

Meeting of the ICP regional coordinators
Washington, September 2004



Measuring PPP for Housing Services in the ICP

*Based on the draft chapter for the ICP
manual prepared by Derek Blades*

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Structure of the presentation



- **Why are housing services special?**
- **Coverage of rents**
- **Principle methods to be applied**
- **Housing services - weights (NA)**
- **Housing services - prices (rents)**
- **Possible sources for weights, quantities and prices**
- **Process for the establishment of housing services' PPP for the ICP 2005**





Why are housing services special? (I)

- **housing markets divided into rented sector and owner-occupier sector**
- **Housing stock divided into modern part and traditional part (to reflect this is a new proposal for the ICP)**
- **Expenditure weights (NA) have big influence on reliability of the results**
- **Definitions and assumptions have to be the same in NA and prices**
- **Often lack of coverage in the NA**



Why are housing services special? (II)

- **NA have to be improved in countries with coverage and estimation problems**
- **Estimates in NA and prices will be based on exploring and combining **existing** sources; there is no time to develop new sources in the short term (by mid-2006)**
- ➔ **Housing services in the ICP 2005 is mainly a job for the national accountants**



Why are housing services special? (III)

Modern dwellings

- Professionally built
- Purchased inputs
- Bought and sold
- May be rented
- Facilities – water, toilet, electricity
- Durable

Traditional dwellings

- Self built
- Made mainly from free, natural materials
- Never bought or sold
- Never rented
- Few or no facilities
- Not durable



Coverage of rents (I)

- **Payments for the use of a dwelling, the land it is situated on and a parking space or garage in connection with the dwelling**
 - **Includes current maintenance and repair cost incurred by the owner and taxes and insurance normally paid by the owner**
 - **Excludes major repair and insurance normally paid by the tenant**
 - **Excludes charges for cold and hot water, heating/ air-conditioning, electricity and gas, refuse and sewerage collection, and gardening, stairway cleaning, maintenance of lifts etc. in multi-occupied dwellings**



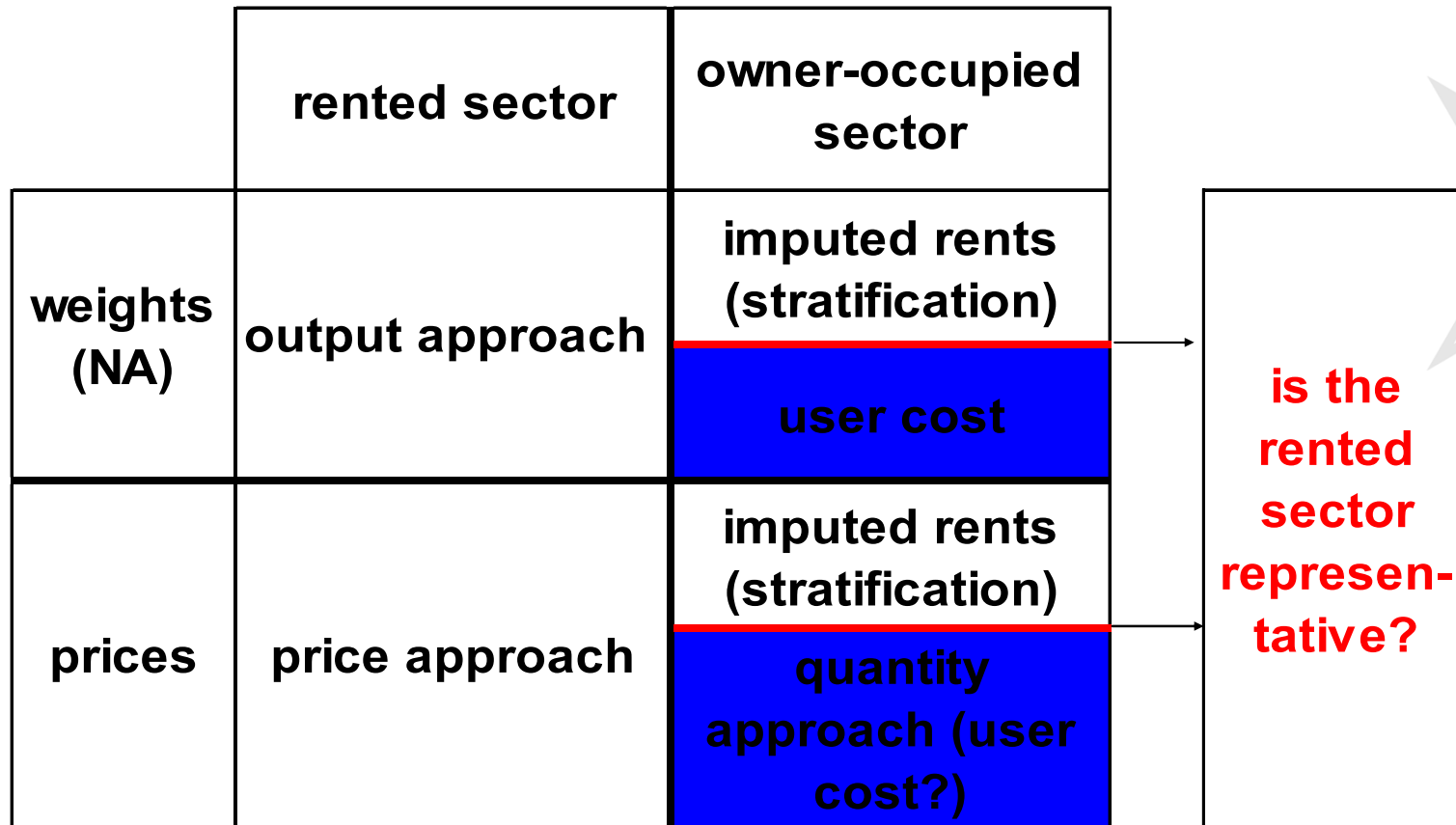
Coverage of rents (II)

- **Payments for unfurnished dwelling**
 - If rents for furnished dwellings are used, make an adjustment in both, prices and weights
- **Full price concept**
 - Rent paid by tenant plus any subsidies
 - by employers (income in kind)
 - or by the state (social transfer in cash or kind)
- **National and annual average prices**
 - Location is taken into account in this way

Principle methods to be applied



Modern housing



traditional housing



Housing services – weights (NA) (I)

Expenditure on Dwelling Services

➤ **Rented sector**

- Actual expenditures, output approach based on rental surveys or administrative information (standard procedure)

➤ **Owner occupied sector**

A. Rented sector is representative

- Imputed rents, using rents of similar dwellings (stratification approach, standard procedure) (*DB example matrix on page 4, Eurostat price approach questionnaire (Q1)*)

B. Rented sector is not representative

- User cost (*DB table 1 to 3 based on Eurostat methodology*)



Housing services – weights (NA) (II)

User cost – summing up cost of producing housing services

- **Repairs and maintenance**
+
- **Net insurance premiums**
+
- **Other taxes on production**
+
- **Consumption of fixed capital**
+
- **Net operating surplus**



Housing services – weights (NA) (II)

Capital stock estimate *(BD, table 2)*

Few countries have PIM-based estimates but almost all have estimates of the number of dwellings by type from a more or less recent census.

To get the **net capital stock** assume that:

- Growth of dwellings since the census equals half of population growth rate.
- Current market price equals half the cost of a newly built dwelling.
- For traditional dwellings the cost of a newly built dwelling is the time taken times the average wage for unskilled agricultural labour.



Housing services – weights (NA) (II)

Consumption of fixed capital and net operating surplus *(DB, table 3)*

- Geometric depreciation – D / T with declining balance rate (D) set at 1.6 and T is the service life
- If no firm information, assume service life is:
 - 70 years for modern dwellings (so $D / T = 0.02$)
 - 8 years for traditional dwellings (so $D / T = 0.2$)
- For net operating surplus rate of return is 2.5 for modern dwellings and zero for traditional dwellings



Housing services – rents (I)

Rents for modern dwellings

- Standard procedure is to collect data on actual rents of a sample of representative dwellings (*DB example matrix on page 4, Eurostat Q1*)
- Imputed rents are then obtained by matching up actual rents with the corresponding numbers of owner-occupied dwellings (*Eurostat Q1*)
- If only few dwellings are rented and these are unrepresentative, e.g. for expatriates, imputation does not work (high rents would overestimate rents and underestimate volumes)
 - ➔ Consider quantity approach (*DB box 2, page 16 and Eurostat Q2*)
 - ➔ Consider user cost (proposal by DB was rejected by TAG)



Housing services – rents (II)

Rents for traditional dwellings

- **Standard approach is not applicable because almost never rented**
- **Consider quantity approach**
- **Consider user cost approach with some special assumptions (TAG rejected idea?)**
 - **Net insurance premiums zero**
 - **Net operating surplus zero**
 - **Repairs and maintenance estimated by time spent and wage rate**
 - **Consumption of fixed capital equals 0.2 times estimated current market value of the dwelling**



Housing services – rents (III)

Quantity approach

- for situations with high owner occupation and unrepresentative rental markets for modern dwellings
- for traditional dwellings
- Direct comparison of volumes, price is derived by dividing expenditure by volumes
- No prices, only quantity information is necessary

(DB, Box 2 and Eurostat Q2)

(Worked example of the quantity approach BD Box 3)

Questionnaire for the Quantity Approach

Quantity indicator	
<i>Preferred measure</i>	<i>Thousand square meters</i>
Useable surface of houses	
Useable surface of flats with < 25m ²	
Useable surface of flats with 25+ m ²	
Total useable surface of all dwellings	
<i>Alternative measure</i>	<i>Thousand rooms</i>
Total number of rooms in houses	
Total number of rooms in flats with < 25m ²	
Total number of rooms in flats with 25+ m ²	
Total number of rooms in all dwellings	
Quality indicators	<i>Number of dwellings with:</i>
Electricity	
Running water	
Inside toilet	
Total number of dwellings	
Memorandum item: mid-year population (<i>thousands</i>)	

Box 3. A worked example of the Quantity Approach

1. Estimation of the **quantity indicator**

Useable surface of dwellings in A: 240 million m²

Useable surface of dwellings in B: 375 million m²

Quantity indicator for country B relative to country A:
 $375 / 240 = \mathbf{1.56}$

2. Estimation of the **quality indicator**

Facility	No. of dwellings with the given facility (thousands)		Weight	Share of dwellings with the given facility (%)	
	Country A	Country B		Country A	Country B
Electricity	2900	7556	0.333	100	99
Running water	2863	4503	0.333	99	59
Toilet inside	2729	3739	0.333	94	49
Total	2900	7632	1.000	98	64

Quality indicator for country B relative to country A:
 $64 / 98 = \mathbf{0.65}$

3. Estimation of the **volume indicator** for country B relative to country A

Quantity indicator x quality indicator: $1.56 \times 0.65 = \mathbf{1.01}$

Possible sources for estimating housing services



- Rental surveys (rents, quantity and quality of dwellings) **NSI, ministries, special institutes, landlord associations, associations of tenants**
- Household budget/ expenditure/ living standard surveys (rents, quantity and quality of dwellings, expenditure on maintenance and repair of dwellings, charges) **NSI, ministries, special institutes**
- Housing and population census (housing stock by type, age, occupancy form, quality) **NSI, ministries, special institutes, census office**
- Insurance statistics (insurance premiums and claims) **NSI, Insurance supervision, central bank, ministry of finance, landlord associations**
- Tax statistics (taxes paid in relation to ownership of dwellings or owner-occupation) **NSI, ministry of finance, central bank, landlord associations**

Process for housing services for the ICP 2005



- 1. Finalisation of the manual chapter and of the questionnaires after the TAG – Derek Blades, **October 2004****
- 2. RC brief their countries in the region (price statisticians and national accountants) **March 2005****
- 3. Countries investigate existing sources and find experts for estimates **June 2005****
- 4. Countries reconcile sources with regard to definitions, assumptions etc. **September 2005****

Process for housing services for the ICP 2005



5. Countries fill questionnaires and provide them to the RC **November 2005**
6. RC undertake inter-country validation and calculate regional PPP **March 2006**
7. GO calculates world-wide PPP **June 2006**
8. GO undertakes world-wide validation **September 2006**
9. Countries prepare plans for developing new sources (rent surveys, census etc.), if necessary, **December 2006**