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AIM-AP

Accurate Income Measurement for the Assessment of Public Policies

Specific Targeted Research or Innovation Project

Citizens and Governance in a Knowledge-based Society

**Deliverable 1.5g: The distributional impact of non-cash incomes in
The Netherlands**

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

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WP1.5 Distributional impact

Deliverable D1.5g

The aggregate distributional impact of private and publicly provided non-cash income components in the Netherlands

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Abstract

This report analyses the distributional impact of three components of non-cash income in the Netherlands: public education expenditures, imputed rent and public health expenditures. On the basis of the Euromod baseline simulation for 2001 we examine the effect on the income distribution of adding these income components attributable to the households in question to disposable household income. Among others, the effects on income inequality are discussed, decomposed according to various household characteristics.

Introduction

Most researchers of the income distribution would agree that, in principle, non-monetary income components should not be ignored when one is interested in, e.g., comparing the income position of various households, comparing the income distribution in various countries, or comparing the income distribution at different points in time. The presence of non-monetary income components (and their size) could, e.g., make a considerable difference for the actual position of a household in the distribution of welfare, and for assessing whether a household should be considered as poor. The clearest example is probably a household living in rent-free accommodation. Such a household would by all accounts need a lower monetary income to be considered non-poor than a similar household paying the market rent for its accommodation. For other possibly relevant non-monetary components of income the case is less clear. Can e.g. the fact that a household profits from free public education be sufficient to lift it out of poverty, in particular when comparing it with a household that does not? Surely, when taking into account that an elderly person benefits much more from public health expenditures than a young person, this should not automatically imply that elderly need fewer monetary resources to be qualified as non-poor?

In this report we take a closer look at the consequences of adding non-monetary components to income, in particular for the income distribution, for indicators of inequality and poverty, and for the equivalence scales used to compare incomes of households of different size and composition. Starting point is the poverty threshold most commonly used by the European Union, where the poverty line is drawn at 60% of the median (monetary) income, and income is equalized using the modified OECD equivalence scale (Hagenaars et al, 1994). Before actually adding non-monetary components to income, we will attempt to answer the following questions: (a) should we be adding specific components of non-monetary income to cash income, (b) if so, how should we redraw the poverty line, and (c) can we still use the modified OECD equivalence scale?

Notably, Smeeding et al. (1993) choose to present the effects of adding non-cash income components, sticking to the original the poverty line. Moreover, they appear to be adding equalised cash income to non-cash income per capita. Radner (1997) discusses what he calls the consistency problem, when income includes non-cash components that are associated with needs that are not taken into account in the equivalence scale in use. See also Frick and Grabka (2001) who choose to use the same equivalence scale for monetary income and imputed rent.

We distinguish three different types of non-monetary income: imputed income from owner-occupied, rent-free or reduced rent accommodation ('imputed rent'), public

education expenditures, and public health expenditures. After tentatively answering the questions, we will provide an empirical illustration using the Euromod baseline (2001) for the Netherlands. This consolidates earlier results on education (De Vos, 2006), imputed rent (De Vos, 2007a) and public health expenditures (De Vos, 2007b), in the framework of the AIM-AP¹ project funded by the European Commission.

Imputed rent

Where imputed rent from owner-occupied or rent-reduced accommodation is concerned, the answers to our questions are the most straightforward. When comparing households in different types of accommodation, and countries with different home ownership rates, undoubtedly it makes sense to include a measure of imputed rent in income². The actual position of households with high levels of imputed rent in the distribution of welfare is definitely better than suggested by their position in the distribution of monetary income.

Can we still use 60% of the median as the poverty line? As long as 60% of the median can still be assumed to somehow represent the income needed to escape poverty this question can be answered affirmatively. Notably, when taking into account imputed rent, our income concept does a better job in representing the income position of the households in question. In itself, it is not impossible that actually a lower or higher percentage of the median of this enhanced income is in some sense preferable as the poverty threshold. Inequality in housing might be more easily accepted (e.g. because quality differences are less visible) than inequality in, say, clothing or transportation, and as a result it might be possible to escape poverty on less than 60% of the median. If, by contrast, housing expenditures are more a necessity than a luxury, 60% of the median including imputed rent might be insufficient to enable households to afford a decent accommodation. To the extent that the 60% cut-off was arbitrary before including imputed rent it will still be arbitrary when imputed rent is included in income.

What can be inferred about the equivalence scale to be used? Again, one might argue that the modified OECD equivalence scale was rather arbitrary in the first place (before we added imputed rent), so this will still be the case with the enhanced income concept. Still, when the (modified) OECD scale was devised, (the cost of) housing may not have been fully taken into account since imputed rent was ignored. Since in general housing exhibits larger economies of scale than most other cost of living, one could assume that the 'real' equivalence scale is actually flatter than the modified OECD scale. However, if it is deemed acceptable to use the modified OECD scale in countries with varying housing

¹ Accurate Income Measurement for the Assessment of Policy,

² In the discussion we assume that a relevant measure of Imputed Rent can be calculated. Various approaches are described in De Vos (2007a).

costs in the first place, there does not seem to be an urgent call for revising that scale when adding imputed rent to income.

There is one serious potential problem with measuring poverty after adding imputed rent. It is likely that there are some households who own their accommodation or live in rent-free accommodation that have full incomes (including imputed rent) above the poverty line merely because a high amount of imputed rent is added to their monetary income. However, with low cash incomes they might still be considered to be in poverty, especially when they have no possibility to sell their accommodation (e.g. when living rent-free). This problem might be exacerbated when the method to calculate imputed rent could be seen to overestimate it for households with low incomes. By checking whether cash income exceeds, e.g., 50% of the poverty line we could assess to what extent poverty is likely to be underestimated when imputed rent is added to disposable income.

Education

Should public education expenditures be added to disposable income? Clearly when comparing households who profit from public education with otherwise similar households who don't, it makes sense to attribute a value to the attendance to public education and add it to the disposable income of the households in question. Notably, this should primarily affect the comparison of households with pupils in public education and households with pupils in private education. Likewise, when comparing the average disposable income in a country where a large part of the population profits from public education with a country where most education is private, the comparability between both countries is improved when the disposable income includes an attributed value for public education.

However, to the extent that participation in education is compulsory, it can be questioned whether the full costs of public education should be added to household income. In fact, one could also postulate that households with children in compulsory education with similar (equivalised) monetary income as households without children in compulsory education are not really better off, because they have no choice but to send their children to school.

The answers here are even less straightforward for the other two questions: where the poverty line should be drawn and which equivalence scale should be used. Let us first assume that the equivalence scale remains unchanged and that we only take into account non-compulsory public education. After adding the attributed value of public education to the disposable income of households with persons attending public education, we recalculate the median, and then redraw the poverty line at 60% of the new median. It is likely that a number of households who were considered poor before adding

public education are no longer poor when public education is added. Likewise, a number of households who were not poor earlier, will fall below the new higher poverty line. Implicitly, the poverty threshold is increased by public education expenditures also for households without persons in the relevant age group. In fact, increasing public education expenditures by e.g. raising salaries of teachers could send certain households without children in public education into poverty.

Even if we accept that, a further question may be posed concerning the equivalence scale to be used. When adding public education expenditures, is it still plausible to use the modified OECD equivalence scale for all households? Arguably, it is not, especially if adding a child in education to a household causes its poverty threshold to increase by less than the amount of additional public education expenditures attributed to the household³.

Somehow we do want household income and the poverty line to reflect that free education increases welfare. However, we also assume that households need a certain minimum amount of non-education income per additional child to prevent them from being in poverty. Therefore, it can be argued that free education should only cover a limited part of the additional resources required per child. It should not be considered completely substitutable with other resources. We could e.g. assume that at the poverty threshold, free (non-compulsory) education cannot cover more than 50%, say, of the additional income required for the child in question. Unfortunately, this is not sufficient to calculate the poverty threshold because it is not quite clear how all this should affect the median.

For the moment, we will assume that to calculate the median, 100% of the relevant education expenditures should be taken into account, and that the poverty threshold is to be drawn at 60% of this new median M' . This would identify the poverty line ($0.6 * M'$). To identify the poor, we calculate the poverty line for each household by multiplying the line with the modified OECD equivalence scale. Assuming that the minimum cash requirement is 50% of the additional income required (i.e. $0.5 * 0.3 * 0.6 * M'$ for children younger than 14 and $0.5 * 0.5 * 0.6 * M'$ for older persons), we should add at most $0.5 * 0.3 * 0.6 * M'$ for the education of children younger than 14 (i.e. 4 year olds) and at most $0.5 * 0.5 * 0.6 * M'$ for the education of children aged 16 or over to the original amount of disposable income. The household is poor if the resulting income is below the poverty line for the household in question.

³ This could e.g. imply that a poor household could escape poverty by adopting a child in public education, or that it would escape poverty as soon as a child reached the age threshold for public education. Clearly, these are rather peculiar consequences of adding public education expenditures to disposable income.

Health expenditures

Next to imputed rent and public education expenditures, a third non-monetary component of income considered in the AIM-AP project concerns public health expenditures. As with education, when comparing households with private health insurance with households with public health coverage, and countries with a large extent of private health insurance with countries with 'free' national health insurance, comparability is enhanced when we take into account the insurance value of public health expenditures. And similar to education, it would not seem to be completely correct to redraw the poverty line at 60% of the new median. Here, we could have the phenomenon that many elderly would be seen to escape poverty as a result of the high public health expenditures attributed to them. It would probably be more plausible to compute an average insurance value for the whole population and add that to income, but even then the assumption that the poverty cut-off should be redrawn adding 60% of that amount does not seem very firmly based.

Suppose the whole population is covered by public health insurance, and assume that the same amount PH is assigned to every person. Even in that case it is not quite clear why the median should be recalculated using the old modified OECD equivalence scale and why a new poverty line should be redrawn at 60% of this new median. For one thing, health costs would implicitly assumed to be 60% of the actual level for persons on the poverty threshold, for another, 'equivalent' income would rise with amount PH for single persons but with a higher amount $(nad + nch) * PH / (1 + 0.5 *(nad - 1) + 0.3 * nch)$ for multiperson households (where *nch* represents the number of children younger than 14 and *nad* the number of older persons in the household). This would imply that multiperson households would be more likely to be classified as non-poor.

It would probably be preferable to add health costs on a per capita basis and assume that health costs at the poverty threshold would be equal to those at all other levels of income. In that case poverty would not be affected by taking public health expenditures into account, as they would be assumed to just cover the need for health care. Taking into account that health costs differ between age groups, we would still want to assume that expenditures exactly cover the minimal costs, so that in fact the poverty status of a household is not affected. In this case one could also choose not to add public health expenditures to cash income but to consider health care as a separate dimension of well-being: some people may be cash-poor but the whole population is covered for health care.

The situation is different when some people are not covered by public health insurance but have to (and do) insure privately. Now some households without public health insurance might be cash poor if they need to pay high private insurance premiums. Moreover, it would seem sensible to calculate the median from which the (cash) poverty

line is derived after subtracting private health insurance premiums from disposable income. So, instead of adding the non-cash income component of public health expenditures PH, we would propose to subtract private health insurance premiums PH', assuming that they are a substitute for public health expenditures and do not, e.g., provide increased coverage or better quality health care⁴. Looked from a different perspective, this approach can be seen to correct the definition of disposable income, subtracting private health insurance premiums PH', to be consistent with the subtracted public health insurance contributions.

In table 1 we summarize the discussion above, and in table 2 we present the various definitions of total disposable that we will distinguish in this paper. In the 'basic' variants we simply add the public education expenditures, imputed rent and public health expenditures as discussed in De Vos (2006), De Vos (2007a) and De Vos (2007b), respectively. In the alternative approaches we use the components that we prefer on the basis of the above discussion.

Table 1. Non-cash income components, equivalence scales and poverty line

Non-cash component	Imputed rent	Public education	Public health
Income	IR	All: PE Non-compulsory: PE'	All: PH (-1) * private health ins. contr.: PH'
Poverty line	60% of new median acceptable; minimum cash requirement: IR''	60% of new median PE: questionable PE': possibly require minimum cash income (PE'')	60% of new median PH: questionable PH': acceptable
Equivalence scale	leave as is (modified OECD) for the time being	PE: mod. OECD questionable PE': modified OECD questionable PE'': mod. OECD acceptable	PH: mod. OECD questionable PH': modified OECD acceptable
Result	IR / IR'': imputed rent treated as any other income component, except possibly minimum cash requirement	PE' / PE'' poverty status mainly affected by non-compulsory educ.	PH': poverty status mainly affected for persons with private health insurance; when median is redrawn others may also be affected

⁴ This would apply to the situation in the Netherlands (2001), where both publicly and privately insured usually consulted the same doctors and used the same health care facilities.

Table 2. Operationalisation of approaches chosen

Income	Basic	Alternative	Alternative with minimum cash requirements
Baseline	(1) Y		
Baseline + Imp. rent	(2) Y + IR		(11) Y + IR''
Baseline + Publ. edu.	(3) Y + PE	(7) Y + PE'	(12) Y + PE''
Baseline + Pubi hlth	(4) Y + PH	(8) Y - PH'	
Baseline + Imp. rent + Publ. edu	(5) Y + IR + PE	(9) Y + IR + PE'	(13) Y + IR'' + PE''
Baseline + Imp. rent + P. edu. + P. hlth	(6) Y + IR + PE + PH	(10) Y + IR + PE' - PH'	(14) Y + IR'' + PE'' - PH'

Data

The dataset that we use as our baseline is the Euromod simulation for 2001, updated from the Socio-Economic Panel (SEP) data collected by Statistics Netherlands in 2000. The SEP is a representative panel survey in which information on income, wealth, housing and work was collected on a yearly basis (1984-2002) from all household members aged 16 or over. It should be noted that households with one or more members who did not fill out the income questionnaire (unit non-response) have been dropped out of the Euromod baseline sample without adjusting the original weights produced by Statistics Netherlands. In addition, for the purpose of the analysis in this report, households with negative or zero post-government incomes have been dropped.

Imputed rent is approximated for households who own their accommodation and rent-free households. It is based on the capital market approach, assuming a rate of return of 3% on the investment. Mortgage interest payments are deducted but only non-negative amounts of imputed rent are taken into account (for details see De Vos, 2007a).

The public education expenditures taken into account are the average amounts spent per student based on figures from Statistics Netherlands in primary, secondary and tertiary education, respectively. Tuition fees are deducted when relevant, and the amounts are reduced for students in part-time education (see De Vos, 2006).

Public health expenditures per capita are based on OECD-figures (see De Vos, 2007b). The distinction between households with public and private health insurance is approximated on the basis of the Euromod simulations. Children below 18 are assumed to be insured with the health insurance of the highest earning parent, and when it can be concluded that at least half of the household members have a public health insurance we assume that the household has a public health insurance.

Results

a. Results by quintile

Using the preferred approaches from the respective reports on imputed rent, public education and public health expenditures (hereafter called the 'traditional' approach) we find that on average these non-cash income components increase disposable income by 6.1, 10.6 and 11.2% respectively (Table 3). The beneficiaries of imputed rent are overrepresented among the higher income groups, but as a percentage of disposable income imputed rent is about 6% in all income quintiles. On the other hand, the lower quintiles are overrepresented among the beneficiaries of public education expenditures, and the income increase is also largest in the lower quintiles, both in relative and in absolute terms. Finally, everybody is supposed to be a beneficiary of public health expenditures, but both in relative and in absolute terms, the lower quintiles profit much more than the higher. Adding imputed rent and public education expenditures, the percentages of beneficiaries vary from 64% in the lowest quintile to 82% in the highest two quintiles, whilst the average increase is more than 33% in the lowest quintile and less than 10% in the highest. Adding all three non-cash income components, the increase in disposable income varies from 65% in the lowest quintile to 14% in the highest.

The picture is quite different when we use our alternative approach (Table 4). Non-compulsory public education adds about one third of total public education, and the number of beneficiaries is about half the total number of beneficiaries of public education. Subtracting private health insurance contributions rather than adding public health expenditures causes a drop of almost 3% of disposable income (as compared to an increase of more than 11%). This affects approximately 40% of the population, varying from less than 10% in the lowest quintile to almost 60% in the highest quintile. Combining imputed rent and non-compulsory education, the increase in disposable income adds up to 9%, varying from 16% in the lowest quintile to 7% in the highest quintile. The percentage of beneficiaries is 70%, increasing from 51% in the lowest quintile to 82% in the highest. When we add imputed rent and non-compulsory education and subtract private health insurance contributions, the number of persons affected rises to 78%, varying from 52% in the lowest quintile to more than 90% in the highest. The overall increase in income amounts to 6%, varying from 15% in the lowest to 4% in the highest.

Table 3. Effect of adding three components of non-cash income to monetary income by quintile (traditional approach)

Imp rent (IR)	Income share		pop share	%of benef	%increase	transfer	
	baseline					pc	eq
	A	B	C	D	E	F	G
1	10.0	10.0	10.2	32.0	6.7	433.7	606.3
2	14.3	14.4	17.7	55.5	6.3	542.4	823.1
3	18.2	18.3	21.8	68.5	6.7	716.8	1113.6
4	23.0	23.0	24.6	77.0	6.1	853.6	1265.7
5	34.5	34.3	25.6	80.2	5.6	1281.0	1767.6
Total	100.0	100.0	100.0	62.7	6.1	765.5	1115.2
Educ (PE)	Income share		pop share	%of benef	%increase	transfer	
	baseline					pc	eq
	A	B	C	D	E	F	G
1	10.0	11.5	21.8	51.9	27.1	1460.3	2452.1
2	14.3	15.3	25.0	59.7	18.3	1323.6	2382.9
3	18.2	18.6	23.0	54.9	12.7	1157.7	2106.6
4	23.0	22.5	18.9	45.1	8.2	942.4	1711.1
5	34.5	32.1	11.3	26.9	3.0	543.2	950.7
Total	100.0	100.0	100.0	47.7	10.6	1085.4	1920.6
Health (PH)	Income share		pop share	%of benef	%increase	transfer	
	baseline					pc	eq
	A	B	C	D	E	F	G
1	10.0	11.8	20.0	100.0	31.4	2111.8	2840.1
2	14.3	15.1	20.0	100.0	17.0	1540.8	2209.0
3	18.2	18.2	20.0	100.0	11.0	1223.2	1831.6
4	23.0	22.3	20.0	100.0	7.8	1142.8	1641.6
5	34.5	32.6	20.0	100.0	5.2	1184.8	1629.2
Total	100.0	100.0	100.0	100.0	11.2	1440.8	2030.4
IR + PE	Income share		pop share	%of benef	%increase	transfer	
	baseline					pc	eq
	A	B	C	D	E	F	G
1	10.0	11.4	16.8	64.2	33.8	1893.9	3058.4
2	14.3	15.3	19.6	74.9	24.6	1866.0	3205.9
3	18.2	18.7	20.5	78.6	19.4	1874.5	3220.2
4	23.0	22.5	21.5	82.2	14.2	1796.0	2976.8
5	34.5	32.1	21.6	82.4	8.7	1824.3	2718.3
Total	100.0	100.0	100.0	76.5	16.7	1850.9	3035.9
IR + PE + PH	Income share		pop share	%of benef	%increase	transfer	
	baseline					pc	eq
	A	B	C	D	E	F	G
1	10.0	12.9	20.0	100.0	65.2	4005.8	5898.5
2	14.3	15.9	20.0	100.0	41.6	3406.8	5414.9
3	18.2	18.6	20.0	100.0	30.5	3097.7	5051.8
4	23.0	22.0	20.0	100.0	22.1	2938.8	4618.4
5	34.5	30.7	20.0	100.0	13.9	3009.1	4347.5
Total	100.0	100.0	100.0	100.0	27.9	3291.7	5066.3

Table 4. Effect of adding three components of non-cash income to monetary income by quintile (alternative approach)

Imp rent (IR)	Income share		pop share	%of benef	%increase	transfer	transfer
	baseline		beneficiaries			pc	eq
	A	B	C	D	E	F	G
1	10.0	10.0	10.2	32.0	6.7	433.7	606.3
2	14.3	14.4	17.7	55.5	6.3	542.4	823.1
3	18.2	18.3	21.8	68.5	6.7	716.8	1113.6
4	23.0	23.0	24.6	77.0	6.1	853.6	1265.7
5	34.5	34.3	25.6	80.2	5.6	1281.0	1767.6
Total	100.0	100.0	100.0	62.7	6.1	765.5	1115.2
Educ (PE')	Income share		pop share	%of benef	%increase	transfer	transfer
	baseline		beneficiaries			pc	eq
	1	10.0	10.5	24.2	28.4	9.1	590.4
2	14.3	14.6	23.0	27.0	4.8	382.0	628.4
3	18.2	18.4	23.3	27.4	3.9	379.7	638.7
4	23.0	22.8	17.9	21.0	2.2	284.9	469.4
5	34.5	33.7	11.6	13.6	1.0	204.4	314.5
Total	100.0	100.0	100.0	23.5	3.2	368.3	575.4
Health (-PH')	Income share		pop share	%of benef	%increase	transfer	transfer
	baseline		beneficiaries			pc	eq
	1	10.0	10.2	3.4	6.7	-0.9	-49.0
2	14.3	14.3	14.5	28.6	-3.2	-255.7	-413.6
3	18.2	18.1	23.5	46.3	-3.9	-398.5	-646.2
4	23.0	22.8	28.9	56.8	-3.7	-483.9	-773.0
5	34.5	34.6	29.7	58.4	-2.4	-533.9	-760.2
Total	100.0	100.0	100.0	39.4	-2.9	-344.2	-534.4
IR + PE'	Income share		pop share	%of benef	%increase	transfer	transfer
	baseline		beneficiaries			pc	eq
	1	10.0	10.6	14.4	50.6	15.8	1024.1
2	14.3	14.6	18.5	65.2	11.1	924.3	1451.5
3	18.2	18.5	21.3	75.2	10.6	1096.5	1752.4
4	23.0	22.8	22.7	79.9	8.3	1138.5	1735.1
5	34.5	33.6	23.2	81.7	6.7	1485.4	2082.0
Total	100.0	100.0	100.0	70.5	9.3	1133.8	1690.6
IR + PE' - PH'	Income share		pop share	%of benef	%increase	transfer	transfer
	baseline		beneficiaries			pc	eq
	1	10.0	10.8	13.4	52.0	14.9	975.1
2	14.3	14.5	18.6	72.0	8.0	668.7	1037.9
3	18.2	18.3	21.7	84.3	6.7	698.0	1106.1
4	23.0	22.6	22.9	88.8	4.6	654.6	962.1
5	34.5	33.8	23.4	90.6	4.2	951.5	1321.9
Total	100.0	100.0	100.0	77.5	6.4	789.6	1156.3

All in all, the traditional approach would seem to seriously overestimate the contribution of these non-cash income components. Therefore, we would recommend considerable restraint with respect to using this approach for the inclusion of non-cash income in the definition of disposable income.

b. inequality and poverty

Adding imputed rent only marginally affects inequality but when public education or public health expenditures are added using the ‘traditional’ approach inequality shows a considerable decrease (Table 5). The relative decrease is stronger using the Atkinson inequality indices than using the Gini. As expected adding imputed rent as well as education causes inequality to decrease to a similar extent as when education is added only. Adding education, imputed rent and public health simultaneously causes an even stronger decrease in inequality. The Gini decreases by more than 20% whilst the Atkinson indices decrease by about 40%.

Table 5. Effect of adding components of non-cash income on inequality and poverty (traditional approach)

	baseline A	Imp rent IR	Educ PE	Health PH	IR + PE	IR + PE + PH
Gini	0.246	0.248	0.218	0.213	0.220	0.190
Atkinson 0.5	0.050	0.050	0.040	0.038	0.040	0.030
Atkinson 1.5	0.155	0.152	0.124	0.111	0.122	0.087
Poverty rate	0.125	0.142	0.117	0.069	0.117	0.055
Normalised poverty gap	0.023	0.026	0.020	0.013	0.021	0.009
FGT2	0.009	0.009	0.006	0.005	0.006	0.003
% difference with baseline						
Gini		0.6	-11.5	-13.6	-10.6	-22.7
Atkinson 0.5		0.6	-20.8	-24.2	-19.8	-39.4
Atkinson 1.5		-1.8	-20.4	-28.2	-21.5	-43.7
Poverty rate		13.2	-6.8	-44.7	-6.5	-55.9
Normalised poverty gap		14.6	-11.5	-42.5	-6.6	-60.6
FGT2		4.7	-29.4	-38.8	-29.4	-67.1

Poverty shows a slight increase when we add imputed rent, and a decrease when we add public education expenditures to disposable income. In the case of imputed rent, the increase is smallest for the FGT2 poverty index, whilst in the case of public education expenditures, the increase is largest. The effect of public health expenditures on poverty is an even larger decrease, using both FGT0, FGT1 and FGT2. Adding both imputed rent and public education, the effect is a small decrease in poverty when using FGT0 and FGT1, but a considerable decrease when using FGT2. Adding all three non-cash components causes poverty to decrease by more than half, up to two-thirds when using FGT2.

As could be expected, the picture is – again – considerably different when we use our alternative approach (Table 6). By adding non-compulsory education only, the decrease in inequality is about a third of the decrease when adding all public education expenditures. Subtracting private health insurance contributions causes a slight increase in inequality. Adding imputed rent as well as non-compulsory education causes inequality to decrease almost to the same extent as when only non-compulsory education is added, and the same holds when private health insurance contributions are subtracted as well.

Interestingly, the decrease in the poverty rate when adding non-compulsory education only is about half the decrease when adding all public education expenditures, but the decrease in the normalised poverty gap (FGT1) is larger and the decrease in the FGT2 index is quite close to the original decrease. When we also take into account that at most half the additional resources required for an additional household member can be covered by public education expenditures, the poverty rate even shows an increase compared to the situation when the original disposable income was used. The normalised poverty gap shows a marginal decrease, whilst the decrease of the FGT2 index is less than half the decrease when all non-compulsory public education expenditures are assumed to fill a household's poverty gap.

Another noteworthy result is that when private health insurance contributions are subtracted from disposable income we still end up with a lower poverty rate, although the decrease of about 10% is nowhere near as high as when public health expenditures are added. Adding imputed rent as well as non-compulsory education causes a slight increase in the poverty rate, but a decrease in the normalised poverty gap. The decrease in FGT2 is as high as when adding non-compulsory education only. Corrected to take into account that education expenditures do not cover more than half the needs of an additional person at the poverty line, the increase in the poverty rate is about as high as when we only add imputed rent. The poverty gap also increases, albeit to a smaller extent than when adding imputed rent only. The FGT2 index still shows an increase, close to the increase found when only education expenditures are added (corrected).

Taking into account all three non-cash income components by adding imputed rent and non-compulsory education and subtracting private health insurance contributions we find a very small drop in the poverty rate, but a considerably larger decrease in the normalised poverty gap (15%) and, especially, the FGT2-index (31%). Correcting the contribution of education, the poverty rate increases by about 8%, whilst the poverty gap ratio remains virtually unchanged compared to the situation when no non-cash income components are counted, and the FGT2-index is reduced by 17%. Hence, if this is the best approach to adding non-cash income to disposable income, the conclusion would be

that the number of poor might end up somewhat higher, but the average poverty gap ratio would hardly be affected. and the poverty index that attaches the highest weights to very low incomes (FGT2) shows a clear decrease.

Table 6. Effect of adding components of non-cash income on inequality and poverty (alternative approach)

	baseline A	Imp rent IR	Educ PE'	Health -PH'	IR + PE'	IR + PE - PH'
Gini	0.246	0.248	0.237	0.247	0.238	0.238
Atkinson 0.5	0.050	0.050	0.046	0.050	0.046	0.046
Atkinson 1.5	0.155	0.152	0.141	0.159	0.138	0.139
Poverty rate	0.125	0.142	0.121	0.113	0.131	0.123
Normalised poverty gap	0.023	0.026	0.019	0.020	0.021	0.019
FGT2	0.009	0.009	0.006	0.008	0.006	0.006
<i>Corrected (minimum cash requirement)</i>						
<i>Poverty rate</i>		0.142	0.135		0.142	0.136
<i>Normalised poverty gap</i>		0.026	0.022		0.025	0.023
<i>FGT2</i>		0.009	0.008		0.008	0.007
<i>% difference with baseline</i>						
Gini		0.6	-4.0	0.2	-3.3	-3.2
Atkinson 0.5		0.6	-8.2	0.8	-7.6	-7.2
Atkinson 1.5		-1.8	-8.9	2.6	-10.9	-10.3
Poverty rate		13.2	-3.7	-10.1	4.3	-2.0
Normalised poverty gap		14.6	-15.9	-10.6	-5.8	-15.0
FGT2		4.7	-25.9	-2.4	-25.9	-30.6
<i>Corrected</i>						
<i>Poverty rate (corrected)</i>		13.2	7.4		13.5	8.4
<i>Normalised poverty gap</i>		14.6	-1.8		8.8	-0.4
<i>FGT2</i>		4.7	-11.8		-11.8	-16.5

c. inequality decomposed by age group

In tables 7 and 8 we present the effects of adding the respective non-cash income components on average income and income inequality according to the 'traditional' and the alternative approach, subdivided by age group. Adding imputed rent, the percentual increases in income do not differ very much between age groups. The average increase varies from almost 6% in the youngest age group to slightly more than 8% in the oldest age group. Across the total population, inequality, as measured by the Mean Log Deviation, is hardly affected, but we see a slight decrease among the 25-64 age group, an even slighter increase among the young, and an almost 11% increase among the oldest age group. Public education expenditures mostly affect the young (an income increase of 22%) and the 25-64 age group (8%). Inequality among the young decreases by 36% (19% for the 25-64). By contrast, the elderly profit most from public health expenditures (an income increase of 23%), and inequality in this age group decreases

most when public health expenditures are added to disposable income (a decrease in inequality of almost 49%).

Adding total public education expenditures as well as imputed rent, the picture is dominated by the effect of the education expenditures. The young benefit most, with an income increase of 27%, and see a large drop in inequality (34%). On the other hand, the income increase of the elderly is less than 9%, and they face an increase in inequality of 11%.

Adding imputed rent, public education and public health expenditures using the 'traditional' approach, we see that, on average, income increases by 37% among the young, 23% among the 25-64 age group, and 32% among the old. Inequality drops by 47% among the young, 37% among the 25-64 age group and 40% among the old.

Table 7. Effect of adding components of non-cash income on average income and inequality, by age group (traditional approach)

	pop share	mean baseline	IR	PE	PH	IR + PE	IR + PE + PH
Below 25	0.302	0.884	0.880	0.972	0.875	0.963	0.948
25-64	0.555	1.088	1.086	1.062	1.068	1.061	1.046
Over 65	0.143	0.902	0.921	0.820	1.002	0.841	0.933
		% change					
Below 25			5.6	21.6	10.0	27.1	37.1
25-64			5.9	7.9	9.1	13.8	22.9
Over 65			8.3	0.4	23.4	8.8	32.2
Total			6.1	10.6	11.2	16.7	27.9
		ineq					
Below 25		0.093	0.094	0.059	0.071	0.061	0.049
25-64		0.105	0.102	0.085	0.082	0.083	0.066
Over 65		0.092	0.103	0.093	0.047	0.103	0.056
Total		0.105	0.105	0.082	0.077	0.083	0.061
		%change					
Below 25			1.5	-36.0	-23.9	-33.9	-47.2
25-64			-2.8	-19.1	-22.5	-21.1	-37.1
Over 65			10.9	0.3	-48.9	11.1	-40.0
Total			0.0	-21.4	-26.2	-21.1	-41.9
		contr					
Below 25		26.8	27.2	21.8	27.6	22.4	24.3
25-64		55.8	54.2	57.5	58.7	55.9	60.4
Over 65		12.6	14.0	16.1	8.8	17.8	13.1
% within		95.3	95.4	95.4	95.1	96.1	97.8
% between		4.7	4.6	4.6	4.9	3.9	2.2

As before, the picture is considerably less dramatic when we apply our alternative approach. Adding non-compulsory education only, income of the young increases by 6%, whilst it increases by 2% among the 25-64 age group. Inequality declines by 17% among the young and 7% among the 24-64 age group. Subtracting private health expenditures

implies a decline of 3% among the young, 2% among the 25-64 age group and 6% among the elderly. Whilst overall inequality shows a slight increase, we note a marginal decline among the young and a 6% decline among the elderly.

Adding imputed rent next to non-compulsory education, income is found to increase by 12% among the young, and about 8.5% in the other age groups. The overall decrease in inequality (-9%) translates itself in an almost similar decrease in the 25-64 age group. Inequality among the young decreases even more (-16%), but inequality among the elderly increases by 11%. In this age group imputed rent is the dominant source of non-cash income, causing inequality to increase.

Table 8. Effect of adding components of non-cash income on average income and inequality, by age group (alternative approach)

	pop share	mean baseline	IR	PE'	-PH'	IR + PE'	IR + PE' - PH'
Below 25	0.302	0.884	0.880	0.910	0.880	0.904	0.901
25-64	0.555	1.088	1.086	1.081	1.097	1.079	1.086
Over 65	0.143	0.902	0.921	0.878	0.877	0.898	0.874
		% change					
Below 25			5.6	6.2	-3.4	11.7	8.4
25-64			5.9	2.4	-2.2	8.3	6.2
Over 65			8.3	0.4	-5.7	8.7	3.0
Total			6.1	3.2	-2.9	9.3	6.4
		ineq					
Below 25		0.093	0.094	0.077	0.092	0.078	0.077
25-64		0.105	0.102	0.098	0.107	0.096	0.096
Over 65		0.092	0.103	0.093	0.087	0.103	0.098
Total		0.105	0.105	0.095	0.106	0.095	0.095
		% change					
Below 25			1.5	-16.8	-0.6	-15.7	-16.8
25-64			-2.8	-6.6	1.7	-9.2	-8.7
Over 65			10.9	0.3	-6.3	11.1	5.7
Total			0.0	-8.9	1.0	-8.9	-8.8
		contr					
Below 25		26.8	27.2	24.5	26.4	24.8	24.4
25-64		55.8	54.2	57.3	56.3	55.7	55.9
Over 65		12.6	14.0	13.9	11.7	15.4	14.6
% within		95.3	95.4	95.6	94.3	95.9	95.0
% between		4.7	4.6	4.4	5.7	4.1	5.0

When we add imputed rent and non-compulsory education and subtract private health insurances, the average net income increase varies between 8% among the young and 3% among the old. As expected, the overall change in inequality is close to the change adding imputed rent and non-compulsory education only, but the increase in inequality among the elderly is lower as a result of taking into account private health insurance premiums.

The effects on average income of including various components of non-cash income by education, household type and employment status as well as the effects on the decomposition of income inequality by these variables are presented in the appendix (Table 13 - Table 18). These tables largely confirm the results obtained on the basis of the decomposition by age group: the groups with many elderly reflect the results of the elderly in Table 7 and Table 8, whilst the groups with many children reflect the results of the young.

Except for the age effects, the decomposition by household type (Table 13 and Table 14) shows quite considerable effects for single parents where adding public education expenditures results in a relatively large increase in average income and a relatively large decrease in inequality when we use the traditional approach. On the basis of the alternative approach, the most noticeable result is the relatively strong increase in inequality among single parents as a result of deducting private health insurance premiums from disposable income.

On the basis of the traditional approach, the decomposition by employment status of the head (Table 15) shows the largest effects in the (small) groups of unemployed and 'other'. Again, these effects are considerably mitigated when we use the alternative approach (Table 16). Differentiated by education level, the traditional approach to adding imputed rent, public education and public health expenditures results in the largest percentage increase in the lowest education groups, whilst the decrease in inequality is the largest amongst persons with higher secondary education (Table 17). On the basis of the alternative approach, none of the education groups shows an income change of more than 10% (Table 18). The changes in inequality are fairly moderate as well.

d. poverty decomposed by age group

Even more than inequality, the poverty indices differentiated by age group appear to be quite sensitive to the inclusion of various non-cash income components (Table 9). Adding imputed rent only, the changes in the poverty rates are relatively modest. In the oldest age group, we find the fastest increase, both in relative and in absolute terms (from 17% to 22%). In this age group the normalised poverty gap increases by more than 60%, whilst the FGT2 index almost doubles. Adding public education expenditures to disposable income, the poverty rate among young persons is more than halved whilst the elderly face an increase in their poverty rate with 85%. Again, the relative changes are even more dramatic when we look at the normalised poverty gap and the FGT2-index.

Adding public health expenditures also has striking effects on poverty. In particular, poverty among the elderly disappears completely, whilst it decreases considerably in the younger age groups.

The effects of adding imputed rent as well as public education expenditures on poverty are fairly similar to the effects of adding public education expenditures only. Adding all three non-cash income components using the 'traditional' approach causes the overall poverty rate to be more than halved. The poverty rate is cut by almost one third among the 25-64 age group, by almost two thirds among the young, and poverty disappears almost completely among the elderly. The effects on the normalised poverty gap and the FGT2-index are even larger.

As mentioned above, we think these results do not accurately reflect the poverty situation of the population in question. As expected, if we only add non-compulsory education expenditures, the drop in poverty among the young, and the increase in poverty among the elderly are considerably moderated (Table 10 thru Table 12). The decrease in poverty among the young is even smaller if it is taken into account that public education expenditures cannot fully cover the additional income needed when a person is added to a household (cf. the 'corrected' results).

Table 9. Effects of adding components of non-cash income on three poverty indices, by age (traditional approach)

age	fgt0						
	pop.share	baseline	IR	PE	PH	IR + PE	IR + PE + PH
Below 25	0.302	0.154	0.173	0.069	0.118	0.079	0.058
25-64	0.555	0.097	0.105	0.091	0.061	0.089	0.066
Over 65	0.143	0.172	0.218	0.319	0.000	0.306	0.010
		0.125	0.142	0.117	0.069	0.117	0.055
	%change						
Below 25			12.0	-55.2	-23.6	-48.9	-62.5
25-64			8.0	-7.1	-37.7	-8.3	-32.7
Over 65			26.8	85.5	-100.0	77.9	-94.2
Total			13.2	-6.8	-44.7	-6.5	-55.9
	contr to aggr						
Below 25		0.372	0.368	0.179	0.514	0.203	0.316
25-64		0.432	0.412	0.430	0.486	0.423	0.658
Over 65		0.196	0.220	0.391	0.000	0.374	0.026
	fgt1						
Below 25	0.302	0.035	0.040	0.013	0.024	0.015	0.011
25-64	0.555	0.018	0.020	0.018	0.010	0.018	0.010
Over 65	0.143	0.012	0.019	0.041	0.000	0.045	0.000
Total		0.023	0.026	0.020	0.013	0.021	0.009
	%change						
Below 25			13.6	-62.1	-31.9	-57.9	-70.1
25-64			7.7	-0.5	-44.2	-0.8	-44.2
Over 65			64.0	244.0	-100.0	281.1	-97.7
Total			14.7	-11.3	-42.6	-6.7	-60.5
	contr to aggr						
Below 25		0.472	0.468	0.202	0.560	0.213	0.357
25-64		0.453	0.425	0.508	0.440	0.481	0.639
Over 65		0.075	0.107	0.290	0.000	0.306	0.004
	fgt2						
Below 25	0.302	0.014	0.016	0.005	0.010	0.005	0.004
25-64	0.555	0.007	0.007	0.006	0.004	0.006	0.003
Over 65	0.143	0.001	0.002	0.007	0.000	0.008	0.000
Total		0.008	0.009	0.006	0.005	0.006	0.003
	%change						
Below 25			10.2	-65.6	-33.2	-63.4	-74.3
25-64			-6.3	-10.1	-42.3	-18.8	-57.0
Over 65			95.3	450.8	-100.0	591.6	-99.3
Total			4.2	-29.1	-38.8	-29.3	-66.7
	contr to aggr						
Below 25		0.510	0.539	0.247	0.557	0.263	0.393
25-64		0.470	0.423	0.596	0.443	0.540	0.607
Over 65		0.020	0.038	0.157	0.000	0.197	0.000

Table 10. Effects of adding components of non-cash income on poverty rate (fgt0), by age (alternative approach)

	fgt0							
	pop.share	baseline	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'	
Below 25	0.302	0.154	0.173	0.121	0.147	0.134	0.127	
25-64	0.555	0.097	0.105	0.095	0.088	0.100	0.092	
Over 65	0.143	0.172	0.218	0.220	0.135	0.245	0.235	
Total		0.125	0.142	0.121	0.113	0.131	0.123	
	%change							
Below 25			12.0	-21.8	-4.6	-13.5	-17.8	
25-64			8.0	-2.5	-9.6	2.3	-6.0	
Over 65			26.8	28.0	-21.4	42.4	36.8	
Total			13.2	-3.7	-10.1	4.3	-2.0	
	contr to aggr							
Below 25		0.372	0.368	0.302	0.395	0.309	0.312	
25-64		0.432	0.412	0.437	0.434	0.423	0.414	
Over 65		0.196	0.220	0.261	0.171	0.268	0.274	
<i>Corrected:</i>								
<i>Below 25</i>			<i>0.173</i>	<i>0.150</i>		<i>0.159</i>	<i>0.154</i>	
<i>25-64</i>			<i>0.105</i>	<i>0.103</i>		<i>0.106</i>	<i>0.100</i>	
<i>Over 65</i>			<i>0.218</i>	<i>0.223</i>		<i>0.247</i>	<i>0.238</i>	
<i>Total</i>			<i>0.142</i>	<i>0.135</i>		<i>0.142</i>	<i>0.136</i>	
	%change							
<i>Below 25</i>			<i>12.0</i>	<i>-2.7</i>		<i>3.2</i>	<i>-0.4</i>	
<i>25-64</i>			<i>8.0</i>	<i>6.1</i>		<i>8.5</i>	<i>2.1</i>	
<i>Over 65</i>			<i>26.8</i>	<i>29.4</i>		<i>43.9</i>	<i>38.6</i>	
<i>Total</i>			<i>13.2</i>	<i>7.4</i>		<i>13.5</i>	<i>8.3</i>	
	contr to aggr							
<i>Below 25</i>			<i>0.368</i>	<i>0.337</i>		<i>0.338</i>	<i>0.342</i>	
<i>25-64</i>			<i>0.412</i>	<i>0.426</i>		<i>0.413</i>	<i>0.407</i>	
<i>Over 65</i>			<i>0.220</i>	<i>0.236</i>		<i>0.249</i>	<i>0.251</i>	

Table 11. Effects of adding components of non-cash income on poverty gap ratio (fgt1), by age (alternative approach)

	fgt1	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'	
Below 25	0.302	0.035	0.040	0.023	0.033	0.026	0.024
25-64	0.555	0.018	0.020	0.017	0.017	0.018	0.017
Over 65	0.143	0.012	0.019	0.018	0.007	0.025	0.019
Total		0.023	0.026	0.019	0.020	0.021	0.019
	%change						
Below 25			13.6	-36.2	-7.3	-27.8	-32.1
25-64			7.7	-6.9	-9.6	-2.3	-9.9
Over 65			64.0	55.8	-40.9	111.4	63.6
Total			14.7	-16.0	-10.8	-5.9	-14.9
	contr to aggr						
Below 25	0.472	0.468	0.359	0.491	0.362	0.377	
25-64	0.453	0.425	0.502	0.459	0.470	0.479	
Over 65	0.075	0.107	0.139	0.050	0.168	0.144	
<i>Corrected:</i>							
<i>Below 25</i>		0.040	0.030		0.033	0.032	
<i>25-64</i>		0.020	0.019		0.020	0.018	
<i>Over 65</i>		0.019	0.018		0.025	0.019	
<i>Total</i>		0.026	0.022		0.025	0.022	
	%change						
<i>Below 25</i>			13.6	-15.2		-6.3	-10.6
<i>25-64</i>			7.7	3.1		7.4	-0.6
<i>Over 65</i>			64.0	56.1		113.0	64.5
<i>Total</i>			14.7	-1.6		8.9	-0.5
	contr to aggr						
<i>Below 25</i>		0.468	0.407		0.407	0.424	
<i>25-64</i>		0.425	0.474		0.447	0.452	
<i>Over 65</i>		0.107	0.119		0.146	0.124	

Table 12. Effects of adding components of non-cash income on fgt2 index, by age (alternative approach)

	fgt2	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
Below 25	0.302	0.014	0.016	0.008	0.014	0.009
25-64	0.555	0.007	0.007	0.006	0.007	0.006
Over 65	0.143	0.001	0.002	0.002	0.001	0.003
Total		0.008	0.009	0.006	0.008	0.006
%change						
Below 25			10.2	-42.8	-2.6	-39.0
25-64			-6.3	-11.5	-0.8	-19.6
Over 65			95.3	83.3	-48.6	183.6
Total			4.2	-25.5	-2.6	-25.4
contr to aggr						
Below 25	0.510	0.539	0.391	0.510	0.417	0.428
25-64	0.470	0.423	0.559	0.479	0.507	0.517
Over 65	0.020	0.038	0.050	0.011	0.077	0.055
<i>Corrected:</i>						
Below 25		0.016	0.011		0.012	0.011
25-64		0.007	0.007		0.006	0.006
Over 65		0.002	0.002		0.003	0.002
Total		0.009	0.007		0.008	0.007
%change						
Below 25			10.2	-24.4		-19.4
25-64			-6.3	-2.7		-10.9
Over 65			95.3	83.3		184.6
Total			4.2	-12.0		-11.3
contr to aggr						
Below 25		0.539	0.438		0.463	0.477
25-64		0.423	0.520		0.472	0.478
Over 65		0.038	0.042		0.065	0.046

Likewise, when subtracting private health insurance premiums rather than adding public health expenditures, the poverty rate among the elderly decreases by about a fifth, the normalised poverty gap drops by about two-fifths and the FGT2-index is cut in half, rather than dropping to zero.

The main effect of adding imputed rent and non-compulsory education expenditures is an increase in poverty among the elderly. Most of the changes in the younger age groups are moderate, and even more so if we correct for minimal cash needs as discussed above. The picture is fairly similar if, in addition to adding imputed rent and non-compulsory education expenditures, we deduct private health insurance premiums from disposable income. The poverty rate among the elderly increases by about a third, the normalised poverty gap increases by about two thirds and the FGT2-index almost doubles. Correcting for minimal cash needs, the poverty rates among the younger age groups are hardly affected, whilst the normalised poverty gap shows a drop of about 10% among the young, and the FGT-2 index drops by about 20% among the young and by about 15% among the 25-64 age group.

All in all, rather than disappearing among the elderly and dropping considerably among the other age groups, poverty appears to be higher among the elderly and show a moderate drop among the other age groups, when we use our alternative approach to adding non-cash income components rather than the traditional approach. We think the results of the alternative approach are more realistic.

In the appendix we include tables on FGT-0, FGT-1 and FGT-2 subdivided by household type, employment status and education level (Table 19 - Table 30). Again, these tables can be seen to confirm a large part of the conclusions drawn on the basis of the age decomposition.

One notable result of the differentiation by household type on the basis of the traditional approach is the moderate effect on poverty of adding all three components of non-monetary income in the group of younger singles and couples (Table 19). The alternative approach results in fairly large decreases in poverty in the 'other' household types. These decreases are considerably smaller when we take into account minimum cash requirements (cf. the 'corrected' results in Table 20 - Table 22). The most noticeable effect of the differentiation by employment status is that in the alternative approach we only find a small effect of taking all three components into account on fgt2 in the group of pensioners (Table 26). To some extent, the relatively modest increase in fgt2 among persons with primary education using the alternative approach (Table 30) may also be seen to reflect this result. In absolute terms, the increase among the elderly in Table 12 is quite comparable, though.

Conclusion

Taking into account non-cash income components such as imputed rent, public education and public health expenditures has considerable effects on disposable household income and its distribution. However, in this paper we also show that plausible alternative approaches cause notably smaller effects on inequality and poverty. We think that poverty statistics using income including non-monetary components should be interpreted carefully before any policy conclusions are drawn.

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Appendix

Table 13. Effect of adding components of non-cash income on average income and inequality, by household type (traditional approach)

	pop share	mean					
		baseline	IR	PE	PH	IR + PE	IR+PE+PH
older single/couple	0.152	0.911	0.929	0.826	1.008	0.847	0.938
young single/couple	0.286	1.181	1.173	1.085	1.150	1.083	1.065
couple with children < 18	0.407	0.947	0.947	1.022	0.931	1.017	0.997
single parent	0.031	0.584	0.564	0.774	0.617	0.745	0.760
other	0.124	0.970	0.973	1.001	0.967	1.003	0.997
		% change					
older single/couple			8.3	0.3	23.1	8.6	31.6
young single/couple			5.4	1.6	8.2	7.0	15.2
couple with children < 18			6.1	19.3	9.3	25.4	34.6
single parent			2.5	46.6	17.5	49.0	66.6
other			6.5	14.2	10.9	20.7	31.6
Total			6.1	10.6	11.2	16.7	27.9
		ineq					
older single/couple		0.094	0.104	0.094	0.049	0.104	0.057
young single/couple		0.128	0.124	0.113	0.104	0.109	0.091
couple with children < 18		0.081	0.080	0.057	0.059	0.057	0.043
single parent		0.056	0.060	0.034	0.040	0.036	0.028
other		0.079	0.080	0.054	0.063	0.056	0.045
Total		0.105	0.105	0.082	0.077	0.083	0.061
		%change					
older single/couple			10.3	0.1	-48.0	10.4	-39.4
young single/couple			-3.1	-11.4	-18.8	-14.8	-28.9
couple with children < 18			-1.3	-29.7	-27.4	-28.9	-46.4
single parent			8.0	-39.6	-28.2	-35.1	-49.5
other			0.7	-31.4	-20.6	-30.0	-42.8
Total			0.0	-21.4	-26.2	-21.1	-41.9
		contr					
older single/couple		13.7	15.1	17.4	9.7	19.1	14.3
young single/couple		35.0	33.9	39.4	38.5	37.8	42.8
couple with children < 18		31.4	31.0	28.1	30.9	28.3	29.0
single parent		1.7	1.8	1.3	1.6	1.4	1.5
other		9.4	9.4	8.2	10.1	8.3	9.2
% within		91.1	91.2	94.4	90.7	94.9	96.8
% between		8.9	8.8	5.6	9.3	5.1	3.2

Table 14. Effect of adding components of non-cash income on average income and inequality, by household type (alternative approach)

	pop share	mean					
	baseline	IR	PE'	-PH'	IR + PE'	IR+PE'-PH'	
older single/couple	0.152	0.911	0.929	0.886	0.887	0.905	0.883
young single/couple	0.286	1.181	1.173	1.163	1.203	1.156	1.176
couple with children < 18	0.407	0.947	0.947	0.949	0.936	0.948	0.938
single parent	0.031	0.584	0.564	0.608	0.599	0.587	0.601
other	0.124	0.970	0.973	1.031	0.980	1.031	1.042
		% change					
older single/couple			8.3	0.3	-5.5	8.6	3.0
young single/couple			5.4	1.6	-1.1	7.0	5.9
couple with children < 18			6.1	3.3	-4.0	9.4	5.4
single parent			2.5	7.5	-0.4	10.0	9.6
other			6.5	9.7	-1.9	16.2	14.3
Total			6.1	3.2	-2.9	9.3	6.4
		ineq					
older single/couple		0.094	0.104	0.094	0.089	0.104	0.100
young single/couple		0.128	0.124	0.113	0.130	0.109	0.109
couple with children < 18		0.081	0.080	0.075	0.079	0.074	0.073
single parent		0.056	0.060	0.054	0.071	0.058	0.068
other		0.079	0.080	0.063	0.080	0.064	0.063
Total		0.105	0.105	0.095	0.106	0.095	0.095
		% change					
older single/couple			10.3	0.1	-5.6	10.4	5.5
young single/couple			-3.1	-11.4	1.8	-14.8	-14.6
couple with children < 18			-1.3	-6.6	-1.9	-7.8	-9.7
single parent			8.0	-3.1	27.7	4.3	21.9
other			0.7	-20.7	0.1	-19.4	-20.1
Total			0.0	-8.9	1.0	-8.9	-8.8
		contr					
older single/couple		13.7	15.1	15.0	12.8	16.6	15.8
young single/couple		35.0	33.9	34.0	35.2	32.7	32.7
couple with children < 18		31.4	31.0	32.2	30.5	31.8	31.1
single parent		1.7	1.8	1.8	2.1	1.9	2.2
other		9.4	9.4	8.2	9.3	8.3	8.2
% within		91.1	91.2	91.1	89.9	91.3	90.1
% between		8.9	8.8	8.9	10.1	8.7	9.9

Table 15. Effect of adding components of non-cash income on average income and inequality, by employment status (traditional approach)

	pop share	mean					
	baseline	IR	PE	PH	IR + PE	IR+PE+PH	
employee	0.722	1.051	1.043	1.065	1.028	1.057	1.037
self-employed	0.047	1.093	1.122	1.103	1.060	1.129	1.097
unemployed	0.025	0.558	0.546	0.640	0.599	0.625	0.655
pensioner	0.169	0.911	0.934	0.830	0.997	0.855	0.936
other	0.037	0.599	0.621	0.618	0.664	0.637	0.691
% change							
employee			5.3	12.1	8.7	17.4	26.1
self-employed			9.0	11.6	7.8	20.6	28.4
unemployed			4.0	26.8	19.4	30.8	50.2
pensioner			8.8	0.8	21.8	9.6	31.4
other			10.0	14.1	23.3	24.2	47.4
Total			6.1	10.6	11.2	16.7	27.9
ineq							
employee		0.084	0.085	0.059	0.068	0.061	0.050
self-employed		0.196	0.181	0.159	0.151	0.146	0.111
unemployed		0.194	0.181	0.120	0.135	0.118	0.093
pensioner		0.095	0.100	0.094	0.051	0.100	0.057
other		0.118	0.124	0.075	0.095	0.076	0.060
Total		0.105	0.105	0.082	0.077	0.083	0.061
%change							
employee			1.1	-29.6	-19.8	-27.6	-40.5
self-employed			-7.6	-19.0	-23.2	-25.3	-43.2
unemployed			-6.6	-38.2	-30.1	-39.3	-51.8
pensioner			5.5	-0.3	-46.1	5.5	-40.3
other			5.8	-35.8	-19.0	-35.4	-48.8
Total			0.0	-21.4	-26.2	-21.1	-41.9
contr							
employee		58.1	58.7	52.0	63.2	53.3	59.6
self-employed		8.8	8.1	9.0	9.1	8.3	8.6
unemployed		4.6	4.3	3.6	4.4	3.6	3.8
pensioner		15.3	16.1	19.4	11.2	20.5	15.7
other		4.2	4.4	3.4	4.6	3.4	3.7
% within		91.0	91.7	87.5	92.4	89.0	91.4
% between		9.0	8.3	12.5	7.6	11.0	8.6

Table 16. Effect of adding components of non-cash income on average income and inequality, by employment status (alternative approach)

	pop share	mean					
		baseline	IR	PE'	-PH'	IR + PE'	IR + PE' - PH'
employee	0.722	1.051	1.043	1.054	1.056	1.046	1.050
self-employed	0.047	1.093	1.122	1.088	1.082	1.117	1.107
unemployed	0.025	0.558	0.546	0.586	0.569	0.574	0.585
pensioner	0.169	0.911	0.934	0.889	0.888	0.912	0.892
other	0.037	0.599	0.621	0.631	0.610	0.651	0.662
% change							
employee			5.3	3.4	-2.5	8.8	6.3
self-employed			9.0	2.7	-4.0	11.7	7.7
unemployed			4.0	8.5	-0.9	12.5	11.6
pensioner			8.8	0.7	-5.3	9.5	4.2
other			10.0	8.7	-1.2	18.7	17.6
Total			6.1	3.2	-2.9	9.3	6.4
ineq							
employee		0.084	0.085	0.075	0.084	0.076	0.076
self-employed		0.196	0.181	0.189	0.215	0.175	0.187
unemployed		0.194	0.181	0.170	0.202	0.155	0.163
pensioner		0.095	0.100	0.094	0.091	0.100	0.097
other		0.118	0.124	0.086	0.134	0.088	0.091
Total		0.105	0.105	0.095	0.106	0.095	0.095
%change							
employee			1.1	-10.5	-0.2	-9.2	-9.7
self-employed			-7.6	-3.4	9.5	-10.6	-4.3
unemployed			-6.6	-12.2	4.5	-19.9	-15.8
pensioner			5.5	-0.4	-4.0	5.4	2.0
other			5.8	-26.7	14.4	-25.3	-22.5
Total			0.0	-8.9	1.0	-8.9	-8.8
contr							
employee		58.1	58.7	57.1	57.5	57.9	57.6
self-employed		8.8	8.1	9.3	9.5	8.6	9.2
unemployed		4.6	4.3	4.5	4.8	4.1	4.3
pensioner		15.3	16.1	16.7	14.5	17.7	17.1
other		4.2	4.4	3.3	4.7	3.4	3.5
% within		91.0	91.7	90.9	91.0	91.7	91.7
% between		9.0	8.3	9.1	9.0	8.3	8.3

Table 17. Effect of adding components of non-cash income on average income and inequality, by education level (traditional approach)

	pop share	mean					
		baseline	IR	PE	PH	IR + PE	IR + PE + PH
tertiary	0.305	1.244	1.240	1.232	1.197	1.229	1.190
higher sec	0.459	0.961	0.965	0.968	0.961	0.971	0.970
lower sec	0.147	0.787	0.790	0.798	0.828	0.799	0.833
primary	0.089	0.714	0.705	0.703	0.807	0.696	0.778
% change							
tertiary			5.8	9.5	7.0	15.3	22.3
higher sec			6.5	11.3	11.2	17.9	29.1
lower sec			6.4	12.1	16.9	18.5	35.3
primary			4.8	8.9	25.5	13.7	39.2
Total			6.1	10.6	11.2	16.7	27.9
ineq							
tertiary		0.096	0.096	0.069	0.081	0.071	0.062
higher sec		0.088	0.086	0.064	0.065	0.063	0.047
lower sec		0.078	0.078	0.063	0.055	0.062	0.043
primary		0.082	0.090	0.074	0.053	0.080	0.047
Total		0.105	0.105	0.082	0.077	0.083	0.061
%change							
tertiary			-0.3	-27.6	-15.6	-26.1	-35.7
higher sec			-1.7	-26.4	-25.8	-27.7	-46.3
lower sec			1.0	-19.4	-29.1	-20.2	-45.1
primary			9.4	-9.5	-35.7	-2.9	-42.8
Total			0.0	-21.4	-26.2	-21.1	-41.9
contr							
tertiary		27.9	27.9	25.7	31.9	26.1	30.9
higher sec		38.4	37.8	36.0	38.6	35.2	35.5
lower sec		10.9	11.0	11.1	10.4	11.0	10.3
primary		7.0	7.6	8.0	6.1	8.6	6.9
% within		84.2	84.2	80.9	87.1	80.9	83.6
% between		15.8	15.8	19.1	12.9	19.1	16.4

Table 18. Effect of adding components of non-cash income on average income and inequality, by education level (alternative approach)

	pop share	mean						
	baseline	IR	PE'	-PH'	IR + PE'	IR + PE' - PH'		
tertiary	0.305	1.244	1.240	1.245	1.239	1.241	1.236	
higher sec	0.459	0.961	0.965	0.962	0.962	0.966	0.967	
lower sec	0.147	0.787	0.790	0.788	0.792	0.790	0.795	
primary	0.089	0.714	0.705	0.703	0.718	0.695	0.698	
% change								
tertiary			5.8	3.2	-3.3	9.1	5.7	
higher sec			6.5	3.3	-2.8	9.8	7.0	
lower sec			6.4	3.2	-2.4	9.7	7.3	
primary			4.8	1.6	-2.4	6.4	4.0	
Total			6.1	3.2	-2.9	9.3	6.4	
ineq								
tertiary		0.096	0.096	0.083	0.099	0.083	0.086	
higher sec		0.088	0.086	0.077	0.089	0.076	0.076	
lower sec		0.078	0.078	0.074	0.079	0.074	0.074	
primary		0.082	0.090	0.074	0.080	0.081	0.079	
Total		0.105	0.105	0.095	0.106	0.095	0.095	
% change								
tertiary			-0.3	-13.0	3.3	-13.2	-10.8	
higher sec			-1.7	-11.5	1.9	-13.1	-12.7	
lower sec			1.0	-4.8	1.5	-4.0	-4.1	
primary			9.4	-10.3	-3.1	-1.4	-4.0	
Total			0.0	-8.9	1.0	-8.9	-8.8	
contr								
tertiary		27.9	27.9	26.7	28.6	26.6	27.3	
higher sec		38.4	37.8	37.3	38.8	36.7	36.8	
lower sec		10.9	11.0	11.4	10.9	11.4	11.4	
primary		7.0	7.6	6.9	6.7	7.6	7.3	
% within		84.2	84.2	82.2	84.9	82.3	82.9	
% between		15.8	15.8	17.8	15.1	17.7	17.1	

Table 19. Effects of adding components of non-cash income on three poverty indices, household type (traditional approach)

	fgt0						
	pop.share	baseline	IR	PE	PH	IR + PE	IR + PE + PH
older single/couple	0.152	0.171	0.215	0.318	0.000	0.303	0.011
young single/couple	0.286	0.122	0.132	0.138	0.087	0.137	0.120
couple with children < 18	0.407	0.093	0.101	0.045	0.061	0.049	0.029
single parent	0.031	0.472	0.576	0.095	0.353	0.130	0.067
other	0.124	0.094	0.100	0.062	0.070	0.063	0.044
		0.125	0.142	0.117	0.069	0.117	0.055
		%change					
older single/couple			26.3	86.4	-100.0	77.5	-93.6
young single/couple			7.6	13.1	-29.1	12.2	-1.8
couple with children < 18			8.1	-51.7	-34.8	-47.0	-69.1
single parent			21.9	-79.9	-25.2	-72.5	-85.7
other			6.3	-34.5	-25.7	-33.5	-53.1
Total			13.2	-6.8	-44.7	-6.5	-55.9
		contr to aggr					
older single/couple		0.207	0.231	0.413	0.000	0.392	0.030
young single/couple		0.279	0.265	0.339	0.358	0.335	0.621
couple with children < 18		0.303	0.289	0.157	0.357	0.172	0.212
single parent		0.119	0.128	0.026	0.161	0.035	0.038
other		0.093	0.087	0.065	0.125	0.066	0.099
		fgt1					
older single/couple	0.152	0.012	0.019	0.040	0.000	0.045	0.000
young single/couple	0.286	0.026	0.028	0.029	0.018	0.030	0.019
couple with children < 18	0.407	0.019	0.021	0.009	0.011	0.010	0.005
single parent	0.031	0.090	0.119	0.018	0.051	0.021	0.014
other	0.124	0.022	0.023	0.010	0.015	0.011	0.006
Total		0.023	0.026	0.020	0.013	0.021	0.009
		%change					
older single/couple			61.9	240.4	-100.0	276.1	-97.2
young single/couple			8.7	12.7	-29.4	14.6	-25.9
couple with children < 18			7.7	-51.0	-44.6	-50.5	-71.6
single parent			32.3	-80.3	-42.8	-76.1	-84.9
other			1.9	-56.1	-34.1	-52.1	-71.8
Total			14.7	-11.3	-42.6	-6.7	-60.5
		contr to aggr					
older single/couple		0.080	0.112	0.305	0.000	0.321	0.006
young single/couple		0.326	0.309	0.414	0.400	0.400	0.610
couple with children < 18		0.348	0.327	0.192	0.335	0.185	0.250
single parent		0.125	0.144	0.028	0.124	0.032	0.048
other		0.122	0.108	0.060	0.140	0.062	0.087
		fgt2					
older single/couple	0.152	0.001	0.002	0.007	0.000	0.008	0.000
young single/couple	0.286	0.011	0.010	0.010	0.008	0.009	0.005
couple with children < 18	0.407	0.008	0.008	0.004	0.004	0.004	0.002
single parent	0.031	0.029	0.037	0.007	0.016	0.008	0.006
other	0.124	0.008	0.009	0.003	0.005	0.003	0.002
Total		0.008	0.009	0.006	0.005	0.006	0.003
		%change					
older single/couple			93.3	442.4	-100.0	578.2	-99.0

young single/couple		-5.6	-10.5	-25.6	-19.5	-53.0
couple with children < 18		1.9	-50.6	-45.5	-51.0	-70.6
single parent		29.8	-74.1	-44.1	-72.2	-80.5
other		2.9	-63.8	-43.2	-62.1	-78.3
Total		4.2	-29.1	-38.8	-29.3	-66.7
	contr to aggr					
older single/couple	0.022	0.040	0.165	0.000	0.207	0.001
young single/couple	0.373	0.338	0.471	0.454	0.425	0.525
couple with children < 18	0.378	0.370	0.263	0.337	0.262	0.333
single parent	0.106	0.133	0.039	0.097	0.042	0.062
other	0.121	0.120	0.062	0.113	0.065	0.079

Table 20. Effects of adding components of non-cash income on poverty rate (fgt0), by household type (alternative approach)

	pop.share	baseline	IR	PE'	- PH'	IR + PE'	IR+PE'- PH'
older single/couple	0.152	0.171	0.215	0.216	0.133	0.241	0.232
young single/couple	0.286	0.122	0.132	0.114	0.112	0.117	0.108
couple with children < 18	0.407	0.093	0.101	0.087	0.086	0.092	0.087
single parent	0.031	0.472	0.576	0.432	0.447	0.472	0.432
other	0.124	0.094	0.100	0.053	0.092	0.068	0.061
Total		0.125	0.142	0.121	0.113	0.131	0.123
	%change						
older single/couple			26.3	26.9	-21.8	41.5	36.3
young single/couple			7.6	-7.1	-8.4	-4.5	-11.6
couple with children < 18			8.1	-7.2	-7.6	-1.4	-6.3
single parent			21.9	-8.5	-5.4	0.0	-8.5
other			6.3	-44.1	-2.9	-27.9	-35.7
Total			13.2	-3.7	-10.1	4.3	-2.0
	contr to aggr						
older single/couple		0.207	0.231	0.272	0.180	0.280	0.287
young single/couple		0.279	0.265	0.269	0.284	0.256	0.252
couple with children < 18		0.303	0.289	0.292	0.311	0.286	0.289
single parent		0.119	0.128	0.113	0.125	0.114	0.111
other		0.093	0.087	0.054	0.100	0.064	0.061
<i>Corrected:</i>							
older single/couple			0.215	0.219		0.244	0.236
young single/couple			0.132	0.125		0.127	0.119
couple with children < 18			0.101	0.102		0.105	0.102
single parent			0.576	0.467		0.499	0.459
other			0.100	0.078		0.083	0.081
Total			0.142	0.135		0.142	0.136
	%change						
older single/couple			26.3	28.3		43.2	38.4
young single/couple			7.6	1.8		4.1	-3.1
couple with children < 18			8.1	9.2		12.8	9.6
single parent			21.9	-1.0		5.7	-2.7
other			6.3	-17.0		-12.4	-14.1
Total			13.2	7.4		13.5	8.3
	contr to aggr						
older single/couple			0.231	0.247		0.261	0.264
young single/couple			0.265	0.264		0.256	0.250
couple with children < 18			0.289	0.308		0.301	0.306
single parent			0.128	0.109		0.111	0.106
other			0.087	0.072		0.072	0.074

Table 21. Effects of adding components of non-cash income on poverty gap ratio (fgt1), by household type (alternative approach)

	pop share	baseline	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
older single/couple	0.152	0.012	0.019	0.018	0.007	0.025	0.019
young single/couple	0.286	0.026	0.028	0.020	0.024	0.021	0.019
couple with children < 18	0.407	0.019	0.021	0.016	0.018	0.017	0.017
single parent	0.031	0.090	0.119	0.083	0.077	0.101	0.092
other	0.124	0.022	0.023	0.010	0.021	0.011	0.010
Total		0.023	0.026	0.019	0.020	0.021	0.019
		%change					
older single/couple			61.9	54.7	-40.8	108.5	61.3
young single/couple			8.7	-22.0	-8.4	-18.7	-25.9
couple with children < 18			7.7	-16.1	-6.7	-11.1	-14.0
single parent			32.3	-7.4	-13.6	12.8	2.8
other			1.9	-54.9	-6.8	-50.4	-56.1
Total			14.7	-16.0	-10.8	-5.9	-14.9
		contr to aggr					
older single/couple		0.080	0.112	0.147	0.053	0.176	0.151
young single/couple		0.326	0.309	0.303	0.335	0.281	0.284
couple with children < 18		0.348	0.327	0.348	0.364	0.329	0.352
single parent		0.125	0.144	0.138	0.121	0.150	0.151
other		0.122	0.108	0.065	0.127	0.064	0.063
<i>Corrected:</i>							
older single/couple			0.019	0.018		0.025	0.019
young single/couple			0.028	0.024		0.025	0.023
couple with children < 18			0.021	0.019		0.020	0.019
single parent			0.119	0.092		0.111	0.101
other			0.023	0.016		0.017	0.016
Total			0.026	0.022		0.025	0.022
		%change					
older single/couple			61.9	55.0		110.2	62.2
young single/couple			8.7	-7.1		-3.6	-10.5
couple with children < 18			7.7	-1.0		4.1	-0.1
single parent			32.3	2.4		23.2	13.0
other			1.9	-29.5		-25.2	-29.5
Total			14.7	-1.6		8.9	-0.5
		contr to aggr					
older single/couple			0.112	0.125		0.154	0.130
young single/couple			0.309	0.308		0.289	0.293
couple with children < 18			0.327	0.350		0.333	0.349
single parent			0.144	0.130		0.141	0.142
other			0.108	0.087		0.084	0.086

Table 22. Effects of adding components of non-cash income on poverty index fgt2, by household type (alternative approach)

	pop share	fgt2	IR	PE ¹	- PH ¹	IR + PE ¹	IR + PE ¹ - PH ¹
older single/couple	0.152	0.001	0.002	0.002	0.001	0.003	0.002
young single/couple	0.286	0.011	0.010	0.007	0.011	0.006	0.006
couple with children < 18	0.407	0.008	0.008	0.007	0.008	0.007	0.007
single parent	0.031	0.029	0.037	0.026	0.027	0.032	0.030
other	0.124	0.008	0.009	0.003	0.008	0.003	0.003
Total		0.008	0.009	0.006	0.008	0.006	0.006
		%change					
older single/couple			93.3	81.7	-48.7	179.0	88.0
young single/couple			-5.6	-36.1	1.6	-46.3	-49.7
couple with children < 18			1.9	-14.0	-2.0	-15.8	-16.3
single parent			29.8	-9.8	-4.8	12.1	5.9
other			2.9	-61.8	-7.6	-60.4	-65.2
Total			4.2	-25.5	-2.6	-25.4	-30.0
		contr to aggr					
older single/couple		0.022	0.040	0.053	0.011	0.081	0.058
young single/couple		0.373	0.338	0.320	0.389	0.268	0.268
couple with children < 18		0.378	0.370	0.436	0.381	0.426	0.452
single parent		0.106	0.133	0.129	0.104	0.160	0.161
other		0.121	0.120	0.062	0.115	0.064	0.060
<i>Corrected:</i>							
older single/couple			0.002	0.002		0.003	0.002
young single/couple			0.010	0.009		0.008	0.007
couple with children < 18			0.008	0.008		0.008	0.007
single parent			0.037	0.028		0.035	0.033
other			0.009	0.005		0.005	0.005
Total			0.009	0.007		0.008	0.007
		%change					
older single/couple			93.3	81.8		180.0	88.4
young single/couple			-5.6	-21.7		-31.2	-33.9
couple with children < 18			1.9	-3.5		-4.7	-6.2
single parent			29.8	-1.0		22.6	16.0
other			2.9	-35.4		-34.9	-39.4
Total			4.2	-12.0		-11.3	-16.1
		contr to aggr					
older single/couple			0.040	0.045		0.068	0.049
young single/couple			0.338	0.332		0.289	0.294
couple with children < 18			0.370	0.415		0.406	0.423
single parent			0.133	0.120		0.147	0.147
other			0.120	0.089		0.089	0.087

Table 23. Effects of adding components of non-cash income on three poverty indices, by employment status (traditional approach)

	fgt0						
	pop.share	baseline	IR	PE	PH	IR + PE	IR + PE + PH
employee	0.722	0.072	0.085	0.043	0.050	0.046	0.032
self-employed	0.047	0.157	0.141	0.106	0.125	0.088	0.073
unemployed	0.025	0.723	0.761	0.471	0.559	0.492	0.448
pensioner	0.169	0.163	0.205	0.294	0.006	0.283	0.028
other	0.037	0.556	0.538	0.523	0.337	0.528	0.351
		0.125	0.142	0.117	0.069	0.117	0.055
		%change					
employee			19.0	-40.5	-30.5	-35.5	-55.7
self-employed			-10.6	-32.4	-20.7	-44.3	-53.6
unemployed			5.4	-34.8	-22.7	-31.9	-38.0
pensioner			26.0	80.9	-96.3	73.9	-82.7
other			-3.2	-5.9	-39.4	-5.1	-36.9
Total			13.2	-6.8	-44.7	-6.5	-55.9
		contr to aggr					
employee		0.414	0.435	0.264	0.520	0.285	0.415
self-employed		0.059	0.046	0.043	0.084	0.035	0.062
unemployed		0.144	0.134	0.101	0.201	0.105	0.202
pensioner		0.220	0.245	0.427	0.015	0.408	0.086
other		0.164	0.140	0.166	0.180	0.166	0.235
		fgt1					
employee	0.722	0.012	0.015	0.007	0.007	0.008	0.005
self-employed	0.047	0.043	0.034	0.034	0.031	0.025	0.018
unemployed	0.025	0.181	0.205	0.122	0.116	0.132	0.089
pensioner	0.169	0.014	0.020	0.040	0.002	0.044	0.003
other	0.037	0.128	0.136	0.098	0.085	0.098	0.049
Total		0.023	0.026	0.020	0.013	0.021	0.009
		%change					
employee			19.6	-43.9	-43.4	-37.8	-60.6
self-employed			-20.3	-21.6	-27.4	-41.0	-57.6
unemployed			13.4	-32.9	-36.0	-27.1	-50.8
pensioner			45.2	185.0	-83.0	210.9	-78.9
other			6.2	-23.3	-33.3	-23.0	-61.3
Total			14.7	-11.3	-42.6	-6.7	-60.5
		contr to aggr					
employee		0.397	0.413	0.251	0.391	0.264	0.395
self-employed		0.089	0.062	0.079	0.113	0.056	0.095
unemployed		0.200	0.198	0.151	0.223	0.156	0.249
pensioner		0.105	0.133	0.339	0.031	0.351	0.056
other		0.209	0.193	0.181	0.243	0.172	0.204
		fgt2					
employee	0.722	0.004	0.004	0.002	0.002	0.002	0.001
self-employed	0.047	0.021	0.016	0.019	0.014	0.013	0.009
unemployed	0.025	0.084	0.090	0.050	0.055	0.051	0.034
pensioner	0.169	0.004	0.004	0.009	0.002	0.009	0.001
other	0.037	0.056	0.055	0.031	0.040	0.027	0.013
Total		0.008	0.009	0.006	0.005	0.006	0.003
		%change					
employee			17.1	-50.6	-49.3	-43.5	-68.0

self-employed		-25.5	-12.7	-32.6	-36.8	-56.3
unemployed		6.9	-41.1	-35.3	-39.2	-60.2
pensioner		3.6	135.0	-51.3	155.8	-66.2
other		-1.4	-45.1	-27.9	-51.5	-76.7
Total		4.2	-29.1	-38.8	-29.3	-66.7
		contr to aggr				
employee	0.321	0.361	0.224	0.266	0.256	0.308
self-employed	0.117	0.084	0.144	0.129	0.104	0.153
unemployed	0.248	0.254	0.206	0.262	0.213	0.296
pensioner	0.072	0.072	0.239	0.057	0.260	0.073
other	0.243	0.230	0.188	0.286	0.166	0.170

Table 24. Effects of adding components of non-cash income on poverty rate (fgt0), by employment status (alternative approach)

	pop.share	baseline	IR	PE'	- PH'	IR + PE'	IR+PE'- PH'
employee	0.722	0.072	0.085	0.061	0.067	0.070	0.063
self-employed	0.047	0.157	0.141	0.141	0.159	0.112	0.140
unemployed	0.025	0.723	0.761	0.677	0.653	0.729	0.687
pensioner	0.169	0.163	0.205	0.202	0.131	0.226	0.220
other	0.037	0.556	0.538	0.517	0.497	0.497	0.444
Total		0.125	0.142	0.121	0.113	0.131	0.123
		%change					
employee			19.0	-15.3	-6.6	-2.2	-12.2
self-employed			-10.6	-10.4	1.0	-28.7	-10.9
unemployed			5.4	-6.3	-9.7	0.8	-4.9
pensioner			26.0	24.1	-19.4	38.8	35.1
other			-3.2	-7.1	-10.6	-10.7	-20.2
Total			13.2	-3.7	-10.1	4.3	-2.0
		contr to aggr					
employee		0.414	0.435	0.364	0.429	0.388	0.371
self-employed		0.059	0.046	0.055	0.066	0.040	0.053
unemployed		0.144	0.134	0.140	0.145	0.139	0.140
pensioner		0.220	0.245	0.283	0.197	0.292	0.303
other		0.164	0.140	0.158	0.163	0.141	0.134
<i>Corrected:</i>							
<i>employee</i>			0.085	0.074		0.081	0.074
<i>self-employed</i>			0.141	0.157		0.122	0.158
<i>unemployed</i>			0.761	0.726		0.753	0.726
<i>pensioner</i>			0.205	0.204		0.229	0.223
<i>other</i>			0.538	0.566		0.562	0.519
<i>Total</i>			0.142	0.135		0.142	0.136
		%change					
<i>employee</i>			19.0	3.6		12.5	2.9
<i>self-employed</i>			-10.6	-0.3		-22.5	0.7
<i>unemployed</i>			5.4	0.5		4.2	0.4
<i>pensioner</i>			26.0	25.4		40.4	37.1
<i>other</i>			-3.2	1.8		1.0	-6.7
<i>Total</i>			13.2	7.4		13.5	8.3
		contr to aggr					
<i>employee</i>			0.435	0.399		0.410	0.393
<i>self-employed</i>			0.046	0.054		0.040	0.055
<i>unemployed</i>			0.134	0.135		0.132	0.133
<i>pensioner</i>			0.245	0.256		0.272	0.278
<i>other</i>			0.140	0.156		0.146	0.141

Table 25. Effects of adding components of non-cash income on poverty gap ratio (fgt1), by employment status (alternative approach)

	pop share	fgt1	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
employee	0.722	0.012	0.015	0.009	0.011	0.011	0.009
self-employed	0.047	0.043	0.034	0.043	0.050	0.034	0.041
unemployed	0.025	0.181	0.205	0.155	0.163	0.174	0.159
pensioner	0.169	0.014	0.020	0.020	0.010	0.025	0.020
other	0.037	0.128	0.136	0.089	0.118	0.093	0.084
Total		0.023	0.026	0.019	0.020	0.021	0.019
		%change					
employee			19.6	-27.8	-14.3	-14.8	-24.7
self-employed			-20.3	-0.9	15.3	-21.2	-4.1
unemployed			13.4	-14.5	-9.9	-3.8	-12.2
pensioner			45.2	41.2	-28.3	79.7	45.6
other			6.2	-30.4	-7.4	-27.5	-34.0
Total			14.7	-16.0	-10.8	-5.9	-14.9
		contr to aggr					
employee		0.397	0.413	0.341	0.381	0.359	0.351
self-employed		0.089	0.062	0.105	0.115	0.075	0.100
unemployed		0.200	0.198	0.204	0.202	0.204	0.206
pensioner		0.105	0.133	0.177	0.085	0.201	0.180
other		0.209	0.193	0.173	0.217	0.161	0.162
<i>Corrected:</i>							
<i>employee</i>			0.015	0.011		0.013	0.012
<i>self-employed</i>			0.034	0.044		0.035	0.042
<i>unemployed</i>			0.205	0.177		0.196	0.181
<i>pensioner</i>			0.020	0.020		0.026	0.021
<i>other</i>			0.136	0.114		0.117	0.109
<i>Total</i>			0.026	0.022		0.025	0.022
		%change					
<i>employee</i>			19.6	-9.0		5.2	-5.5
<i>self-employed</i>			-20.3	3.3		-18.5	-2.1
<i>unemployed</i>			13.4	-2.4		8.0	-0.2
<i>pensioner</i>			45.2	41.9		81.3	46.7
<i>other</i>			6.2	-10.7		-8.3	-14.3
<i>Total</i>			14.7	-1.6		8.9	-0.5
		contr to aggr					
<i>employee</i>			0.413	0.367		0.383	0.377
<i>self-employed</i>			0.062	0.093		0.067	0.088
<i>unemployed</i>			0.198	0.198		0.199	0.201
<i>pensioner</i>			0.133	0.152		0.175	0.155
<i>other</i>			0.193	0.190		0.176	0.180

Table 26. Effects of adding components of non-cash income on poverty index fgt2, by employment status (alternative approach)

	pop share	fgt2	IR	PE ¹	- PH ¹	IR + PE ¹	IR + PE ¹ - PH ¹
employee	0.722	0.004	0.004	0.002	0.003	0.003	0.002
self-employed	0.047	0.021	0.016	0.022	0.027	0.016	0.020
unemployed	0.025	0.084	0.090	0.067	0.080	0.070	0.066
pensioner	0.169	0.004	0.004	0.004	0.003	0.005	0.004
other	0.037	0.056	0.055	0.030	0.056	0.027	0.026
Total		0.008	0.009	0.006	0.008	0.006	0.006
		%change					
employee			17.1	-35.5	-13.4	-25.7	-35.6
self-employed			-25.5	4.1	29.3	-22.5	-4.0
unemployed			6.9	-20.2	-5.5	-17.0	-22.1
pensioner			3.6	21.2	-8.6	28.3	5.1
other			-1.4	-45.9	0.8	-51.1	-53.7
Total			4.2	-25.5	-2.6	-25.4	-30.0
		contr to aggr					
employee		0.321	0.361	0.278	0.285	0.320	0.295
self-employed		0.117	0.084	0.163	0.155	0.121	0.160
unemployed		0.248	0.254	0.265	0.240	0.276	0.276
pensioner		0.072	0.072	0.117	0.068	0.124	0.108
other		0.243	0.230	0.176	0.251	0.159	0.161
<i>Corrected:</i>							
<i>employee</i>			0.004	0.003		0.004	0.003
<i>self-employed</i>			0.016	0.022		0.017	0.021
<i>unemployed</i>			0.090	0.077		0.081	0.076
<i>pensioner</i>			0.004	0.004		0.005	0.004
<i>other</i>			0.055	0.040		0.037	0.037
<i>Total</i>			0.009	0.007		0.008	0.007
		%change					
<i>employee</i>			17.1	-17.0		-5.7	-16.9
<i>self-employed</i>			-25.5	5.2		-21.7	-3.4
<i>unemployed</i>			6.9	-8.5		-4.4	-9.9
<i>pensioner</i>			3.6	23.6		29.8	6.4
<i>other</i>			-1.4	-28.0		-32.9	-34.3
<i>Total</i>			4.2	-12.0		-11.3	-16.1
		contr to aggr					
<i>employee</i>			0.361	0.303		0.341	0.318
<i>self-employed</i>			0.084	0.140		0.103	0.135
<i>unemployed</i>			0.254	0.258		0.267	0.266
<i>pensioner</i>			0.072	0.101		0.105	0.091
<i>other</i>			0.230	0.199		0.184	0.190

Table 27. Effects of adding components of non-cash income on three poverty indices, by education level (traditional approach)

	fgt0						IR + PE + PH
	pop.share	baseline	IR	PE	PH	IR + PE	
tertiary	0.305	0.049	0.056	0.044	0.043	0.048	0.040
higher sec	0.459	0.111	0.122	0.082	0.062	0.083	0.046
lower sec	0.147	0.215	0.230	0.198	0.116	0.185	0.077
primary	0.089	0.310	0.396	0.411	0.118	0.421	0.118
		0.125	0.142	0.117	0.069	0.117	0.055
	%change						
tertiary			12.6	-10.5	-12.2	-2.6	-18.4
higher sec			9.4	-26.4	-44.2	-25.7	-58.5
lower sec			6.7	-8.0	-46.0	-14.1	-64.2
primary			28.0	32.9	-61.9	35.8	-61.9
Total			13.2	-6.8	-44.7	-6.5	-55.9
	contr to aggr						
tertiary		0.120	0.120	0.116	0.191	0.125	0.222
higher sec		0.408	0.395	0.323	0.412	0.324	0.384
lower sec		0.252	0.237	0.249	0.246	0.231	0.204
primary		0.220	0.248	0.313	0.151	0.319	0.190
	fgt1						
tertiary	0.305	0.013	0.015	0.010	0.011	0.011	0.009
higher sec	0.459	0.021	0.023	0.015	0.012	0.015	0.007
lower sec	0.147	0.035	0.039	0.034	0.017	0.033	0.012
primary	0.089	0.043	0.059	0.057	0.018	0.069	0.014
Total		0.023	0.026	0.020	0.013	0.021	0.009
	%change						
tertiary			12.1	-26.5	-17.5	-19.0	-35.2
higher sec			9.2	-26.3	-41.1	-28.5	-66.4
lower sec			10.5	-4.4	-52.8	-6.3	-64.8
primary			37.2	33.4	-59.0	61.3	-66.5
Total			14.7	-11.3	-42.6	-6.7	-60.5
	contr to aggr						
tertiary		0.179	0.175	0.148	0.257	0.155	0.293
higher sec		0.425	0.404	0.353	0.436	0.325	0.361
lower sec		0.229	0.220	0.246	0.188	0.229	0.204
primary		0.168	0.201	0.253	0.120	0.290	0.142
	fgt2						
tertiary	0.305	0.007	0.007	0.004	0.005	0.004	0.003
higher sec	0.459	0.008	0.008	0.005	0.005	0.005	0.002
lower sec	0.147	0.010	0.011	0.009	0.005	0.009	0.004
primary	0.089	0.012	0.016	0.011	0.006	0.015	0.003
Total		0.008	0.009	0.006	0.005	0.006	0.003
	%change						
tertiary			-0.5	-38.9	-22.4	-41.7	-55.9
higher sec			-3.5	-37.7	-38.2	-44.5	-71.7
lower sec			8.1	-10.0	-52.2	-12.9	-65.3
primary			34.5	-7.2	-54.2	24.7	-71.9
Total			4.2	-29.1	-38.8	-29.3	-66.7
	contr to aggr						
tertiary		0.249	0.237	0.214	0.315	0.205	0.329
higher sec		0.445	0.412	0.391	0.449	0.349	0.377
lower sec		0.179	0.186	0.227	0.140	0.220	0.186
primary		0.128	0.165	0.168	0.096	0.226	0.108

Table 28. Effects of adding components of non-cash income on poverty rate (fgt0), by education level (alternative approach)

	fgt0						
	pop.share	baseline	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
tertiary	0.305	0.049	0.056	0.036	0.049	0.047	0.043
higher sec	0.459	0.111	0.122	0.098	0.102	0.097	0.093
lower sec	0.147	0.215	0.230	0.228	0.192	0.234	0.222
primary	0.089	0.310	0.396	0.352	0.260	0.425	0.389
Total		0.125	0.142	0.121	0.113	0.131	0.123
	%change						
tertiary			12.6	-26.6	-1.2	-5.2	-12.0
higher sec			9.4	-12.1	-8.9	-13.2	-16.9
lower sec			6.7	5.7	-11.1	8.5	3.0
primary			28.0	13.6	-16.1	37.2	25.5
Total			13.2	-3.7	-10.1	4.3	-2.0
	contr to aggr						
tertiary		0.120	0.120	0.092	0.132	0.109	0.108
higher sec		0.408	0.395	0.373	0.414	0.340	0.346
lower sec		0.252	0.237	0.277	0.249	0.262	0.265
primary		0.220	0.248	0.259	0.205	0.289	0.281
<i>Corrected:</i>							
<i>tertiary</i>			<i>0.056</i>	<i>0.048</i>		<i>0.056</i>	<i>0.054</i>
<i>higher sec</i>			<i>0.122</i>	<i>0.114</i>		<i>0.111</i>	<i>0.107</i>
<i>lower sec</i>			<i>0.230</i>	<i>0.240</i>		<i>0.247</i>	<i>0.235</i>
<i>primary</i>			<i>0.396</i>	<i>0.366</i>		<i>0.430</i>	<i>0.403</i>
<i>Total</i>			<i>0.142</i>	<i>0.135</i>		<i>0.142</i>	<i>0.136</i>
	%change						
<i>tertiary</i>			<i>12.6</i>	<i>-3.8</i>		<i>13.2</i>	<i>8.3</i>
<i>higher sec</i>			<i>9.4</i>	<i>2.5</i>		<i>-0.7</i>	<i>-3.8</i>
<i>lower sec</i>			<i>6.7</i>	<i>11.4</i>		<i>14.6</i>	<i>9.1</i>
<i>primary</i>			<i>28.0</i>	<i>18.0</i>		<i>38.8</i>	<i>30.0</i>
			<i>13.2</i>	<i>7.4</i>		<i>13.5</i>	<i>8.3</i>
	contr to aggr						
<i>tertiary</i>			<i>0.120</i>	<i>0.108</i>		<i>0.120</i>	<i>0.120</i>
<i>higher sec</i>			<i>0.395</i>	<i>0.390</i>		<i>0.357</i>	<i>0.363</i>
<i>lower sec</i>			<i>0.237</i>	<i>0.261</i>		<i>0.254</i>	<i>0.254</i>
<i>primary</i>			<i>0.248</i>	<i>0.241</i>		<i>0.268</i>	<i>0.263</i>

Table 29. Effects of adding components of non-cash income on poverty gap ratio (fgt1), by education level (alternative approach)

	pop share	fgt1	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
tertiary	0.305	0.013	0.015	0.008	0.013	0.009	0.009
higher sec	0.459	0.021	0.023	0.016	0.019	0.017	0.016
lower sec	0.147	0.035	0.039	0.035	0.031	0.038	0.034
primary	0.089	0.043	0.059	0.043	0.035	0.058	0.048
Total		0.023	0.026	0.019	0.020	0.021	0.019
		%change					
tertiary			12.1	-37.2	-5.1	-30.5	-33.8
higher sec			9.2	-21.8	-8.8	-19.3	-24.1
lower sec			10.5	-1.0	-13.1	7.7	-3.4
primary			37.2	0.6	-19.0	35.8	12.9
Total			14.7	-16.0	-10.8	-5.9	-14.9
		contr to aggr					
tertiary		0.179	0.175	0.134	0.190	0.132	0.139
higher sec		0.425	0.404	0.396	0.435	0.364	0.379
lower sec		0.229	0.220	0.270	0.223	0.262	0.260
primary		0.168	0.201	0.201	0.152	0.242	0.223
<i>Corrected:</i>							
<i>tertiary</i>			<i>0.015</i>	<i>0.011</i>		<i>0.012</i>	<i>0.012</i>
<i>higher sec</i>			<i>0.023</i>	<i>0.020</i>		<i>0.020</i>	<i>0.019</i>
<i>lower sec</i>			<i>0.039</i>	<i>0.038</i>		<i>0.041</i>	<i>0.037</i>
<i>primary</i>			<i>0.059</i>	<i>0.048</i>		<i>0.063</i>	<i>0.054</i>
<i>Total</i>			<i>0.026</i>	<i>0.022</i>		<i>0.025</i>	<i>0.022</i>
		%change					
<i>tertiary</i>			<i>12.1</i>	<i>-18.6</i>		<i>-10.3</i>	<i>-12.3</i>
<i>higher sec</i>			<i>9.2</i>	<i>-5.5</i>		<i>-2.4</i>	<i>-8.3</i>
<i>lower sec</i>			<i>10.5</i>	<i>8.4</i>		<i>15.9</i>	<i>4.3</i>
<i>primary</i>			<i>37.2</i>	<i>12.9</i>		<i>48.1</i>	<i>25.4</i>
<i>Total</i>			<i>14.7</i>	<i>-1.6</i>		<i>8.9</i>	<i>-0.5</i>
		contr to aggr					
<i>tertiary</i>			<i>0.175</i>	<i>0.148</i>		<i>0.147</i>	<i>0.157</i>
<i>higher sec</i>			<i>0.404</i>	<i>0.408</i>		<i>0.381</i>	<i>0.391</i>
<i>lower sec</i>			<i>0.220</i>	<i>0.252</i>		<i>0.244</i>	<i>0.240</i>
<i>primary</i>			<i>0.201</i>	<i>0.193</i>		<i>0.229</i>	<i>0.212</i>

Table 30. Effects of adding components of non-cash income on poverty index fgt2, by education level (alternative approach)

	pop share	fgt2	IR	PE'	- PH'	IR + PE'	IR + PE' - PH'
tertiary	0.305	0.007	0.007	0.004	0.007	0.004	0.004
higher sec	0.459	0.008	0.008	0.006	0.008	0.005	0.005
lower sec	0.147	0.010	0.011	0.010	0.010	0.010	0.010
primary	0.089	0.012	0.016	0.009	0.011	0.013	0.011
Total		0.008	0.009	0.006	0.008	0.006	0.006
		%change					
tertiary			-0.5	-35.7	-1.4	-41.4	-43.8
higher sec			-3.5	-27.8	0.0	-35.4	-36.2
lower sec			8.1	-5.7	-3.7	-0.2	-8.2
primary			34.5	-25.4	-12.9	4.8	-12.5
Total			4.2	-25.5	-2.6	-25.4	-30.0
		contr to aggr					
tertiary		0.249	0.237	0.215	0.252	0.195	0.200
higher sec		0.445	0.412	0.431	0.457	0.385	0.405
lower sec		0.179	0.186	0.227	0.177	0.239	0.235
primary		0.128	0.165	0.128	0.114	0.180	0.160
<i>Corrected:</i>							
<i>tertiary</i>			<i>0.007</i>	<i>0.005</i>		<i>0.005</i>	<i>0.005</i>
<i>higher sec</i>			<i>0.008</i>	<i>0.007</i>		<i>0.006</i>	<i>0.006</i>
<i>lower sec</i>			<i>0.011</i>	<i>0.011</i>		<i>0.011</i>	<i>0.010</i>
<i>primary</i>			<i>0.016</i>	<i>0.011</i>		<i>0.015</i>	<i>0.013</i>
<i>Total</i>			<i>0.009</i>	<i>0.007</i>		<i>0.008</i>	<i>0.007</i>
		%change					
<i>tertiary</i>			<i>-0.5</i>	<i>-22.0</i>		<i>-26.5</i>	<i>-28.1</i>
<i>higher sec</i>			<i>-3.5</i>	<i>-14.2</i>		<i>-21.3</i>	<i>-22.6</i>
<i>lower sec</i>			<i>8.1</i>	<i>3.1</i>		<i>8.2</i>	<i>-0.4</i>
<i>primary</i>			<i>34.5</i>	<i>-6.2</i>		<i>25.5</i>	<i>7.5</i>
<i>Total</i>			<i>4.2</i>	<i>-12.0</i>		<i>-11.3</i>	<i>-16.1</i>
		contr to aggr					
<i>tertiary</i>			<i>0.237</i>	<i>0.220</i>		<i>0.206</i>	<i>0.213</i>
<i>higher sec</i>			<i>0.412</i>	<i>0.433</i>		<i>0.395</i>	<i>0.410</i>
<i>lower sec</i>			<i>0.186</i>	<i>0.210</i>		<i>0.218</i>	<i>0.213</i>
<i>primary</i>			<i>0.165</i>	<i>0.137</i>		<i>0.181</i>	<i>0.164</i>