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Accurate Income Measurement for the Assessment of Public Policies

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**Project: Accurate Income Measurement for the Assessment of Public Policies
(AIM-AP)**

Part I: Non-cash incomes

Work Package: Imputed rent

Country Report Belgium on Imputed Rent

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1. Introduction

The focus of the Belgian housing policy has always been on home acquisition rather than the provision of social housing. As a result, a large majority of Belgian households are living in their own home, while only a small percentage are living in a social rented home. Home-ownership has a large impact on a household's expenditure structure. First, the impact of mortgage payments lowers the households disposable income considerably. Secondly, mortgage free owner-occupiers are much better off than renters with comparable incomes. Because of the large proportion of home-owners in Belgium, a serious attempt to estimate the economic well-being of households should take the advantage derived of home-ownership into account. The limited Belgian research on this topic shows that overall inequality in disposable income drops after controlling for home-ownership (Van den Bosch & Van Dam 2001). The elderly often have little or no housing cost combined with low incomes; households on active age often combine high income with high housing costs.

During the last decade, the housing market in Belgium witnessed the same boom as most European countries. The average house price doubled during 1995 and 2005. As Belgians are said to have a "brick in the stomach", this caused concern regarding the access to home ownership. The majority of Belgian housing research focuses on the effect of price increases on home-ownership. Up to the mid-nineties, most research pointed out that low income groups are facing increased difficulty in property acquisition (e.g. Meulemans et al. 1996). The most recent research points out that the price rocketing of the last decade did not cause an increase in affordability problems on the buyers market, but it did so on the rental market (De Decker 2006).

This report covers an overview of Belgian housing policies, as well as the current situation on the housing market that clearly bears these policies shape. We explore different techniques to account for housing costs that are applicable on the data of SILC 2004. This methodological selection for the calculation of so-called *imputed rent* is vital. As pointed out by the Canberra Group (2001), the way in which is dealt with the income value of home ownership is crucial for the distributional

consequences. We use the so-called self-assessment approach and the opportunity cost approach to provide estimates of imputed rent. These estimates are used to calculate the distribution effects of incorporating imputed rent in the income concept.

2. The housing market and housing policy instruments in Belgium

2.1 The housing market

Ever since the Second World War, the heart of the Belgian housing policy has been a continuous effort to support families in the acquisition of a private dwelling. Like in most European countries, this resulted in a housing market where owner-occupied dwellings are dominant. About 68% of households live in a private home they own (European Commission 2003). The impact of social housing on the total market remains limited. Only 5.7% of households are renters of social housing, which is below the European average. The remaining part of the housing market, about 26%, is a private rental market. This private rental sector provides accommodation for many low-income households.

Table 1: Tenure status of households in Belgium, 2001.

	Belgium	Flanders	Walloon Region	Brussels Capital Region
Number of dwellings (*)	3,872,563 (100%)	2,244,512 (100%)	1,252,321 (100%)	375,730 (100%)
- owner occupation	2,715,228 (70,1%)	1,668,886 (74,4%)	883,328 (70,5%)	163,014 (43,4%)
- renting	1,157,335 (29,9%)	575,626 (25,6%)	368,993 (29,5%)	212,716 (56,6%)
Social renting (2004)(**)	273,000 (7%)	135,000 (6%)	38,000 (9,5%)	100,000 (8%)

Source: De Decker (2006)

(*) based on National Institute of Statistics (Census 2001)

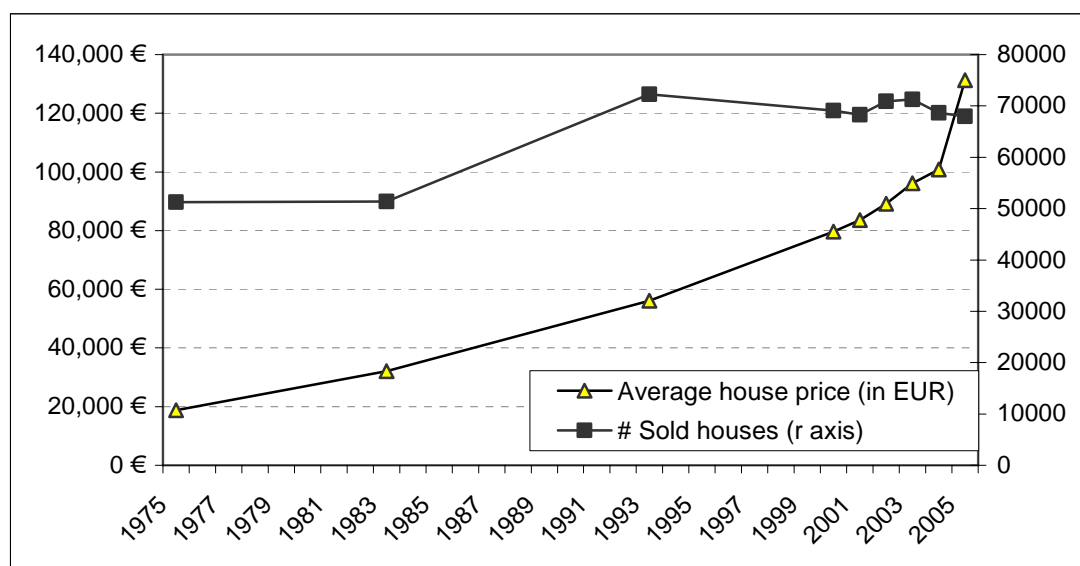
(**) approximate figures, derived from various regional sources

Census information for 2001 gives similar figures as the commission's ECHP-based figures. The census reveals significant regional differences in the tenure structure. Owner occupation is the most frequent in Flanders (74%), whereas in Brussels only

43% of households live in their own home. Walloon Region is similar to Flanders with 70% owner occupiers. The regional differences in social renting are much smaller, despite the large differences in the size of the rental market. Walloon Region has the largest proportion of social renters (9%). In Brussels, where the rental market accounts for the shelter of more than half of all households, only 8% of households are social renting.

The available research is focusing mainly on the regional housing markets (Meulemans et al. 1996; De Decker 2004; Van Dam et al. 2003; Winters 2003). In line with the policy paradigm, the main focus is on trends regarding home acquisition. As in most industrialized countries, housing prices witnessed steep increases in recent years (see Figure 1). Simultaneously, there is a declining property acquisition among low income groups and young households due to price increases (Meulemans et al. 1996).

Figure 1: The evolution of house sales and house prices in Belgium, 1975-2005



Source: Statistics Belgium.

Not only low income households have problems to find an affordable house. Also the middle income groups are facing high housing costs, as the percentage of housing costs in the total disposable family income has gone up considerable (De Decker & Van Dam 2005; Van den Bosch & Van Dam 2001; Meulemans et al. 1996). The continuously rising home ownership rates are partly due to home-ownership of the

large baby-boom birth cohorts (Meulemans et al. 1996). Compared to other industrialized countries, home prices in Belgium remain below average even after the steep increase of recent years (De Decker 2006).

2.2 Housing policy

The housing policy is a mixture of federal, regional and local policies. At the federal level there are important tax advantages in support of home ownership which are explored later. Following state reforms in the eighties, part of housing policy has become a regional (*gewest*) responsibility. Consequently, Brussels, Flanders and the Walloon Region each have their own housing policies. Although the support of home acquisition remains the dominant policy track, the regions are increasingly investing in the provision of social rent housing.

2.2.1 Promotion of home-ownership through the tax system

The “cadastral income” (CI) is the average normal net income that the real estate provides to its owner. This corresponds to an estimation of the average normal net rent value of the property for 1 year (at the reference time, which is 1 January 1975) (Federale Overheidsdienst Financiën, 2004). The cadastral income is subject to annual *indexing* (the index for tax year 2004 is 1.3391).

From 1 January 2005 onwards, the tax treatment of the dwelling one owns has changed considerably. Before 1 January 2005 ‘cadastral income’ was part of taxable income. There were 4 possibilities of tax relief an owner could apply for:

- (a) The *normal interest deduction*: interest payments on mortgages for purchasing or renovating a home may be deducted from the income from real estate, on condition that the duration of the loan is at least 10 years. The ‘normal deduction of interest’ may not exceed the cadastral income.
- (b) The *dwelling allowance*: part of the cadastral income is exempt from taxes. This is known as the *dwelling allowance*. This amount is increased for each dependent person (incl. spouses), for disabled heads or partner, and for widow(er)s with dependent children. The deductible amount may not exceed

income from real estate. Depending on the level of the combined income, owner-occupiers may be entitled to an additional deduction, i.e. the so-called additional dwelling allowance. Combined income is the sum of occupational incomes of both spouses, plus the cadastral income of the own home and other real estate. Again, the amount deducted may not exceed the remaining income from real estate.

- (c) The *additional interest deduction*: the interest that remains after the normal deduction of interest may likewise be deducted from the total income on condition that the mortgage loan was raised in order to build, purchase or renovate a home in Belgium, and that the loan was contracted after 30 April 1986 for a duration of at least 10 years. This additional interest deduction is restricted in function of the number of years that the rental value income of the real property in question has been included in the taxable income. For the first five taxable years, the deduction amounts to 80%, and for each of the seven following years it amounts to 70, 60, 50, 40, 30, 20, and 10% respectively.
- (d) The *tax credit for capital redemption payments*: the capital redemption for a mortgage loan with a duration of at least 10 years entitles one to an extra tax reduction (in the form of a tax credit). This reduction is calculated on a maximum limit of the initial loan, which is comparable to that applied for the additional interest reduction

For mortgage loans that started before 1 January, the measures (a), (c) and (d) still apply.

From 1 January 2005 onwards, the dwelling allowance has been abolished, and the CI of the only and own dwelling has become tax exempt in the personal income tax system. For owners with a mortgage loan that is contracted after 1 January 2005, the three other tax advantages (interest deduction, additional interest deduction, tax credit for capital redemption payments) have been replaced by the so-called ‘dwelling bonus’, which is only applicable for mortgages contracted for the own and only dwelling and that have a term of at least 10 years. When these conditions are fulfilled, the tax payer can deduct each year a basic amount of 1,500 Euro from his taxable income (indexed to 1,870 Euro for tax year 2006). The tax advantage is thus applied at the marginal tax rate. This basic amount can be increased with (a) 500 Euro (620

for tax year 2006) during the first 10 years of the term of the mortgage and with (b) 50 Euro (60 Euro for 2006) when there are three or more children in the household.

2.2.2 Regional and local taxes

Apart from the tax treatment in the federal tax system, also regional and local taxes play a role in housing policy in the form of the *withholding tax on income from real estate* (WTIRE). It is calculated on the basis of the total rental value of the property ('cadastral income') after deduction of interest payments. It has three components: a regional WTIRE, a provincial WTIRE (= surcharge on the regional WTIRE) and a municipal WTIRE (= surcharge on the regional WTIRE). In the final settlement of personal income taxes, part of the WTIRE was taken into account as an advanced tax payment until 31/12/2004; this implied that part of the WTIRE of one's own home and more in particular 12.5% of the rental value income could be deducted from federal personal tax liabilities (though the deduction could not exceed total tax payable. If WTIRE was passed onto the renter (i.e. WTIRE is explicitly part of rents due), then the renter could also deduct these withholding tax from his personal income tax liabilities. Since 1 January 2005, this settlement of 12.5% is not applicable any more with the new tax treatment of real estate, and thus WTIRE can now entirely be considered as an extra tax on the dwelling

Tax policy encourages the possession of owner-occupied dwellings in the federal personal income taxation, but transaction costs for purchasing a house are increased considerably by registration rights, which belong to regional competences. Except for low-priced housing, the transaction costs involved are considerable and among the highest in Europe (Catte et al. 2004). Transaction costs are the lowest in Flanders (amounting 10% of the home value), plus 1-2% additional transaction costs regardless the region of purchase.

2.2.3 Social housing policies

Social housing policies are entirely part of regional competences. The regional differences in housing policies are not of a strategic nature: in all three regions, the emphasis is on acquisition support in the form of renovation subsidies, rather than

financial support of renting families. The differences between regions relate to generosity and eligibility criteria. Local authorities have considerable freedom in the implementation of the regional policy, and hence differentiation stems mainly from local policies.

To stimulate ownership, social loans are available at local government institutions and municipal social renting organizations. The conditions vary, but depending on the target group restrictions apply regarding maximum income, number of children or maximum value of the purchased dwelling. To a broader public there are subsidies available for the renovation of existing homes, with means tested eligibility criteria that are less tight. Again, the height of the subsidy and the eligibility criteria vary locally.

Rental subsidies are virtually non-existent. In Flanders, a small system of rental subsidies exists for emergency cases and is a welfare rather than a general housing policy. This subsidy is means tested and only applies to occupants of “unhealthy” homes, renters who are forced out of their home in so-called “housing emergency areas” (woonmoodgebied) or homeless people.

3. Data

3.1 The dataset: SILC-Belgium

The **Belgian EU-SILC of the survey year 2004** (with income data referring to 2003) provides the micro data. This is currently the most recent and most suitable dataset for our purpose. We have used the Belgian dataset, which apart from the variables provided to EUROSTAT also contains extra information on some crucial variables (as e.g. more details on housing costs, cf. infra). The SILC-2004 of Belgium contains 5,275 households and 12,971 individuals. For the distribution analysis households with a negative or zero household income were excluded; consequently, we are left with 5,248 households and 12,930 individuals for our analyses.

The data allow us to distinguish households who own their home outright and those who are paying off a mortgage. Among tenants we can distinguish three categories: 1) tenants at the private, non-subsidized market, 2) tenants who rent at a reduced rate, and 3) those who rent for free. For tenants with reduced rent it is not possible to differentiate between beneficiaries from social housing and those whose reduced rent is granted by their landlord (employer, relatives etc.) due to lack of data.

Table 2 presents the tenure status of households and individuals. In line with other sources, the SILC-data show for Belgium a high share of owners: about two thirds of all households live in an owner-occupied house, which corresponds to 72% of all individuals. Somewhat less than half of these own outright, whereas a majority of owners has an outstanding mortgage. Around a quarter of households (and 22% of the population) live in a dwelling that is rented in the private non-subsidized market. Consequently, the share of tenants at reduced rate or rent-free is very small in Belgium (around 5% resp. 2%).

Table 2: Tenure status in the Belgian SILC, 2003.

	% of households	% of individuals living in a household of ...	N (=number of unweighted individuals)
Owners	66.5%	72.3%	9,236
- <i>owner outright</i>	37.5%	33.9%	4,205
- <i>owner with mortgage</i>	29.0%	38.4%	5,031
Renters (private market)	26.5%	21.6%	2,878
Reduced rent	5.2%	4.5%	596
Rent-Free	1.8%	1.6%	215

Source: SILC 2004

Table 3 presents some basic socio-demographic indicators for the different categories of tenure status. Outright owners and rent-free tenants are significantly older than owners on mortgage and tenants on the private market. This also reflected in the average duration of occupancy: outright owners occupy their house on average for 25 years, whereas for the tenants on the private market this is only 6 years. According to household type outright owners are dominant among elder singles / couples. Owners on mortgage, on the contrary, are very prominent among couple with minor children. Tenants on the private market and reduced-rent tenants are mainly singles or couples younger than 65 (without children) and lone parents.

Table 3: Socio-demographic characteristics per tenure status, Belgium 2003.

	Outright owners	Owners on mortgage	Tenants - private market	Tenants - reduced rent	Tenants rent-free	Total
Age reference person						
below 25	15.6	41.1	30.1	32.4	23.2	29.4
25-64	48.1	57.9	57.1	48.9	54.8	54.0
65+	36.3	1.0	12.8	18.7	22.0	16.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Occupancy in years (avg.)						
	25.5	9.9	6.0	9.4	15.0	14.2
Type of household						
Single persons / couples (65+)	33.7	0.7	12.8	18.4	17.1	15.5
Single persons / couples (none 65+)	21.0	16.3	36.4	27.4	23.8	22.8
Couple with children up to 18	16.7	63.7	25.7	33.2	30.4	37.7
Mono-parental household	1.8	4.5	12.4	14.6	4.9	5.8
Other	26.9	14.8	12.6	6.4	23.9	18.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: SILC 2004

3.2 Data on housing costs in SILC-Belgium

In order to derive net imputed rent, it is important to have information on housing costs. The variable ‘Total housing cost’ (HH070) includes the monthly costs connected with the households right to live in the accommodation. According to the EUROSTAT-instructions for the construction of the EU-SILC variables, the contents should be:

- for owners: mortgage interest payments, structural insurance, mandatory services and charges (sewage removal, refuse removal etc.), regular maintenance and repairs, taxes, cost of utilities (water, electricity, gas and heating);
- for tenants at market price: rent payments (including housing benefits), structural insurance (if paid for), mandatory services and charges (sewage removal, refuse removal etc.), regular maintenance and repairs, taxes (if paid for the tenants), cost of utilities (water, electricity, gas and heating);
- for tenants at reduced price or rent free: imputed rent (including housing benefits), structural insurance (if paid for), mandatory services and charges (sewage removal, refuse removal etc.)(if paid for), taxes on dwelling (if applicable),

regular maintenance and repairs, cost of utilities (water, electricity, gas and heating).

We try to split this ‘Total housing cost’ into five different categories:

- rent payments;
- operating costs;
- maintenance costs/depreciation;
- interest on outstanding mortgages;
- property taxes.

Rent payments are included in the variable ‘Current rent related to occupied dwelling’ (HH060), which asks the respondents to give the rent without costs. On average a household pays 410 Euro per month for renting a dwelling on the private house market. For reduced-rent tenants, this amount is substantially lower (see Table 4).

SILC- Belgium provides a variable that includes payments for water, electricity, gas, fuel oil, coal, wood, maintenance of common space or lift; these various components cannot be distinguished, and as most components refer to *operating costs*, we have labeled this variable as such. Another Belgium-specific variable includes payments for insurance, refuse removal, maintenance, waste water taxes, withholding tax on real estate, and other costs (asked for tenants only); we have labeled this variable ‘*Maintenance costs and taxes*’ (though some of the cost would probably be more in place in the category of operating costs, but unfortunately also here no distinction can be made between the various components; this also explains why this variable is not confined to owners only, see Table 4). Frick and Grabka (2003) propose to use 1.60 Euro per m² for the total of operating and maintenance costs, but as we have no information on the surface of the dwelling, we do not know how close the amounts in the SILC-data are to these estimates. *Interest repayments on mortgage* (HY100G) of owners have been calculated by the data provider on the basis of the survey data, following EUROSTAT instructions. These however are gross interest payments and not net. At present, net interest payments are not available. Unfortunately, they cannot be calculated due to lack of information on cadastral income in SILC-2004. Consequently, for this group housing costs will suffer from a certain degree of overestimation.

Table 4: Housing costs per month per household according to tenure status, 2003.

	Rent payments	Operating costs	Maintenance costs and taxes	Interest repayments	Total housing cost
Owners	-	165	126	102	393
- <i>owner outright</i>	-	161	125	-	286
- <i>owner with mortgage</i>	-	169	128	224	521
Tenants	387	84	36	-	507
Renters (private market)	410	106	46	-	562
Reduced rent	266	-	-	-	266
Rent-Free	-	-	-	-	-

Source: Calculated on the basis of EU-SILC Belgium 2004 (unweighted amounts)

4. Methods to calculate net imputed rent¹

According to the definition of the EU Commission regulation (EC) No. 1980/2003 three groups of potential beneficiaries of imputed rent (IR) can be identified, namely owner-occupiers, rent-free tenants and tenants with below-market rent (including social housing and rent-reduction by employers or relatives). For a general description of the various approaches that can be used to calculate imputed rent on the basis of micro data, we refer to Frick and Grabka (2003), Frick et al. (2006) and Frick et al. (2007). They propose three methods:

- 1) the opportunity cost approach;
- 2) the capital market approach;
- 3) the self-assessment approach.

From these methods we were able to apply two for Belgium on the basis of the data of SILC 2004, namely the opportunity cost approach and the self-assessment approach. We were not able to use the capital market approach due to lack of information on the self assessed or any other market value of the owner-occupied dwelling.

It would be interesting to compare the calculated imputed rents with the value of the cadastral income. As we have seen, the cadastral income is used as an estimation of

¹ We are very grateful to Markus Grabka and Karel Van den Bosch for useful comments and help when applying the various methods.

the average normal net rent value of the property for 1 year for tax purposes. Hence, it can also be considered as an indicator for imputed rent. Normally there should be a “perequation” of CI’s every 10 years, i.e. a general re-estimation of the value of the CI’s. As this has not taken place since the seventies CI’s in Belgium are not a good measure for imputed rent as they systematically underestimate the rental value of the property. Nevertheless, it would be interesting to compare the estimates of imputed rent calculated in this paper with the current CI’s, in order to have an idea of the extent of this underestimation, but unfortunately this is not possible as the value of the cadastral income is not asked in SILC-2004.

4.1 The self-assessment approach

In the self-assessment approach respondents are asked to make an assessment of the rental value of their home. In SILC 2004 the following question is asked to owners and rent-free tenants: “Can you make an estimate of the monthly rent you would have to pay for your dwelling if you would have to rent it?” (variable HH061)². Reduced-rent tenants are not asked what their rent would be if they would rent at market prices. Consequently, the self-assessment approach is only applicable to owners and rent-free tenants. The response on this question is reasonably good. Of all 5,246 households, it was answered for 3499 households (for 1676 households the question was not applicable (1402 market rate renters and 274 reduced rent tenants), which leaves a missing for 73 households; of these 73 there are 42 owners outright; 22 owners with mortgage; 7 rent-free tenants; 2 missing on tenure status).

The amount answered on the self-assessment question is taken to be the value for imputed rent. From this amount owner specific costs (i.e. maintenance costs, taxes and interest payments) are deducted in order to arrive at net imputed rent. Negative imputed rent amounts were put to zero. The table below presents (monthly) imputed rent for the different tenure status categories for which this method is applied.

² It is not entirely clear whether this monthly rent refers to net or gross amounts (before or after deduction of housing costs). In the question asked to renters, the amount asked however is ‘net’ i.e. excluding all costs. Consequently, we assume that the same applies to self-assessed rent).

Table 5: Average amount of imputed rent per month according to the self-assessment approach, Belgium 2003.

	IR before deduction of costs	Costs (maintenance, taxes, interest payments)	Net imputed rent
Owners outright	656	130	531
owner with mortgage	724	363	381
Tenants Rent-Free	544	-	544

Source: Calculated on the data of SILC Belgium 2004

4.2 The opportunity cost approach

The opportunity cost approach estimates the opportunity cost of housing in a non-subsidized rental market (see Frick and Grabka, 2003). For applying this approach to Belgium we rely on a hedonic regression estimation of the logarithm of rent (excluding all costs) actually paid by main tenants on the private housing market (so excluding social housing and any reduced rent payments). We apply a two-step Heckmann procedure to predict the logarithm of rent:

- step 1: running of a semi-logarithmic regression model with $\log(\text{rent})$ as dependent variable based on the population of tenants in the private market. The covariates that have been used refer to type and size of the dwelling, quality of the dwelling and the neighbourhood, occupancy in years, geographical location, household income (see Table 6 for a summing up). Most of the independent variables were recoded into dummy variables. A Heckman selection correction is applied to correct for potential selectivity into the owner status.
- Step 2: application of the resulting coefficients to otherwise similar owner-occupiers as well as rent-free and reduced-rent tenants.

After these two steps a randomly chosen error term from the true distribution of renters is added in order to maintain variation in the resulting estimates of imputed rent. We arrive at an annual measure of imputed rent by taking the antilog of the estimated monthly fictitious rent and by multiplying it by 12. In order to arrive at net imputed rent we deduct maintenance costs and taxes for all owner occupiers and interest payments for owners with mortgage. Negative imputed rents are put to zero.

Table 6: Covariates used in the two-step Heckmann estimation (opportunity cost approach), Belgium 2003.

Variable	Mean	Std. Dev.	Code
Detached house	.322501	.4674779	No=0; yes=1
Semi-detached house	.40897	.4916904	No=0; yes=1
Appartment/flat in building with <10 dwellings	.1860509	.3891847	No=0; yes=1
Appartment/flat in building with ≥10 dwellings	.0697453	.2547416	No=0; yes=1
1 room in house	.0197643	.1392027	No=0; yes=1
2 rooms	.0520715	.2221923	No=0; yes=1
3 rooms	.1263778	.3323062	No=0; yes=1
4 rooms	.2166477	.4119996	No=0; yes=1
5 rooms	.2253896	.4178783	No=0; yes=1
6 or more rooms	.359179	.4798054	No=0; yes=1
Moisture free?	.1415811	.3486532	yes=0; no=1
Possible to keep home adequately warm?	.0716458	.257925	yes=0; no=1
Modern comfort present? (bath / shower / indoor flushing toilet / hot current water)	.0414291	.1992995	No=0; yes=1
Dwelling too dark?	.1176359	.3222071	yes=0; no=1
Central heating?	.1940327	.3954918	yes=0; no=1
Noise from neighbours / street?	.254466	.435602	No=0; yes=1
Pollution, grime or other environmental problem?	.1685671	.3744047	No=0; yes=1
Crime, violence or vandalism in the area?	.2067655	.4050243	No=0; yes=1
Difficult to reach?	.2004941	.4004082	No=0; yes=1
Dirty neighbourhood?	.163626	.369971	No=0; yes=1
Brussels capital region	.1377803	.344702	No=0; yes=1
Flanders - Densely populated area	.2869631	.4523872	No=0; yes=1
Flanders - Intermediate area	.2356518	.4244459	No=0; yes=1
Walloon Region - Densely populated area	.1351197	.3418839	No=0; yes=1
Walloon Region – Intermediate area	.154504	.3614655	No=0; yes=1
Walloon Region - Thinly populated area	.049981	.2179264	No=0; yes=1
Occupancy in years	15.13322	14.25832	Continuous
Household disposable income	27024.54	18469.11	Continuous

Source: Own calculations on the basis of SILC-Belgium 2004.

According to the opportunity cost approach imputed rents are much lower than the amounts we found with the self-assessment approach (compare Table 7 and Table 5). Apparently, there is a discrepancy between the assessment of owners of the rental value of their home and the imputed rent based on prevailing private market rents. The correlation between the two measures of IR is, though statistically significant, not very high with 0.2502 (calculated over owners and rent-free tenants only).

Table 7: Average amount of imputed rent per month per household according to the opportunity cost approach, Belgium 2003.

	IR before deduction of costs	Costs (maintenance, taxes, interest payments; rent payments for reduced rent tenants)	Net imputed rent
Owners outright	332	131	216
Owners with mortgage	477	363	174
Tenants reduced rent	369	256	122
Tenants rent-free	363	0	363

Source: Calculated on the data of SILC Belgium 2004

5. Results

We now present the impact of including net imputed rent in the income concept on income inequality. As explained above, we use two methods for measuring imputed rent, namely the self-assessment approach and the opportunity cost approach. We present results for owners and tenants separately. Owners are further divided into those who own outright and those who still have a mortgage burden; tenants are further divided into private market tenants, reduced-rent tenants and rent-free tenants (with of course no imputed rent measure for private market tenants).

The unit of analysis is the individual in the context of his household. Baseline income is household disposable income on a yearly basis. The income advantage of IR, using the two approaches, is compared to the baseline in both absolute and relative terms. Both disposable income and the income advantage from IR are equivalised in order to take account of family size and composition. The equivalence scale used is the modified OECD-scale, which attributes a value 1 to the first adult, 0.5 to each other adult and 0.3 to each child. Results are presented in the tables at the end of this paper.

5.1 Housing tenure and imputed rent

As we have already seen, the majority of individuals lives in an owner-occupied home (72% see Table A). Less than half of these owner own outright, whereas 53% of owners still live with an outstanding mortgage. Tenants in the private housing market make up the large majority of all tenants (almost 80% of all tenants). Tenants at reduced or free rent make up around 5% and 2% of the population.

In Table B we find the proportion of individuals living in a household with a positive IR-measure (according to the opportunity cost approach). For the entire population this amounts to 63.4%. The share of IR-beneficiaries is very high among owner occupiers (81.2%), and especially among those who own outright (90.9%). For owners on mortgage the share is much lower (72.7%): for more than one third housing

costs outweigh the benefit of IR, mainly because of outstanding mortgage interest payments. Of all tenants 16.8% enjoy a positive IR, which can be attributed to rent-free tenants (100%) and to a lesser extent to reduced rent tenants (68.2%). This indicates that even though rents are at a reduced rate, the rent payments outweigh net imputed rent for 31.8% of the individuals in this group.

5.2 Population share of beneficiaries

The share of beneficiaries (opportunity cost approach) increases with income level: in the bottom quintile 49.1% of individuals benefit from imputed rent against 69.4% in the top quintile (see Table C.1). The increase is most pronounced for owners on mortgage; for owners outright the share is almost stable around 30% (with a somewhat higher share in the second quintile). For tenants a reverse pattern can be distinguished: beneficiaries (both for rent-free and reduced-rent tenants) make up a higher share in the bottom quintile than in the top quintile. The pattern is similar when using the self-assessment approach. In general the share of beneficiaries is somewhat higher with the self-assessment approach than with the opportunity cost approach, which is striking as no IR could be calculated in the self-assessment approach for reduced-rent tenants.

Potential beneficiaries are all those living in an owner-occupied house, or in a home that is rented for free or at a reduced rate. Consequently, the total proportion of potential beneficiaries in Belgium amounts to 78.4%. As can be expected from the structure of the Belgian housing market, the majority of potential beneficiaries are owners: in principal all owners can benefit from imputed rent. Of all tenants, only 22% can potentially benefit from imputed rent. Overall, the share of potential beneficiaries increases with income level, and this is mainly driven by the pattern for owners on mortgage. The reverse pattern is found for tenants (mainly rent-free tenants); this is not surprising as tenants, and especially those at reduced or free rent, are found more frequently in the lower part of the distribution. The difference between actual and potential beneficiaries follows from the deduction of costs. As for owners on mortgage also interest payments have been deducted, the gap between actual and potential beneficiaries is larger. For reduced-rent tenants the gap follows

from the fact their imputed rent is arrived at after deduction of rent payments. For rent-free tenants no deductions are applied, so hence potential beneficiaries overlap entirely with actual beneficiaries, and there is full “take-up”.

5.3 *Income advantages from imputed rent*

Average income advantages from imputed rent per quintile and per tenure status are presented in Tables C.2 & C.3. Panel (1) of Table C.2 shows that the income share per quintile is hardly affected by the inclusion of imputed rent in the income concept, and this is the case for both the self-assessment and the opportunity cost approach. Relative income increases in disposable income are, however, not negligible: with the opportunity cost approach disposable income increases on average with 6%, and according to the self-assessment approach even with almost 13% (see panel (2)). Income increases are more important at the bottom of the income distribution: 8.7% for the opportunity cost measure, and even 20.8% for the self-assessment approach in the bottom quintile, against only 4.9% resp. 10% in the top quintile. The proportion of IR in disposable income tends to decrease with income level for all groups, but for owners on mortgage. The fact that the increase in disposable income is roughly an increasing function of income indicates that housing costs, and more particularly the burden of interest payments are relatively more heavy at the bottom of the income distribution.

Overall, the average amount of IR increases with income level (see panels (3) and (4) for average per capita transfers and for average equivalised transfer respectively), which indicates that richer individuals live in a dwelling of higher value. When using the opportunity cost approach (observations are similar, though less pronounced, when using the self-assessment approach) this pattern can be distinguished most clearly for home-owners on mortgage: for this group the per capita IR transfer in the top quintile is about six times higher than in the bottom quintile. The dispersion of average amounts for owner-occupiers is much smaller (e.g. for the 3rd and 4th quintile it is even lower than in the 2nd quintile). If we look at income advantages per beneficiary (see Table C.3), then we see that for both categories of owners imputed rent is an increasing function of income.

For tenants the pattern is reversed: imputed rent amounts are highest at the bottom of the income distribution. This is mostly due to the fact that the share of beneficiary tenants decreases with income. Table C.3 indicates that also tenants that are better-off, tend to live in more expensive houses.

5.4 Effect on income inequality and poverty

The effect of including IR in the income concept on income inequality and poverty is measured by calculating a series of commonly used inequality and poverty measures for both baseline income and for plus IR (total, as well as for each tenure status separately). The inequality measures used are the Gini index; the Atkinson index for inequality aversion parameters 0.5 and 1.5; the mean log deviation (MLD); the half squared coefficient of variation (Half SCV); and three percentile ratios (90/10; 90/50 and 50/10). The poverty measures are those from the FGT family with parameters 0 (head count), 1 (normalized poverty gap) and 2 (average squared normalized poverty gap)(see Foster, Greer and Thorbecke, 1984).

As can be expected from our analysis on the basis of quintile distributions, inclusion of IR in the income concept reduces inequality and poverty in general (see Table D). The Gini coefficient decreases with 1.3% (opportunity cost measure), resp. 2.7% (self-assessment). Inequality indicators that are more sensitive to changes at the bottom of the distribution, namely the MLD and especially the Atkinson 1.5, report a markedly higher decrease in inequality (5.7% resp. 16.7% with the opportunity cost approach and 8.1% resp. 18.2% with the self assessment approach). The results of the poverty measures confirm these results: the decrease in poverty is strongest for FGT2, which attaches more weight to poverty than the other two poverty measures.

Inequality is reduced when including IR for outright owners and for tenants. The inequality reducing effect for tenants points into the direction that social housing may play a role here, but as we cannot distinguish reduced rent tenants in social housing from other categories, this results is only indicative. The strong effect for low-income sensitive measures (MLD, Atkinson 1.5, FGT2) is apparently to a very large extent

due to IR for outright owners. This is probably due to the fact that these owners are mainly elderly, single individuals that are found relatively more at the bottom of the income distribution and that are important beneficiaries of IR.

5.5 Breakdowns for characteristics of the household

Table E.1 presents average income before and after inclusion of IR (opportunity cost approach only) broken down for household characteristics, as well as the decomposable MLD, which allows to distinguish within and between-groups inequality. The household characteristics considered are: household type; socio-economic group of the reference person; educational level of the reference person; age of the household member; and housing tenure status. The highest increase in income is experienced by the elderly (or pensioners). This group is characterised by a relatively low education and a high share of singles/couples without children, hence explaining the higher income increase for these groups. According to tenure status we see that home-owners without mortgage and rent-free tenants experience the highest increase in disposable income (9.3% and even 17.9% resp.). Inequality is most strongly reduced within these groups (e.g. 15% for outright owners; 29% for rent-free tenants; 13.2% for 65+ old individuals). Also reduced rent tenants experience a strong reduction in inequality within their group. Inclusion of IR increases inequality between owners and tenants, which is not surprising as the majority of tenants cannot benefit from IR, and their income position is initially already weaker than that of owners. The increase of between-group inequality is smaller when we take the finer breakdown of tenure status, but still considerable with almost 20%. Consequently, the contribution of between-group inequality to total inequality amounts to 7.2% after inclusion of IR.

Decomposing the FGT-poverty measures for these characteristics yields results that are consistent with our findings for inequality (see Table E.2). Poverty decreases mainly for elderly individuals and for home-owners who own outright. The poverty measures that are most sensitive for changes for the poor decrease the most (e.g. for outright owners FGT0 decreases with 14.5%, FGT1 with 21.4% and FGT with 26%). As the poverty line is variable, tenants on the private market (who do not benefit from

IR) see a considerable increase in their poverty rates (around 16% for all three poverty measures).

6. Conclusion

Although housing policy is a regional policy since more than two decades, the tenure statuses of households in the two largest regions are similar. About 70% of households are owner-occupiers; about 20%-25% are renters and between 5% and 10% live in social housing. In the Brussels Region, more than half of households are renters, but the market share of social housing is similar to Flanders and Walloon Region. In recent years, in the context of increasing affordability problems, more efforts are put into social housing.

We explored two methods to account for housing costs in the household income. For our analysis we used the Belgian dataset of 2004 wave of the Survey on Income and Living Conditions in the EU (SILC). First, we looked at the self-assessed value of houses; secondly we used an opportunity cost approach. Although the correlation of the two estimates is rather low, they both yield similar distributional consequences. The poverty, poverty gap and overall inequality lowers after we put housing costs into account. These findings are in line with most research on the income value of housing (e.g. Frick & Grabka 2003; Lefebure et al. 2006), all of which use different datasets³.

The imputed rent causes an increase of disposable income in all quintiles, but the relative increase is the highest in the bottom quintiles and the lowest in the top quintile. The interdecile ranges show that accounting for imputed rent lifts the income of the lower deciles while it has little effect on the higher deciles: The interdecile range between top and median remains constant, while both the range between top and bottom as the range between median and bottom drop to the same extent. The drop in inequality is due to the relation between ownership and age, and income and age. At old age, when income is lower, many households own their homes outright.

³ Our analysis are based on EU-SILC; Frick & Grabka used SOEP for Germany, PSID for USA and BHSP for UK; Lefebure et al. used SHARE for 9 European countries.

At active age, when income is higher, large mortgage payments are putting a weight on disposable income.

The post-war Belgian housing policy has always emphasized the stimulation of home ownership. In particular, the acquiring of modest housing has been stimulated. Below market loans, below market sale of social housing and renovation subsidies - all with means tested eligibility- brought the ownership of a small family home in the reach of many Belgian households. Overall inequality does not rise after controlling for home ownership – it declines. Since the positive effect of imputed rent is the largest in lower income households, the Belgian housing policy is indirectly achieving its goal of bringing home-ownership in the reach of lower income groups.

Although the effect of imputed rent on the total income distribution is known by now, the policy consequences are less clear. Often is claimed that owning a house is a protection against poverty or financial stress. Our results show that this is true as far as pensioners are concerned, but it is much harder to examine the exact causality of home-ownership. Exactly those who are in need of protection against poverty due to housing costs often are unable to acquire a home. The increasing attention of the regional housing policies in the extension seems justified, as the house-poor and the income-poor are often the same.

7. References

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8. Tables

Table A: Structure of the housing market, Belgium 2003

Tenure status	Population share	Population share
<i>Owner occupiers</i>	72.3	100.0
<i>thereof</i>		
outright owner	33.9	46.9
with outstanding mortgage	38.4	53.1
<i>Tenants</i>	27.7	100.0
<i>thereof</i>		
in private market (non-subsidized)	21.6	78.1
rent-reduced	4.5	16.2
rent-free	1.6	5.7
Total	100.0	

Source: SILC-Belgium, 2004.

Table B: Housing tenure and income advantages from IR (opportunity cost approach) by tenure status, Belgium 2003.

Tenure status	Share with IR=0	Share with IR>0	Total
<i>Owner occupiers</i>	18.8	81.2	100.0
<i>thereof</i>			
outright owner	9.1	90.9	100.0
with outstanding mortgage	27.3	72.7	100.0
<i>Tenants</i>	83.2	16.8	100.0
<i>thereof</i>			
in private market (non-subsidized)	100.0	0.0	100.0
rent-reduced	31.8	68.2	100.0
rent-free	0.0	100	100.0
Total	19.2	80.8	100.0

Source: own calculations on SILC-Belgium 2004.

Table C.1: Population share of beneficiaries from IR by tenure status, quintile distribution, Belgium 2003.

Quintile	Population share of beneficiaries (%)												
	Opportunity-cost-approach							Self-assessment-Approach					
	Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants	
Total		own outright	on mortgage	Total	rent-free	reduced-rent*	Total		own outright	on mortgage	Total	rent-free	
1 (bottom)	49.1	40.5	28.5	12.0	8.6	2.5	6.1	50.3	48.2	31.9	16.3	2.1	2.1
2	64.7	58.2	36.3	22.0	6.4	1.3	5.1	64.3	63.0	38.5	24.5	1.3	1.3
3	64.4	60.4	31.0	29.5	4.0	2.0	2.1	71.4	69.5	32.2	37.2	2.0	2.0
4	69.2	66.8	29.4	37.4	2.4	1.2	1.3	78.2	77.1	30.2	46.9	1.1	1.1
5 (top)	69.4	67.7	28.9	38.8	1.8	0.9	0.8	79.4	78.7	30.3	48.4	0.7	0.7
All	63.4	58.7	30.8	27.9	4.6	1.6	3.1	68.7	67.3	32.6	34.7	1.5	1.5
	Share of potential beneficiaries												
1 (bottom)	63.5	52.9	33.2	19.7	10.6	2.5	8.1						
2	76.2	67.4	39.9	27.5	8.8	1.3	7.5						
3	80.2	74.4	33.9	40.6	5.8	2.0	3.8						
4	85.5	82.5	31.4	51.1	2.9	1.2	1.8						
5 (top)	86.6	84.4	31.2	53.3	2.2	0.9	1.3						
All	78.4	72.3	33.9	38.4	6.1	1.6	4.5						
	Beneficiaries as % of Potential beneficiaries												
1 (bottom)	77.3	76.6	86.0	61.0	80.8	100.0	74.9						
2	84.8	86.4	90.8	79.9	73.1	100.0	68.3						
3	80.3	81.2	91.4	72.6	69.4	100.0	53.7						
4	81.0	80.9	93.5	73.2	82.6	100.0	71.0						
5 (top)	80.2	80.2	92.9	72.8	79.7	100.0	64.4						
All	80.8	81.2	90.9	72.7	76.5	100.0	68.2						

Source: own calculations on SILC-Belgium 2004.

Table C.2: Income advantages from IR by tenure status, quintile distribution, Belgium 2003.

Quintile	Baseline in %	Income Share												
		Opportunity-cost-approach							Self-assessment-Approach					
		Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants	
			Total	own outright	on mort- gage	Total	rent- free	reduced- rent*		Total	own outright	on mort- gage	Total	rent- free
1 (bottom)	8.8	9.0	8.9	9.0	8.8	8.9	8.9	8.9	9.0	8.9	9.0	8.6	8.9	8.9
2	14.2	14.3	14.2	14.3	14.1	14.2	14.2	14.2	14.4	14.4	14.5	14.0	14.2	14.2
3	18.4	18.5	18.4	18.4	18.4	18.4	18.4	18.4	18.6	18.6	18.6	18.4	18.4	18.4
4	23.4	23.3	23.4	23.3	23.4	23.4	23.4	23.4	23.3	23.3	23.2	23.6	23.4	23.4
5 (top)	35.2	35.0	35.1	35.0	35.4	35.1	35.2	35.2	34.8	34.8	34.7	35.5	35.2	35.2
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Quintile		% Increase in disposable income												
1 (bottom)	7337	8.7	6.9	5.2	1.7	1.8	0.8	1.0	20.8	19.8	15.7	4.1	1.0	1.0
2	11748	7.5	6.6	4.5	2.1	0.9	0.3	0.6	17.3	16.8	12.1	4.7	0.5	0.5
3	15263	6.2	5.8	3.3	2.4	0.5	0.3	0.2	14.5	14.0	8.7	5.4	0.4	0.4
4	19416	5.5	5.3	2.5	2.8	0.3	0.2	0.1	11.4	11.2	5.5	5.6	0.3	0.3
5 (top)	29239	4.9	4.7	2.3	2.5	0.2	0.1	0.1	10.0	9.8	4.7	5.1	0.1	0.1
All	16599	6.0	5.5	3.1	2.4	0.5	0.2	0.3	13.1	12.8	7.7	5.1	0.3	0.3

Table C.2: (continued)

Quintile	Baseline (EUR) mean	Mean transfer per capita (not equivalized)												
		Opportunity-cost-approach							Self-assessment-Approach					
		Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants	
			Total	own outright	on mortgage	Total	rent-free	reduced-rent		Total	own outright	on mortgage	Total	rent-free
1 (bottom)	0.0	478	376	297	79	102	45	57	1145	1089	905	184	56.3	56.3
2	0.0	635	553	407	147	82	26	55	1494	1448	1113	335	45.3	45.3
3	0.0	656	605	376	229	51	29	22	1549	1501	993	508	47.9	47.9
4	0.0	723	682	350	333	41	27	14	1497	1457	787	670	40.4	40.4
5 (top)	0.0	1003	963	483	480	40	26	14	2016	1982	1013	970	33.6	33.6
All	0.0	699	636	382	253	63	31	32	1540	1495	962	533	44.7	44.7
Quintile		Equivalized IR-transfer (EUR) mean												
1 (bottom)	7337	642	508	381	127	133	60	73	1525	1453	1155	298	71.8	71.8
2	11748	881	775	530	244	107	32	74	2031	1975	1425	550	55.2	55.2
3	15263	953	878	506	372	74	45	29	2210	2141	1320	821	68.6	68.6
4	19416	1074	1023	483	540	51	34	17	2216	2166	1076	1090	50.2	50.2
5 (top)	29239	1439	1385	661	725	53	34	19	2916	2873	1384	1488	43.3	43.3
All	16599	998	914	512	401	84	41	43	2179	2122	1272	849	57.8	57.8

Table C.2: (continued)

Quintile		(5) Disposable income including Imputed Rent (EUR) mean												
		Baseline (EUR) mean	Opportunity-cost-approach						Self-assessment-Approach					
Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants			
	Total		own outright	on mort- gage	Total	rent- free		reduced- rent	Total	own outright	on mort- gage	Total	rent- free	
1 (bottom)	7337	7979	7845	7718	7464	7470	7397	7410	8862	8790	8492	7635	7409	7409
2	11748	12629	12523	12279	11992	11855	11780	11823	13779	13723	13173	12298	11803	11803
3	15263	16215	16141	15769	15635	15337	15308	15292	17472	17404	16583	16083	15331	15331
4	19416	20490	20439	19899	19956	19467	19450	19433	21632	21582	20492	20506	19466	19466
5 (top)	29239	30677	30624	29899	29963	29292	29273	29258	32155	32111	30623	30727	29282	29282
All	16599	17597	17513	17111	17001	16683	16640	16642	18779	18721	17871	17448	16657	16657

Source: own calculations on SILC-Belgium 2004.

Table C.3: Income advantages from IR by tenure status for beneficiaries only, quintile distribution, Belgium 2003.

Quintile	Post-Gov.- Inc.	Income advantage from Imputed Rent (beneficiaries only)												
		Opportunity-cost-approach							Self-assessment-Approach					
		Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants	
			Total	own outright	on mortgage	Total	rent-free	reduced-rent*		Total	own outright	on mortgage	Total	rent-free
1 (bottom)	0.0	1307	1255	1338	1059	1552	2400	1203	3034	3018	3623	1831	3397	3397
2	0.0	1363	1330	1463	1111	1656	2420	1456	3157	3136	3703	2245	4145	4145
3	0.0	1479	1454	1636	1263	1859	2302	1436	3095	3083	4095	2206	3510	3510
4	0.0	1551	1531	1644	1442	2102	2903	1350	2834	2810	3567	2324	4420	4420
5 (top)	0.0	2072	2047	2285	1869	3034	3596	2379	3675	3652	4577	3074	6247	6247
All	0.0	1574	1556	1663	1438	1803	2597	1393	3172	3154	3902	2451	3999	3999

Source: own calculations on SILC-Belgium 2004.

Table D: inequality and poverty indices by tenure status, Belgium 2003.

Inequality indices	Baseline	Value of the Index												
		Opportunity-cost-approach							Self-assessment-Approach					
		Total	Owner-occupiers			Tenants			Total	Owner-occupiers			Tenants	
			Total	own outright	on mortgage	Total	rent-free	reduced-rent*		Total	own outright	on mortgage	Total	rent-free
Gini	0.2655	0.2620	0.2640	0.2624	0.2680	0.2637	0.2649	0.2643	0.2583	0.2592	0.2577	0.2711	0.2650	0.2650
Atkinson 0.5	0.0603	0.0583	0.0592	0.0587	0.0612	0.0595	0.0600	0.0598	0.0567	0.0571	0.0568	0.0623	0.0601	0.0601
Atkinson 1.5	0.2409	0.2006	0.2043	0.2026	0.2437	0.2378	0.2398	0.2389	0.1971	0.1986	0.1973	0.2469	0.2400	0.2400
MLD	0.1336	0.1260	0.1284	0.1271	0.1356	0.1315	0.1328	0.1323	0.1228	0.1238	0.1228	0.1381	0.1329	0.1329
Half SCV	0.1447	0.1400	0.1418	0.1417	0.1456	0.1431	0.1441	0.1437	0.1331	0.1337	0.1351	0.1468	0.1445	0.1445
DR: 90/10	3.36	3.33	3.38	3.33	3.43	3.31	3.34	3.33	3.33	3.34	3.29	3.48	3.34	3.34
DR: 90/50	1.72	1.73	1.72	1.74	1.72	1.72	1.72	1.69	1.70	1.70	1.75	1.72	1.72	1.72
DR: 50/10	1.95	1.93	1.96	1.94	1.97	1.93	1.94	1.94	1.97	1.97	1.94	1.99	1.94	1.94
FGT0	0.1540	0.1523	0.1550	0.1523	0.1570	0.1504	0.1548	0.1516	0.1543	0.1547	0.1503	0.1617	0.1527	0.1527
FGT1	0.0422	0.0406	0.0419	0.0409	0.0429	0.0411	0.0417	0.0416	0.0416	0.0420	0.0406	0.0444	0.0418	0.0418
FGT2	0.0192	0.0180	0.0187	0.0183	0.0195	0.0186	0.0189	0.0189	0.0182	0.0185	0.0181	0.0200	0.0189	0.0189
		Proportional change in %												
Gini	0.2655	-1.3	-0.6	-1.2	0.9	-0.7	-0.2	-0.5	-2.7	-2.4	-3.0	2.1	-0.2	-0.2
Atkinson 0.5	0.0603	-3.4	-1.8	-2.7	1.4	-1.4	-0.5	-0.9	-5.9	-5.3	-5.9	3.2	-0.4	-0.4
Atkinson 1.5	0.2409	-16.7	-15.2	-15.9	1.2	-1.3	-0.5	-0.8	-18.2	-17.5	-18.1	2.5	-0.4	-0.4
MLD	0.1336	-5.7	-3.9	-4.9	1.5	-1.6	-0.6	-1.0	-8.1	-7.3	-8.1	3.3	-0.5	-0.5
Half SCV	0.1447	-3.3	-2.0	-2.1	0.6	-1.2	-0.4	-0.7	-8.0	-7.6	-6.7	1.4	-0.2	-0.2
DR: 90/10	3.3605	-1.0	0.5	-0.9	2.1	-1.4	-0.7	-1.0	-0.9	-0.7	-2.1	3.6	-0.6	-0.6
DR: 90/50	1.7239	0.1	-0.2	1.0	-0.3	-0.1	-0.2	-1.8	-1.6	-1.4	1.6	-0.2	-0.2	0.0
DR: 50/10	1.9494	-0.9	0.4	-0.7	1.1	-1.1	-0.6	-0.7	0.9	0.9	-0.7	2.0	-0.4	-0.4
FGT0	0.1540	-1.1	0.6	-1.1	1.9	-2.3	0.5	-1.6	0.2	0.4	-2.4	5.0	-0.9	-0.9
FGT1	0.0422	-3.8	-0.7	-3.0	1.7	-2.5	-1.1	-1.4	-1.3	-0.3	-3.8	5.4	-0.9	-0.9
FGT2	0.0192	-6.3	-2.4	-4.4	1.5	-3.1	-1.6	-1.5	-5.1	-3.5	-5.8	4.1	-1.4	-1.4

Source: own calculations on SILC-Belgium 2004.

Table E.1: Inequality decomposition by household characteristics, Belgium 2003.

Characteristic of household or household head	A	B		C		D	E		F	G	H	I
	Pop. share in %	Mean		Income position		% increase in mean eq. inc.	Mean Log Deviation (MLD)		% change in inequality	% contribution to aggregate inequality		
		Baseline	Including IR	Baseline	Including IR	Including IR	Baseline	Including IR	Including IR	Baseline	Including IR	
Household type												
Single persons / couples (65+)	15.5	13577	14720	82	84	8.4	0.1052	0.0897	-14.8	12.2	11.1	
Single persons / couples (none 65+)	22.7	18862	20048	114	114	6.3	0.1689	0.1580	-6.5	28.6	28.4	
Couple with children up to 18	37.8	17155	18078	103	103	5.4	0.1133	0.1080	-4.7	32.1	32.4	
Mono-parental household	5.8	11568	12210	70	69	5.6	0.1092	0.1092	-0.1	4.7	5.0	
Other household types	18.3	16795	17703	101	101	5.4	0.1177	0.1165	-1.0	16.1	16.9	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.1252	0.1181	-5.7	93.7	93.7	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0084	0.0079	-6.2	6.3	6.3	
Socioeconomic group of HH head												
Blue collar worker	19.0	15698	16594	95	94	5.7	0.0766	0.0714	-6.8	10.9	10.8	
White collar worker	32.7	21222	22333	128	127	5.2	0.0788	0.0776	-1.5	19.3	20.1	
Self-employed	10.3	16847	17701	101	101	5.1	0.1906	0.1734	-9.0	14.7	14.2	
Unemployed	8.1	10609	11227	64	64	5.8	0.1097	0.1171	6.7	6.6	7.5	
Pensioner	23.8	14321	15481	86	88	8.1	0.1149	0.1040	-9.5	20.4	19.6	
Other	6.2	11542	12367	70	70	7.2	0.2038	0.1892	-7.2	9.5	9.3	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.1087	0.1027	-5.6	81.4	81.5	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0241	0.0228	-5.7	18.1	18.1	
Educational level of HH head												
Tertiary education	29.7	21045	22125	127	126	5.1	0.1155	0.1122	-2.9	25.7	26.4	
Upper secondary education	35.4	16332	17337	98	99	6.2	0.1077	0.1031	-4.3	28.5	28.9	
Lower secondary education	15.6	14514	15525	87	88	7.0	0.1282	0.1225	-4.4	15.0	15.2	
Primary education or less	19.4	12206	13042	74	74	6.9	0.1115	0.0980	-12.1	16.2	15.1	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.0114	0.1079	846.3	8.5	85.6	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0187	0.0175	-6.6	14.0	13.9	

Age of HH member												
Below 25	29.5	15669	16502	94	94	5.3	0.1273	0.1244	-2.3	28.1	29.1	
25-64	53.9	17992	19040	108	108	5.8	0.1354	0.1283	-5.3	54.7	54.9	
Over 64	16.6	13729	14853	83	84	8.2	0.1083	0.0939	-13.2	24.0	22.1	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.1285	0.1214	-5.5	96.2	96.4	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0051	0.0046	-10.2	3.8	3.6	
Housing tenure												
Owners, total	72.4	17614	18877	106	107	7.2	0.1159	0.1039	-10.4	62.8	59.6	
Tenants, total	27.7	13945	14247	84	81	2.2	0.1609	0.1565	-2.7	33.3	34.3	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.1283	0.1184	-7.7	96.1	94.0	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0053	0.0076	44.1	3.9	6.0	
Owner: own outright	33.9	16276	17787	98	101	9.3	0.1338	0.1137	-15.0	27.7	25.0	
Owner: on mortgage	38.4	18791	19836	113	113	5.6	0.0953	0.0923	-3.1	27.4	28.2	
Tenant: private market (non-subsidized)	21.6	14270	14270	86	81	0.0	0.1678	0.1678	0.0	27.1	28.8	
Tenant: reduced-rent	4.5	12184	13135	73	75	7.8	0.1223	0.1112	-9.1	4.1	4.0	
Tenant: rent-free	1.6	14502	17099	87	97	17.9	0.1466	0.1041	-29.0	1.7	1.3	
% Within groups inequality	./.	./.	./.	./.	./.	./.	0.1260	0.1169	-7.2	94.3	92.8	
% Between groups inequality	./.	./.	./.	./.	./.	./.	0.0076	0.0091	19.8	5.7	7.2	
ALL	100.0			100	100	6.0	0.1336	0.1260	-5.7	100.0	100.0	

Source: own calculations on SILC-Belgium 2004.

Table E.2: Poverty decomposition by household characteristics, Belgium 2003.

Characteristic of household or household head	A	B	C	D	E	F	G	H	I	J	K
	Pop. share in %	FGT0		% change in poverty (FGT0)	% contribution to aggregate poverty (FGT0)		FGT1		% change in poverty (FGT1)	% contribution to aggregate poverty (FGT1)	
		Baseline	Including IR	Including IR	Baseline	Including IR	Baseline	Including IR	Including IR	Baseline	Including IR
Household type											
Single persons / couples (65+)	15.5	20.0	18.1	-9.8	20.2	18.4	4.4	3.5	-20.4	16.4	13.5
Single persons / couples (none 65+)	22.7	12.9	13.1	1.2	19.0	19.4	4.0	3.8	-6.1	21.5	21.0
Couple with children up to 18	37.8	12.4	12.1	-3.0	30.5	29.9	3.6	3.6	0.6	31.9	33.3
Mono-parental household	5.8	33.9	36.1	6.2	12.7	13.6	8.0	8.4	5.5	10.9	11.9
Other household types	18.3	14.9	15.5	4.5	17.6	18.6	4.4	4.5	0.3	19.3	20.1
					100.0	100.0				100	100
Socioeconomic group of HH head											
Blue collar worker	19.0	9.9	9.4	-5.6	12.4	11.8	2.3	2.3	-0.1	10.3	10.7
White collar worker	32.7	2.5	2.5	-0.5	5.3	5.3	0.7	0.7	-2.4	5.2	5.3
Self-employed	10.3	19.3	19.3	0.0	13.1	13.2	6.9	6.6	-3.7	17.1	17.1
Unemployed	8.1	42.9	46.4	8.2	22.8	24.8	11.4	12.3	7.7	22.1	24.7
Pensioner	23.8	18.8	17.7	-6.1	29.4	27.8	4.8	4.0	-16.1	27.2	23.7
Other	6.2	42.0	42.0	-0.1	17.1	17.2	12.2	12.0	-1.1	18.1	18.6
					100	100.0				100	100
Educational level of HH head											
Tertiary education	29.7	6.2	6.4	2.9	12.2	12.6	2.1	2.1	-0.7	15.0	15.5
Upper secondary education	35.4	13.2	13.0	-1.2	30.9	30.6	3.4	3.3	-3.1	29.3	29.5
Lower secondary education	15.6	20.2	19.5	-3.8	20.9	20.2	5.9	5.6	-5.6	22.3	21.8
Primary education or less	19.4	28.2	28.4	1.0	36.0	36.6	7.1	6.8	-4.3	33.4	33.1
					100	100.0				100	100

Age of HH member												
Below 25	29.5	18.1	18.3	0.8	34.6	35.3	5.1	5.2	2.5	35.7	38.0	
25-64	53.9	12.5	12.6	1.1	43.6	44.6	3.6	3.5	-3.3	46.1	46.4	
Over 64	16.6	20.2	18.4	-8.5	21.7	20.1	4.6	3.8	-17.9	18.1	15.5	
	100.0				100.0	100.0				100	100	
Housing tenure												
Owners, total	72.4	11.0	9.8	-10.7	51.6	46.6	3.0	2.5	-15.9	50.7	44.4	
Tenants, total	27.7	27.0	24.9	-7.5	48.4	53.4	7.5	8.1	8.2	49.3	55.5	
Owner: own outright	33.9	14.7	12.6	-14.5	32.4	28.0	3.9	3.1	-21.4	31.6	25.8	
Owner: on mortgage	38.4	7.7	7.4	-4.0	19.2	18.6	2.1	2.0	-6.2	19.1	18.7	
Tenant: private market (non-subsidized)	21.6	26.6	30.7	15.5	37.2	43.5	7.5	8.7	16.6	38.3	46.5	
Tenant: reduced-rent	4.5	29.4	27.5	-6.4	8.6	8.1	7.8	7.1	-9.3	8.3	7.9	
Tenant: rent-free	1.6	25.9	17.5	-32.3	2.7	1.8	7.0	3.1	-55.4	2.6	1.2	
ALL	100.0	15.4	15.2	-1.1	100.0	100.0	4.2	4.1	-3.9	100.0	100.0	

Source: own calculations on SILC-Belgium 2004.

Table E.2: Poverty decomposition by household characteristics, Belgium 2003 (continued).

Characteristic of household or household head	L		M	N	O		P
	FGT2		% change in poverty (FGT2)		% contribution to aggregate poverty (FGT2)		
	Baseline	Including IR	Including IR		Baseline	Including IR	
Household type							
Single persons / couples (65+)	1.7	1.3			13.8	11.3	
Single persons or couples (none 65+)	2.1	1.8			24.4	22.8	
Couple with children up to 18	1.7	1.7			33.3	35.3	
Mono-parental household	3.4	3.5			10.3	11.1	
Other household types	1.9	1.9			18.2	19.4	
					100	100	
Socioeconomic group of HH head							
Blue collar worker	1.0	0.9			10.0	10.1	
White collar worker	0.3	0.3			5.1	5.4	
Self-employed	3.8	3.5			20.7	20.5	
Unemployed	4.5	4.9			19.2	22.3	
Pensioner	2.0	1.6			24.8	20.9	
Other	6.1	6.0			20.2	20.8	
					100	100	
Educational level of HH head							
Tertiary education	1.2	1.2			19.0	19.3	
Upper secondary education	1.5	1.4			27.8	28.0	
Lower secondary education	2.7	2.5			22.5	22.4	
Primary education or less	3.0	2.7			30.6	30.0	
					100	100	
Age of HH member							
Below 25	2.4	2.4			36.4	39.4	
25-64	1.7	1.6			48.2	47.6	
Over 64	1.8	1.4			15.4	12.9	
					100.0	100.0	
Housing tenure							
Owners, total	1.3	1.1			50.5	43.8	
Tenants, total	3.4	3.7			49.5	56.1	
Owner: own outright	1.8	1.3			31.3	24.7	
Owner: on mortgage	1.0	0.9			19.2	19.2	
Tenant: private market (non-subsidized)	3.4	3.9			38.2	47.3	
Tenant: reduced-rent	3.7	3.2			8.5	8.0	
Tenant: rent-free	3.4	1.0			2.8	0.8	
ALL	1.9	1.8			100.0	100.0	

Source: own calculations on SILC-Belgium 2004.