

## ESTIMATING RENTALS OF DWELLING SERVICES BY THE USER COST APPROACH

### IN SERBIA

#### Introduction

1. This paper describes the estimation of dwelling services in the Republic of Serbia for 2003 -2006 by the user cost method.

#### Methodological framework

2. The main methodological framework for estimating dwelling services in the Republic Serbia for 2003 - 2006 is that presented to the ICP Regional Coordinators at a workshop held in Eurostat between 24 and 28 March 2003.

3. The synthesis report of September 2003 on the implementation of the user cost method for estimating dwelling services in EU Candidate Countries (Czech Republic, Estonia, Hungary, Malta, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, Bulgaria and Romania) by the Eurostat expert team - Arja Kinnunen, Knut O Sorensen and Notbert Swarts - was especially useful.

4. Discussions with the OECD-EUROSTAT expert team during their visits in connection with the estimation of various components of the non-observed economy in the national accounts of Serbia were also helpful.

#### Sources

5. **Net stock of owner-occupied dwellings:** The main source of data for the net stock of owner-occupied dwellings in Serbia was data from the SORS Construction Department. These data are based on the Population, Households and Dwellings Census in the Republic of Serbia for 2002 and the standard way of estimating changes in the stock in subsequent years (including completed dwellings and excluding those still needing time for completion). The census results on dwellings in the Republic of Serbia give the number of dwellings and square meters of living area for each of the following territories: Central Serbia, Vojvodina, Belgrade suburb and Belgrade central municipalities.

6. Each of these territories, except Belgrade centre, is divided into urban and rural areas. This breakdown is important because dwelling prices depend particularly on location. For the user cost calculation all owner-occupied dwellings, short-time non-occupied dwellings, weekend-houses were included. Rented dwellings were estimated separately from the Population, Households and Dwellings Census. Under 10 per cent of all occupied dwellings are rented.

7. Prices of newly-built dwellings, calculated per square meter, were taken from the regular Construction Department survey covering about 20 Serbian cities. These prices were modified using results of other surveys – data from the Household Budget Survey, data from advertising agencies and from an ad hoc survey that was made in 15 SORS area-departments and which provided information about prices of new and used dwellings in the centre of cities, in suburbs and in rural areas for Belgrade, Central Serbia and Vojvodina separately.

8. **Expenditure on maintenance and repair of owner-occupied dwellings:** These expenditures were estimated from surveys conducted by the SORS Construction Department.

9. **Net insurance premiums paid by owners:** Net insurance premiums paid by owners were derived by subtracting insurance claims paid to owner-occupiers from gross insurance premiums paid on owner-occupied dwellings. Data on gross insurance premiums paid by owner occupiers and on insurance claims paid to owner occupiers were taken from:

- the National Bank of Serbia: These data were also only available as a single total; and
- one of a few large insurance companies in the Republic of Serbia: Data were available separately on gross insurance premiums paid on owner-occupied dwellings and on insurance paid on the contents of occupied dwellings).

10. **Other taxes on production:** Taxes are not paid on housing services by owner-occupiers in the Republic of Serbia. But taxes are paid by owners on the value of their dwellings and the associated land. This data were taken from Tax Authority data. A useful cross-check was provided by data from the Household Budget Survey and by information on personal recurrent (annual) taxes on owner-occupied dwellings.

#### Methodological adjustments

11. The recommended “declining balance factor” (1.6) was used in the calculation of fixed capital. The service life of dwellings – 75 years - was calculated as an average of the ages of demolished dwellings. The recommended rate of return of 2.5 per cent to obtain the net operating surplus was not used. Instead this rates of return was used 2.09 – 2.29 per cent depends on level of the rate charged on housing loan.

#### Impact on GDP

12. The impact on the GDP for 2003 - 2006 of estimating dwelling services by the user cost method is shown in the table overleaf.

#### Share of GDP (%)

	2003	2004	2005	2006
<b>Impute rents</b>	9,60	9,18	9,03	8,42
<b>Actual rents</b>	1,38	1,25	1,18	1,10
<b>Total</b>	10,98	10,44	10,21	9,52

#### Note

These estimations have already been included in official data RSOS

REPUBLIC STATISTICAL OFFICE OF SERBIA, SNA DEPARTMENT  
**Serbia 2003, 2004, 2005 and 2006 Dwelling Services**  
 User cost approach

**Table1** Estimating **expenditure** on owner-occupied dwelling services mill RSD

Item No.	Description of item	2003	2004	2005	2006
<b>Intermediate consumption</b>					
UC 01	Expenditure on maintenance and repair of owner-occupied dwellings	3 188	4 539	5 291	6 018
UC 02	Gross insurance premiums paid on owner-occupied dwellings	155	188	228	260
UC 03	Insurance claims paid to owners ( <i>minus</i> )	62	75	92	94
UC 04	Net insurance premiums paid by owners. (UC02)-(UC03)	93	113	137	166
UC 05	Total intermediate consumption. (UC01)+(UC04)	3 281	4 652	5 428	6 183
<b>Other taxes on production</b>					
UC 06	Taxes paid by owners on housing services	0	0	0	0
UC 07	Taxes paid by owners on the value of owner-occupied dwellings and their associated land	1 537	1 830	2 250	2 723
UC 08	Total taxes paid by owners. (UC07)+(UC08)	1 537	1 830	2 250	2 723
<b>Consumption of fixed capital</b>					
UC 09	Consumption of fixed capital on owner-occupied dwellings at current prices	49 788	57 795	68 689	74 860
<b>Net operating surplus</b>					
UC 10	Current market value of the stock of owner-occupied dwellings at the beginning of the year				
UC 11	Current market value of the stock of owner-occupied dwellings at the end of the year				
UC 12	Current market value of the stock of owner-occupied dwellings at mid-year ((UC 10)+(UC 11))/2	2 771 775	3 217 510	3 824 001	4 167 539
UC 13	Rate of return on owner-occupied dwellings in percent per annum	0.0209	0.0209	0.0214	0.0229
UC 14	Net operating surplus. (UC13)*(UC12)/100	57 849	67 152	81 721	95 298
<b>Expenditure on owner-occupied dwelling services</b>					
UC 15	Expenditure on owner-occupied dwelling services. (UC05)+(UC08)+(UC09)+(UC14)	<b>112 455</b>	<b>131 429</b>	<b>158 088</b>	<b>179 064</b>

**Table2** Estimating the **net stock** of owner-occupied dwellings in current prices for countries with a min.data set

Item No.	Description of item	Value	Value	Value	Value
K1	Surface (in mill. <b>sqm</b> ) owned-occupied dwelling units at the time of the most recent census	175	175	175	175
K2	Growth rate of owner-occupied dwellings between last census and the middle of the current year	0.0029	0.0040	0.0046	0.0050
K3	Estimated surface (in mill. <b>sqm</b> ) of owner-occupied dwellings in the middle of the current year. ((K1)*(K2))	176	177	178	180
K4	Average cost of newly-constructed dwellings ( <b>sqm</b> ) in current year	31 270	36 074	42 440	45 812
K5	Average net value (i.e. after deducting accumulated depreciation) ((K4)*(1-A/L))	15 731	18 148	21 433	23 205
K6	Net stock of owner-occupied dwellings at current prices. ((K3)*(K5))	2 771 775	3 217 510	3 824 001	4 167 539

**Table3** Estimating of **consumption of fixed capital** of owner-occupied dwellings at current prices

Item No.	Description of item	Value	Value	Value	Value
CFC1	Mid-year of the net stock of owner-occupied dwellings at current prices (excluded land)	<b>2 333 834</b>	<b>2 709 144</b>	<b>3 219 809</b>	<b>3 509 068</b>
CFC2	Estimated service life of owner-occupied dwellings (in year)	75	75	75	75
CFC3	Depreciation rate for owner-occupied dwellings. 1.6/(CFC2)	0.02133	0.02133	0.02133	0.02133
CFC4	Consumption of fixed capital formation of owner-occupied dwellings in current prices. (CFC1)*(CFC3)	49 788	57 795	68 689	74 860
<b>actual rents of dwellings output</b>					
	<i>market rent</i>	<b>16 157</b>	<b>17 938</b>	<b>20 613</b>	<b>23 338</b>
	<i>non market rent</i>	15 240	16 918	19 451	22 037
		917	1 019	1 162	1 302
<b>total rentals output</b>					
		<b>128 612</b>	<b>149 366</b>	<b>178 701</b>	<b>202 402</b>