



## **SEMINAR**

# **Inflation Measures: Too High - Too Low - Internationally Comparable? Paris, 21-22 June 2005**

### **10. International Comparability of the Consumer Price Index: Owner-occupied housing**

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**INTERNATIONAL COMPARABILITY OF THE CONSUMER PRICE INDEX: OWNER-  
OCCUPIED HOUSING**

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## 1. Background

1. One of the central preoccupations of statistical work at the OECD is to assess and advance international comparability of statistical series. Given its membership, the OECD is well placed to address issues of international comparability in particular between the large economic blocks of its member countries: the European Union, North America, and Asia Pacific. Despite some previous work (OECD 2002) and despite a monthly collection and publication of CPI data for all OECD countries, the OECD has in the past not specifically focused on the question of international comparability of CPIs. With the creation of a Prices Division in 2004, more emphasis has been put on this area. The present document has been drafted with a view to improving knowledge about the international comparability of an important and sometimes contentious area of the CPI: the treatment of owner-occupied housing (OOH). The main purpose of the paper is to document different practices in the OECD regions and to provide some evidence about the impact of these differences on the international comparability of consumer prices.

2. The document is organized as follows: section 2 provides a brief discussion about the rationale for recognizing owner-occupied housing in the CPI or for leaving it out from the index; section 3 discusses whether leaving out the OOH item from countries CPIs is a way towards improving international comparability; section 4 aims at shedding some light on the quantitative impact of the choice between different methods. Section 5 concludes and provides a suggestion for future work at the international level.

## 2. OOH in the CPI

3. There is an extensive literature on consumer price indices and on the conceptual and practical issues associated with the treatment of housing in the CPI (see for example, ILO et al. (2004), Diewert (2002), Goodhart(2001)) and no attempt is made here to give an overview of this discussion. We simply recall a few points that consistently emerge from the literature:

- there is no single best CPI – several conceptual approaches exist and their choice depends essentially on the use to which the CPI is put;
- the main conceptual approaches towards recording and valuing consumption are the *use approach*, the *acquisition approach* and the *payment approach* although terminology varies between sources and although the latter two approaches are sometimes considered together. Because these distinctions are particularly important for products like dwellings for which the timing of acquisition, use and payment do not coincide, the three approaches are briefly characterized below. For completeness, we add a fourth approach, namely one that excludes OOH entirely from the CPI.
  - a CPI based on the use approach measures the average change in prices of the consumption goods and services used by households to satisfy their needs and wants. In the case of durables or fixed assets such as dwellings, the use approach suggests that the value of the flow of services derived from these long-lived goods should be considered in the CPI. The implementation of the use approach has given rise to two main methodologies: (i) user costs of OOH; (ii) rental equivalents of OOH.
  - a CPI based on the acquisition approach measures the average change in prices of the goods and services acquired by the household, irrespective of whether they were wholly paid for or used in the period under consideration. Under the acquisition approach, the full value of a dwelling would be included in the CPI, regardless of the timing of the use of the asset.

**Table 1: Overview of OOH treatment in the CPI**

<b>Purpose of CPI</b>	<b>Price of consumption services</b>		<b>Price of monetary transactions in the household sector</b>	<b>Price of outlays by the household sector</b>	<b>Price of monetary transactions of consumer goods and services in the household sector</b>
<b>Approach</b>	Use approach		Acquisition approach	Payment approach	Exclusion of OOH
<b>Method</b>	Rental equivalents	User cost	Net acquisition	Payments	-
<b>Main elements</b>	Rent index differentiated by characteristics Weights: stock of OOH, differentiated by characteristics or survey of owners	Mortgage debt and equity, depreciation, capital gains and losses, recurrent costs	Net purchases of HH sector (construction of new dwellings, alterations and additions)	Outlays of HH sector (mortgage interest, alterations and additions etc.) excluding transactions without net impact on HH balance (e.g., down payments, mortgage principal)	-
<b>Issues in international comparability</b>	Representativity of rents when rental market is 'thin' or not comparable with OOH	Consistent methodology for imputations, in particular rates of return, and depreciation, in particular if ex-ante approach is adopted	Consistent inclusion or exclusion of land prices	Consistent treatment of mortgage interest payments, treatment of tax provisions	-
	Used in national accounts and PPP programme	Consistent methodology for capital stock measures	For large cross-country differences in the share of house ownership, danger of biased international comparison		-
			Base period weights depend on country's position in the business cycle		-

- a CPI based on the payments approach measures the average change in prices of the goods and services paid for by the household, irrespective of the time of acquisition or use of the good or service. Under the payment approach, all payments related to dwellings would be included in the CPI, including fees, mortgage interest payments etc.
- finally, a CPI that excludes OOH entirely could be interpreted as measuring the average change in prices of monetary transactions of consumer goods and services in the HH sector. The limitation to monetary transaction excludes capturing OOH services by way of imputation and the limitation to consumer goods and services excludes capturing OOH by way of acquisition prices or mortgage interest payments.

### **3. Does exclusion of housing from the CPI ensure international comparability?**

4. Several national CPIs as well as the European HICP exclude owner-occupied housing from their CPI (with the possible exception of certain types of maintenance expenditure). This may be due to conceptual or practical reasons or both.

5. On conceptual grounds, the exclusion of OOH from the CPI reflects a two-fold decision about the scope of the CPI. First, the standard assumption is made that dwellings are fixed assets and not consumer durables. This boundary – consistent with COICOP - implies that acquisition prices of dwelling do not make up an item in the CPI because they are part of capital formation. However, the housing services produced and consumed by owner-occupiers *are* included in COICOP and this would imply recognition of the price of housing services for owner-occupied dwellings. Consequently, to exclude the value of OOH services from the CPI, a second decision has to be made about the scope of the index, such as to exclude all non-monetary expenditure associated with own-account production of households. The exclusion of non-monetary expenditure is sometimes motivated by the objective of producing a “pure measure of inflation”, that takes into account only monetary transactions and avoids imputations.

6. The most prominent example of a CPI that excludes both house prices and imputations for own-account production of housing services is the HICP. “Imputed rents or mortgage interest payments, which are used in some CPIs, are not actual price transactions and considered inappropriate for international comparisons of consumer price inflation” (Commission of the European Communities, 1998, p.25). Thus, measures of housing services from owner-occupied dwellings are rejected because they are imputations. Another example for a CPI that leaves out OOH is the national CPI for France.

7. When it comes to international comparability, the exclusion of OOH from national CPIs may be an unsatisfactory solution when there are large differences in the share of the population that own their dwellings. From Table 2 below it is apparent that these differences are large. Thus, for two countries that are identical except for the share of home owners, the same changes in all prices would produce different changes in CPI. Conversely, the changes in both countries’ CPI would be identical if OOH enters the CPI calculation with a rental equivalent approach. Whether such an ‘axiomatic’ property of the CPI is a desirable criterion for international comparability or not depends on the concept and use underlying the CPI. It is apparent that under a ‘use approach’, designed to measure the change in the cost of living, the right internationally comparable CPI is the one that yields identical price changes for both countries when everything is identical except the share of house-ownership. Under a different concept, for example one that defines the CPI as a measure of the price change of monetary transactions in durable and non-durable consumer goods and services (thereby excluding OOH), it may be acceptable to observe different CPI changes in two countries that only differ by the share in house ownership.

**Table 2: Share of home ownership  
Percentage of households in owner-occupied dwellings, 2002**

Australia	70	Japan	60
Austria	56	Luxembourg	70
Belgium	71	Netherlands	53
Canada	66	New Zealand	65
Denmark	51	Norway	77
Finland	58	Portugal	64
France	55	Spain	85
Germany	42	Sweden	61
Greece	83	Switzerland (2001)*	31
Ireland	77	United Kingdom	69
Italy	80	United States	68

*Source:* OECD Economic Outlook 2004; \*Switzerland: national statistical office.

8. Another option is to exclude *all* items for shelter, owner-occupied and rented. This has been suggested in the 2003 resolution of the 17<sup>th</sup> International Conference of Labour Statisticians:

“Comparing national CPI movements across countries is difficult because of the different measurement approaches used by countries for certain products, particularly housing and financial services. The exclusion of housing (actual rents and either imputed rents or acquisition of new houses, and maintenance and repair of dwelling) and financial services from the all-items index will make the resulting estimates of price change for the remaining products more comparable across countries” (Paragraph 80)

9. While such an index would appear more internationally comparable than an index that only excludes OOH, it raises the question how analytically meaningful a measure of inflation is that excludes such an important expenditure item. Thus, there is a trade-off between comparability and pertinence of an international price index that is not easily resolved.

#### **4. Treatment of OOH in OECD countries' CPI**

10. Many OECD countries recognize owner-occupied dwellings in their CPI scope and this section will provide some indications about the relative importance of this item, the methods applied and their impact on international comparability. Several factors determine the international comparability of national CPIs with regard to OOH:

- Importance of actual rentals and OOH as a whole;
- Relative importance of OOH compared to actual rental activity;
- Consistency of approaches to select base-year weights and the scope of prices for OOH;

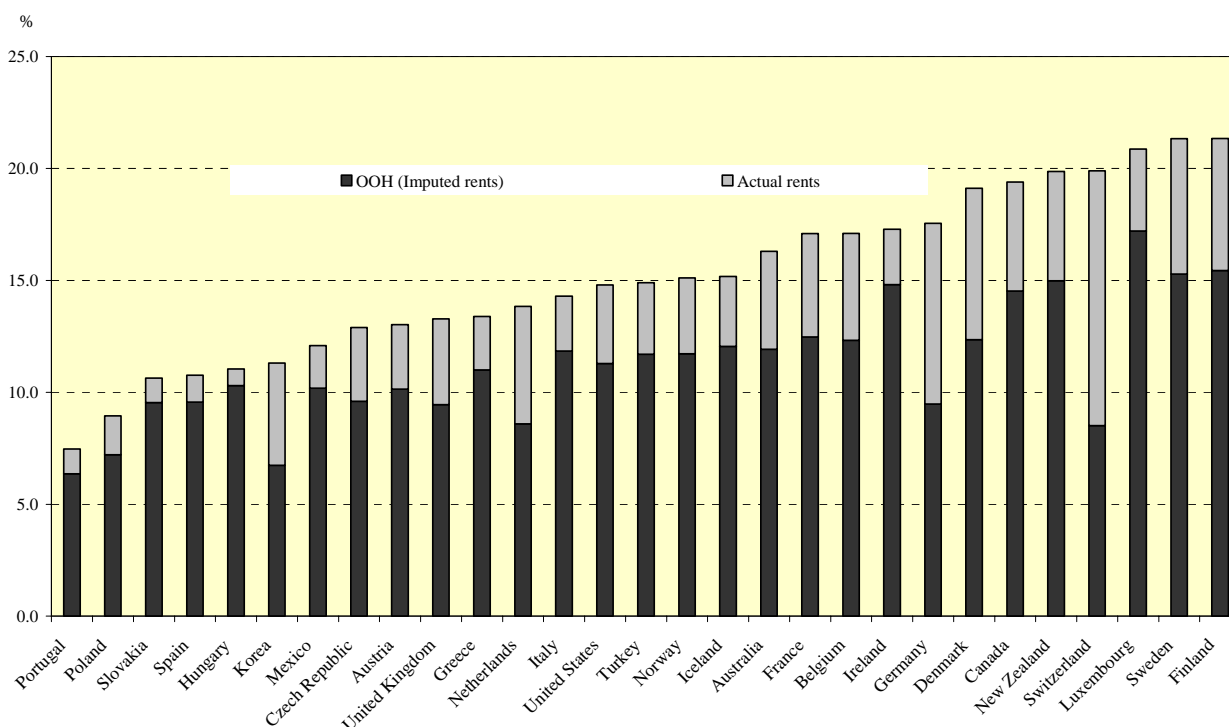
- Given a particular approach, consistency of methods to determine the price changes. For example, for comparability, different countries should apply similar approaches towards quality adjustment of rents.

#### 4.1. Importance of actual rentals and OOH

11. The first item in the list above (overall importance of rentals in expenditure) plays a role in the sense that differences in national treatment will have small overall impact on the CPI if the expenditure share is small. The table below reproduces the weights of OOH in the CPIs of OECD countries. More specifically, it shows the weights of the relevant positions of COICOP. It is immediately apparent that the expenditure weights vary to a great extent. However, because the expenditure share depends both on the structure of the housing market and on the method chosen for measuring OOH, these data cannot be compared directly. If one limits comparisons to those countries with similar approaches, one finds that among statistical offices that use the rental equivalent approach, and for which weights were available to the OECD, these weights vary between just over 5 % for Hungary and about 23 % for the United States.

12. National accounts provide another source of information about the relative importance of OOH. The SNA 1993 recommends rental equivalents as the method for estimating the value of owner-occupied housing services and there is reason to believe that there is greater homogeneity among national accounts approaches than there is between methods applied in the national CPI. Despite the fact that the expenditure share in the national accounts is not necessarily a reliable guide to expenditure shares in the CPI, it is apparent that OOH (based on a rental equivalent method in most cases) represents a sizeable share of private final consumption of households. In many cases, the share of OOH services exceeds the share of actual rentals, and often by a considerable margin.

**Figure 1: Expenditure on housing in OECD countries  
Percentage of Private Final Household Consumption, 2002**



Source: OECD Annual National Accounts.

**Table 3: Share of actual rentals and OOH in CPI of OECD countries**  
**Percentage weights**

	Actual rentals (COICOP 4.1)	Imputed rentals for housing (COICOP 4.2) = OOH	Total rentals, including repairs and maintenance (COICOP 4.1+4.2+4.3+4.4)	Weight reference year
Canada <sup>1</sup>	6.14	15.98	22.64	July 2004, 2001 basket at adjusted June 2004 prices
Mexico	2.52	11.97	17.29	2002 June 2 quarter
United States <sup>2</sup>	6.16	23.30	30.45	2001-2002, average 2003
Australia <sup>3</sup>	5.60	10.91	19.75	2nd Quarter 2000.
Japan	3.48	13.60	21.22	2000
Korea	--	--	15.64	2000
New Zealand	5.40	14.15	19.63	June 2002 quarter
Austria	3.89	0.92	13.34	2000
Belgium	5.66	--	8.44	
Czech Republic	5.12	8.83	17.11	1999
Denmark	6.80	12.27	22.01	1999, in use since January 2003
Finland	6.67	6.75	17.10	2000
France <sup>4</sup>	6.10	--	9.26	2005
Germany <sup>5</sup>	21.22	-- <sup>5</sup>	25.56	2003
Greece	3.92	--	7.96	1999
Hungary	0.12	5.24	11.85	
Iceland	2.47	15.25	22.78	2005 March
Ireland <sup>6</sup>	2.60	4.63	9.05	2001 December
Italy <sup>7</sup>	2.63	--	5.64	2005
Luxembourg	3.46	--	4.33	
Netherlands	6.69	9.13	18.23	2000
Norway	3.07	11.70	21.35	2004-2005, weights are calculated as average expenditure shares of the last 3 years, annual Laspeyres chain index
Poland	6.16	--	9.80	2005
Portugal	2.18	--	6.02	2004 December
Slovak Republic	1.18	11.03	16.40	From January 2005 Laspeyres chained index with annually updated weights.
Spain	2.28	--	6.60	2005
Sweden	14.09	9.23	24.12	2005, chained Walsh index since 2005
Switzerland <sup>8</sup>	20.18	-- <sup>8</sup>	20.94	2005
United Kingdom <sup>9</sup>	4.30	12.40	20.90	2005

Notes:

<sup>1</sup> OOH comprises: mortgage interest cost, replacement cost, property taxes, homeowners insurance premiums and homeowners maintenance and repairs.

<sup>2</sup> Total rentals include water and sewer and trash collection services, but exclude lodging away from home and Tenants' and household insurance.

<sup>3</sup> OOH comprises: house purchase, property rates and charges, house repairs and maintenance.

<sup>4</sup> Total rentals include actual rentals, repairs and maintenance, water and other services linked with the housing.

<sup>5</sup> OOH is included in actual rents. Total rentals include actual rentals, repairs & maintenance, water, electricity, gas & other fuels.

<sup>6</sup> OOH is mortgage interest which is placed under the COICOP group 4.1.2 (see Statistics Ireland "CPI introduction of Updated Series").

<sup>7</sup> Total rentals include repairs and maintenance, services of repairs and maintenance, water, taxes.

<sup>8</sup> OOH is included in actual rents.

<sup>9</sup> Weights for owner occupied housing in CPI includes the sub-groups: mortgage interest payments, depreciation and council tax and rates.

Weights for total rentals comprise all subgroups: rent, mortgage interest payments, depreciation, council tax and rates, water and other charges, repairs & maintenance charges, DIY materials, dwelling insurance and ground rent.

Source: National Statistical Offices.

#### 4.2. Consistency of approaches towards OOH

13. Country methodologies for the treatment of OOH in the CPI vary significantly, as can be seen from the table below. All of the methods mentioned above are represented. The majority of countries (13) use rental equivalents, and 8 countries exclude OOH from their national CPI. Canada, Finland, Iceland, Sweden and the United Kingdom feature a user cost approach, more or less simplified with regard to the full theoretical model. Australia and New Zealand have implemented a net acquisitions approach which is also the candidate method for the future development of the European HICP. Ireland recognizes mortgage payments and thus falls under the category of the payments approach. Austria includes only commodities for housing construction which can be considered a variant of the net acquisition approach.

**Table 4: Overview of methods\* to estimate OOH in the CPI**

	Rental equivalents	User cost	Net acquisitions	Payments	Exclusion of OOH
Canada		X			
Mexico	X				
United States	X				
Australia			X		
Japan	X				
Korea	X				
New-Zealand			X		
Austria <sup>1</sup>					
Belgium					X
Czech Republic	X				
Denmark	X				
Finland		X			
France					X
Germany	X				
Greece					X
Hungary	X				
Iceland		X			
Ireland <sup>2</sup>				X	
Italy					X
Luxembourg					X
Netherlands	X				
Norway	X				
Poland					X
Portugal					X
Slovak Republic	X				
Spain					X
Sweden		X			
Switzerland	X				
Turkey	X				
United Kingdom		X		X	
Euro area (HICP)					X

\* For a discussion of methods see section 2. Minor repairs and maintenance as well as property taxes are included in all countries.

1) House construction commodities only

2) Mortgage interest payments only

Source: OECD (2002) and national sources.

#### 4.3. Impact of methodological choices

14. A question of interest for international comparisons is: how much does the choice of a particular method matter for the overall change in the CPI? The fact that the expenditure share of OOH is likely to be large (see above) leads one to believe that the choice of method, including an exclusion of OOH from the CPI will produce a visible impact on the overall price change. Evidence on the impact of different treatments of OOH on the overall CPI is mixed.

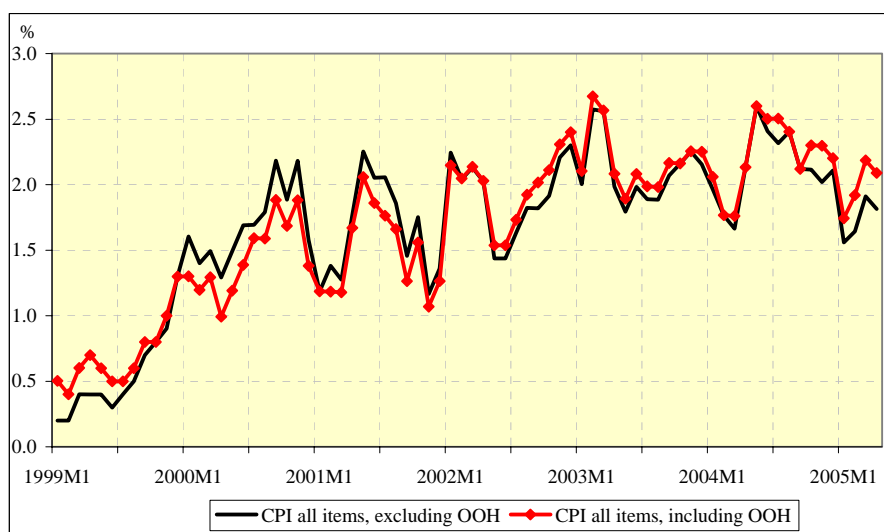
### Comparisons based on rental equivalents

15. First, a simulation carried out by INSEE (1998) measured the effect of introducing OOH into the French CPI, on the basis of rental equivalents. The basic conclusion is that for the period under consideration (1991 to 1996), the effects on the overall index were comparatively small:

“Given the importance of owner-occupied housing, the question arises whether its recognition in the CPI would not have a considerable impact on the CPI as a whole, and even more so as the price of rents have rise relatively faster than the average of other prices in recent years and as the share of rents in the present index is only 5.2%. This explains why INSEE computes, in addition to the total index, an index named ‘total including imputed rents’ that reflects this own-account consumption. The weight of rents rises from 5.2% to 17.3% and thus nearly triples. The overall index is of course affected, but only by one point over six years. [...] Thus, an important modification of the scope of the index leads to an annual average increase of a little less than 0.15%. Although this is not negligible, it is not sizeable: the overall assessment of the pace of inflation or its trends is hardly affected” (INSEE 1998).

16. This assessment remains valid several years later. The figure below shows the 12-months changes of the headline CPI for France (excluding OOH) and the supplementary CPI including OOH, based on rental equivalents. In the supplementary index, the weight of rents (actual plus OOH) represents about 17%, compared to less than 6% for actual rents in the headline CPI. On a multi-year average, inflation measured by the two series is very similar. For individual years or months, however, differences can be larger.

**Figure 2: Effects of OOH in CPI of France**  
12-months percentage change

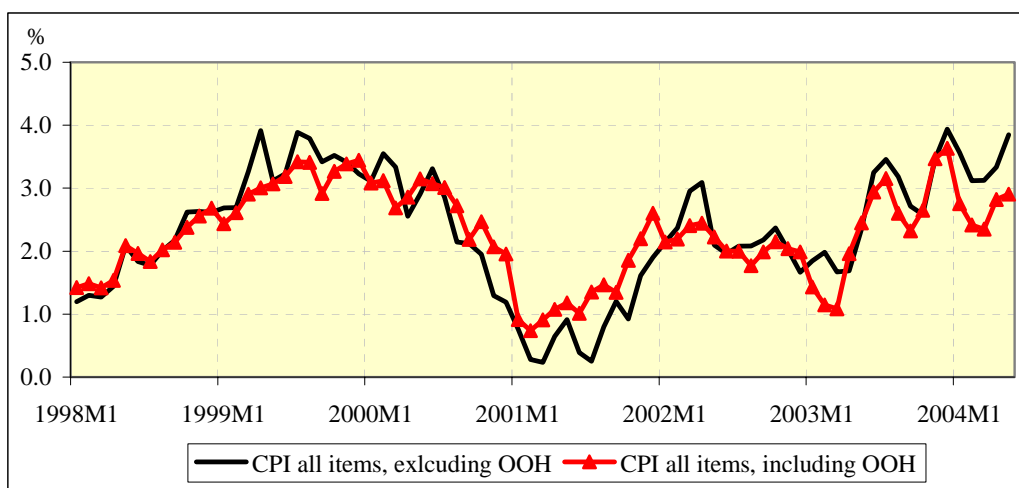


Source: INSEE.

17. In the United States CPI, OOH services are captured with a rental equivalent approach. In 2001, they accounted for about 22% of total expenditure. The same rent index is used for both rental and owner-occupied units, with the modification that any utility costs are removed from the rent measure in applying it to OOH. Over the period shown in the Figure below, the United States CPI all items rose by 2.74% at annual rate whereas the CPI excluding OOH rose by 2.65%. Like in the French case, this is a relatively small average impact over a six-year period. However, short-term differences can be more important. In

the present example for the United States, the maximum percentage point difference between the two indices in terms of 12-months changes was larger than one percentage point.

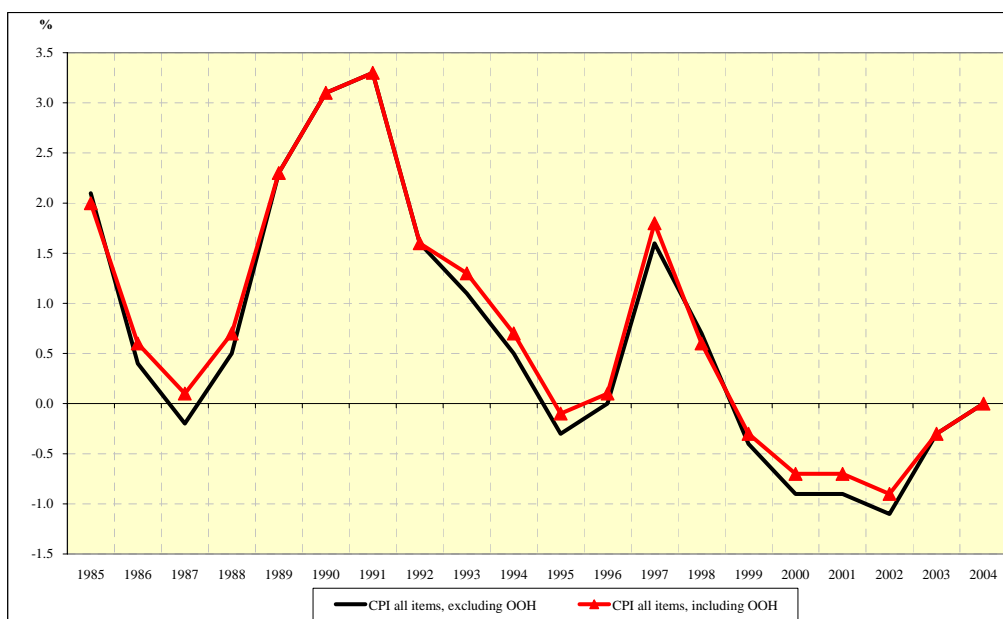
**Figure 3: Effects of OOH in the United States CPI  
12-months percentage changes**



Source: Bureau of Labor Statistics.

18. A glance at Japanese data confirms the picture emerging from the US and France comparisons: based on annual data, there is little difference between the headline CPI series, which includes OOH based on rental equivalents and the CPI series excluding OOH. Difference tend to be larger for higher frequency data, however.

**Figure 4: Effects of OOH in the CPI of Japan  
Average annual percentage changes**

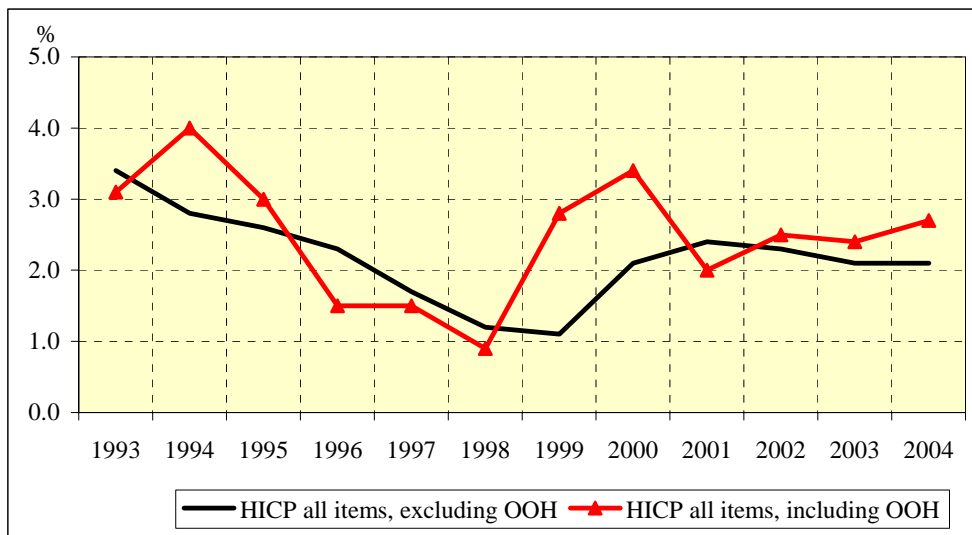


Source: Ministry of Internal Affairs and Communications, Statistics Bureau Japan

*A comparison based on user costs*

19. The 2005 *OECD Economic Review* of the Euro Area, put together by the OECD Economics Department also devoted some space on the issue of OOH in measuring inflation. The authors carry out a simulation of estimated impacts of introducing a user cost measure of OOH into the European HICP. They use a user cost approach, along the lines suggested by Poterba (1992) and combine the resulting variations in user costs with the HICP by applying weights from the breakdown of private household final consumption expenditure in the OECD Annual National Accounts. The conclusion is that taking account of OOH can have a sizable impact on inflation measures at high and at low frequency. For example, for the Euro area as a whole, the simulated price index exceeds the HICP by 0.6 percentage points in 2004. At the same time, the picture varies greatly across countries and exhibits significant volatility over time, confirming similar evidence from other studies (see for example Johannessen (2004) or the discussion of this method in the *International Consumer Price Index Manual* (ILO et al. 2004)). This volatility is also visible at the level of the Euro area and tends to be more pronounced for individual countries. But the main message remains, namely that the inclusion and exclusion of OOH in the CPI can have a notable impact on the overall index and thereby on international comparability.

**Figure 5: HICP and adjusted HICP for the Euro area**  
Annual percentage changes



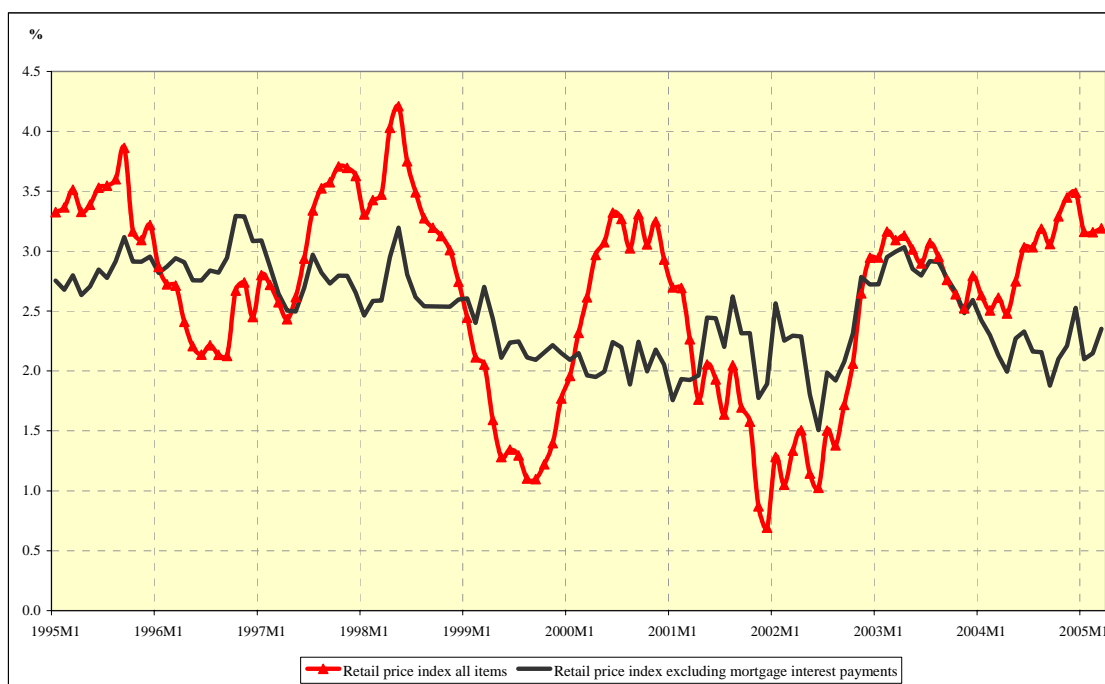
Source: OECD (forthcoming)

*A comparison based on mortgage interest payments*

20. Generally, when ex-post mortgage interest payments and/or capital gains and losses enter the computation of the OOH item in the CPI, there is a tendency to accentuate the cyclicity of the overall price index. This is confirmed by a comparison of the Retail Price Index (RPI) in the United Kingdom with the same index excluding mortgage interest payments (RPIX). Although the RPI is different from the CPI in a number of aspects (see ONS 2005), the comparison between of the RPI and the RPIX provides some insight into the effects of including OOH into such an index, when the inclusion is based on a particular version of the payments method (see above).

21. The figure below shows the curve for the RPI and the RPIX as published by the Office for National Statistics. The effect of cyclicity that is added by the mortgage interest payment is apparent, whereas there is little difference in the long-term average between the two series.

**Figure 6: Effects of including mortgage interest payments on the UK Retail price index  
12-month percentage changes**



Source: Office of National Statistics.

#### *A comparison based on national accounts deflators*

22. There are many reasons why implicit deflators for private household final consumption in the national accounts turn out to be different from the CPI (for a discussion see Fixler and Jaditz, 2002). It is nonetheless instructive to take a look at the effects of OOH on the implicit deflator in the national accounts: as all OECD countries have largely adopted<sup>1</sup> the 1993 SNA, there is at least a presumption of a certain degree of international comparability of prices and volumes of final consumption expenditure by households. The SNA 1993 is quite clear in its recommendation to use rental equivalents for the estimation of service flows from OOH. Some countries with non-representative rental markets apply a user cost concept in the national accounts but the *use approach* is common to all OECD countries.

23. Despite the conceptual differences between the CPI and the national accounts deflator, Table 5 confirms some of the messages taken away from the earlier discussion: (i) for the period under consideration, the average impact over several years (1996-2003) of OOH on the annual rate of the implicit deflator is moderate for most countries, and situated in the order of 0.1 or 0.2 percentage points per year

<sup>1</sup> Differences remain in certain areas and countries, for example the United States. See [http://www.bea.gov/bea/ARTICLES/2004/12December/1204\\_NIPA&SNA.pdf](http://www.bea.gov/bea/ARTICLES/2004/12December/1204_NIPA&SNA.pdf).

(exceptions: Hungary, Ireland and Iceland). (ii) for individual years, differences widen and it is probable that they would increase further if quarterly data were examined.

#### ***4.4. Consistency in measuring prices***

24. A final point that influences the international comparability of price measures of OOH is the methodology that is used to derive individual price series such as rental prices in the case of rental equivalents, the specific lay-out of the elements of the user cost method or the details of how a price is derived for mortgage interest payments in the case of the payments method. A discussion of all these items is beyond the scope of the paper at hand but mention is made of one issue, quality adjustment. All OECD countries accept the principle of quality adjustment in their price indices, but these adjustments are implemented with an array of methods (Triplett 2004). For example, the United States use a hedonic method to control for the age of dwellings and for other characteristics that bear on rental prices. This is sometimes said to boost the housing component of the CPI because an unchanged nominal rent for a given dwelling translates into a quality-corrected price increase when the dwelling has become one year older. Most other countries correct for quality changes via stratification methods, comparing rents of similar dwellings over time and the choice of quality-adjustment methods may have an impact on the resulting price series. For example, Hoffmann and Kurz (2002) examined the rent indices in Germany and found that there is some evidence of an understatement of rent inflation in the official rent index in the early 1990s, essentially linked to quality adjustment methods. No ready conclusion can be drawn as to the effects of quality adjustment methods of rental indices on the international comparability of consumer price indices.

### **5. Conclusions and way forward**

25. This paper has looked at OOH in the CPI from a perspective of international comparability and we draw the following conclusions:

- As numerous earlier papers on the subject have pointed out, there is no unique way of integrating OOH into the CPI. Much depends on the purpose of the CPI and in practice, different countries use an array of methods.
- By most measures, the weight of OOH in consumer expenditure is high and this generates a potential for significant impact on the overall CPI profile if the price of OOH moves differently from the average of other items.
- At the same time, a comparison of series excluding and including OOH in the CPI points to relatively modest effect in terms of longer-term averages but sizeable effects for short-term measures. The amplitude of short-term effects depends strongly on the methodology chosen to implement price series for OOH. Because short-term changes in the CPI are very important for users, such short-term effects and the absence of international comparability cannot be neglected.
- Closely associated with the choice of methods for OOH is the question of quality adjustment of price series – this applies not only to OOH but to shelter at large. Despite the fact that all OECD countries aim at quality-adjusting rents and house price indices, there are different ways of doing so and the quantitative impact of the quality adjustment method is difficult to assess.

26. From the perspective of an international organization such as the OECD, the question arises where to go from here to improve international comparability of the CPI. The exclusion of OOH from the CPI does not automatically ensure international comparability, given the structural differences in house ownership across countries. The exclusion of *all* shelter (OOH and rents) from the CPI may enhance international comparability but reduces the analytical usefulness of the resulting series. In the end, enhanced international comparability requires that a similar concept for OOH is used for different countries. At the European level, work is ongoing to integrate OOH into the HICP via a net acquisitions approach. Once in place, this will enhance comparability of CPI data among European countries but not necessarily beyond<sup>2</sup>.

27. From an OECD perspective, a meaningful way forward would be to develop a standardized series for the price of shelter, for example based on national data about rents and on a simplified user cost approach for OOH. The OECD has put in place a similar approach for other variables, for example standardized unemployment rates or measures of capital services. Time series are brought together at the international level, using a standardized method that is applied to all countries and whose primary purpose is to facilitate international comparisons. Although such work is carried out in co-operation with national statistical offices, data are published under the responsibility of the OECD and do not engage national administrations. Whether a similar approach could be envisioned for OOH in the CPI needs discussion and participants to the present meeting are invited to express their views on the topic.

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<sup>2</sup> There is also an issue about whether or not land prices should be reflected in the net acquisitions approach. The discussions in the European Union seem to point towards an exclusion of land prices. For a discussion, see Calmfors et al. (2005).

**Table 5: Effects of OOH on implicit deflators of private final household expenditure in the national accounts**  
Percentage changes over previous year

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average 1996- 2003 or latest
Australia	Including OOH	3.0	2.1	1.6	1.3	2.4	1.5	1.6	0.9	1.6	4.7	2.7	2.6	1.4	2.2
	Excluding OOH	3.1	2.4	1.8	1.4	2.5	1.3	1.4	0.6	1.6	5.0	2.7	2.8	1.3	2.2
Austria	Including OOH	3.4	3.9	3.6	3.0	2.1	1.9	1.4	0.2	0.6	2.5	1.9	1.2	1.5	1.3
	Excluding OOH	3.2	3.7	3.5	2.7	1.5	1.4	1.1	0.1	0.3	2.6	1.8	1.2	1.3	1.2
Belgium	Including OOH						2.1	1.8	0.9	1.2	2.2	2.5	1.7	1.9	1.7
	Excluding OOH						1.9	1.9	0.9	1.2	2.4	2.5	1.7	1.8	1.8
Canada	Including OOH	5.1	1.4	2.1	1.0	1.4	1.6	1.5	1.1	1.8	2.2	1.7	1.9	1.7	1.7
	Excluding OOH	5.4	1.2	2.2	0.7	1.3	1.7	1.7	1.1	1.9	2.4	1.8	2.1	1.9	1.8
Czech Republic	Including OOH						7.7	8.7	9.2	2.5	3.0	3.6	1.0	0.2	4.0
	Excluding OOH						7.4	8.4	9.0	2.3	3.2	3.6	0.8	0.3	4.0
Denmark	Including OOH	2.4	2.2	1.8	3.0	2.3	2.0	2.0	1.3	2.3	2.4	2.4	2.1	2.0	2.1
	Excluding OOH	2.2	2.0	1.4	2.9	2.3	2.0	1.8	1.1	2.3	2.3	2.2	1.9	1.8	1.9
Finland	Including OOH	5.6	3.3	4.4	0.9	0.9	1.6	1.8	2.0	1.1	3.5	3.5	3.3	0.0	2.2
	Excluding OOH	5.0	2.9	4.4	0.6	0.7	1.2	1.1	1.7	0.7	3.5	3.4	3.2	-0.6	1.9
France	Including OOH	3.5	2.5	2.4	2.2	2.0	1.9	1.4	0.7	0.4	1.5	1.6	1.9	2.1	1.4
	Excluding OOH	3.4	2.2	2.2	2.1	1.9	1.8	1.4	0.5	0.2	1.5	1.7	1.8	2.0	1.3
Germany	Including OOH		4.5	4.0	2.6	1.9	1.6	1.8	0.9	0.2	1.3	1.6	1.2	1.1	1.2
	Excluding OOH		4.2	3.7	2.5	1.7	1.4	1.7	0.9	0.1	1.3	1.7	1.1	1.2	1.1
Greece	Including OOH	19.7	15.6	14.2	11.0	8.9	8.2	5.5	4.5	2.4	3.4	3.4	3.6	3.5	3.8
	Excluding OOH	19.7	15.6	14.2	11.0	9.5	7.9	5.3	4.4	2.4	3.4	3.5	3.5	3.3	3.7
Hungary	Including OOH												8.6	3.9	4.5
	Excluding OOH												-2.8	4.7	4.9
Iceland	Including OOH								0.9	2.4	4.3	7.0	4.9	0.8	3.4
	Excluding OOH								0.3	1.6	3.2	7.1	4.7	-0.3	2.8
Ireland	Including OOH	2.6	3.0	2.1	2.8	2.7	2.7	2.5	3.5	2.8	3.8	4.1	5.1	3.9	3.7
	Excluding OOH	2.5	2.6	1.7	2.7	2.0	1.7	0.9	1.9	1.6	2.8	2.6	4.4	3.5	2.5
Italy	Including OOH	7.0	5.7	5.0	4.9	5.9	4.6	2.2	2.1	2.1	2.8	2.7	3.2	2.7	2.5
	Excluding OOH	6.7	5.3	4.7	4.4	5.4	4.2	1.9	1.9	1.7	2.4	2.6	2.8	2.5	2.2
Japan	Including OOH	2.8	1.6	1.1	0.5	-0.3	-0.3	0.8	-0.2	-0.6	-1.2	-1.7	-1.2	-1.6	-0.8
	Excluding OOH	2.8	1.6	1.1	0.5	-0.3	-0.3	0.8	-0.2	-0.6	-1.2	-1.7	-1.2	-1.6	-0.8
Korea	Including OOH	11.1	8.2	6.8	9.5	6.6	6.2	5.8	6.2	3.3	4.8	4.7	3.0	3.5	4.5
	Excluding OOH	11.1	8.2	6.8	9.5	6.6	5.9	5.4	6.6	3.8	4.6	4.8	2.8	3.5	4.5
Luxembourg	Including OOH	3.4	4.6	4.5	3.0	2.1	1.6	1.4	1.1	1.9	3.6	2.9	2.1	2.2	2.2
	Excluding OOH	3.1	3.4	3.7	1.9	1.9	1.9	1.8	1.2	2.0	3.3	2.2	1.6	2.1	2.0
Mexico	Including OOH	24.6	15.4	10.1	7.5	34.0	30.8	16.3	20.3	13.8	10.5	7.2	5.4	6.9	11.5
	Excluding OOH	24.6	15.4	10.1	7.5	34.0	30.8	16.3	20.3	13.8	10.5	7.2	5.4	6.9	11.5
Netherlands	Including OOH	3.1	3.1	2.0	2.8	1.3	1.8	2.0	1.8	1.8	3.2	4.7	2.7	2.3	2.7
	Excluding OOH	3.0	2.9	1.7	2.7	0.9	1.6	1.8	1.6	1.7	3.3	4.9	2.7	2.3	2.6
New Zealand	Including OOH	1.1	1.3	0.9	1.8	3.0	2.0	2.0	1.4	0.3	2.2	2.2	2.2	--	1.7
	Excluding OOH	1.1	1.3	0.9	1.8	3.0	2.0	2.0	1.4	0.3	2.2	2.2	2.2	--	1.7
Norway	Including OOH	3.6	2.6	2.5	1.2	2.4	1.2	2.4	2.3	2.1	3.0	2.4	1.6	--	2.3
	Excluding OOH	3.2	2.4	2.5	1.3	2.6	1.1	2.4	2.3	2.0	2.8	2.1	1.2	--	2.1
Poland	Including OOH						19.4	14.5	11.2	6.4	9.0	4.7	1.6	0.7	6.9
	Excluding OOH						19.4	14.5	11.2	6.4	9.0	4.7	1.6	0.7	6.9
Portugal	Including OOH	11.9	9.5	6.9	5.5	4.3	3.6	3.0	2.8	2.1	3.3	4.0	3.6	3.3	3.1
	Excluding OOH	11.2	9.2	6.6	5.4	4.3	3.6	2.9	2.8	2.0	3.3	4.1	3.6	3.4	3.2
Slovak Republic	Including OOH							5.7	6.1	8.3	11.0	5.4	2.8	7.8	6.7
	Excluding OOH							5.1	5.6	7.7	10.4	6.1	13.5	7.8	8.0
Spain	Including OOH						3.5	2.6	2.3	2.5	3.3	3.4	3.5	3.2	3.0
	Excluding OOH						3.2	2.3	2.0	2.4	3.2	3.4	3.5	3.3	2.9
Sweden	Including OOH						1.4	1.7	0.6	1.0	1.1	2.2	1.9	--	1.4
	Excluding OOH						1.1	1.6	0.8	1.3	1.1	2.5	1.8	--	1.5
Switzerland	Including OOH	5.7	3.8	3.3	0.4	1.6	0.6	0.7	-0.5	0.4	0.6	0.4	1.6	0.6	0.5
	Excluding OOH	5.7	3.8	3.3	0.4	1.6	0.6	0.7	-0.5	0.4	0.6	0.4	1.6	0.6	0.5
United Kingdom	Including OOH	8.4	5.1	3.0	2.3	3.3	3.1	2.9	2.8	1.6	1.4	2.2	1.6	1.7	2.0
	Excluding OOH	7.8	4.3	3.1	2.2	3.0	3.2	2.8	2.3	1.4	1.4	2.0	1.2	1.7	3.4
USA	Including OOH	3.6	2.9	2.3	2.1	2.1	2.2	1.7	0.9	1.7	2.5	2.1	1.4	1.9	1.7
	Excluding OOH	3.8	2.8	2.2	2.0	2.0	2.0	1.6	0.7	1.5	2.5	1.9	1.1	1.8	1.6

Source: OECD Annual National Accounts.

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