commission to ensure a legal basis for this quarterly combined index;
- the ECB suggests a timetable for the development of the quarterly combined index, to be released first as experimental statistics;
- the ECB supports further research on separating consumption from investment elements in the OOHPI;
- the ECB recalls that the long-term aim is the integration of OOH into the HICP on a monthly basis, which could pave the way for the HICP to include OOH as the main index for monetary policy purposes.

<sup>(\*)</sup> At present, all EU Member States (except Greece) along with Norway and Iceland provide OOHPIs on a regular basis to Eurostat. Methodological information regarding the indices of these 28 countries is available [here](#).

48. The issues highlighted by Commission report 2018/768 are reflected in these conclusions: as currently the OOHPI cannot be integrated into the HICP, the ECB requests a separate quarterly index combining these two existing indices to be produced, to serve their needs until the long-term aim is achieved. It is worth noting that the long-term aim does not specifically refer to the OOHPI.

49. Finally, it should be mentioned that Eurostat has prepared a Commission implementing regulation precisely defining the methodology of the OOHPI (and the HPI), based on the implementing powers given by the 2016 framework regulation (Commission, forthcoming). This regulation will ensure the quality and comparability of the OOHPI. It is planned to be implemented as of 1 January 2024.



# 3

## Approaches to measuring inflation of owner-occupied housing

### 3.1. Introduction

50. There are three fundamental measurement approaches for a CPI:

- The acquisitions approach measures the changes in prices of products acquired during a given period.
- The use approach measures the changes in the cost of using the products during a given period.
- The payments approach measures the changes in actual payments made during a given period to have access to the products.

51. For most products included in a CPI, these three approaches are approximately equivalent. However, this is not the case for housing. A dwelling is an asset which is acquired at a certain point, used over many years and financed through savings and loans. As a result, the measurement of OOH in a CPI can be based on any of these three approaches: the acquisitions approach; the use approach, which can be implemented as a rental equivalence approach, or as a user cost approach; or the payments approach.

52. For each approach, the OOH index covers different expenditure categories for which corresponding price changes must be measured. Moreover, each approach can be related to a different purpose of the CPI. There is no perfect solution and each approach has advantages and disadvantages. Even for a given conceptual approach, there may be different implementation variants. When selecting an approach, one criterion could be to align the approach with the conceptual basis of the CPI, which should be linked to the main purpose of the CPI. Other criteria to consider could be public acceptance, but also the practicality of implementation (including availability of data sources). See also the international CPI manual (IMF et al, 2020), paragraph 11.82 and on, for further discussion.

53. In the next sections, the main approaches are discussed in more detail. For each of them, country examples of implementation are presented in boxes. Full statistics on the use of the methods in the EU and EFTA countries can be found in Section 6.

### 3.2. Net acquisitions approach

54. The aim of the net acquisitions approach<sup>(10)</sup> is to measure the changes in prices of dwellings and of other goods and services acquired by households in their role as owner-occupiers. This approach focuses solely on the costs faced by households of acquiring and owning a dwelling. The total value of the acquisition of a dwelling is entirely allocated to the time of purchase, regardless of when its consumption starts and when and how it is paid for.

<sup>(10)</sup> See paragraphs 11.125–11.145 in IMF et al. (2020), and Section 1.3.1 in Eurostat (2017).

55. An OOH price index under the net acquisitions approach could cover the following expenditures made by the reference population:

- net purchases of dwellings,
- constructions of new dwellings,
- alterations and additions to existing dwellings,
- transaction costs (legal and real estate agency fees payable on property transfers),
- repair and maintenance of dwellings,
- insurance of dwellings,
- property taxes.

56. The 'net' principle means that purchases are accounted for as positive expenditures whereas sales are accounted for as negative expenditures. Consequently, transactions made within the reference population cancel out. This is especially relevant for residential property markets as dwellings are often sold between two households. That is why an OOH price index based on the net acquisitions approach does cover purchases of new dwellings, but largely disregards purchases of existing dwellings, except for existing dwellings that are purchased from or sold to units outside the household sector.

57. It can be argued that the acquisitions approach includes both a consumption element and an asset element. On the one hand, households acquire dwellings as a way to access housing services. On the other hand, the acquisition of a dwelling can be seen as an investment which is expected to increase in value over time (capital gains). To disentangle these two elements is a challenge.

58. An OOH index based on the net acquisitions approach has the following advantages.

- The approach is based on monetary transactions only and does not require imputations for non-monetary transactions to be made. This is consistent with CPIs whose scope is restricted to monetary expenditures <sup>(1)</sup> only.
- By relying on actual transaction prices, the index includes changes in house prices as they are commonly understood by the general public.
- The treatment of dwellings is consistent with the treatment of durables (for example cars) in a CPI. The expenditure weights are based on the net principle and the full price enters the index at the moment of acquisition.

59. An OOH index based on the net acquisitions approach has the following disadvantages.

- In the national accounts, housing structures are considered as produced non-financial assets. Expenditure on dwellings is thus part of gross fixed capital formation. The approach is therefore not consistent with a CPI that is aligned to the concept of consumption as defined in the national accounts.
- One approach is to regard the cost of the land as representing the investment element and the cost of the structure as representing the consumption element. Both the land and the structure are however bundled together in the observed transaction prices. There is no agreed-upon or easy-to-implement technique for decomposing an HPI into land and structure components. Using modelling to make the separation would introduce estimation elements in the index.
- There can be practical difficulties to produce the OOH index on a monthly basis and according to the same timeliness as the CPI. This is because of an insufficient number of dwelling transactions in one month, making the corresponding price indices less reliable, or because the index is based on lagged administrative data sources.
- The net principle may be difficult to explain to the general public. It may be that transactions on existing dwellings are an important part of the housing market while being excluded from the OOH scope.
- The total OOH expenditure depends more on the flow of dwelling transactions than on the stock of dwellings occupied by their owner. As a result, the share of OOH in the CPI can fluctuate from one year to another, following the different phases of the housing cycle.

<sup>(1)</sup> A CPI including OOH based on the acquisitions approach can be interpreted as an index that covers all monetary expenditures, whether current or capital, of households for direct final consumption or for use in the production of housing services for own consumption (Hill, 1996).

## Box 1: Implementation examples of the net acquisitions approach in national CPIs

**Finland** has included owner-occupied housing in their national CPI according to the net acquisitions approach since 1988. One reason for this choice is that the rental equivalence is considered to be unsuitable because the rental and owner-occupier housing markets have different structures. The main components of the Finnish OOH index are ‘acquisitions of dwellings’ and ‘renovations’. In addition, the index includes ‘other costs for OOH’ but also ‘interests on housing loans’. The price changes for the ‘acquisition of dwellings’ component are based on transaction prices for existing dwellings including land, whereas the corresponding weight is based on transactions for new dwellings excluding land.

**Czechia** has been progressively moving towards an OOH index based on the net acquisitions approach over the years 2007 to 2017. Prior to this period, the rental equivalence was used in the Czech national CPI. The change in approach was motivated by the fact that the imputed rentals are mainly based on apartments while family houses are important for owner-occupiers. The current OOH index is essentially aligned on the scope and methodology of the European OOHPI. The prices for the acquisition of new dwellings are obtained from surveys with developers and exclude the cost of land. Estimation techniques are used to obtain monthly indices with the timeliness required to produce the CPI.

The quarterly CPI of **Australia** includes OOH based on the net acquisitions approach. The aim is to include the cost of net additions of dwellings. The Australian OOH index covers, amongst others, the purchases of new homes whose prices only represent the cost of the dwelling structure and exclude the cost of land. Different pricing methods are used to focus on the structure, such as component cost pricing (following the prices of the different inputs used in the production of dwellings) or model pricing (following the prices of project homes).

## 3.3. Rental equivalence approach

60. The aim of the rental equivalence approach<sup>(12)</sup> is to measure the changes in the prices of housing services by estimating the market value of those services. A price is imputed for the OOH dwelling service which is equal to the rental price of a similar dwelling in the same time period. This means that this rental price is taken as a measure of the cost of using a dwelling for own occupation. Imputed rentals are also recommended in the national accounts for measuring the value of housing services of owner-occupiers (referred to as the ‘stratification method’ in Commission (2021) on the principles for estimating dwelling services), see Section 4 of this report.

61. Under the rental equivalence approach, there would be no need to cover other products in addition to the imputed rentals. Costs for products such as repairs or insurance are already borne by the landlords and are therefore implicitly included in the rent. The inclusion of such products would lead to double counting.

62. In practice, imputed rentals are obtained by adjusting actual rental data to reflect the composition of the stock of owner-occupied dwellings. The rents used in these calculations should exclude any other additional costs related to the dwelling (for example furniture or utility costs). Moreover, subsidised or regulated rents should in principle be excluded as they may not reflect market rents. Whether the estimation of the owner-occupier’s equivalent rent should be derived from all running rental contracts or from new rental contracts only remains an open question<sup>(13)</sup>.

<sup>(12)</sup> See paragraphs 11.96–11.102 in IMF et al. (2020), and Section 1.3.2.2 in Eurostat (2017).

<sup>(13)</sup> See CPI Theory Manual (draft), Chapter 9, page 9: ‘Contract rent or roll-over rent refers to the rent paid by a renter who has a long term rental contract with the owner of the dwelling unit and (current) market rent is the rent paid by the renter in the first period after a rental contract has been negotiated. [...] if we value the services of an owner occupied dwelling at its current opportunity cost on the rental market, market rent should be used in the CPI to value the services of OOH rather than contract rent.’

## Box 2: Implementation examples of the rental equivalence approach in national consumer price indexes

**Denmark** has been including OOH in the national CPI using the rental equivalence approach for over 40 years. The rental equivalence approach is broadly accepted because of its simplicity and because it has been applied for a long time. The price index for actual rentals is used as a proxy for the imputed rentals price index. This is an approximation because the structure of the stock of rented and owner-occupied dwellings are different. Moreover, the rents price index is only updated once per year. New data sources on rents that were recently introduced will make it possible to improve the frequency of the indices, and to apply stratum weights that reflect the owner-occupier market.

The rental equivalence approach is implemented in the national CPI of **the Netherlands**. The objective is to cover the cost of housing services consumed by all households. In practice, the data needed to calculate the imputed rentals are obtained from a large survey which is conducted once per year and which is also used to compile the actual rentals price index. The weights for the imputed rentals are taken from the national accounts.

**Germany** uses the rental equivalence approach in their national CPI, given that there is a large rental market in Germany. In practice, the actual rentals price index is used to measure price changes for a broad category that covers both actual and imputed rentals (*Wohnungsmiete, einschl. Mietwert von Eigentümerwohnung*).

**Switzerland** has been using the rental equivalence approach to measure the costs of owner-occupiers for many years. This approach is well suited to the Swiss housing market, in which tenants are the majority. Until 2015, the actual rentals price index was used as an approximation for the imputed rentals price index. In 2016, the approach was improved to the extent that the structure of owner-occupied dwellings is now explicitly used for the weighting of the strata of the imputed rentals price index.

The **United Kingdom** launched the consumer prices index including owner-occupiers' housing costs (CPIH) in 2013. The CPIH is an additional inflation measure that includes owner-occupiers' housing costs based on the rental equivalence approach. The main reasons for selecting the rental equivalence approach were the exclusion of asset prices, the availability of rents data and the consistency with national accounts. In practice, rents data are obtained from a large administrative data source. The OOH index is stratified by property type and by region and the strata are weighted to reflect the owner-occupied dwelling stock. Work is ongoing to further improve the calculation methodology by moving from a stratification to a hedonic approach.

In the **United States** (US), the owner's equivalent rent (OER) index was introduced into the all urban consumers CPI (CPI-U) in 1983. Rents data are obtained from a survey which contacts tenants every 6 months on a rolling basis. The OER index and the rents index differ as the sampled dwellings are weighted differently in both indices, and different expenditure weights are used to aggregate the area-level indices into US-level indices. The weight for the OER component is obtained from the Consumer Expenditure Survey by asking owners to estimate a rent for the dwelling that they occupy. Research is currently conducted on developing a supplementary price index based on the payments approach.

63. Being an implementation of the use approach in a CPI, the rental equivalence approach is consistent with a CPI that is based on a cost-of-living framework.
64. An OOH index based on the rental equivalence approach has the following advantages.
- The approach is consistent with the valuation of housing services consumed by owner-occupiers as measured in the national accounts.
  - The approach can be more easily implemented than other approaches if rents data are already available (for example the actual rentals data already used in the CPI).
  - The approach can be explained to the general public as a way of measuring the costs for an owner to live in his own dwelling instead of renting it out. It is based on actual price developments as observed for the rented dwellings.
  - The rental equivalence approach allows the entire stock of dwellings to be covered in the CPI; rented dwellings are covered by the actual rentals category while owner-occupied dwellings are covered by the imputed rentals category.
65. An OOH index based on the rental equivalence approach has the following disadvantages.
- The approach uses a notional concept that relies on imputed prices rather than actual transaction prices. It deviates from the idea that inflation is a monetary phenomenon and that an indicator designed to serve monetary policy purposes should include only monetary transactions.
  - It is often not representative in countries with a small rental market or markets with large structural differences between rented and owner-occupied dwellings.
  - The measurement may also be impacted by the way that the rental market is regulated, or the extent of social housing.
  - Any concerns regarding the quality of the sources of rents data (for example regarding timeliness, frequency, coverage, etc.) will have implications for the quality of the imputed rentals index. In addition, such quality concerns will be amplified as the CPI becomes very reliant on rents data.

## 3.4. User cost approach

66. The user cost approach aims at measuring the change in the cost to owner-occupiers of using their dwelling <sup>(14)</sup>. Conceptually, it falls into the same family of methods as the rental equivalence approach since it focuses on the estimation of the flow of shelter services consumed by owner-occupiers. In theory, in the presence of a free market with perfect competition and the absence of transaction costs, this approach would yield comparable index results as those obtained through the rental equivalence approach <sup>(15)</sup>.

67. The user cost approach splits the costs for owner-occupiers of using the dwelling into two main categories. The first one, costs for wear and tear, reflects the recurring costs associated with the use of the services provided by the dwelling. The second one, capital costs, attempts to estimate the opportunity cost of tying up capital in bricks and mortar rather than investing in some other financial asset.

68. A (full) user cost method would include the following elements:

- financing costs (e.g. mortgage interest payments, down payments);
- depreciation;
- property taxes;
- transaction costs, including taxes, related to the purchase of the dwelling;
- capital gains or losses;
- running costs (maintenance, repair, insurance, etc.);
- opportunity cost of forgone profits (the return that the owner-occupier would have had when investing in something else than the dwelling).

69. In practice, as some of these elements are difficult to estimate and/or are not considered applicable in the context of a CPI (e.g. capital gains and the opportunity cost associated with capital invested in the

<sup>(14)</sup> See paragraphs 11.87–11.95 in IMF et al. (2020), and Section 1.3.1.2 in Eurostat (2017).

<sup>(15)</sup> This is the underlying reason why the methods pertaining to these two approaches are sometimes perceived to as 'equivalent' or 'close substitutes' to one another in various fields, such as the estimation of dwelling service levels for national accounts (Commission, 2021). However, there is evidence that this does not happen in practice when it comes to the measurement of price changes.

dwelling could be considered as investment rather than consumption), simpler or partial versions of the full user cost are used by NSIs in practice (see Box 3).

70. A price index measuring OOH using the user cost approach has the following advantages:

- it is conceptually compatible with the cost-of-living index framework and may be seen as preferable for indices based on this concept;
- the model underlying the approach is directly linked to economic theory, something that can be seen as an advantage when explaining the method to users.

71. An OOH price index based on the user cost approach would have the following disadvantages:

- the inclusion of mortgage interest rate could diminish its usefulness for monetary policy purposes as interest rates, which are used as an instrument for controlling inflation, would be included in the instrument that measures that same inflation;
- when potential capital gains are included and exceed the costs, total user cost can be negative; a price index could then not be derived from these numbers;
- different elements of this approach are difficult to estimate, require modelling (e.g. depreciation, interest payments) or depend on various assumptions (e.g. about the time period an owner-occupied dwelling is used by its owner) which are difficult to verify, and may be difficult to explain to users;
- depreciation is an imputed transaction, which is not aligned with the HICP and the household final monetary consumption expenditure concept;
- as land does not depreciate, an appropriate price indicator for estimating depreciation should ideally be an index of house prices excluding land values, which are known to be difficult to calculate.

### Box 3: Implementation examples of the user cost approach in national CPIs

**Sweden** has applied the user cost approach to OOH measurement since 1957. It is defined as a partial user cost as the capital gains/losses element is not included. It comprises an interest cost index, depreciation, building insurance, real estate tax and other costs. The most important element of this approach, the interest cost index, is a product of an interest rate index and a capital stock index.

The value of replacement costs (depreciation) is calculated as a depreciation rate multiplied by total stock, excluding land, which is updated every 3 years from administrative records. Property price indices, which are used as an input in the capital stock index, are inclusive of land.

The interest cost index covers both interest costs related to mortgage loans but also the opportunity cost of forgone profits, where it is assumed that this latter cost changes in proportion with the interest cost for loans. Mortgage interest costs, which are included in the interest cost index, are estimated from nominal interest rates.

A version with fixed mortgage interest rate (the CPIF) is also calculated and has been used since 2017 by the Swedish Central Bank as a monetary policy target indicator.

In the **Icelandic** version of the user cost approach, which has been applied in the national CPI since 1992, the capital gains/losses element is also not taken into account. The cost of equity is priced at a constant real rate found appropriate to represent the opportunity cost of forgone profits. Depreciation is calculated from total stock excluding land, which is updated yearly from administrative records. As in Sweden, property price indices used as inputs are inclusive of land. Mortgage interest costs are estimated from real interest rates.

The partial version of the user cost used by **Canada** comprises mortgage interest payments, replacement costs (depreciation), property taxes, homeowners' home and mortgage insurance, homeowners' maintenance and repairs, and other owned accommodation expenses. Capital gains/losses and return to homeowners' equity (opportunity cost of forgone profits) are not covered. Depreciation is estimated for the total stock excluding land from data extracted from a survey on household spending, to which a constant house/property ratio is applied. The property price index used as input, the new housing price index (NHPI), excludes the value of land. Mortgage interest costs are estimated from nominal interest rates.

## 3.5. Payments approach

72. The aim of the payments approach <sup>(6)</sup> is to measure the changes in the payments incurred by households in relation to the purchase of dwellings and of other housing goods and services. It is a cash flow approach that focuses on the moment that the respective payments are made by households, regardless of when the underlying dwellings and products are used or acquired.

73. An OOH price index under the payments approach could cover the following expenditures made by the reference population:

- down payments or deposits on newly purchased dwellings;
- transaction costs (legal and real estate agency fees payable on property transfers);
- repayments of mortgage principal;
- mortgage interest payments;
- alterations and additions to existing dwellings;
- repair and maintenance of dwellings;
- insurance of dwellings;
- property taxes.

74. Some of these expenditures could however be excluded on the grounds that they have no impact on a household's balance sheet. In particular, down payments or repayments on mortgage principal decrease the cash account of a household, but they also reduce a liability or create an asset (the dwelling). That is why the payments approach is typically restricted to the remaining expenditure categories that do have an impact on the household's balance sheet.

75. By focusing on the actual payments incurred by the households, the payments approach is more in line with the use of a CPI as a tool for the indexation of wages and pensions.

76. An OOH index based on the payments approach has the following advantages.

- It does not require imputations. It is consistent with CPIs whose scope is restricted to monetary expenditures only.
- It can be intuitively explained to the general public as the approach is directly linked to the payments that households make in relation to their dwelling (for example mortgage payments).

77. An OOH index based on the payments approach has the following disadvantages.

- The inclusion of mortgage interest rate could diminish its usefulness for monetary policy purposes as interest rates, which are used as an instrument for controlling inflation, would be included in the instrument that measures that same inflation.
- Some components used in the payments approach (for example interest rates) are not part of household final consumption expenditure as defined in the national accounts.
- The payments approach captures the cost of owning a dwelling through the inclusion of interest rates. However, it does not account for the potential benefits (capital gains) of owning a dwelling;
- It can be data intensive to develop a price index for mortgage interest payments which is driven by changes in interest rates and house prices. It depends on the conditions of the loans taken out by households (for example fixed or variables rates) over long time periods.

### Box 4: Implementation examples of the payments approach in national CPIs

The payments approach for treating owner-occupied housing in a CPI has been implemented in **Ireland** since 1975. This index covers mortgage interest payments, house insurance, and maintenance and repair of the dwelling. The method is well accepted by the public, focusing on the payments that owner-occupiers actually face. However, given the conceptual problems inherent in the payments approach, extensive work has been conducted for changing the approach towards the rental equivalence approach. No decisions on this have been taken yet.

<sup>(6)</sup> See paragraphs 11.103–11.124 in IMF et al. (2020), and Section 1.3.3 in Eurostat (2017).



## 3.6. The owner-occupied housing price index (OOHPI)

78. As described in Section 2.3, the OOHPI has been developed since the beginning of the century as a stand-alone indicator (next to the HICP and the HPI) to measure the changes in prices faced by owner-occupiers based on the net acquisitions approach. The index was first regulated in 2013 by Commission (2013), which was subsequently incorporated in the framework regulation from 2016. All Member States (except Greece) and EFTA countries (except Switzerland) produce the OOHPI, starting from reference year 2010. The index is produced quarterly and is released approximately 3 months after the end of the quarter <sup>(17)</sup>.

79. Table 2 lists the household expenditure categories included in the OOHPI with the respective weights for the euro area total in 2022.

**Table 2: Breakdown of the owner-occupied housing price index (OOHPI)**

Expenditure categories	Item weights (percentage) for EU in 2022
O.1.1. Acquisitions of dwellings	78.3
O.1.1.1. New dwellings	66.2
O.1.1.1.1. Purchases of newly built dwellings	23.2
O.1.1.1.2. Self-build dwellings and major renovations	43.0
O.1.1.2. Existing dwellings new to households	0.7
O.1.1.3. Other services related to the acquisition of dwellings	11.4
O.1.2. Ownership of dwellings	21.7
O.1.2.1. Major repairs and maintenance	18.1
O.1.2.2. Insurance connected with dwellings	2.6
O.1.2.3. Other services related to ownership of dwellings	1.0

80. These categories are complementary to the concept of household final monetary consumption expenditures used in the HICP. Their relation to ESA 2010 concepts is as follows:

- O.1.1. Acquisition of dwellings = gross fixed capital formation of households in their capacity as producers of own-account housing services;
- O.1.2. Ownership of dwellings = intermediate consumption of households in their capacity as producers of own-account housing services.

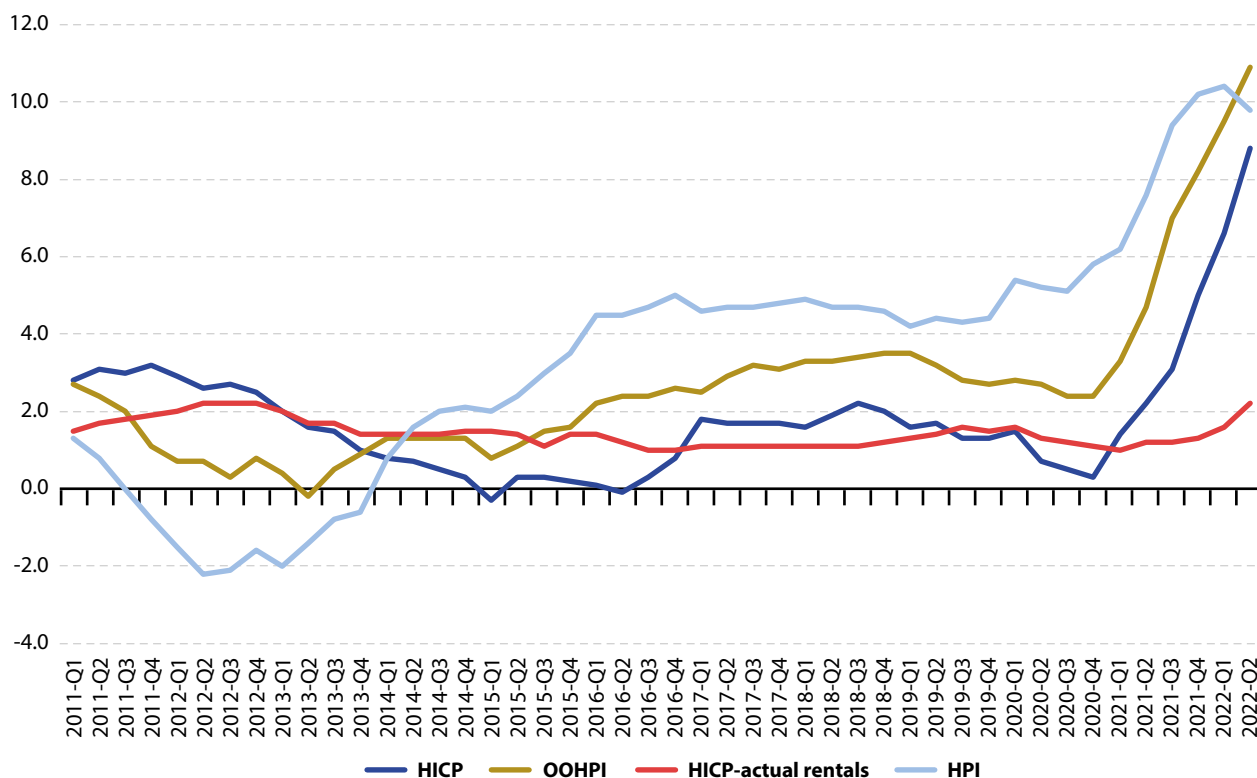
81. The sum of the expenditures covered by the HICP and the OOHPI can be described as the monetary expenditures, whether current or capital, of households for direct final consumption or for use in the production of housing services for own consumption (Hill, 1996).

82. In the OOHPI, the weights are based on national accounts data and concepts. This implies that the weights exclude the value of land purchased (as per the national accounts definition of gross fixed capital formation). However, the price indices used for 'Purchases of newly built dwellings', 'Existing dwellings new to households' and 'Other services related to acquisition of dwellings' (together a share of 35.3 percent) typically do not separate land from structures. The index for 'self-build dwellings and major renovations' (share 43.0 percent) is usually based on construction price or cost indices which exclude the price of land.

83. Chart 1 shows the annual rates of change of the OOHPI for the euro area since 2010, compared to those of the HPI, the HICP and the actual rentals component (COICOP 4.1) of the HICP.

<sup>(17)</sup> The deadline for transmission of the OOHPI to Eurostat is 85 days after the end of the quarter.



**Chart 1: Annual rates of change of HICP, actual rentals, HPI and OOHPI, EU, %**

84. The HPI is the most volatile of these indices, which is due the large influence of house developments of existing dwellings. The OOHPI is mostly driven by price developments of new dwellings and includes the ownership component, which explains the more moderate behaviour of this index, compared to the HPI. The actual rentals component of the HICP has a strikingly different behaviour – ever since 2010, it has shown annual rates mostly between 1.5 % and 2 %.

### 3.7. Comparison of the approaches

85. Whereas the four main approaches to OOH each have their own conceptual underpinning, in practice the differences between some of them may be less large than they appear. Table 3 compares the typical components of each approach.

86. The table shows that the net acquisition, the user cost and the payment approach have several components in common. Some of the examples mentioned above of the implementation of these approaches show that they can use components of different approaches. For example, Finland uses an approach that is predominantly net acquisition, but adds a mortgage interest component. Similarly, Canada's partial user cost approach can also be characterised as a payments approach to which depreciation costs are added. None of the known implementations of the user cost approach include capital gains and losses, nor the opportunity cost of foregone profits. The OOHPI, as an implementation of the net acquisitions approach, excludes property taxes.

**Table 3:** Typical components of the four main approaches

OOH components	Net acquisitions approach	Full user cost approach	Payment approach	Rental equivalence approach
<b>Financing costs</b>				
Mortgage interest payments	—	X	X	—
Mortgage down payments or repayments	—	X	X	—
<b>Acquisition costs</b>				
Purchases and construction of dwellings (net)	X	—	—	—
Major renovations of dwellings	X	—	—	—
Transaction costs	X	X	X	—
<b>Running costs</b>				
Depreciation	—	X	—	—
Property taxes	X	X	X	—
Insurance premiums (of owners)	X	X	X	—
Repair and maintenance (by owners)	X	X	X	—
Other ownership-related expenses	X	X	X	—
<b>Other costs</b>				
Capital gains and losses	—	X	—	—
Opportunity cost of forgone profits	—	X	—	—
Equivalent rent	—	—	—	X

87. The rental equivalence approach is different as it imputes a rent that intends to implicitly cover the costs that a typical tenant would have to make, and thereby many of the components. It is the only approach that does not make use of directly measured components.

# 4

## National accounts methodology

### 4.1. Measuring the value of owner-occupied housing in national accounts

88. As elaborated in Section 2, an important conceptual principle that has been employed in the HICP since its inception is to include only monetary transactions. The rationale for this principle is that the main use of the HICP is as monetary policy target. The aim of the HICP is to measure the change in the purchasing power of money. Consuming self-produced goods or services does not involve money, thus no information on inflation can be derived from this activity. As Peter Hill wrote in 1996: ‘... the imputed prices used in national accounts to record quantities of goods and services produced for own consumption provide no new information about the rate of inflation.’ (Hill, 1996, page 6). However, inputs purchased (in monetary transactions) to be used to produce goods or services for own final use do provide information on inflation.

89. The aim of national accounts is different: they aim to measure the production and consumption that use up resources and affect the welfare of households, no matter whether the production takes place for sale or for own use. Hence, in national accounts, it is necessary to estimate the value of production and consumption of own-produced goods and (some<sup>(18)</sup>) services.

90. ESA 2010, paragraph 3.20, defines output produced for own final use as goods or services that are retained either for own final consumption or for capital formation by the same institutional unit. It adds in paragraph 3.21 that ‘Products retained for own final consumption can only be produced by the households sector. Examples of products retained for own final consumption include:

- [...]
- dwelling services produced by owner-occupiers;

91. Paragraph 3.45 describes the principles for the valuation of output produced for own final use: ‘Output for own final use (P.12) is valued at the basic prices of similar products sold on the market. This generates net operating surplus or mixed income for such output. An example is services of owner-occupied dwellings generating net operating surplus. If basic prices of similar products are not available, output for own final use should be valued at the costs of production plus a mark-up (except for non-market producers) for net operating surplus or mixed income.’

92. Paragraph 3.75 elaborates specifically on owner-occupied housing: ‘The output of services of owner-occupied dwellings is valued at the estimated value of rental 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.’

93. Paragraph 3.79 adds: ‘In the absence of a sufficiently large rental market, where accommodation is characteristic of owner-occupied dwellings, the user cost method is applied for owner-occupied

<sup>(18)</sup> In practice, only one type of own-account produced service is included in gross domestic product: dwelling services.

dwellings. Under the user cost method, the output of dwelling services is the sum of intermediate consumption, consumption of fixed capital, other taxes less subsidies on production and net operating surplus (NOS). The NOS is measured by applying a constant real annual rate of return to the net value of the stock of owner-occupied dwellings at current prices (replacement costs).'

94. Note that the user cost method defined here is in fact measuring the cost of producing owner-occupied dwelling services, and is a simplified variant of the more general user cost approach described in Section 3.4.

95. The principles of paragraphs 3.75 and 3.79 are further elaborated in Commission (2021), the regulation specifying the principles for estimating dwelling services for the purposes of the harmonisation of gross national income (GNI) at market prices. As dwelling services are a substantial share of GNI, this dedicated regulation lays down detailed rules for the estimation of the value of these services. The regulation does not cover the price measurement of owner-occupied housing in national accounts.

96. Principle 1 (Basic Methods) of this regulation says:

'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.'

97. Thus, the rental equivalence approach is the default method that may be replaced by the user cost method under certain circumstances.

## 4.2. Measuring prices and volumes of owner-occupied dwelling services in national accounts

98. The 2016 version of the *Eurostat Handbook on Price and Volume Measures in National Accounts* (Eurostat (2016)) discusses in Section 4.12.2 the principles for dwelling services of owner-occupiers and notes:

'The stratification method thus contains in its calculation of estimates at current prices all the data necessary for the decomposition of the value of output into its price and volume component.'

'When the stratification method is not used for current prices: the use of a CPI for privately rented dwellings that takes full account of changes in quality to deflate output would be an A method <sup>(19)</sup>.'

'The use of the acquisition price of new dwellings would be a C method as this does not relate to the rental income of the dwelling, but to its acquisition price.'

99. Note that the handbook does not explicitly address the GNI user cost approach, although this approach is similar to the measurement of non-market output (sum of costs of production), for which

<sup>(19)</sup> 'A' methods are the ideal methods, whereas 'C' methods should not be used.

input methods may be used. For example, on page 38 of the handbook it states for non-market output: 'if input methods are used, they should estimate the volume of each input separately, taking quality changes of the inputs into account'. Doing so would yield the following.

- Intermediate consumption (Section 3.3): to be deflated product by product with appropriate price indices of goods and services consumed.
- Taxes less subsidies on production (Section 3.11.1): 'Taxes on ownership or use of an asset – These might be levied on the number and/or size of assets used (for example cars, property). As with payroll taxes, where the tax is levied on a value of assets, the changes in the unit price of the asset should be measured as a price effect'.
- Consumption of fixed capital (Section 3.11.3): 'The use of genuine investment price indices (IPIs) will be an A method'.
- Net operating surplus: the GNI regulation fixes the net operating surplus as equal to 2.5 % of the value of the dwelling stock. Thus, the price change of net operating surplus is equal to the change in the value of the dwelling stock.

### 4.3. Comparison of GNI user cost approach and the owner-occupied housing price index

100. Table 4 compares the components of the GNI user cost approach with the net acquisitions approach of the OOHPI.

**Table 4: Comparison of GNI user cost approach and OOHPI**

	OOHPI value (weight)	OOHPI price	GNI user cost value (weight)	GNI user cost price
<b>Intermediate consumption</b>	Included	Price indices of goods and services	Included	Price indices of goods and services
<b>Gross fixed capital formation</b>	Included	Price indices of (new) dwellings including land (*)	Excluded	
<b>Taxes less subsidies on production</b>	Excluded		Included	Price indices of dwellings excluding land + tax changes
<b>Consumption of fixed capital</b>	Excluded		Included	Price indices of dwellings excluding land
<b>Net operating surplus</b>	Excluded		Included	Price indices of dwellings including land

(\*) The OOHPI includes land in the price indices for practical reasons, even though the value of gross fixed capital formation excludes land (see Section 3.6).

101. One major difference is that the OOHPI includes gross fixed capital formation in owner-occupied dwellings, while the GNI user cost approach includes the consumption of fixed capital of owner-occupied dwellings. Whereas the value of these two variables will be different in level and trend, the price indices used in the two approaches for these components will be the same or at least similar, with a partly different treatment for land. Also for the remaining components of the GNI user cost approach, i.e. property taxes and net operating surplus, an index related to prices of dwellings is needed. Thus, the GNI user cost approach, deflated in this way, would use similar price indices as the OOHPI: indices related to the intermediate goods and services used in the production of the dwelling services and indices related to the acquisition of dwellings. The two methods will have different weights.

# 5

## Experimental calculations

### 5.1. Introduction

102. This chapter presents the results of experimental calculations of indices combining the HICP with an OOH component. Using the already available data, Eurostat calculated the combined indices with a quarterly frequency for individual countries and for European aggregates. The calculations were based on two approaches: the net acquisitions approach (using the OOHPI) and an approximate rental equivalence approach. For both approaches, the same calculation procedures were applied. In particular, to comply with the HICP methodology, a chain-linked Laspeyres-type formula was used.

### 5.2. Input data used in calculations

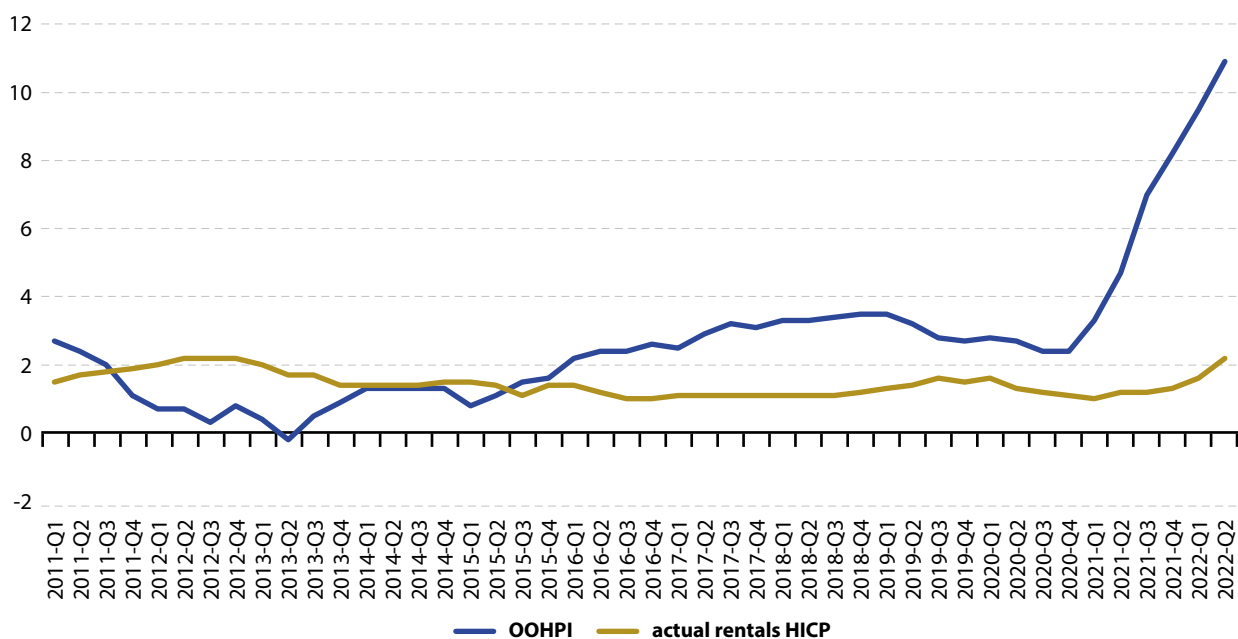
103. Most of the input data used in the calculations (see Table 5) were taken directly (or were calculated) from the Eurostat dissemination database. An exception are the data on owner-occupiers' housing expenditures, which are sent annually by countries to Eurostat but not made publicly available on the Eurostat website. The OOHPI, which is an established official indicator that follows a harmonised approach (see Section 3.6), is used for the net acquisitions approach. The situation is different for the rental equivalence approach. In particular, the ESS has not undertaken any work to develop harmonised data specifically for applying this approach in the context of price statistics. In the absence of monthly or quarterly price indices for imputed rentals, the experimental calculations are based on actual rentals taken from the HICP. This means that the difference in the structure of the stock of the owner-occupied dwellings and the stock of rented dwellings is not considered <sup>(20)</sup>. Since it is not entirely clear whether the price index for actual rentals taken from the HICP may serve as an approximation of the price index for imputed rentals, one should be careful when interpreting the experimental results obtained with the approximate rental equivalence approach.

<sup>(20)</sup> Also, social housing and regulated rents will be included in the actual rental series. However these may not be relevant when calculating the imputed rental series. Moreover some academics consider that the imputed rental series should include only new rents (see Section 3.3).

**Table 5.** Input data used in the experimental calculations

	HICP component	OOH component for net acquisitions approach	OOH component for approximate rental equivalence approach
<b>Price index</b>	Quarterly all-items HICP obtained as arithmetic average of monthly all-items HICP	Quarterly all-items OOHPI	Quarterly price indices for actual rentals obtained as arithmetic average of monthly price index for actual rentals for housing from the HICP
<b>Weights</b>	Price updated household final monetary consumption expenditures (HFMCE) <sup>(2)</sup>	Price updated owner-occupiers' housing expenditures <sup>(2)</sup>	Price updated final consumption expenditure of households on imputed rentals for housing from national accounts

104. Chart 2 compares the OOH price indices used in the experimental calculations for the EU. The quarterly all-items OOHPI, which is based on the net acquisitions approach, follows a distinct cyclical pattern correlated with the house price cycle. This is because one of the most important components of the index is purchases of newly built dwellings. The picture is different when looking at price indices for actual rentals for housing taken from the HICP. In this case, price changes are very stable over time. In the second quarter of 2022, this led to a record difference of 8.7 percentage points between the annual rates of change of the OOHPI and the HICP actual rental index.

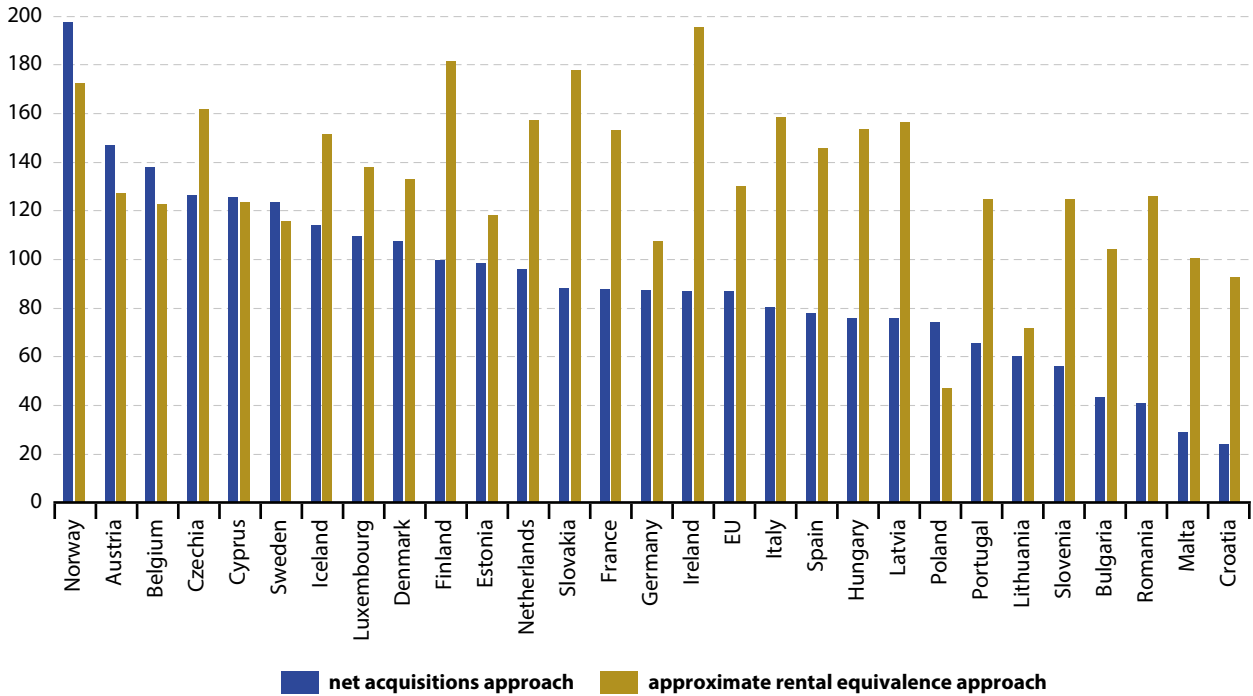
**Chart 2.** Annual rates of change for OOH components according to net acquisitions approach (OOHPI) and approximate rental equivalence approach, EU, %

105. Chart 3 shows the weights of the OOH component used in the combined index for individual countries in 2022. For both approaches, large differences between countries are observed. The range is from slightly above 20 to nearly 200 parts per 1000 in the case of the net acquisitions approach and from slightly below 50 to more than 190 parts per 1000 in the case of the approximate rental equivalence approach. For most countries, the weight used in the rental equivalence approach is higher than the weight used in the net acquisitions approach. However, there are some countries (Austria, Belgium, Cyprus, Sweden and Poland) where the opposite is true, possibly due to specificities in their market structures. Apart from that, the volatility of the weight of the OOH component in the combined index, calculated as the coefficient of variation of the weights over the 2010–2022 period, is significantly higher for the net acquisitions approach than for the approximate rental equivalence approach (see Chart 4).

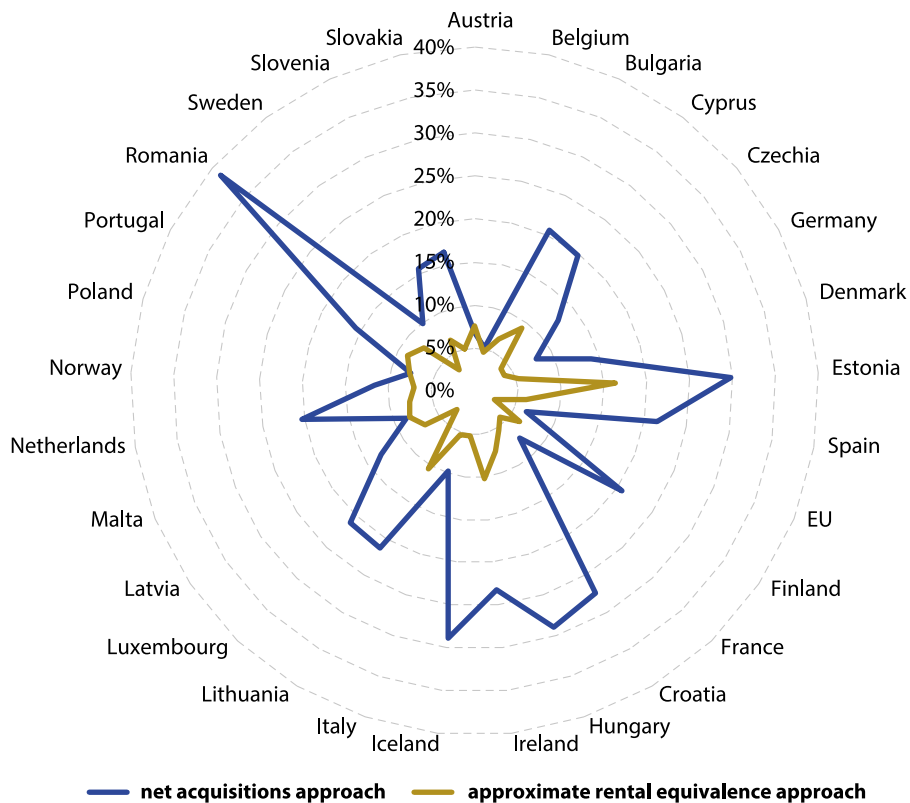
<sup>(2)</sup> HFMCE is defined precisely in the Annex to Commission (2020).

<sup>(2)</sup> Owner-occupiers' housing expenditure is defined precisely in the Annex to the forthcoming implementing regulation on HPI and OOHPI (Commission, forthcoming).

**Chart 3.** Weight of OOH component according to the net acquisitions approach and approximate rental equivalence approach in 2022, parts per thousand



**Chart 4.** Coefficient of variation of the OOH component weights over the years 2010–2022, %

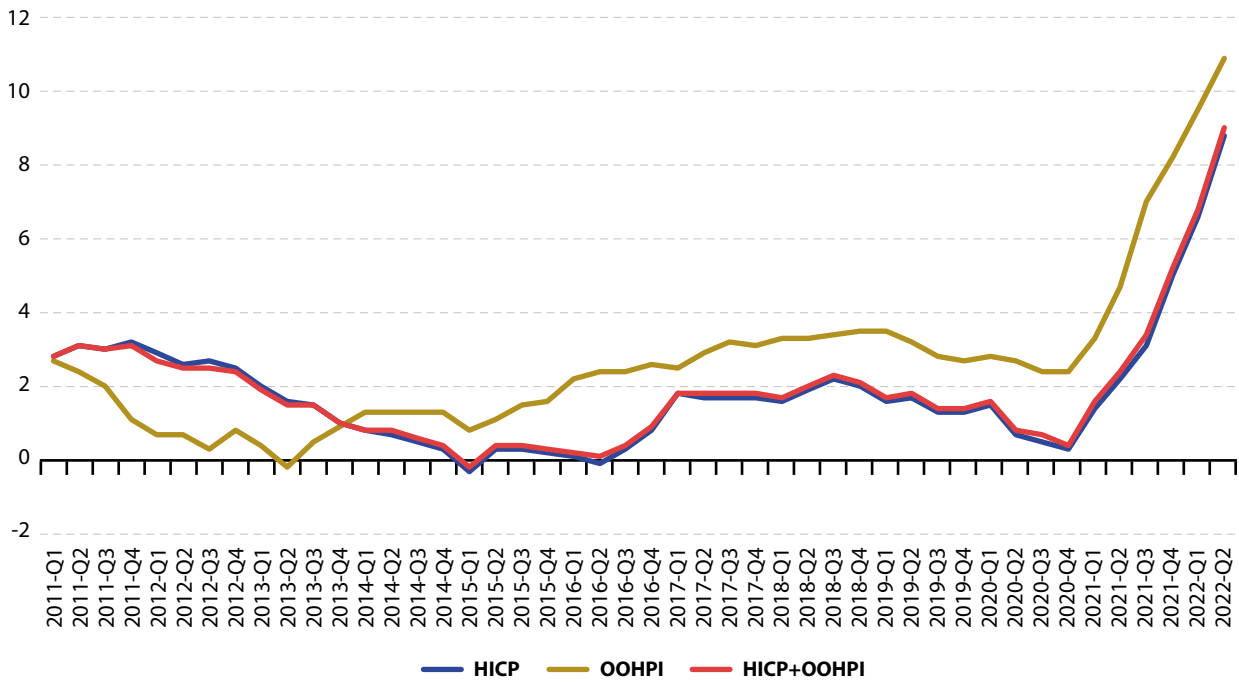




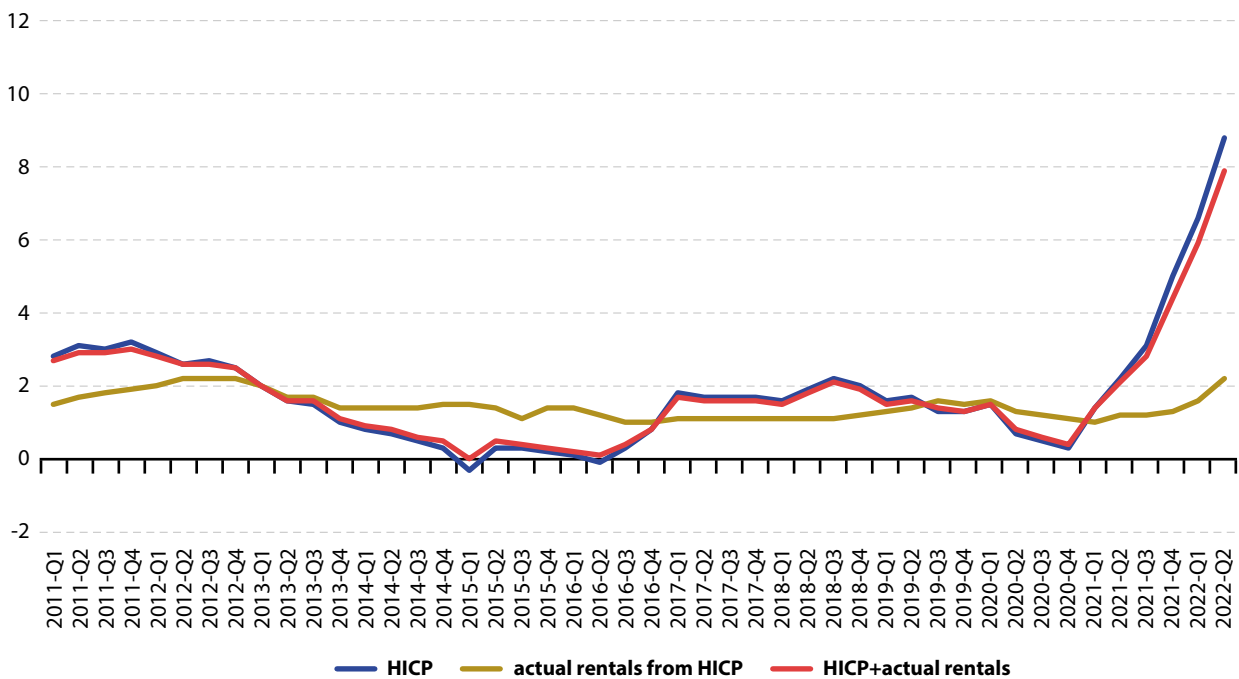
### 5.3. Results

106. Charts 5 and 6 show the results of the experimental calculations for the EU together with the HICP and the price index for the OOH component. For both approaches, annual rates of change for the HICP and the combined index are very similar.

**Chart 5. Annual rates of change of HICP+OOH (net acquisitions approach), HICP and OOHPI, EU, %**

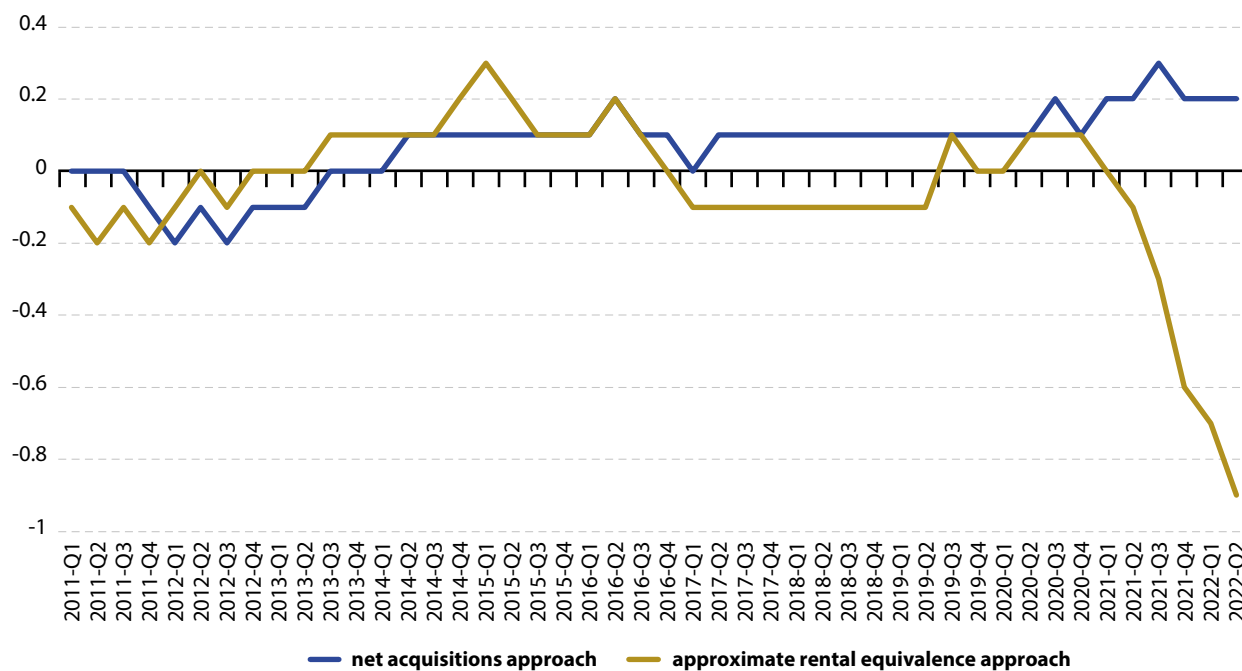


**Chart 6. Annual rates of change of HICP+OOH (approximate rental equivalence approach), HICP and actual rentals, EU, %**



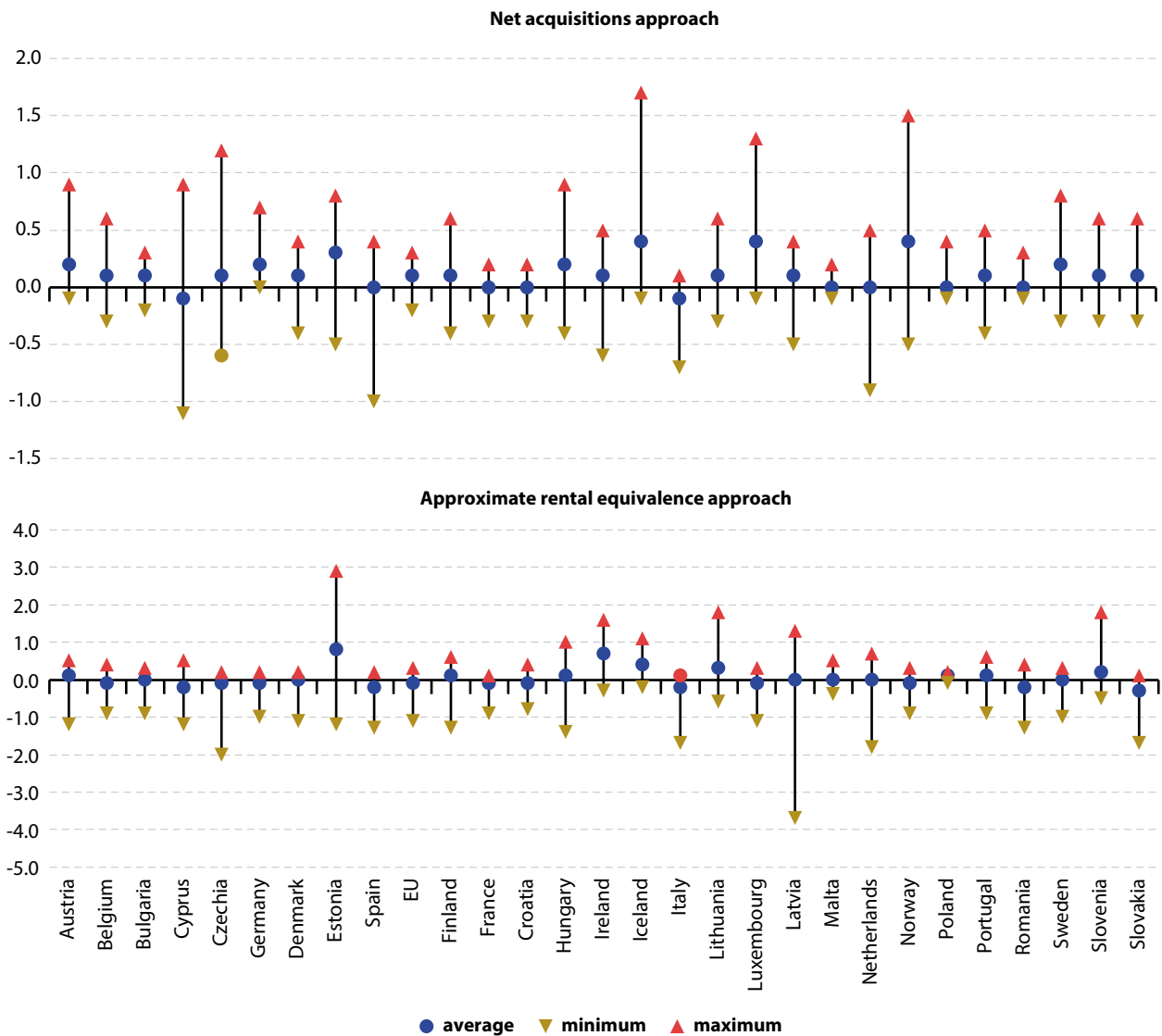
107. Chart 7 shows the differences between the annual rates of change (rounded to one decimal) for the two combined indices and the annual rate of change of the HICP. The difference ranges from -0.2 to 0.3 percentage point in the case of the net acquisitions approach and from -0.9 to 0.3 in the case of the approximate rental equivalence approach. In the case of the net acquisitions approach, the difference is positive in two thirds of the periods under consideration (32 out of 46 quarters), which means that the addition of the OOH component to the HICP would result in an increase in the average inflation measure in these periods. In the case of the approximate rental equivalence approach, there are more periods in which the addition of the OOH component to the HICP would lower the average measure of inflation than periods in which it would be increased (22 versus 16 quarters). In 14 quarters, the difference for the net acquisitions approach and the difference for the approximate rental equivalence approach have the opposite sign. This means that, in those periods, the applied approach determines whether the average inflation measure will be increased or decreased as a result of including the OOH component. In particular, it is true for the quarters of 2021 and 2022 when very strong increases in dwelling prices and in the HICP were observed. In the second quarter of 2022, the difference between annual rates of change for the combined index based on the net acquisitions approach and the approximate rental equivalence approach is the highest in the whole period under consideration and amounts to 1.1 percentage points.

**Chart 7. Difference between annual rates of change of HICP and HICP+OOH, EU, percentage points**



108. In addition to data for European aggregates, the experimental calculations provided information on the impact of the inclusion of the OOH component on inflation in individual countries. In particular, the minimum, maximum and average difference between annual rates of change for the combined index and the HICP in the period from Q1 2011 to Q2 2022 were analysed. As shown in Chart 8, in many cases the range between the minimum and maximum difference is greater for individual countries than for European aggregates. Hence, it can be concluded that the addition of the OOH component to the HICP has a more significant impact on inflation at the individual countries level than at the European aggregate level.

**Chart 8.** Difference between annual rates of change for HICP and HICP+OOH (Q1 2011 to Q2 2022), percentage points



## 5.4. Conclusion on comparability

109. In the case of both the net acquisitions approach and the approximate rental equivalence approach, the combination of the OOH component with the HICP has a relatively small impact on the overall index for the EU. However, the direction of the impact is often different. Whereas, in the period considered, the net acquisitions approach has had a mostly upwards effect on inflation, the approximate rental equivalence approach tended to reduce inflation more often. Especially in the most recent quarters, the difference between the impact of the two methods becomes very substantial.

110. Article 4(2) of the framework regulation defines comparability as follows:

‘2. Any sub-indices of the harmonised indices that deviate from the concepts or methods of this Regulation shall be deemed comparable if they result in an index that is estimated to differ systematically by:

(a) less than or equal to 0,1 percentage points on average over one year against the previous year from an index compiled following the methodological approach of this Regulation, in the case of the HICP and the HICP-CT;’

111. The results of the calculation presented in this section shows that the rental equivalence approach and the net acquisitions approach are unlikely to be deemed comparable under the regulation, as the impact on the HICP is often larger than 0.1 percentage point. This implies that, were OOH to be included in the HICP, one method would have to be chosen with little flexibility in the implementation.

# 6

## Results of the survey on owner-occupied housing measurement

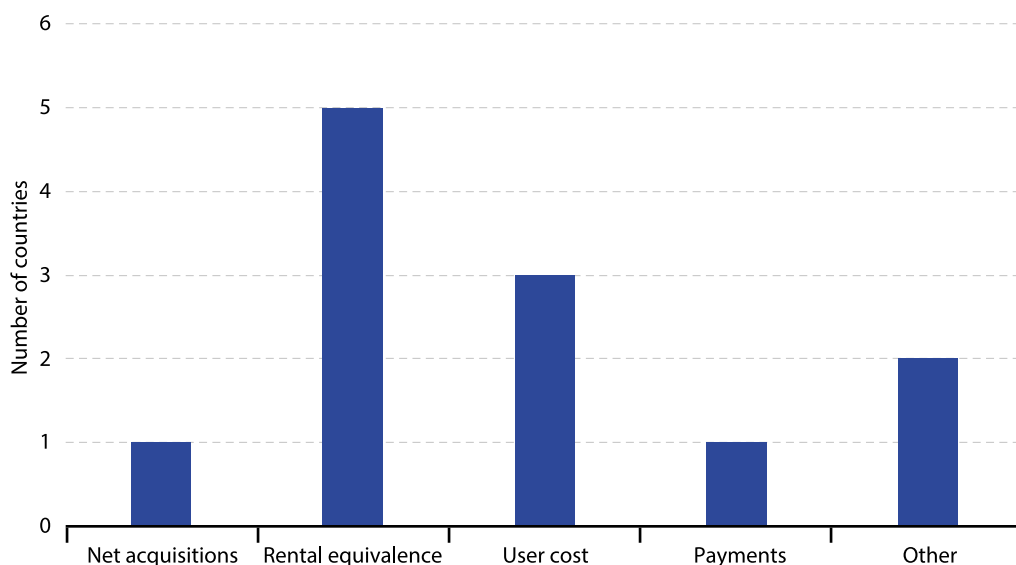
112. The OOH task force conducted a survey among the statistical offices of all EU and EFTA countries, with the objective to evaluate the suitability, for each country, of various approaches to the measurement of OOH in respect of its possible future inclusion in the monthly HICP. The survey was launched in the EU-survey tool on 1 July 2022, with the deadline for responses set to 31 August 2022. All 30 countries provided a response. This section of the report summarises, in an anonymous way, the key outcomes of the survey.

### 6.1. Part I: the measurement of owner-occupied housing at the national level

113. The first part of the survey aimed to collect information on past and current practices, and possible future plans, for the measurement of OOH in national CPIs and national accounts.

114. Currently, 12 countries include a measure of OOH in their national CPIs, while 18 do not. Chart 9 shows the distribution of the various approaches used by these countries.

**Chart 9: Approaches to OOH used in national CPIs**



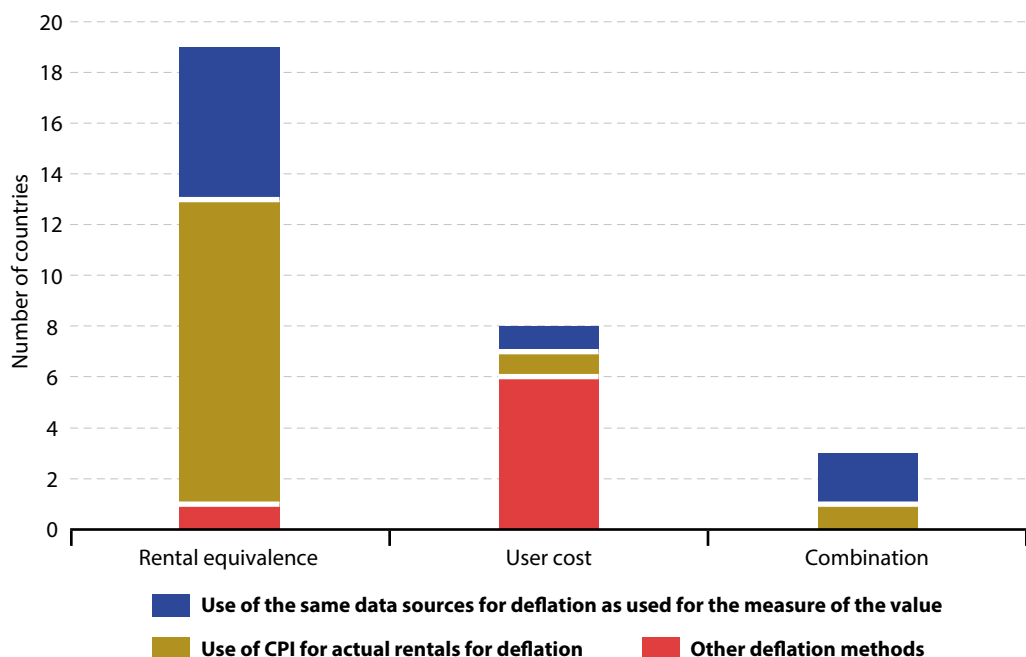
115. Eight out of these 12 countries have been using the same method for more than 30 years.

116. The main reasons for the 18 other countries to not include OOH in their CPI are unresolved methodological issues, the difficulties in producing an OOH measure at monthly frequency, the lack of demand from national users and the need to maintain consistency between their CPI and the HICP. Two of these 18 countries did include OOH in the past and one country is considering including OOH in the future but has not yet decided on the approach that will be used.

117. In most countries, the HICP is not used in legislation related to indexation of wages, social security, pensions or rents, for example. For this purpose, national CPIs are normally used. Three countries provided examples of the use of the HICP in national legislation.

118. In the national accounts, 19 countries use the rental equivalence approach, 8 use the user cost approach while 3 use a combination of the two. Chart 10 shows this information in combination with the methods used to deflate the value of OOH in national accounts.

**Chart 10: Approaches used to measure OOH in the national accounts**



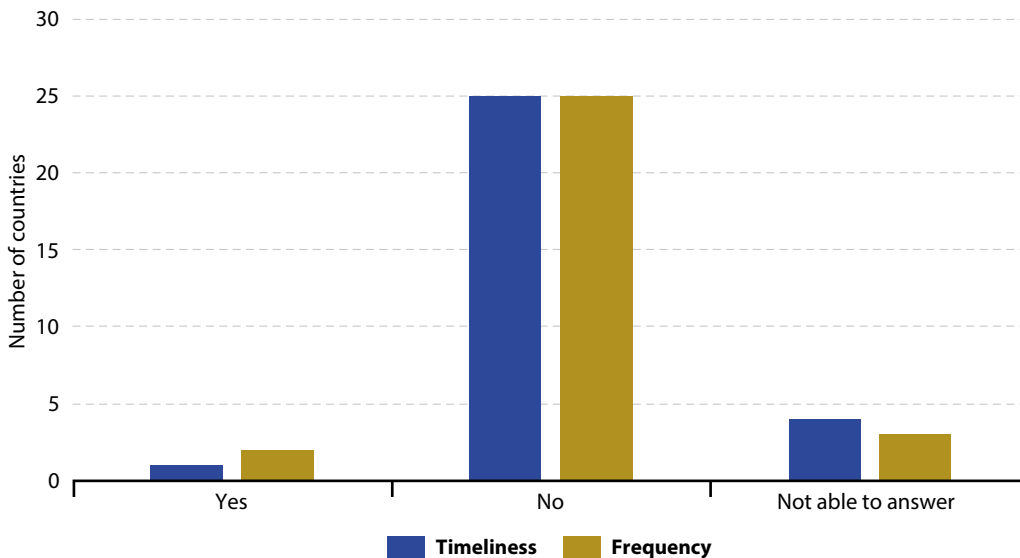
119. Twelve out of the 19 countries that only use the rental equivalence approach use the CPI for actual rentals to deflate the value of OOH consumption in their national accounts. Five countries use the method that is recommended in the handbook on price and volume measures (see Section 4.2). The 'other deflation methods' used by countries that employ the user cost method include extrapolation with volume indicators and separate deflation of each of the components of the method.

## 6.2. Part II: net acquisitions approach

120. The second part of the survey collected information and views on the net acquisitions approach, and in particular its implementation in the OOHPI.

121. The first set of questions related to the possibilities for improving the timeliness and frequency of the OOHPI.

**Chart 11: Do you think that you can provide the OOHPI in the future with the same timeliness/frequency as the monthly HICP without seriously affecting other quality dimensions, such as accuracy, and without the need for additional revisions?**



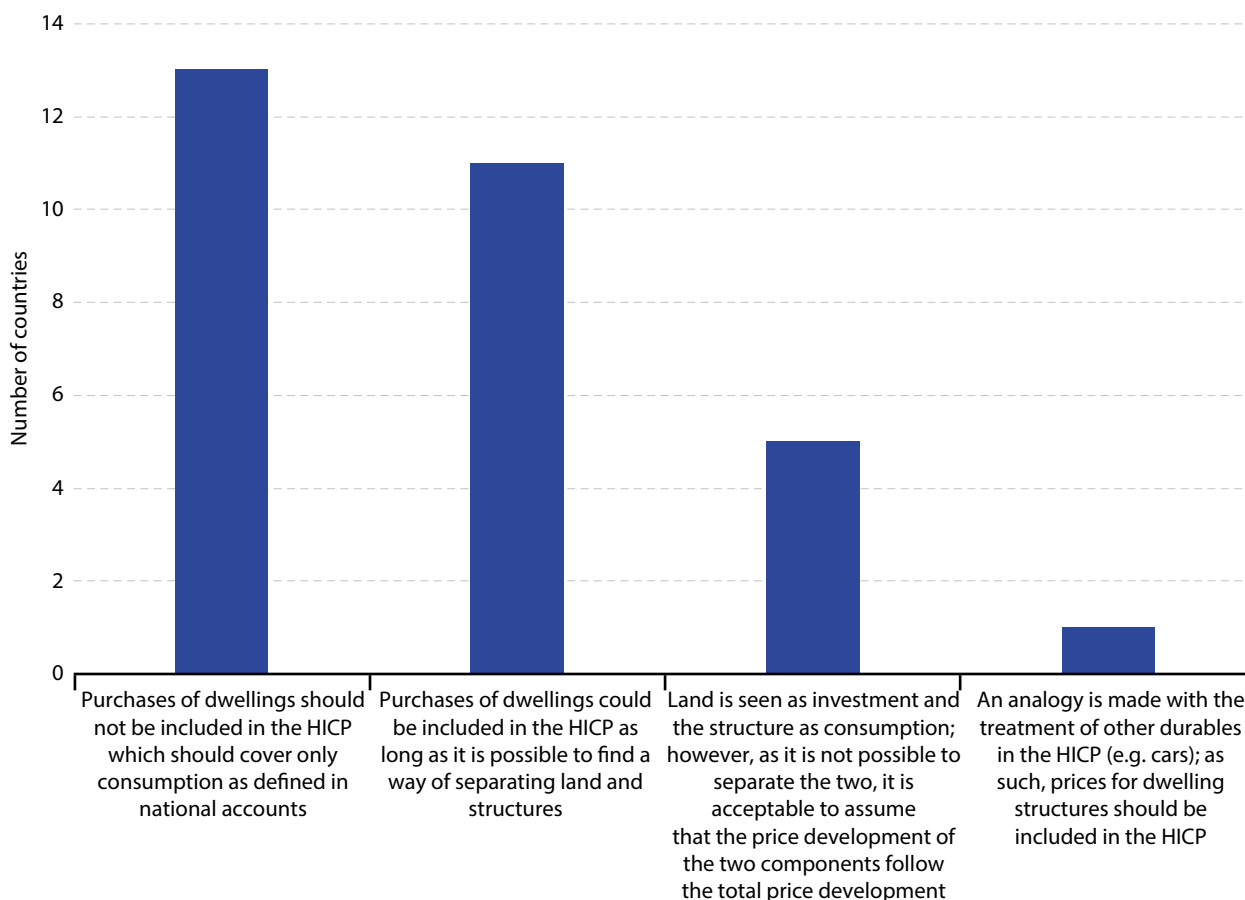
122. Chart 11 shows that almost all countries expect that it will not be possible to improve the timeliness and frequency of the OOHPI to HICP standards without affecting its quality. The main reasons that countries give for this are that the timeliness and frequency of the underlying (often administrative) data sources would not allow this, and that the number of transactions per month will be too small to produce a reliable index.

123. The countries that responded 'yes' refer to the use of new data sources and nowcasting methods to improve timeliness and frequency.

124. Five countries do expect that the timeliness of the OOHPI could be improved in their country, by on average 25–30 days, which does not yet reach the timeliness required by the HICP.

125. A second set of questions related to the treatment of land, and the possibilities to separate prices for land from prices for building structures. Three countries reported that they had data that would allow them to make the separation. Countries were also asked to choose among four options the one that best represented their view on the inclusion of the acquisition of dwellings in the HICP. The results are given in Chart 12.

**Chart 12:** Please choose from the options below the one that best represents your view on the inclusion of the acquisition of dwellings in the HICP.



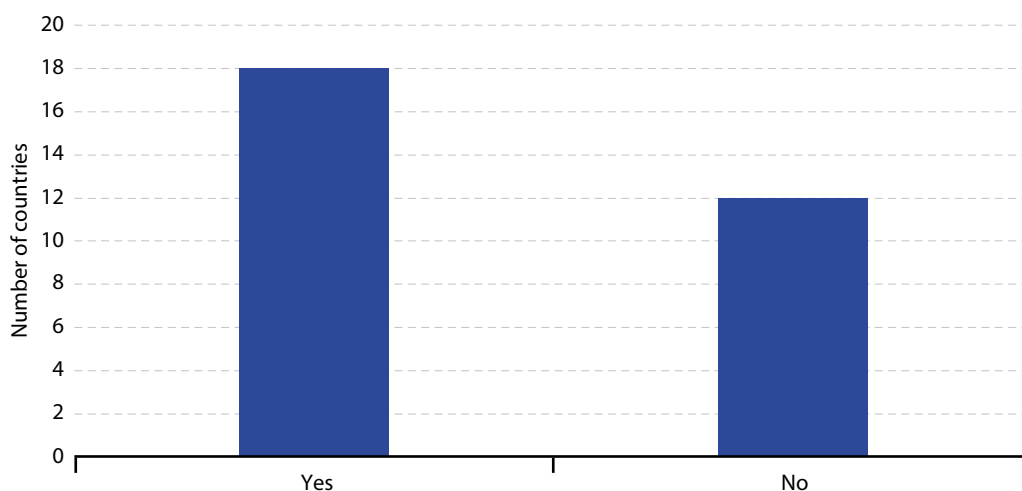
126. Thirteen of the 30 countries consider that purchases of dwellings should not be included in the HICP, because this is not considered consumption in the national accounts. Eleven countries state that purchases of dwellings could be included in the HICP as long as it is possible to separate out the land component. Five countries agree to the statement that it is acceptable to assume that the price development of the land and structure follow the total price development. Finally, one country considers that the dwellings can be treated in the same way as durables.

127. Eight countries reported a number of other methodological issues relevant for the use of the net acquisitions approach, such as the volatility of the weights and/or the index, the relationship between the OOH weights and the stock of owner-occupied and rented dwellings and the calculation of an HICP-CT including OOH.

128. The final question in this part of the survey asked countries whether they considered the net acquisitions approach to be an appropriate approach for their country to incorporate the OOH component into the monthly HICP, assuming that the methodological issues on timeliness, frequency and the separation of consumption and investment can be resolved. Chart 13 shows the results.



**Chart 13:** Assuming that the methodological issues on timeliness, frequency and the separation of consumption and investment can be resolved, do you consider the net acquisitions approach to be an appropriate approach for your country to incorporate the OOH component into the monthly HICP?



129. Eighteen countries consider that the net acquisitions approach would be appropriate for them if the methodological issues could be resolved. Those that answered 'yes' provided the following explanations:

- the net acquisitions approach is the most appropriate if the methodological issues can be solved;
- rental equivalence is considered to be not feasible or not appropriate;
- as the timeliness problem is difficult to solve, it is necessary to accept estimations or revisions;
- the net acquisitions approach ensures a high degree of harmonisation that will be difficult to get with other methods;
- consistency with the HICP framework of monetary transactions;
- the approach is in line with the experience of house buyers;
- the approach is suitable because the HICP is not used for indexation;
- the approach is already implemented at the national level;
- the approach is consistent with the treatment of durables in the HICP.

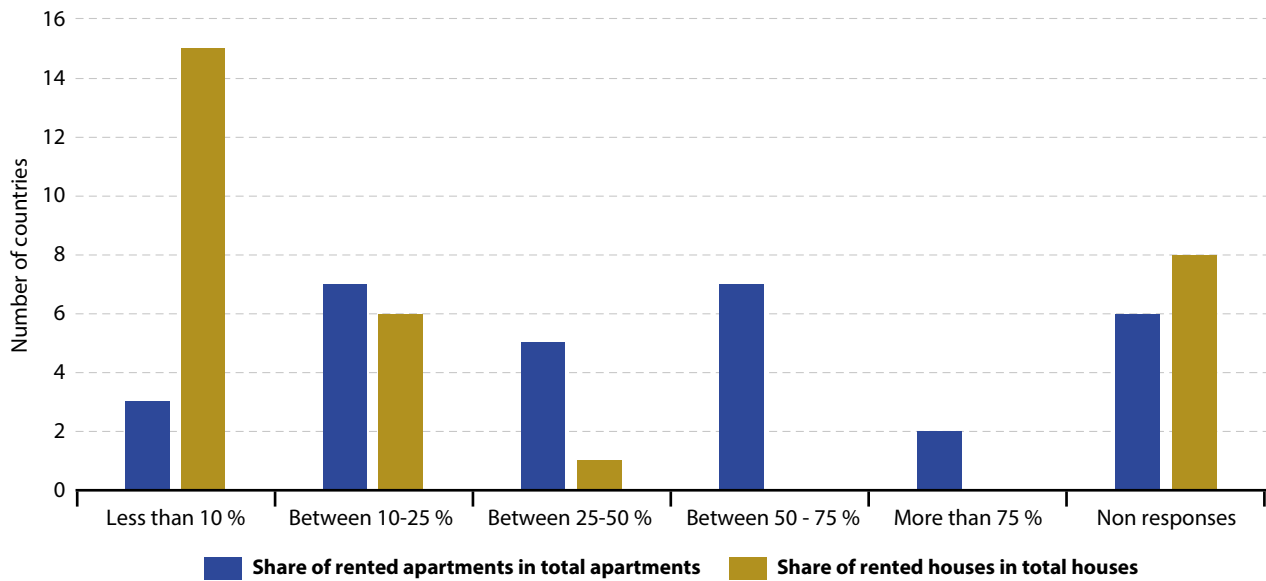
130. Those that answered 'no' made the following notes:

- the approach is inconsistent with national accounts;
- rental equivalence is preferred;
- splitting the land and the structure is a problem that cannot be solved;
- asset component should not be included in the HICP;
- data sources are not available to solve the timeliness and frequency issues;
- not suitable for a CPI, OOH price index based on net acquisitions can only be used to compile a mixed indicator;
- solving the timeliness and the investment issues requires too much estimation (while one strength of the net acquisitions approach would be to avoid imputations);
- user cost is preferred because of small rental market;
- reduces harmonisation due to differences in the share of owner-occupiers.

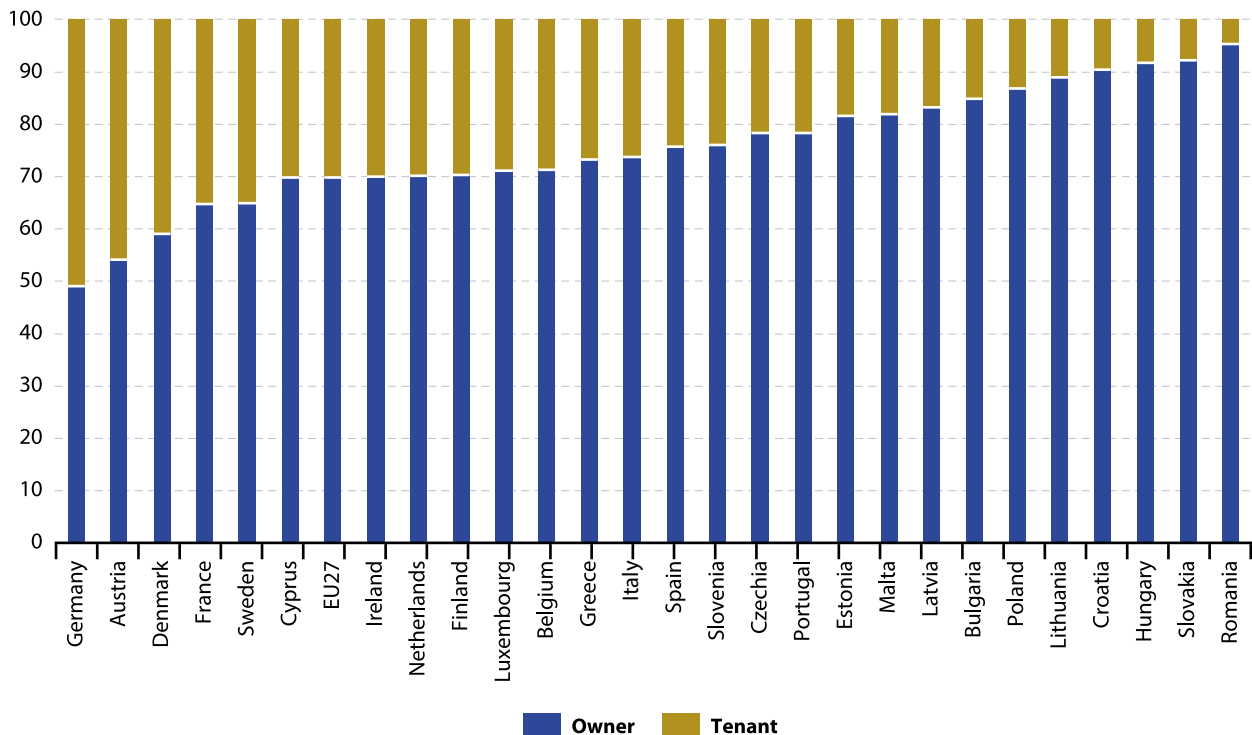
## 6.3. Part III: rental equivalence approach

131. The third part of the survey investigated the appropriateness and feasibility of the rental equivalence approach.

132. The first set of questions asked for structural data on the housing market, in particular on the numbers of rented and owner-occupied dwellings (divided into apartments and houses). Chart 14 shows that there is a lot of variation across countries in the share of rented apartments among the total number of apartments, but that for houses, the share of rented houses is below 10 % in the majority of countries that provided data on this subject.

**Chart 14:** Shares of rented apartments and houses in the total number of apartments and houses

133. For the total shares of owner-occupiers and renting households, the Survey of Income and Living Conditions (SILC) provides data for all Member States, see Chart 15.

**Chart 15:** Distribution of households by tenure status, 2021 <sup>(23)</sup>.

Source: EU Statistics on Income and Living Conditions (Eurostat data code: ILC\_LVHO02).

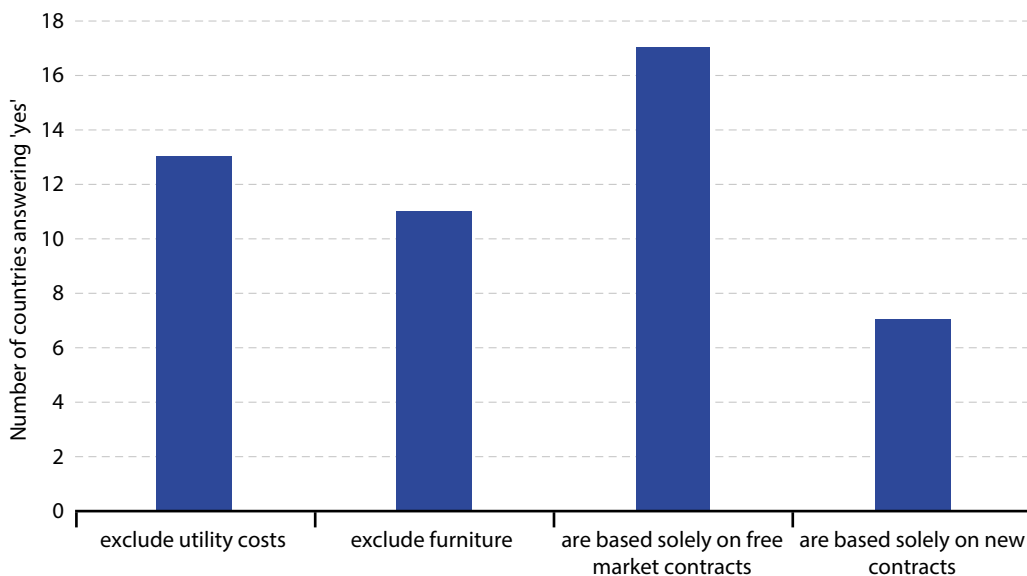
<sup>(23)</sup> Slovakia: 2020.

134. Unfortunately, the OOH survey did not receive a sufficient number of responses on shares of dwellings under rent control and social housing. Information on the average number of new rental contracts was also requested but too few countries could provide data on this to draw conclusions.

135. Countries were then asked to evaluate whether the extent of the differences in characteristics (property type, location, size, age, etc.) between the stock of owner-occupied dwellings and the stock of rented dwellings would significantly affect the quality of the results of the rental equivalence approach in their country. A large majority (24) of countries considered this to be the case. As reasons, those countries specified that, for example, the rental market is too small, in particular for houses, and/or that there is no possibility to correct for the differences. The countries that said that the quality would not be significantly affected noted that their rental market is sufficiently large or that differences in characteristics between rented and owner-occupied dwellings are not significant.

136. As discussed in Section 3.3, the rents used in the rental equivalence method should exclude any other additional costs related to the dwelling (for example furniture or utility costs). Moreover, subsidised or regulated rents should in principle be excluded as they may not reflect market rents. It remains an open question whether the estimation of the owner-occupier's equivalent rent should be derived from all running rental contracts, or from new rental contracts only. The countries were asked if their data sources would allow them to calculate imputed rentals that satisfy these requirements. Chart 16 shows that for three out of four of the items mentioned, most countries do not have the data.

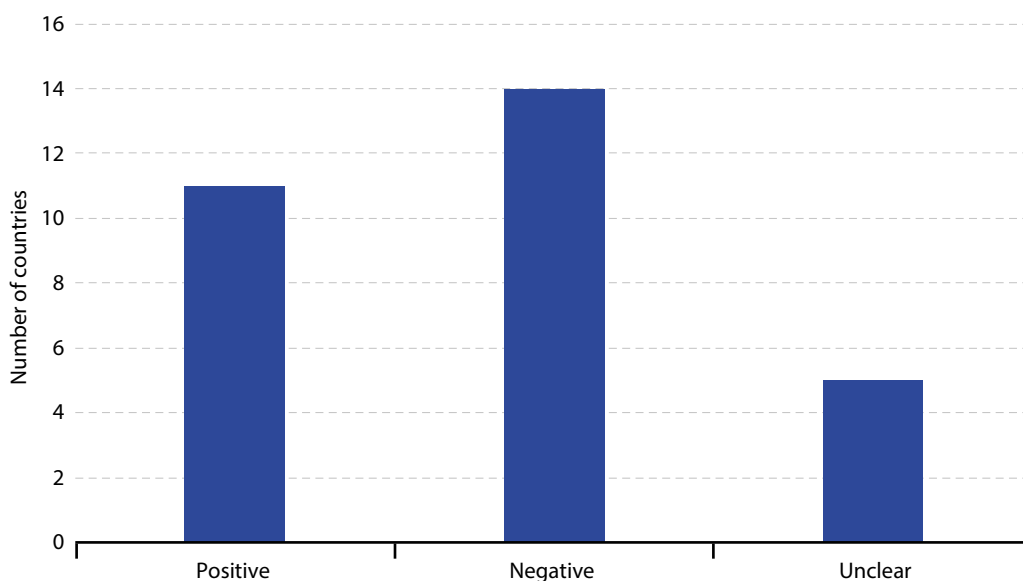
**Chart 16: Taking into account information available in currently used data sources on rents, would you be able to calculate imputed rentals for owner-occupied housing which:**



137. Regarding timeliness and frequency, 17 out of 30 countries responded that the rental equivalence approach would allow them to produce the OOH component in a way that meets the requirements of the HICP.

138. An open question requested the countries to assess the feasibility and appropriateness of the rental equivalence approach for their country as a method to incorporate the OOH component into the monthly HICP. The replies were categorised in those that were predominantly positive as regards the rental equivalence approach and those that were mostly negative. Some responses could not unambiguously be classified this way. Chart 17 shows the results.

**Chart 17: Please provide your assessment of the feasibility and appropriateness of the rental equivalence approach for your country as a method to incorporate the OOH component into the monthly HICP.**



139. Fourteen countries expressed a mostly negative view of the feasibility and appropriateness of the rental equivalence approach. Some of the main arguments these countries gave for this are:

- their national accounts do not use this approach;
- small size of the rental market;
- it does not reflect price changes of owner-occupiers' expenditures;
- no good rents data available;
- no timely rents data available;
- significant differences between the characteristics of owner-occupied dwellings and rented dwellings and between rural and urban areas;
- imputed prices are not consistent with HICP methodology;
- importance of rental market regulation;
- rental index does not include new rental contracts.

140. Eleven countries gave a mostly positive view; some of their points provided are:

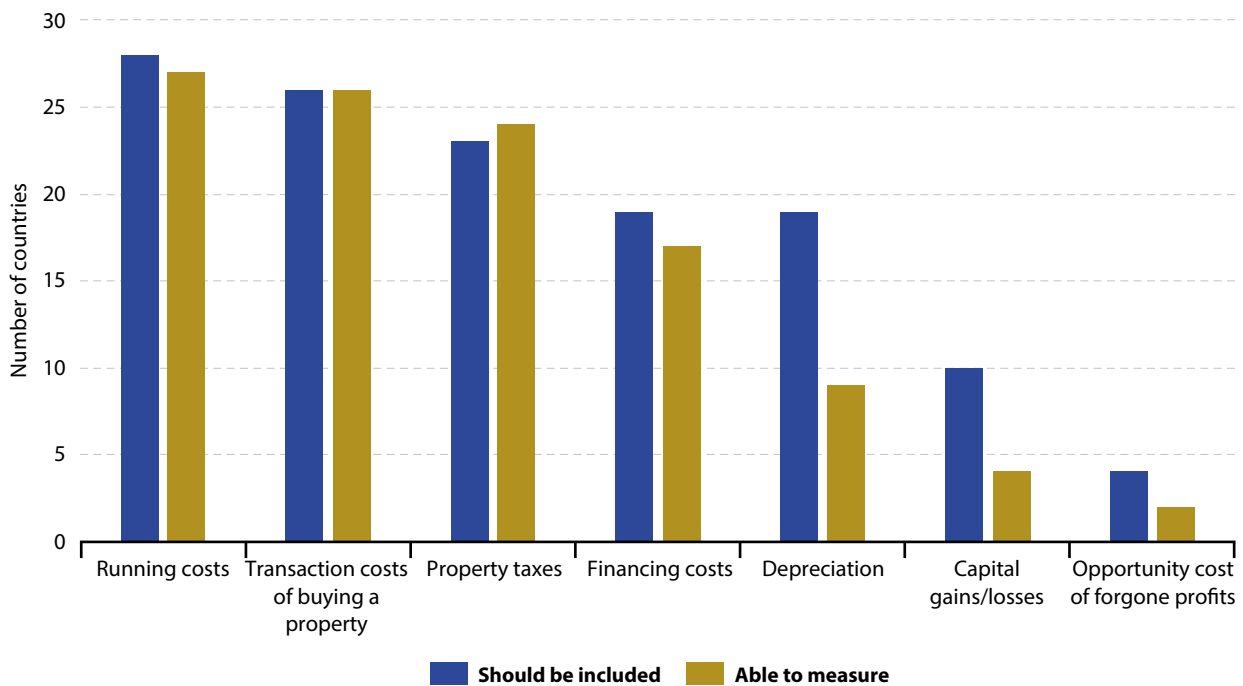
- more than 60 % of the households are renters;
- it is a feasible and practical approach;
- it is used in national accounts;
- it is used in the national CPI;
- it can be done with existing data sources;
- can be done with timeliness and frequency of HICP.

141. Finally, on the question of whether countries considered it useful to develop efforts for further investigation into the rental equivalence approach as a harmonised approach to including OOH in the HICP, 17 countries responded 'No'. Additional methodological issues that may merit investigation, as mentioned by the countries, are possible revisions due to newly available information, harmonisation of the methods (e.g. the stratification criteria) and the treatment of secondary dwellings.

## 6.4. Part IV: user cost approach

142. The fourth part of the survey considered the user cost approach. The focus of the questions was which of the possible components of the user cost approach should or could be included, see Chart 18.

**Chart 18: Which of the possible user cost components should be included in an approach used by all countries and which of these components do you think you are able to measure?**



143. Running costs, transaction costs and property taxes are widely seen as important to include and feasible to measure. Financing costs and depreciation are also seen as important but less feasible. Capital gains/losses and opportunity costs of forgone profits are seen as less desirable and difficult in practice.

144. Countries were again asked for an assessment of the feasibility and appropriateness of the user cost approach. Eleven countries could not answer this question, often for lack of experience with the approach. Twelve countries answered negatively to the question or stated that it would be very difficult to implement. There was one clear 'Yes' answer and six other countries mentioned that it would be possible to implement the approach if methodological, timeliness and frequency issues are overcome. It is also worth mentioning that one country with experience with the approach does not recommend it to be implemented in the HICP context.

145. Seventeen countries could not answer the question of whether the user cost approach would enable them to produce the OOH component with timeliness and frequency of the HICP. Twelve countries said this would not be possible, while two countries (those that already use it in their national CPI) said it is.

146. Twenty countries said that they do not consider it useful to develop efforts for further investigation into the user cost approach as a harmonised approach to including OOH in the HICP.

# 7

## Conclusions

147. This report provides a summary of the history of the OOH topic in the context of the HICP, describes the possible methods based on the available literature, in particular the international CPI manual, and discusses the advantages and disadvantages of each of these methods. The report also summarises the treatment of OOH in the national accounts, as regards the estimation of the value of OOH and its breakdown in prices and volumes.

148. The report provides an analysis of experimental calculations, prepared by Eurostat, that compare the impact of combining the HICP with a) the OOHPI, which is based on the net acquisitions approach and b) an approximate rental equivalence approach using the HICP actual rentals component as a proxy for OOH. Finally, the report summarises the results of a survey among all EU and EFTA countries, conducted by the dedicated ESS task force, in which information and views were collected on the appropriateness and feasibility of net acquisitions, rental equivalence and user cost approaches.

149. According to the survey results, a small majority of countries have no objections to the use of the net acquisitions approach, provided the methodological issues can be resolved. However, there is near unanimity among countries that it will not be possible in the foreseeable future to produce the OOHPI with the same timeliness and frequency as the HICP without loss of quality. Also, almost all countries state that the issue of separating consumption and investment components of dwelling purchases is very important but will be difficult to solve, for conceptual and practical reasons. The separation of land from building structures, considered by some to be a way forward on this issue but would not be fully in line with national accounts definitions, is difficult to implement in practice. Separate data on land transactions or land values are currently only available in a few countries, while econometric estimation methods that have been proposed in the academic literature need further testing.

150. The survey results also showed that most countries that include OOH in their national CPIs use the rental equivalence approach. This approach is also the one that is most used in national accounts. Almost half of the countries assess the rental equivalence approach not to be appropriate or feasible for their country, because of the size and structure of their rental markets or due to the insufficient quality of available input data. Some of them have conceptual concerns regarding the inclusion of non-monetary transactions in the HICP. The rental equivalence approach is seen, in general, as easy to implement and slightly more than half of the countries expect it to be possible to produce an OOH index with the same timeliness and frequency as the HICP without loss of quality.

151. Most countries consider the user cost approach not to be appropriate or feasible for their country or are not able to evaluate this method considering the lack of national experience with and research into this method. The user cost approach would need house price indices as input and thus the issue of timeliness and frequency should be resolved. In addition, the exclusion of land from these house price indices would be needed for some of the components of the approach.

152. The experimental calculations of indices combining the HICP with the OOHPI based on the net acquisitions approach on the one hand and with the approximate rental equivalence approach on the other, show different results. While the overall impact on the annual rates of change of the HICP, at the EU level, is in most periods relatively small, the direction of the impact is often different. Especially in the most recent quarters with high inflation, the difference between the impacts of the two methods becomes substantial: for the second quarter of 2022, adding the OOHPI to the HICP would increase

the annual inflation rate for the EU by 0.2 percentage points, while the approximate rental equivalence approach would decrease the annual inflation rate by 0.9 percentage points.

153. The significant differences in the results of the experimental calculations between the various methods, and the need to respect the comparability requirements of the HICP framework regulation, imply that a harmonised approach to include OOH in the HICP would require the selection of a single method of inclusion of OOH in the HICP.

154. In conclusion, there is no consensus among EU countries on the best method to include OOH in the HICP. There are substantial differences of opinion on conceptual questions. Besides these differences, none of the three approaches investigated currently enable in practice to include OOH in the HICP without affecting the quality of the HICP.

155. More research on the separation of consumption and investment elements is needed, as well as investigations into versions of the rental equivalence and user cost approaches that can be consistently implemented in all countries. In this context, the eventual separation of land from building structures would considerably improve the appropriateness of the OOHPI. Improving the timeliness and frequency of house price indicators (HPI and OOHPI) would be important in its own right.

156. The results of the Task Force work were discussed by the ESS Committee (ESSC) <sup>(24)</sup> in its February 2023 meeting. The ESSC issued the following opinion:

1. “The ESSC acknowledged and expressed its appreciation of the very substantial work carried out by the Task Force on Owner-Occupied Housing and the HICP. The ESSC agreed that there are still significant obstacles, of conceptual as well as practical nature, to include owner-occupied housing in the HICP.
2. In view of the significant differences in direction and size of the results, the ESSC did not support the regular publication of the two experimental indicators, considering that this could be misleading and detrimental to the credibility of the HICP. The ESSC agreed that the work carried out by the task force should be made public by Eurostat.
3. The ESSC supported the continuation of the work on the conceptual and practical issues that need resolution before an integration of owner-occupied housing into the HICP could be considered. To this end, it asked Eurostat to present to the ESSC a concrete research agenda. It also asked Eurostat to provide a roadmap for improving the timeliness and frequency of housing price indicators.
4. Key users like the European Central Bank, the Economic and Financial Committee and researchers should be consulted for addressing the policy information needs while continuing to work on the methodological challenges.
5. The ESSC considered that the work to improve housing price indicators is costly and financial support should therefore be envisaged.”

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<sup>(24)</sup> See <https://ec.europa.eu/eurostat/web/european-statistical-system/governance-bodies/essc>

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# Owner-occupied housing and the harmonised index of consumer prices

## Outcome of the work of the European Statistical System

The harmonised index of consumer prices (HICP) was created in the 1990s to serve as the key comparable measure of consumer inflation for the purpose of policymaking within the EU's monetary union. From the outset, the costs of households to live in their own home ('owner-occupied housing') have been excluded from the coverage of the HICP.

In July 2021, as a result of its monetary policy strategy review, new recommendations were addressed by the ECB to the European Statistical System (ESS) in this regard.

This report reflects the outcome of the work carried out by a dedicated task force of the ESS and of discussions at the ESS Committee in February 2023, as a response to the ECB's recommendations.

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