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- Annelies De Schrijver -

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Fiscal data in the Statistics on Income and Living Conditions (SILC) survey: a path for the future?

An exploratory study on the use of IPCAL and Belcotax for individual income variables

Annelies De Schrijver [1]

[1] Statistician at Statbel (General Directorate of Statistics - Statistics Belgium)

ABSTRACT

Public social statistics have come under increasing pressure in recent years to minimise the burden on respondents and publish the results as quickly as possible. For the Statistics on Income and Living Conditions (SILC), the use of fiscal administrative data is an interesting avenue to meet this need. This analysis will investigate the feasibility of using the tax datasets IPCAL and Belcotax for the individual income variables in SILC. IPCAL contains final tax data, while Belcotax contains preliminary tax data. The results of this exploratory study are highly promising for (1) employee income, (2) contributions to individual private pension plans, (3) pensions from individual private pension plans, (4) unemployment benefits, (5) pensions, (6) survivors' pensions and (7) sickness and disability benefits.

CONTENT

INLEIDING

Public social statistics have come under increasing pressure in recent years. Pressure to modernise while minimising the burden on respondents. But there is also pressure to deliver more rapidly, so that the figures can play a more active role in policy-making at all levels: European, national, regional and even provincial. This also applies to EU-SILC (European Statistics on Income and Living Conditions), one of the most important European harmonised social statistics carried out by Statbel, the Belgian statistical office, on behalf of Eurostat, the statistical service of the European Commission. SILC is used to monitor key trends in income, poverty and living conditions[2].

In order to respond to this pressure, the traditional survey model of the Belgian SILC needs to be revised. It is no longer feasible to construct all variables on the basis of survey questions. Not only is this very difficult for respondents and interviewers, the difficulty of the questions can also undermine the quality of the figures and requires a lot of data-cleaning which in turn affects the timing for the publication of the results. Moreover, in the near future, a new framework regulation will enter into force at European level, requiring Member States to publish the results more quickly[3]. One possible avenue for overcoming these obstacles is to intensify the use of administrative data. Currently, administrative data in SILC are primarily used for methodological and data collection purposes, but they can also play a content-related role. This analysis echoes a project financed by Eurostat and carried out by Statbel on the possibilities offered by fiscal data to fill in the SILC income variables at individual level[4]. The aim is to actually use these for SILC in the future so that most of the individual income questions can be eliminated. Accordingly, two tax data datasets of the FPS Finance are used (Belcotax and IPCAL), which were received in accordance with the privacy legislation[5]. To carry out this analysis, these data were linked to the SILC survey via pseudonymised data, making it impossible to ascertain the identity of the persons. For reasons of statistical secrecy, no information held by Statbel will in any way be passed on to the FPS Finance or any other administration. The responses given in the SILC survey remain confidential.

The first part of this report describes these source files. The subsequent sections always compare an official SILC income variable with an administrative construct. The variables covered are: employee income, benefits in kind, contributions to individual private pension schemes, profit or loss as a self-employed person, pensions from individual private pension schemes, unemployment benefits, old age benefits, survivors' benefits, sickness benefits and disability benefits. For each of these, a dual analysis is carried out: one for gross income and one for net income, always comparing the number of beneficiaries and the amounts reported. Only the overall results are presented, even though more in-depth analyses were often carried out in order to gain a better understanding of the comparison. Presenting all the analyses is not within the remit of this report. It is important to note that the analyses are carried out on the raw data without using weights. The final part of the analysis brings together all the results and presents a re-calculation of the main poverty indicators based on fiscal data and, concrete advice on how they should be used in the future. Of course, the weights for these analyses will be taken into account.

However, the exploratory nature of the study implies that it is only a first attempt to construct the income variables on the basis of tax data. How it is ultimately used may be slightly different. This is the first reason why the results of this study cannot be used as backcasting, or in other words, as a new SILC time series 'when administrative data would have been used'. Secondly, when reading this analysis, it will become clear that survey data will still be necessary, not only as a supplement to the tax data, but also as auxiliary variables to correctly process the administrative data. It is taken as a given that when administrative data are used, the questionnaire needs to be fundamentally revised[6]. Not only the use of administrative data, but also the questionnaire revision itself implies a break in time series. The calculations with tax data in this analysis can in

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[2] More information regarding the SILC (such as questionnaires, methodological data, definitions) can be found at https://statbel.fgov.be/en/themes/households/poverty-and-living-conditions/risk-poverty-or-social-exclusion#documents.

[3] This framework regulation is known as IESS (Integrated European Social Statistics): Framework regulation for the production of European statistics on persons and households

[4] Financing by Eurostat Grant 2014 'Action plan for EU-SILC improvements'. This analysis relates to a reworking of the final report validated by Eurostat.

[5] We would therefore like to take this opportunity to thank the FPS Finance for making the data available.

[6] Since SILC 2019, tax data based on the results of this report have been used. At the time, the questionnaire was fundamentally revised according to the use of Belcotax for the majority of the individual income variables. When this report refers to (the current) SILC, it means all years up to and including SILC 2018. Any references to the future SILC refer to the reform of SILC 2019.

no event eliminate this break, because the impact of the new questionnaire will then be overlooked, and therefore cannot provide a new SILC time series. Thirdly, the normal SILC weights are used in this analysis. These are partly calculated based on data (including poverty status) from previous SILC waves to correct for panel attrition. Given that this status may change at individual level through the use of tax data, this may have an impact on the weight calculations. This would require all weights from the past to be recalculated, and this has not happened. Finally, this report is limited to the personal income variables. In addition, there are also income variables at household level that can and will be collected through administrative data. This is consequently the fourth reason why the results shown are not backcasting - they do not include the total of administratively available income variables. It is certain that there will be a break in time series when administrative data are used in the future SILC. The main objective of this analysis is therefore to document the differences between the data sources as effectively as possible and to justify the choices for the future SILC.

1. DESCRIPTION OF THE TAX DATA

This analysis uses two tax datasets: IPCAL and Belcotax. These data will be linked to SILC 2009 up to and including SILC 2014. This section describes the tax datasets and how they were linked to SILC.

1.1. IPCAL and SILC

Every year, Belgians have to make their personal tax returns. They do this either alone or together with their partner. In this tax return - spread over various tax codes - the vast majority of taxable income is included. A number of taxable incomes are not included, such as interest on savings books and other investments that are taxed at source. In addition, citizens can also include a number of expense items that entitle them to a tax benefit (e.g. housing bonus or service vouchers). The FPS Finance collects these incomes in the IPCAL dataset[7], which is supplied to Statbel after the returns have been closed. When a couple files a declaration together, the incomes of both are stored in separate codes, meaning that for this analysis we are able to look at the income on an individual level[8]. Income of a given year N is declared by citizens in assessment year N+1 between May and October, and the final IPCAL dataset is available for Statbel in June N+2. Concretely linked to SILC, this means that the 2013 income collected through SILC 2014 will be declared by citizens to the tax authorities between May and October 2014 and that Statbel will have this income at its disposal at the end of June 2015.

SILC uses both an individual identification variable and a household identification variable. To make the link with IPCAL, a coded national register number (NISS number) was also added to the datasets. Annex 1 gives an overview of the number of observations in the SILC R- (all respondents), P- (all respondents aged 16 and over) and H- (all participating households) files, as well as in IPCAL and the linked dataset. This shows that every year there are a number of SILC respondents for whom no coded national register number is available (see difference # observations and # NISS numbers for R file). After analysis, it appears that around one third of these are under 16 years of age. For them, we have no income information in the P file, nor do we suspect that they have earned any income. In other words, they do not pose any problem. In addition, there also appear to be SILC respondents who are not present in IPCAL (cf. difference # observations SILC R and # observations IPCAL). The vast majority are young people who do not have to file a tax return either. It is therefore logical that they will not be in IPCAL. In addition, this group also includes the SILC respondents for whom the NISS number could not be found. In a number of exceptional cases, there is simply no tax return for the SILC respondent concerned[9].

1.2. Belcotax and SILC

The personal tax return resulting from IPCAL is drawn up on the basis of tax sheets. These sheets are sent to citizens by those paying the income (e.g. employers, insurance institutions and organisations responsible for the payment of social benefits). A person can have more than one tax sheet. Someone who worked the first months of the year, then was unemployed and went back to work for another employer at the end of the year, will have at least three sheets: two from the employers and one from the unemployment benefit. For most of the income components, it is compulsory that the sheets are also sent to the FPS Finance. The latter collects them in the Belcotax dataset and makes them available to the taxpayer via the electronic application Tax-on-web. The taxpayer then has to confirm or modify the amounts already entered, add any income components (e.g. self-employed income) and add the expenditure items to complete the return. Income of a given year N is declared by citizens in assessment year N+1 between May and October, and the preparatory dataset therefore needs to be ready at the outset. Concretely linked to SILC, this means that the 2013 income collected through SILC 2014 will be in Belcotax in May 2014 and Statbel will have access to it in June 2014.

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7 Personal income tax calculated

8 In the IPCAL files, the first person gets a prefix A and the second a B - in the tax return it is 1 and 2 respectively. For this analysis, the prefixes are omitted, and a file is constructed on an individual level. IPCAL codes can always be found in the tax return. Prefix 1/2 is omitted, as is the suffix and the preceding dash. A 0 is added to the remaining 3-digit code. For example, employee salaries are indicated as 1250-11 for the person in the left column and 2250-78 for the person in the right column in the tax return, for this analysis the code 2500 is used.

9 All SILC respondents were included in the linked SILC-IPCAL dataset, including those for whom no tax information is available, because only this dataset allows the impact of tax data on the total sample to be assessed. For the analyses where income is compared on a one-to-one basis in the different sources, they are of course not taken into account.

Since a person can have several of the same Belcotax sheets, as well as several types of sheets, the sheets of the same type were aggregated[10] in the first instance. In a second step, the different sheets were linked to each other and to SILC on an individual level via the same coded NISS number. Every year, between 4,400 and 4,900 SILC respondents do not have a Belcotax sheet. This seems high, but is largely accounted for by the children and students who have no income to declare.

1.3. Conclusion

IPCAL and Belcotax both have advantages and disadvantages. IPCAL is more complete than Belcotax with respect to the types of income, as the taxpayer himself has to add 'missing' income (e.g. income from self-employment) and also more accurate, as the taxpayer has checked and verified the data. However, IPCAL is not a good data source if we want to deliver the SILC data earlier, as it is only available at the time the SILC results are published and therefore does not help to meet the future deadlines of the new framework regulation. As regards SILC, Belcotax is the only possibility since this dataset is available a year earlier - and therefore on time. This does not mean, however, that an analysis of IPCAL is not important. A comparison between Belcotax and IPCAL is essential in order to gain insight into what is missing, by using a provisional tax dataset rather than a definitive one. IPCAL is therefore always taken into account in this report. In the following sections, the differences and similarities between these three sources are discussed separately for each of the gross and net incomes. All the elements are subsequently taken together and the impact on the poverty indicators will be discussed.

10 Since Belcotax consists of a separate dataset for each type of tax sheet, the same codes appear in several types of sheets. In this analysis, therefore, a prefix is added to each code that refers to the tax sheet. For example: code 2060 in sheet 281.10 contains the salaries of employees, and is converted here to 10_2060.

2. EMPLOYEE CASH OR NEAR CASH INCOME (PY010)

The Eurostat variable PY010 is the sum of a variety of income components that can be acquired as employees. A distinction is made between gross (PY010G) and net (PY010N) income. Gross income refers to what someone earns as an employee, without deduction of social security contributions and taxes. Net income in turn reflects what remains for the employee after deduction of these contributions and other deductions. This section looks at the possibilities offered by IPCAL and Belcotax to construct the SILC variable PY010.

2.1. Linking concepts and codes

The very first step in the analysis is to link the definition of PY010 to the information available for tax purposes. In document 065[11] Eurostat defines employee cash or near cash income as: "*Wages and salaries paid in cash for time worked or work done in main and any secondary or casual job(s); Remuneration for time not worked; Enhanced rates of pay for overtime; Fees paid to directors of incorporated enterprises; Piece rate payments; Payments for fostering children; Commissions, tips and gratuities; Supplementary payments; Profit sharing and bonuses paid in cash; Additional payments based on productivity; Allowances paid for working in remote locations; Allowances for transport to or from work; Additional payments made by employers to their employees or former employees and other eligible persons to supplement the sick, disability, maternity leave or survivor's pay entitlement from social insurance schemes, where such payments cannot be separately and clearly identified as social benefits; Payments made by employers to an employee in lieu of wages and salaries through a social insurance scheme when unable to work through sickness, disability or maternity leave where such payments cannot be separately and clearly identified as social benefits.*"

Currently, during the SILC interview the following items are asked for: wages as employee in main and/or secondary occupation; income from seasonal, periodical or occasional work; extra income for overtime; extra income from commissions; tips; sales or production premiums; end-of-year bonus; thirteenth month; fourteenth month; holiday pay; profit distribution; shares of the company where the respondent works; extra remuneration for work abroad, for work in special circumstances or locations; and finally, other bonuses or premiums as well as income from undeclared work are also requested[12].

In order to construct an income, on the basis of IPCAL and Belcotax, that complies with the European definition and is therefore comparable to what is currently collected through survey questions in SILC, various tax codes are necessary. These are shown in Appendix 2. However, combining these poses a number of challenges which are highlighted below.

2.1.1. Challenge 1: Social security contributions

A first challenge lies in the nature of the tax codes, which are gross taxable, which actually means the gross amounts without the social security contributions already deducted[13]. The amounts included in the tax datasets therefore hover, as it were, between the gross and net amounts required for SILC. The social security contributions need to be estimated in order to arrive at the gross amounts. However, given the different systems used in practice, this is not self-evident. Employees and managers in employment pay 13.07% of their gross income; civil servants 11.05% and labourers 13.07% of 108% of their gross income. In addition, students benefit from a favourable scheme, they pay a solidarity contribution of 2.71% instead of social security contributions. IPCAL and Belcotax do not contain all the necessary information to simulate the contributions accurately. Statutory officials and managers in employment can be identified in the tax datasets, and student work can be identified on the basis of the calendar question[14] in SILC, so that a correction is made for them. The difference between

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11 Eurostat document SILC 065 is a kind of SILC Bible; it contains detailed information for all variables to be delivered. In this analysis, frequent reference will be made to document 065 as a yardstick.

12 Income not directly requested but included in the Eurostat definition are attendance fees, allowances for foster care and for commuting. The former and the latter can be assumed to be entered under 'seasonal work, periodical work or occasional work' or under 'other bonuses or premiums'. The allowance for foster care is currently not surveyed as such in SILC, but will be included in the questionnaire revision for the future SILC.

13 There are a number of income components for which no social security contribution is payable (e.g. contributions from the impulse fund, attendance fees and contribution to travel expenses).

14 This question asks for the status of the respondent (e.g. employee, retired, etc.) for each month of the income reference period (= calendar year preceding the survey year).

employees and labourers cannot be made at present[15], so the rate for employees is used for all non-students and non-officials[16].

Workers on low incomes can benefit from a social work bonus which gives them a discount on social security contributions. Until 2012, this social work bonus existed as such. Given that gross taxable amounts are declared in the tax files, the information was until that point not relevant for the tax authorities and therefore absent from IPCAL and Belcotax. Since 2012, however, a tax work bonus has been added to the social work bonus. Beneficiaries of the social work bonus also receive a discount on the withholding tax on professional income. Since then, the information has become fiscally relevant and therefore included in the data datasets. This means that for SILC 2009 (income 2008) up to and including SILC 2012 (income 2011), we cannot take into account the social work bonus and therefore the social security contributions - and consequently the gross income - of these employees are slightly overestimated, but not the net income. Since SILC 2013 (income 2012), the social security contribution is first simulated as indicated above, then the obtained discount is deducted again in order to arrive at a correct estimate of the gross income.

Finally, employees can also be partially or fully paid by tips. These tips must always be included in the total remuneration (IPCAL code 2500, Belcotax code 10_2060). The social security contributions due are calculated on fixed daily wages and salaries. In IPCAL, no distinction can be made between ordinary remuneration and tips. On the other hand, Belcotax has information indicating whether the remuneration consists entirely, mainly or incidentally of tips and the flat-rate social security contribution paid on them. However, analysis shows that this only concerns a handful of respondents per year. Sometimes the amount of tips is indicated without a flat-rate, and sometimes only a flat rate without any indication of the size of the tips. Since the tips are included in the total remuneration, the rules of simulation of social security contributions previously indicated are applied and not the flat-rate amount (if any) indicated.

2.1.2. Challenge 2: Insufficient details in IPCAL

The second challenge concerns the lack of necessary details in IPCAL. Code 2500 contains not only monetary income, but also benefits in kind. The latter are not included in the definition of employee income (PY010), but need to be collected separately (PY020). For the IPCAL calculations, code 2500 was fully attributed to PY010, then the information on benefits in kind from the SILC questionnaire (variable PY020) was used to correct for this, even though this is not an ideal solution. Belcotax makes the distinction between PY010 and PY020 possible.

2.1.3. Challenge 3: royalties

Thirdly, royalties in SILC need to be treated as income from self-employed activities. For tax purposes, they must be declared as income from movable assets. However, this is subject to a maximum amount (e.g. 54,890 euros in 2013). royalties exceeding this limit must be declared as professional income - in the case of remuneration for employees, and income from self-employed activities for the self-employed. As a result, a limited part of the royalties may still end up in the employees' income. However, in the SILC years surveyed, none of the respondents indicated the maximum in the case of royalties, so we can assume that this problem does not arise here.

2.1.4. Challenge 4: Attendance fees

Attendance fees are declared for tax purposes as income from self-employed activities, under the same IPCAL code used for income from liberal professions. As self-employed persons pay tax in a different way (via advance payments) than beneficiaries of attendance fees (via withholding tax on professional income), the presence of attendance fees can be assumed from the presence of paid withholding tax on professional income. If this code is filled in, the reported income is applied as attendance fees. Only people who combine attendance fees with a liberal profession make a mistake in this way. Belcotax does not have a tax sheet for the self-employed, but it does for attendance fees, so this income can be correctly identified in this dataset without any problems.

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15 In the future SILC, respondents will be asked via the calendar question to indicate whether they have worked as an employee or as a labourer.

16 This simulation uses a single rate for the full year, which in a number of cases may lead to an underestimation of social security contributions and consequently gross income, but this has no impact on net income. For example, students who enter the regular labour market after their student job.

2.1.5. Challenge 5: Withholding tax on professional income and special social security contribution

A fifth challenge is the calculation of net employee income. For this, the declared gross taxable income must be reduced by taxes and special social security contributions (BBSZ in Dutch). IPCAL and Belcotax both have a specific code for the withholding tax on professional income already paid, this is a type of advance payment of taxes deducted monthly at source from income. The exact amount of tax due is only settled in the final personal income tax statement, taking into account any other income and tax advantages.

The withholding tax on professional income and special social security contribution are not unique to employee income, the tax code collects the amount paid on this income, but also on unemployment benefits, early retirement pensions, sickness and disability benefits together. As such, a proportional factor was calculated indicating the proportion of employee income within all the relevant income. With the same factor, the relevant part of the withholding tax on professional income is granted to employees[17]. The same problem also arises in Belcotax, albeit to a lesser extent. Sheet 281.10 which contains employees' income and sheet 281.20 which contains managers' income are included more purely in the type of income included: in addition to employees' income, only benefits in kind (PY020), bad weather stamps (PY090) and severance pay (PY090) are included. The amounts are allocated proportionally to the income components.

2.1.6. Challenge 6: Professional costs

The tax authorities assume that employees have to incur various costs that allow them to perform their activities, i.e. professional costs. These costs are deducted from gross taxable income in the tax calculation. In their tax return, workers can choose to prove their professional expenses, or to accept a flat rate calculated by the tax authorities. Most workers opt for the flat rate; a sum that for most employees is noticeably higher than the costs they actually incurred. The question is therefore to what extent professional costs need to be taken into account in constructing the employee's income. Indeed, the choice made here is decisive for the analysis of the income variables that follow. For example, the unemployed and pensioners can also have 'professional costs'. For them, however, there is no flat rate. They can only prove the actual costs, and for this purpose they have to deduct the gross taxable income themselves from the costs. Self-employed people find themselves in an atypical situation in this respect, as they have to provide their own working environment and equipment. Their professional costs are discussed in the section on self-employed persons.

First of all, it should be clarified that information on proven professional costs of employees is only present in IPCAL, not in Belcotax. For pensioners and the unemployed, there is not even a separate code in IPCAL. This implies a difference in the amounts between Belcotax on the one hand (gross taxable) and IPCAL on the other (gross taxable minus professional costs). If the professional costs have to be taken into account in SILC, this can only be done for employees by simulating the fiscal flat rate for everyone on the basis of the data in Belcotax. Because of the high flat rate, the administrative employees' income will be artificially lower compared with the real 'disposable' employee income and the amount reported in SILC. The professional costs for employees are a fiscal rather than a monetary factor. They will not be taken into account in the construction of the administrative variables.

2.2. Comparison between SILC, IPCAL and Belcotax

Now that PY010 is constructed based on IPCAL and Belcotax codes, the actual comparison can be made. Table 1 shows in the first rows the number of respondents with an employee income in each of the datasets, followed by the number of respondents with an employee income in all three datasets. The row 'I+B' represents those respondents who have an employee income in both tax datasets - regardless of what they report in SILC. Finally, the last two rows indicate the number of respondents that are in only one of the two tax datasets - again regardless of what they report in SILC.

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17 This is the best possible solution, but it is important to make explicit the underlying assumption here that the rate of withholding tax on professional income is the same for all these types of income, which in reality is not the case.

Table 1: Number of beneficiaries of employee income (PY010)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	6,251	6,226	6,040	5,952	6,105	5,856
SILC (S)	5,784	5,635	5,392	5,221	5,475	5,247
BELCOTAX (B)	6,141	6,111	5,962	5,914	6,150	5,784
I+S+B	5,197	5,120	4,922	4,879	5,053	4,694
I+B	6,084	6,063	5,915	5,829	5,964	5,627
Fiscal only I	167	163	125	123	141	229
Fiscal only B	57	48	47	85	186	157

What is most striking is that both IPCAL and Belcotax have more employees than SILC. If we look at the respondents who do not have PY010 in SILC, but do have a tax employee income, it is striking that these are rather small amounts[18] that are easily forgotten during the SILC interview:

- Approximately 50% of these respondents are under 25 years of age, they indicated several months of 'training' in the calendar question. These are most likely students who forget to report their occasional student job during the interview.
- There are also respondents who indicate that they have worked as a self-employed person for 12 months, and also report this income. They may have forgotten small amounts of employee income.
- In addition, there are also respondents who claim to have been unemployed for 12 months, and also report this benefit. It is also possible that they forgot to mention a small job.

We also see a limited number of respondents that are not present in either tax dataset - for some we can ascertain the reason for this. For example, in 2009 there were 57 respondents who were only in Belcotax with an employee income and not in IPCAL. Only 20 of these had filed a tax return, and thus had an IPCAL record, but no income as an employee. The other 37 may be foreign nationals working in Belgium and filing their tax returns abroad. The majority of them do not have Belgian nationality and/or were not born in Belgium. On the other hand, there are more respondents who only have an IPCAL employee income. These may be Belgians who work abroad but still pay tax in Belgium. Indeed, their foreign employer is not obliged to communicate their income to the Belgian tax authorities. Finally, there are also respondents who only have an employee income in SILC, but not in the tax files. Sometimes these may be mistakes made by these respondents (e.g. employee income in SILC, but income from social benefits in the tax datasets), but it may also be income that is missing a priori in the tax datasets:

- International civil servants: an IPCAL code indicates whether someone is an international civil servant or not, but the income itself does not need to be declared. This only concerns a very low number of respondents every year.
- Tax-free PhD bursaries
- Undeclared work

Disregarding these differences, the following is a comparison of gross and net employee income. All amounts refer to annual amounts expressed in euro.

2.2.1. Gross employee income

In the first instance, the gross employee income is compared for all respondents who have an employee income in each of the three data sources (Table 2). The absolute difference in mean is always calculated in comparison with the SILC average (i.e. fiscal average - SILC average). The same applies to the relative difference (i.e. absolute difference/SILC mean). To ensure the legibility of this table and the following tables in this report, the number of respondents is indicated with N, the mean with $\bar{x}$, the absolute difference in mean between SILC and Belcotax with $\Delta\bar{x}$, the relative difference between SILC and Belcotax with $\Delta\bar{x}\%$, and finally the standard deviation with s.

A number of elements stand out in Table 2. Firstly, the difference between Belcotax and IPCAL is smaller each year than the difference between each of the tax sources and SILC. The mean employee income in the tax datasets is always higher than that in SILC. Secondly, the standard deviation is always the lowest in SILC, then in IPCAL and the highest in Belcotax. Finally,

[18] The median is less than 2,000 euros each year, while the mean in all years is between 3,500 and 5,000 euros.

it also appears that both the absolute and relative differences between SILC on the one hand and both tax datasets on the other are rather large.

Table 2: Comparison of gross employee income for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	5,197	5,197	5,197	5,120	5,120	5,120	4,922	4,922	4,922
$\bar{x}$	30,603	32,346	33,025	31,367	32,713	33,368	32,261	33,351	34,035
$\Delta\bar{x}$		1,743	2,422		1,346	2,006		1,090	1,774
$\Delta\bar{x}$ %		**5.70%**	**7.91%**		**4.29%**	**6.38%**		**3.38%**	**5.50%**
s	20,567	21,778	23,098	18,364	20,644	21,082	18,724	21,009	21,415
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	4,879	4,879	4,879	5,053	5,053	5,053	4,694	4,694	4,694
$\bar{x}$	32,690	33,611	34,286	34,341	35,607	36,253	34,876	36,524	37,105
$\Delta\bar{x}$		921	1,596		1,266	1,911		1,648	2,229
$\Delta\bar{x}$ %		**2.82%**	**4.88%**		**3.69%**	**5.57%**		**4.73%**	**6.39%**
s	19,971	22,020	22,381	19,679	22,634	23,370	20,325	23,727	24,357

Due to the restriction that a respondent must have an employee income in each of the three sources to be included in the analysis, a lot of information is lost. As such, Table 3 presents the comparison limited to tax datasets, although the results are very similar. The Belcotax mean is higher than the IPCAL mean, and the same goes for the standard deviation. Generally speaking, the differences between the two tax sources are rather small.

Table 3: Comparison of gross employee income for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	IPCAL	Belcotax	IPCAL	Belcotax	IPCAL	Belcotax
N	6,084	6,084	6,063	6,063	5,915	5,915
Mean	28,169	28,741	28,323	28,869	28,408	28,967
Difference in mean	572		546		559	
Difference in mean (%)	**2.03%**		**1.93%**		**1.97%**	
Standard deviation	22,721	23,917	21,947	22,407	22,343	22,796
	2012		**2013**		**2014**	
	IPCAL	Belcotax	IPCAL	Belcotax	IPCAL	Belcotax
N	5,829	5,829	5,964	5,964	5,627	5,627
Mean	28,714	29,251	30,837	31,383	31,109	31,570
Difference in mean	537		546		461	
Difference in mean (%)	**1.87%**		**1.77%**		**1.48%**	
Standard deviation	23,165	23,570	23,910	24,610	25,047	25,638

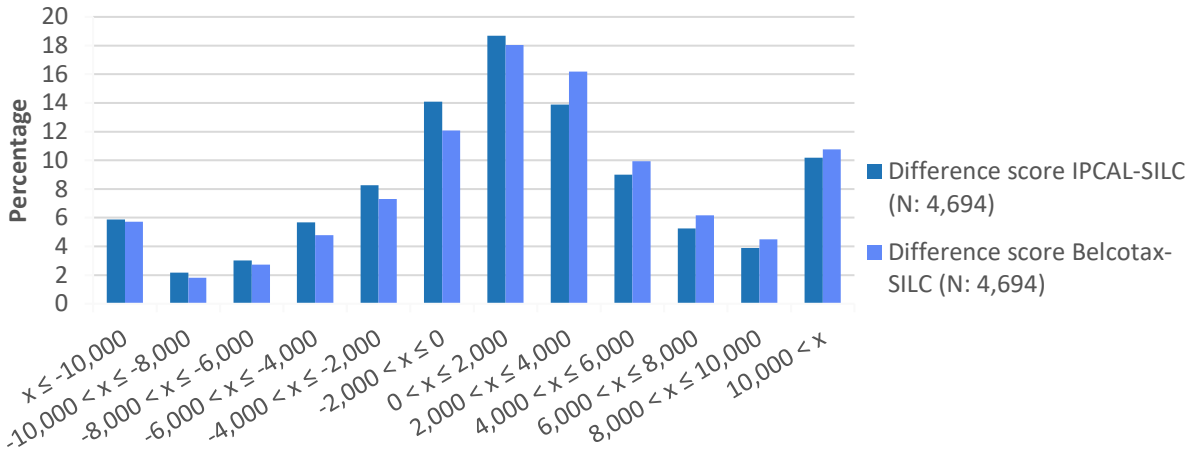
However, the crucial question remains how these differences between Belcotax and IPCAL can arise. Part of the answer lies in the correction made for IPCAL based on PY020 survey data. Since in IPCAL cash income (PY010) cannot be distinguished from benefits in kind (PY020), SILC data for benefits in kind were deducted from the IPCAL amount as indicated above in order to best isolate cash income (cfr. 2.1.2). As will become clear in chapter 3 below, the SILC variable PY020 is not a good proxy for the benefits in kind included in the tax datasets, as the SILC amounts are larger than those in Belcotax. This artificially increases the differences between IPCAL and Belcotax, as too large a sum for benefits in kind is deducted from the IPCAL code. As an additional analysis, each relevant IPCAL code was compared with the corresponding Belcotax codes on an

individual level. This shows that the vast majority of the respondents transfer the Belcotax information integrally to IPCAL. Most of the differences are between IPCAL code 2500 and the corresponding Belcotax codes 10_2060, 10_2061 and 10_2069, which suggests that the taxpayer has deliberately made these changes.

Difference scores are calculated at individual level to gain a better understanding of the causes of the differences between SILC on the one hand and the tax datasets on the other (Figure 1). Positive scores refer to lower SILC values than tax values, negative scores to higher SILC values than tax values. For most respondents, a logical explanation cannot be found based on the available data - there is no demonstrable reason for the differences (both higher and lower in SILC than in the tax sources). For other respondents, there are a number of interesting avenues:

- Respondents declare tax income as a manager (treated in SILC as income from self-employed activities), while in SILC they report a similar amount as an employee.
- Some athletes have a significantly higher fiscal income than what is reported in SILC. It is possible that during the SILC interview profit bonuses or other additional remuneration is overlooked, as the SILC calculation is based on monthly income. Bonuses are covered separately in the questionnaire, but specific bonuses or starting fees may not be perceived as such by the respondents.
- Some respondents report the same amount for gross and net in SILC. It is possible that these are net amounts, as a result of which the gross income in SILC has been underestimated. A rough estimate of gross income based on the net reported amount usually results in an amount that is more in line with the tax information.
- Some respondents have an imputed employee income. On the basis of information available in SILC, it was assumed that they had received this income for 12 months, whereas in the tax files it appears that the amounts involved are very low.

Figure 1: Difference scores between SILC, IPCAL and Belcotax for gross employee income expressed in euros (SILC 2014)



2.2.2. Net employee income

After the gross employee income, the net variant can also be compared. It is important to note that the number of beneficiaries may differ from the gross analysis. This is caused by the PY020 correction applied to IPCAL. After this the BBSZ and withholding tax were also deducted. As the SILC variable PY020 overestimates the benefits in kind included in IPCAL, a number of respondents obtain negative values for employee income, which are not taken into account for this analysis. In comparison with the gross employee income, the results of the net variant are different (Table 4). The Belcotax mean is now closer to SILC than to IPCAL, but the IPCAL mean is still lower than the Belcotax mean. The fiscal means are now lower than the SILC mean. This can either be an overestimate during the SILC interview, or an error caused by the allocation of the withholding tax in the tax datasets. Moreover, the differences in the standard deviations have narrowed.

Table 4: Comparison of net employee income for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	5,195	5,195	5,195	5,120	5,120	5,120	4,921	4,921	4,921
$\bar{x}$	20,429	19,586	20,143	20,590	20,102	20,629	21,167	20,354	20,848
$\Delta\bar{x}$		-843	-286		-488	39		-813	-319
$\Delta\bar{x}$ %		**-4.13%**	**-1.40%**		**-2.37%**	**0.19%**		**-3.84%**	**-1.51%**
s	11,627	10,324	11,972	10,127	10,025	10,440	10,355	10,235	10,480
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	4,879	4,879	4,879	5,048	5,048	5,048	4,694	4,694	4,694
$\bar{x}$	21,540	20,590	21,088	22,532	21,615	22,248	22,890	22,118	22,751
$\Delta\bar{x}$		-950	-452		-917	-284		-772	-139
$\Delta\bar{x}$ %		**-4.41%**	**-2.10%**		**-4.07%**	**-1.26%**		**-3.37%**	**-0.61%**
s	11,770	10,685	10,897	11,127	10,849	11,404	11,374	11,166	11,754

The comparison which only concerns the tax datasets is shown in Table 5. The results again show that the mean in Belcotax is higher than that in IPCAL. Relatively speaking, the differences between the two means have increased, which can be explained by the calculation of the withholding tax on professional income. More assumptions were made with IPCAL (cf. one code for employee income, unemployment benefit, early retirement, sickness and disability benefit) than with Belcotax (cf. one code predominantly for employee income, with minimal proportion of benefits in kind and unemployment benefits). This results in a higher probability of errors in IPCAL.

Table 5: Comparison of net employee income for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	IPCAL	Belcotax	IPCAL	Belcotax	IPCAL	Belcotax
N	6,068	6,068	6,056	6,056	5,908	5,908
Mean	17,148	17,611	17,475	17,905	17,420	17,816
Difference in mean	463		430		396	
Difference in mean (%)	**2.70%**		**2.46%**		**2.27%**	
Standard deviation	11,398	12,804	11,325	11,754	11,571	11,874
	2012		**2013**		**2014**	
	IPCAL	Belcotax	IPCAL	Belcotax	IPCAL	Belcotax
N	5,822	5,822	5,947	5,947	5,617	5,617
Mean	17,678	18,069	18,835	19,361	18,940	19,454
Difference in mean	391		526		514	
Difference in mean (%)	**2.21%**		**2.79%**		**2.71%**	
Standard deviation	11,936	12,215	12,197	12,750	12,604	13,191

2.3. Conclusion

On the basis of the above analysis, a number of conclusions can be drawn. Firstly, using administrative data will increase the number of respondents with an employee income. At the same time, using the Belcotax will allow about 30 questions to be removed from the SILC questionnaire, but a number of additional questions need to be added in order to fill in gaps in the tax data and to make correct estimates of social security contributions. Secondly, it also appears that the differences between

Belcotax and IPCAL are difficult to interpret given the adjustment for benefits in kind and the assumptions made when allocating withholding tax on professional income. Generally speaking, however, there appear to be very few differences between the two tax sources at code level.

3. BENEFITS IN KIND (PY020)

SILC is supposed to collect benefits in kind (PY020) separately from employee income (PY010). These benefits also exist in a gross (PY020G) and a net (PY020N) variant. As indicated above, benefits in kind are indicated in IPCAL in the same fiscal code as cash employee income, while separate codes exist in Belcotax. This part of the report looks at the possible use of Belcotax for benefits in kind. Given that the company car (PY021) is a subcategory of these benefits (PY020), this is also discussed here.

3.1. Linking concepts and codes

Once again, the first step involves analysing the definition and approaching it through the available tax codes. In document 065, Eurostat defines benefits in kind as follows: "*Company car and associated costs provided for either private use or both private and work use; Free or subsidised meals, luncheon vouchers; Reimbursement or payment of housing-related expenses; Other goods and services provided free or at reduced price by the employer to their employees; Accommodation provided for free*." The SILC interview enquires as to: company car; meal vouchers; cover for mobile phone costs; cover for gas and electricity costs of the house; cover for car insurance; and cover for fuel for the car[19].

Some data manipulation is necessary to achieve a Belcotax construct of benefits in kind (PY020) and company cars (PY021) comparable to the SILC construct. The codes used are shown in Annex 3. The challenges involved in this construction are discussed below.

3.1.1. Challenge 1: Insufficient detail in Belcotax

Belcotax includes nine categories of benefits in kind: loan, housing, PC, heating, lighting, PC and internet, power supply, miscellaneous and vehicle. There is one Belcotax code which indicates the amount of all benefits in kind together, and a second code which refers to their nature. For employees or managers in employment who combine several benefits, the amounts of the different types cannot be distinguished[20], in other words, company cars cannot be isolated when accompanied by other benefits in kind. For the construction of PY021, therefore, the full amount of benefits in kind is taken from everyone who has a company car, even when combined with other benefits in kind. This results in a slight overestimation of the value of the company car, but not of the number of beneficiaries.

This lack of detail has a second implication for company cars: it is the only benefit in kind in Belcotax on which no social security contributions are due. It can be assumed that for most employees with a company car, the company car weighs proportionally the heaviest in the total amount of benefits in kind. As such, only social security contributions are simulated for PY020G for respondents without a company car.

3.1.2. Challenge 2: Social advantage or taxable income

The benefits included in Belcotax are clearly covered by the Eurostat definition, but do not yet include the full concept. Meal vouchers and eco vouchers, the most popular benefits in kind in Belgium, are the most important missing elements. Both are an untaxed social benefit, not a taxable income, and are therefore absent from Belcotax. Given that the information on meal vouchers is available in SILC, the survey data on these vouchers are added to the administrative records in order to bring the construct as closely as possible into line with the European definition. Information about eco vouchers is not available in SILC, but will be added in the future.

3.1.3. Challenge 3: Incompleteness of SILC

Finally, Belcotax includes a number of benefits in kind that are not explicitly requested in SILC: loan, PC and internet. However, employees are asked for 'another bonus or premium', but seldom mention benefits in kind there. This is taken into account

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19 In BE-SILC, the free residence and reduced rent due to an employer is currently incorrectly put under imputed rent instead of benefits in kind. This will be remedied in the future, but does not have any impact on the calculation of disposable income used for the poverty indicators.

20 Since the free residence and reduced rent due to an employer is included in Belcotax as a benefit in kind - and its tax value cannot be distinguished from the other benefits - the comparison is a priori distorted. However, this concerns a limited proportion of respondents, who logically have a high amount for benefits in kind: 15 in 2009, 11 in 2010, 10 in 2011, 11 in 2012, 9 in 2013 and 7 in 2014.

in the questionnaire revision, but the discrepancy will in any case negatively affect the current comparison between SILC and Belcotax.

3.2. Comparison between SILC and Belcotax

The administrative concept of benefits in kind, supplemented by survey data on meal vouchers, is compared with that of SILC in the next analysis step. As can be seen from Table 6, there are no major differences in the numbers of beneficiaries between the two data sources. However, the (very popular) meal vouchers must be taken into account as they are used for both SILC and Belcotax survey data.

Table 6: Number of beneficiaries of benefits in kind (PY020)

	2009	2010	2011	2012	2013	2014
SILC (S)	2,638	2,601	2,591	2,479	2,725	2,626
BELCOTAX (B)	2,276	2,286	2,292	2,322	2,588	2,496
S+B	2,175	2,198	2,183	2,155	2,410	2,362

In contrast to the employee income, there are now more beneficiaries in SILC than in Belcotax. Those who only have a benefit in kind in SILC primarily report company cars for private use there. This is very surprising, because when a company car is used privately, it must be taxed as a benefit in kind (in Belcotax). Company cars that are only used for work-related trips are not taxed (not in Belcotax), and are therefore not a benefit in kind. Table 7 shows the numbers for company cars. On the one hand, the large differences in the number of beneficiaries of benefits in kind are indeed due to company cars. On the other hand, since 2013, there has been a remarkably better match between the two sources than previously. Currently, the reliability of Belcotax is questionable, but this avenue should not be a priori excluded for the future. Disregarding these differences, the following is a comparison of gross and net benefit in kind. All amounts refer to annual amounts expressed in euro.

Table 7: Number of beneficiaries of company cars (PY021)

	2009	2010	2011	2012	2013	2014
SILC (S)	545	506	540	504	546	573
BELCOTAX (B)	80	68	68	60	296	305
S+B	72	60	60	56	272	278

3.2.1. Gross benefits in kind

Where only the number of beneficiaries was considered above, the next step of analysis includes a comparison of the amounts for the respondents who have PY020 in both datasets (Table 8). Not only are there more beneficiaries in SILC, the reported value of the benefits is also higher there. This is all the more remarkable bearing in mind that meal vouchers are identical in both sources. In 2013 and 2014 the differences are still large, but clearly smaller. Company cars may again be responsible for this difference, even if the analysis is limited to respondents who have benefits in kind in both datasets. Someone may have reported a company car in SILC, but not in Belcotax, combined with one or more other benefits in kind. In this case, the value in SILC will a priori be much higher than in Belcotax.

Table 8: Comparison of gross benefits in kind for SILC and Belcotax expressed in euro

	2009		2010		2011	
	SILC	Belcotax	SILC	Belcotax	SILC	Belcotax
N	2,175	2,175	2,198	2,198	2,183	2,183
Mean	1,504	1,056	1,526	1,079	1,619	1,094
Difference in mean	-448		-447		-525	
Difference in mean (%)	**-29.79%**		**-29.29%**		**-32.43%**	
Standard deviation	1,375	1,001	1,369	712	1,444	694
	2012		2013		2014	
	SILC	Belcotax	SILC	Belcotax	SILC	Belcotax
N	2,155	2,155	2,410	2,410	2,363	2,363
Mean	1,583	1,105	1,680	1,401	1,715	1,407
Difference in mean	-478		-279		-308	
Difference in mean (%)	**-30.20%**		**-16.61%**		**-17.96%**	
Standard deviation	1,380	602	1,458	1,613	1,508	1,776

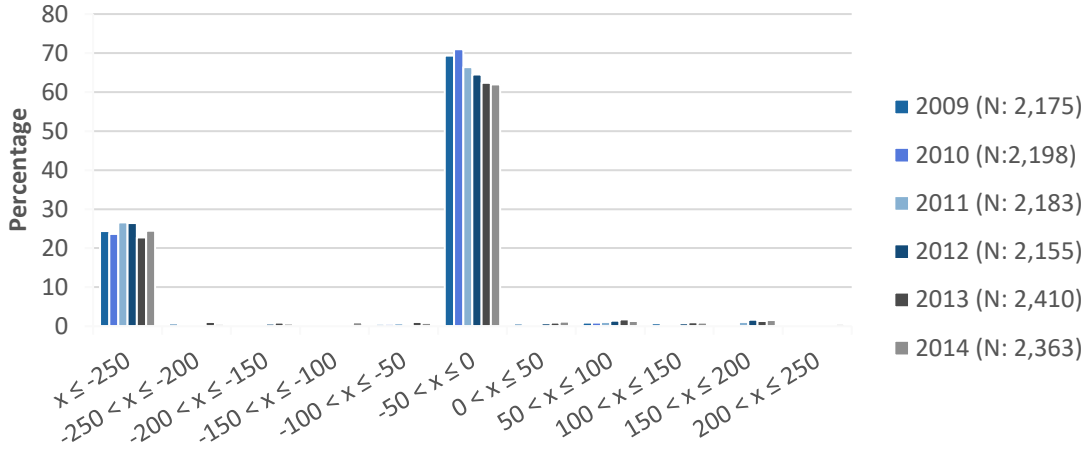
In order to get a full understanding of the problem of company cars, Table 9 shows the analysis for these separately. The results fluctuate strongly over the years, which is normal given the small sub-sample. Up to and including 2012, we can state that the mean in both datasets is in line with each other. In other words, when SILC reports a company car that has also been declared in the tax files, SILC succeeds relatively well in calculating its tax value. In 2012 (SILC 2013), a change was made to the tax calculation of the benefit for company cars, resulting in higher Belcotax amounts. However, no changes were made in SILC, which is immediately the most obvious explanation for the notable differences in 2013 and 2014 - a problem that will be solved in the future. Nevertheless, the fundamental problem remains the large differences in the number of beneficiaries.

Table 9: Comparison of gross benefits of company cars in SILC and Belcotax expressed in euro

	2009		2010		2011	
	SILC	Belcotax	SILC	Belcotax	SILC L	Belcotax
N	72	72	60	60	60	60
Mean	1,906	1,928	2,037	2,111	1,973	2,053
Difference in mean	22		74		80	
Difference in mean (%)	**1.15%**		**3.63%**		**4.05%**	
Standard deviation	848	1,066	609	1,059	678	1,195
	2012		2013		2014	
	SILC	Belcotax	SILC	Belcotax	SILC L	Belcotax
N	56	56	272	272	278	278
Mean	1,990	2,178	1,932	2,725	2,007	2,760
Difference in mean	188		793		753	
Difference in mean (%)	**9.45%**		**41.05%**		**37.52%**	
Standard deviation	592	1,336	657	2,415	646	3,321

Individual difference scores show that between 60% and 70% of respondents have an identical value in both datasets - these are the meal vouchers transferred from SILC to Belcotax (Figure 2). In addition, around 25% have a significantly higher value in SILC than in Belcotax (negative difference scores) - these are primarily company cars. The other respondents had rather small differences between the two datasets.

Figure 2: Difference scores between SILC and Belcotax for gross benefits in kind expressed in euro



3.2.2. Net benefits in kind

The results of the net comparison are presented in Table 10, but do not require much additional comment. They are fully in line with the gross results discussed in detail above: the averages in SILC are noticeably higher than in Belcotax. The problem of company cars persists; a separate analysis for company cars is therefore not appropriate.

Table 10: Comparison of net benefits in kind for SILC and Belcotax expressed in euro

	2009		2010		2011	
	SILC	Belcotax	SILC	Belcotax	SILC	Belcotax
N	2,175	2,175	2,198	2,198	2,183	2,183
Mean	1,425	1,016	1,445	1,042	1,520	1,057
Difference in mean	-409		-403		-46	
Difference in mean (%)	**-28.70%**		**-27.89%**		**-30.46%**	
Standard deviation	1,159	586	1,155	527	1,216	541
	2012		2013		2014	
	SILC	Belcotax	SILC	Belcotax	SILC	Belcotax
N	2,155	2,155	2,410	2,410	2,363	2,363
Mean	1,501	1,072	1,581	1,252	1,617	1,251
Difference in mean	-429		-329		-366	
Difference in mean (%)	**-28.58%**		**-20.81%**		**-22.63%**	
Standard deviation	1,169	525	1,218	1,046	1,259	1,063

3.3. Conclusion

In this section it was not possible to make a useful comparison between SILC and Belcotax in terms of benefits in kind in general, and company cars more specifically. The reasons for this lie with both Belcotax and SILC:

- Belcotax underestimates the number of company cars.
- Meal vouchers and eco vouchers are social benefits and therefore not available in Belcotax.
- Both datasets contain information on telephone costs and electricity and gas costs, but the lack of details in Belcotax does not allow analysis by type.
- In addition, Belcotax also includes information about residences (HY030 - imputed rent), computers and internet connections, but this information is missing in SILC.

The results therefore suggest that survey data is indispensable for company cars, meal vouchers and eco vouchers. However, benefits other than company cars cannot be identified separately in Belcotax. As such, the future SILC will continue to enquire

what benefits in kind the respondents received, including both taxable and social benefits. For the taxable benefits, a yes/no answer is often sufficient; the value can be calculated on the basis of the tax regulations.

4. CONTRIBUTIONS TO INDIVIDUAL PRIVATE PENSION PLANS (PY035)

The Belgian pension system is based on three pillars: the first comprises the statutory pension that is part of the social security system, the second comprises the supplementary pension organised by the employer or the self-employed person, and the third comprises the supplementary pension organised by the beneficiary him or herself. In order to receive a third pillar pension upon retirement, the beneficiary must pay a personal contribution at least once in previous years. These contributions are collected in the variable PY035, and are the subject of this section.

4.1. Linking concepts and codes

In Belgium, a third pillar pension can be built up in two ways: via pension savings and via long-term savings (life insurance). Only the first method is referred to for variable PY035, as indicated in the Eurostat document 065. In addition, there are two ways in which pension savings can be made: through a pension savings fund or pension savings insurance. The difference between the two lies in the investment risk, not in terms of contributions and taxes. Pension saving is stimulated by the Belgian government through a tax benefit. To this end, a maximum amount for the payment is set and indexed annually: 830 euros in 2008 (SILC 2009) and 940 euros in 2013 (SILC 2014). However, the taxpayer is free to decide whether or not to take advantage of this tax benefit. If a person receives the benefit at least once, the third pillar pension is taxable at the time of retirement, otherwise it is not.

Most banks and insurance companies send the tax sheet 281.60 to their customers who made a payment in the past year after the end of the income year. At the same time, they may also inform the tax authorities, but this is not an obligation. If they do, the payment is included in Belcotax (code 60_2060), otherwise it is not. Taxpayers can then choose to apply for the tax benefit. If they do, the payment is included in IPCAL (code 3610), otherwise it is not. This implies that both Belcotax and IPCAL are to some extent incomplete. The following section will examine whether and to what extent this impedes the use of administrative files.

4.2. Comparison between SILC, IPCAL and Belcotax

Contributions for pension savings only need to be collected on a gross basis for Eurostat. This has only been requested in the SILC interview since 2013. Table 11 shows a certain degree of overlap between the three datasets. SILC contains the majority of contributors for pension savings. The table also shows that a number of contributions are only reported in the tax files, but not in SILC - these respondents may have forgotten to mention this during the interview. The opposite also happens: not fiscally, but in SILC. This can point to two situations:

- Those who do not wish to use the tax benefit (not in IPCAL, possibly in Belcotax) and those whose bank or insurance institution does not send the information to the FPS Finance (not in Belcotax, possibly in IPCAL). However, the figures show a clear positive trend: banks and insurance companies increasingly supply data to Belcotax. In this case the SILC information is correct.
- Those who did not save for a pension, but, for example, built up a third pillar pension through life insurance, and incorrectly report this as pension saving. For example, in 2014 there were 184 respondents who report PY035 in SILC, but reported payments for life insurance in IPCAL. In this case the tax information is correct.

Table 11: Number of contributors to pension savings (PY035)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	3,373	3,404	3,414	3,353	3,486	3,401
SILC (S)	-	-	-	-	3,275	3,353
BELCOTAX (B)	2,765	2,764	2,895	3,068	3,168	3,174
I+S+B	-	-	-	-	2,484	2,602
I+B	-	-	-	-	3,131	3,140
Fiscal only I	658	665	559	314	355	261
Fiscal only B	50	25	40	29	37	34

When the amounts are compared, a high degree of comparability can be seen in the averages, caused by the ceilings imposed by the government for the tax benefit - and therefore used by most respondents (Table 12). Nevertheless, there are a number of interesting remarks that suggest that the answers in SILC are less reliable than the tax data. Specifically, these relate to the SILC mean, which is higher than the fiscal mean. This applies even more so to the standard deviation. Moreover, the SILC sometimes exceed the limits imposed by the government, which obviously results in the above mentioned higher mean and standard deviation.

Table 12: Comparison of pension savings contributions for SILC, IPCAL and Belcotax expressed in euro

	2013			2014		
	S	I	B	S	I	B
N	2,484	2,484	2,484	2,602	2,602	2,602
Mean	873	808	811	900	831	836
Difference in mean		-65	-62		-69	-64
Difference in mean (%)		**-7.45%**	**-7.10%**		**-7.67%**	**-7.11%**
Standard deviation	449	194	201	572	204	217

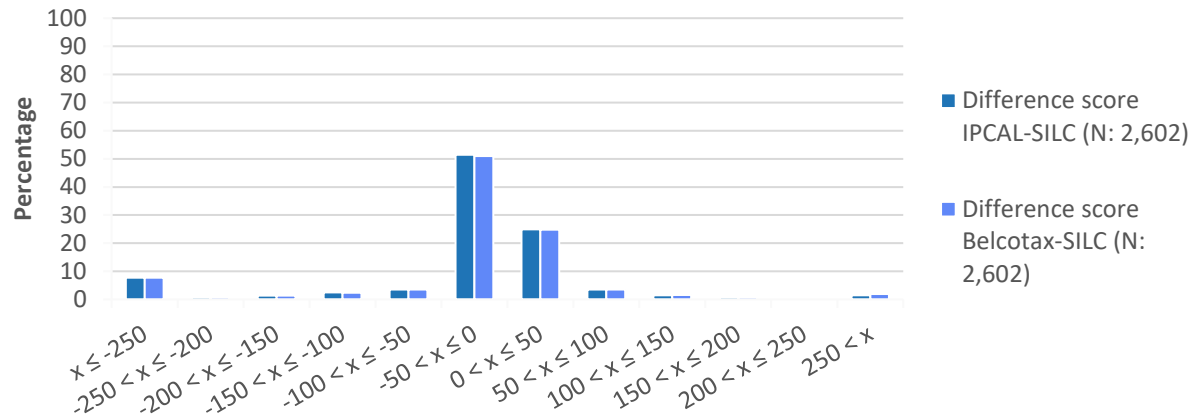
Due to the restriction that a respondent must be present in each of the three datasets in order to be involved in the analysis, valuable information is lost. The same analysis is carried out in Table 13, limited to IPCAL and Belcotax. Differences between the two sources are almost negligible at this aggregated level.

Table 13: Comparison of pension savings contributions for IPCAL and Belcotax expressed in euro

	2013		2014	
	IPCAL	Belcotax	IPCAL	Belcotax
N	3,131	3,131	3,140	3,140
Mean	789	792	809	814
Difference in mean	3		5	
Difference in mean (%)	**0.38%**		**0.62%**	
Standard deviation	214	222	227	238

Analysis shows that even at the individual level, the differences between IPCAL and Belcotax are virtually non-existent - which is logical given the tax ceilings which, for many respondents, are also the amount actually paid (Figure 3).

Figure 3: Difference scores between SILC, IPCAL and Belcotax contributions to individual private pension plans expressed in euro (SILC 2014)



The question now arises as to why some amounts in SILC are so much higher than those in the tax datasets, while in both cases it clearly relates to pension savings. For some situations, a possible cause can be found, for others not:

- During the SILC interview, respondents can indicate how much they have paid throughout the year, quarterly, or monthly. Those who have (too) high amounts in SILC may have reported the annual amount as a quarterly or monthly amount. Or perhaps it was a monthly amount, but they didn't pay it twelve times, but less often - up to the fiscal maximum. The reverse is also possible, they may have reported a quarterly or monthly amount as an annual amount, so that SILC PY035 is underestimated.
- Since it is possible to build up a third pillar pension at the same time via pension savings and via long-term savings, it appears that some respondents report the total amount paid in SILC and thus arrive at a higher amount.

4.3. Conclusion

The variable PY035 stands more or less on its own and is not included in the income calculation which is in turn used for poverty indicators. The implications of using Belcotax - with its associated incompleteness - therefore only have implications for this variable, and could result in three fewer questions in the questionnaire.

Since most Belgians pay the fiscal maximum, the reliability of SILC is easy to evaluate. Results show that some of the respondents still exceed this maximum, that some SILC respondents do not mention their contribution during the interview, while others mention payments that do not fall under the definition. By using Belcotax, we would already avoid these problems and improve the completeness of the number of people who make payments. Belcotax itself is not perfect; after all, banks and insurance companies have no obligation to inform the FPS Finance, although the vast majority appear to do so, and the figures show a positive trend.

5. CASH BENEFITS OR LOSSES FROM SELF-EMPLOYMENT (PY050)

A fourth monetary variable that is analysed is profit or loss from self-employment, again both gross and net. Gross cash benefits or losses from self-employment (PY050G) refers to 'income' before tax and social security contributions have been deducted, while the net variant (PY050N) refers to the same profit or loss after subtraction. Self-employed people are fundamentally different from employees in the way they pay social security contributions and taxes: they have to take the first step, while for employees it is deducted from their wages in the first instance. This implies a different approach for the construction of the administrative variables.

Enquiring about income from self-employment in a survey is particularly difficult. Not only are there different types of self-employed persons (each with their own specific income), they are often not fully aware of their income because an accountant handles this task from them. Survey questions about this income are then just as taxing as they are irritating for respondents. The use of tax data would not only shorten the questionnaire, but also fundamentally improve the respondents' survey experience. It should be noted that there are only Belcotax sheets for company managers and royalties. The other information is only available in IPCAL - and therefore a priori available too late for actual use in SILC. This section is therefore a symbolic, informative comparison rather than an actual exercise regarding the future.

5.1. Linking concepts and codes

Eurostat defines income from self-employment in document 065 as follows: "*income received, during the income reference period, by individuals, for themselves or in respect of their family members, as a result of their current or former involvement in self-employed work. Self-employed work covers those jobs where the remuneration is directly dependent upon the profits (or the potential profits) derived from goods and services produced (where own consumption is considered to be part of profits).*" The following should be taken into account in this regard (SILC doc065): "*Net operating profit or loss acquiring to working owners of, or partners in, an unincorporated enterprise, less interest on business loans; Royalties earned on writing, inventions, and so on not included in the profit/loss of unincorporated enterprises; Rentals from business buildings, vehicles, equipment, etc. not included in the profit/loss of unincorporated enterprises, after deduction of related costs such as interest on associated loans, repairs and maintenance and insurance charges.*"

During the SILC interview, this is surveyed on three aspects:

1. Accounting profit or loss
2. Wage paid to the person
3. How much the activities have generated for the household

Not all self-employed people can answer the questions of each of the three aspects. A given aspect might not be applicable (e.g. the person does not pay themselves a salary), or the respondent may not be sufficiently informed (e.g. their accountant handles the bookkeeping). For the calculation of PY050, the 3rd aspect is used in the first instance. If this information is not available, the 2nd aspect is used. If this information is not available, the 1st aspect is used.

However, operationalisation in SILC suffers from a number of problems when it is ignored. First of all, royalties is not explicitly enquired about. Secondly, income earned during the income reference period is enquired about, but most respondents will interpret this as self-employment during the income reference period. In this way, part of the income from previous work as a self-employed person can be overlooked. Thirdly, Eurostat states in document 065 that persons who pay their own social contributions but are otherwise employees must be treated as employees (cf. bogus self-employed). However, this distinction cannot be made based on the tax files as they declare their income as self-employed.

For tax purposes, two broad categories of self-employed persons can be distinguished: those who work in their own name (i.e. sole proprietorship) and those who have set up a company (i.e. a legal entity) of which they are managers. The first category is further subdivided into (1) industrial, commercial or agricultural enterprises, (2) liberal professions, official posts or other gainful activities and (3) assisting spouses or legally cohabiting partners. Together with royalties and income from previous self-employed work, this brings the total to six types of income of self-employed persons described below. An overview of all codes used is given in Appendix 4.

5.1.1. Traders and farmers

The first category of self-employed are traders and farmers working in their own name. This means that they pay tax on the company's profits through personal income tax rather than corporate income tax. One characteristic of their activities is that they sell goods, which implies that they first have to buy and/or produce these goods. The declared gross profit (code 6000) refers to the difference between the original cost of these goods and the price received for them, less VAT. Unlike employees, self-employed persons are required to provide their own working environment and can therefore declare professional expenses for tax purposes which are deducted from gross profit for the PY050 variable. Since in the case of self-employed persons this involves a large proportion of the costs borne by the employer for employees, the professional costs are included in the calculation, whereas this was not the case for employees. This relates to both ordinary professional expenses (code 6060) and the costs associated with the reimbursement of any assisting spouse or legal cohabitant (code 6110). One challenge here is that social security contributions are also seen as professional costs, and are included in code 6060. For PY050G the social contributions must be included, but not for PY050N. To cover this, social security contributions are simulated and deducted from professional costs so that they can be processed separately. However, this simulation is particularly challenging because until 2014 the social contributions were calculated on the basis of income year N-3, corrected by a weighting factor[21].

A different calculation has been used since 2015. The contributions are initially estimated on the basis of the income of year N-3, and once the income of year N is known (in year N+2), the true amount of the social contribution is calculated and a possible correction is made so that the contributions actually relate to the income of year N. As such, a self-employed person paid contributions in 2015 on the basis of the income of year 2012. In 2017, the income for 2015 is known, and the self-employed person has to pay or will receive a refund. Income brackets are also used for the calculations and are indexed annually. Moreover, different rules apply to self-employed persons in their main occupation than to self-employed persons in their secondary occupation. IPCAL code 6170 indicates which part of the income was earned in the secondary occupation so that it can be correctly charged. For starting self-employed, there are different rules. For the calculations in this report, the income of the given year is used to make the simulation, without distinction to starters and more experienced self-employed, because this information is not available.

There are two ways to pay assisting spouses or legally cohabiting partners. The first applies to partners who have no other income (code 6110). This income is declared for tax purposes by the partner (see below). The second applies to partners who do have another income (code 6160). In this case, the partner does not have to declare the amount received fiscally. As such, for traders and farmers who pay their partner, only code 6110 is subtracted, because this income is counted for the recipient.

In order to go from gross to net profit or loss, in addition to social security contributions, taxes must also be deducted. This also poses challenges, as self-employed persons have to make advance payments in the income year. The final tax will be calculated later with the tax return. To approximate the amount due as closely as possible, taxes are simulated on the basis of the tax brackets and applicable rates of 25%, 30%, 40%, 45% and 50%.

5.1.2. Income from the liberal professions, offices, posts or other gainful activities

The liberal professions constitute the second group of self-employed persons; they have their own specific tax codes to indicate both income and professional costs. Again, two codes can be indicated for payments to assisting partners: code 6690 for partners who declare their own income and code 6630 for partners who do not. This is processed in the same way as for traders and farmers. Professional costs are also broken down into ordinary professional costs (code 6570) and the payments to partners mentioned above (code 6690). Where the social security contributions paid were included in the professional costs for the traders and farmers above, they are shown separately for the liberal professions in code 6560. This makes it

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21 For example: A self-employed person in main occupation with a taxable income of less than 12,597.43 euros in 2012 had to pay social security contributions of 2,771.44 euros. If the taxable income is higher, the contribution is calculated in instalments: (1) for the part between 0 and 54,398.06 euros a rate of 22% applies, (2) for the part between 54,398.07 and 80,165.52 euros a rate of 14.16% applies, (3) for everything above 80,165.52 euros no additional contribution has to be paid. The same limits are applied for self-employed persons in secondary employment, except for the first bracket: incomes under 1,393.70 euro were free of contributions in 2012. To calculate the contribution for 2012, the income of 2009 is used, weighted by a coefficient of 1.095035 to better approximate the income in 2012.

easier to construct the income variable: for the gross calculation only professional costs are deducted, for the net calculation, social security contributions are also deducted. Finally, the taxes are calculated in the same way as for traders and farmers.

5.1.3. Assisting spouses and legally cohabiting partners

Assisting partners form the third category of self-employed persons. As already indicated, there are two types: those who have other income, and those who do not. If the latter are remunerated for their activities as assistants, they must declare this in the personal income tax. The remuneration of the former is declared under the professional income of their partner. Social contributions paid are shown separately (code 4510), and taxes are simulated again as above so that both the gross and net variant of their income can be calculated.

5.1.4. Managers

Managers in the fourth category pay tax on their company's profits through corporate income tax. In order to provide for themselves, they pay themselves a monthly wage that is taxed in personal income tax (code 4000). Some managers are employed, and their income is included in employee income as indicated above. As with employees, the amounts in IPCAL are gross taxable - social security contributions have already been deducted. These must therefore be simulated again and added to the amount indicated in order to arrive at a gross income. In some cases, the manager's company pays these social security contributions as a benefit in kind. In this case, it is already included in the remuneration in code 4000. Based on IPCAL, we cannot make a distinction between company managers who pay social security contributions themselves and those who do not, so we simulate and add them up for everyone. Finally, in order to go from gross to net income, special social security contributions and taxes have to be deducted. As is the case for employees, company managers pay them via withholding tax on professional income (code 4070).

5.1.5. Royalties

Royalties is a fifth source of income within SILC under the title self-employed. For tax purposes, royalties must be declared as income from movable assets. Since 2012 (SILC 2013), all royalties must be declared in the personal income tax - even if they have already been taxed at source, but until then this was not always the case. Some royalties were taxed at source and were optional in IPCAL, others were taxed through personal income tax and thus included in IPCAL. No social security contributions are paid on copyrights, but 15% withholding tax on income from movable assets is simulated for the calculations.

5.1.6. Profit and benefits of a previous professional activity

The latter type refers to profits and losses from a previous self-employed activity that had already ceased during the income reference period. The amounts indicated are gross; social security contributions are not due and taxes are simulated as above to move to a net figure.

5.2. Comparison between SILC and IPCAL

Based on the above, an IPCAL version of PY050G and PY050N has been constructed. The vast majority of respondents reporting income as self-employed in SILC indicate the same type of income in the tax files, but not all (Table 14). Some of them are only present in SILC and do not have an IPCAL tax return, or have declared another type of income fiscally (e.g. income as an employee).

Table 14: Number of beneficiaries of profit or loss as self-employed (PY050)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	894	892	865	874	901	925
SILC (S)	719	714	707	655	705	682
S+I	622	631	621	597	631	633

Another part of them can only be found in IPCAL. Analysis of these respondents shows that they report low incomes in the tax files as self-employed persons. There are three reasons for this: the respondent forgot to report something, the

respondent misclassified something and the income was not explicitly enquired about in the SILC (cf. royalties and previous activities). Situations of forgotten income are, for example:

- Some respondents report employee income, unemployment benefits and/or pensions in SILC and IPCAL that together appear to be a plausible annual amount, coupled with self-employment income in IPCAL. If it were a secondary income, we would find it in those specific codes for traders and farmers, and liberal professions - but this is often not the case. It therefore relates to actual income from a main occupation, since from a tax point of view it is more interesting to identify it as a secondary occupation if it is actually a secondary occupation.
- Some respondents indicate a very low income as a self-employed person in IPCAL (in combination with another type of income that is in both sources), such as 0.01 or 1 euro. It is unclear what the (fiscal) reason for this is, or in which situations this is possible.
- Some respondents only enter professional costs fiscally, without an income.
- Some respondents indicate that they are students in SILC, and have a rather low income as a self-employed person in the tax files. They may be self-employed students.
- Some respondents indicate tax income as assisting spouse, but not in SILC.

Situations in which respondents have misclassified their income in SILC are, for example:

- Some respondents report employee income, unemployment benefit or pension in SILC, but only declare income in the tax files as self-employed.
- Some respondents only provide information for the calendar question in SILC (e.g. 12 months employee with income), without reporting income. On the basis of this information, an employee income is imputed for them, while in IPCAL they only declare income as self-employed.

This section first compares the social security contributions and then moves on to gross and net profit or loss in SILC and IPCAL. All amounts refer to annual amounts expressed in euro.

5.2.1. Estimate of social security contributions

As indicated above, social security contributions for traders and farmers on the one hand and managers on the other hand had to be simulated in IPCAL. As these are also enquired about in the SILC interview, it is possible to verify the quality of the simulations (Table 15). The estimate is always higher than the reported amount in SILC. In SILC, however, it relates to the social contributions estimated for income year N, calculated on the basis of income N-3; whereas for IPCAL the actual income in N is used. This difference has been large in the last three years of analysis in particular. What is also striking is that the standard deviation in IPCAL is smaller than that in SILC, because it may indicate that the simulation does not sufficiently capture the individual differences. However, the results should be sufficiently nuanced in the context of the relatively small sample involved in this analysis. It is certain that the social contributions based on IPCAL are fundamentally higher than those reported in SILC, which - under the assumption of identical income in both - will influence the gross comparison in the sense that higher gross amounts are expected in the tax files.

Table 15: Comparison of social security contributions in SILC and IPCAL expressed in euro

	2013		2014			
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	332	332	316	316	292	292
Mean	5,496	5,872	5,528	5,930	5,717	5,870
Difference in mean	376		402		153	
Difference in mean (%)	**6.84%**		**7.27%**		**2.68%**	
Standard deviation	5,427	3,702	4,974	3,801	4,556	3,665
	2013		2014			
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	308	308	312	312	309	309
Mean	5,426	6,250	5,824	6,533	5,733	6,868
Difference in mean	824		709		1,135	
Difference in mean (%)	**15.19%**		**12.17%**		**19.80%**	
Standard deviation	4,115	3,878	4,650	4,076	4,177	4,116

5.2.2. Gross profit and loss

Table 16 clearly shows that there are large differences in mean between SILC and IPCAL in terms of gross income as a self-employed person; the income is already significantly greater than differences in employee income and seems to increase over the years. This difference is mainly due to a yearly increase of the average in IPCAL versus stability (and sometimes decrease) in SILC, and may indicate that the questions during the SILC interview are not sufficiently accurate to grasp the reality. Indeed, the differences are so great that they cannot only be allocated to the differences in social contributions discussed above, although this will clearly be an important factor. In addition, it should be noted that for a substantial proportion of respondents, the information on social security contributions is missing from SILC, meaning that the comparison above was only carried out on a sub-sample, and that for some managers, social security contributions have been incorrectly added, whereas they were already included in income as a benefit in kind.

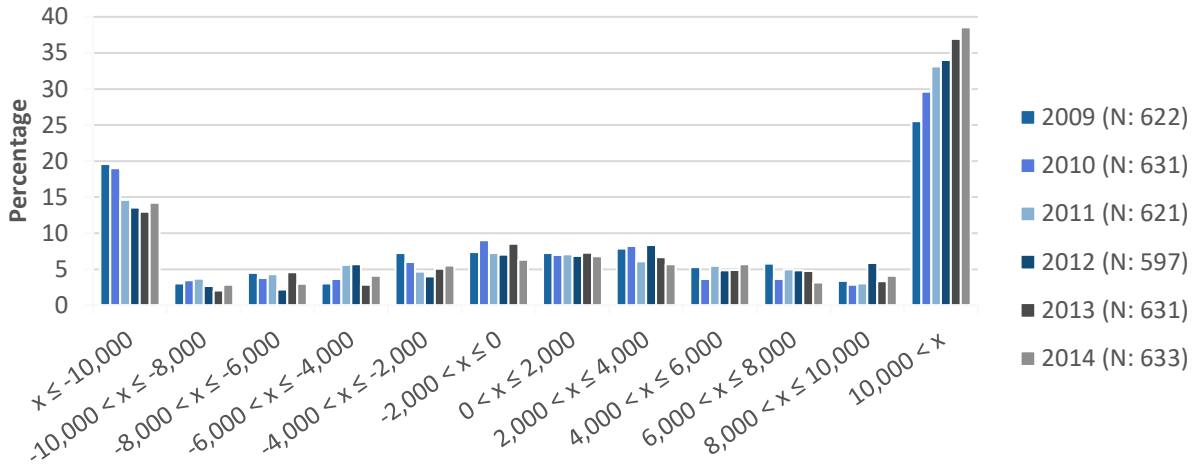
Table 16: Comparison of gross profit or loss as a self-employed person in SILC and IPCAL expressed in euros

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	622	622	631	631	621	621
Mean	27,996	30,981	26,550	31,181	24,445	31,318
Difference in mean	2,985		4,631		6,873	
Difference in mean (%)	**10.66%**		**17.44%**		**28.12%**	
Standard deviation	29,837	39,378	28,048	36,331	25,017	36,221
	2012		2013		2014	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	597	597	631	631	633	633
Mean	23,615	30,139	24,946	32,117	24,766	33,312
Difference in mean	6,524		7,171		8,546	
Difference in mean (%)	**27.63%**		**28.75%**		**34.51%**	
Standard deviation	27,000	31,197	26,084	35,647	23,284	32,576

Difference scores at individual level can provide a better insight (Figure 4). Where these showed a kind of gauss curve for employees - small deviations the rule, large deviations the exception - the distribution for the self-employed looks more like a parabola - small deviations the exception, large deviations the rule. The comparison on an aggregated level for SILC 2009

and 2010 may therefore seem acceptable, while on an individual level it appears that the extremes push the averages out. Those two years also show more negative difference scores (SILC higher than IPCAL) and less positive ones (SILC lower than IPCAL) than the other years, which again explains the 'better' result at aggregate level, as the extremes are better balanced. However, the reason for this is unclear. It is striking that the majority of respondents have a higher gross income in IPCAL than in SILC. An additional analysis for the largest difference scores shows that there is often no clear explanation. SILC does not have enough detailed information to go into this in more detail.

Figure 4: Difference scores between SILC and IPCAL for gross self-employed income expressed in euros



5.2.3. Net profit and loss

After the discussion of the gross construct, it is now the turn of the net construct[22]. The aggregated figures are shown in Table 17 and show the exact opposite result to the gross results: the IPCAL means are significantly lower than the SILC means. In relative terms, however, the differences are smaller. The adjustment with social contributions and taxes have had an immense impact on income. As regards the IPCAL construct, it is already clear that the simulated social contributions based on income are higher than the social contributions reported. The same income was used for the calculation of the taxes, so it can be assumed that there has been an overestimation here too. Once again, SILC does not have enough detail for this to be fully understood. Not to mention that in SILC a subjective estimate by the respondent is initially used for the construction of PY050. This subjective estimate is by definition an estimate of net income (PY050N). This is higher on an aggregate level than the IPCAL construct. It is noticeable in the tax database that the self-employed report high professional costs, as this tax element reduces their taxable income and consequently the tax they have to pay. We assume that the subjective estimation in SILC gives a more realistic picture than the fiscal one. However, this net reporting implies that an imputation is necessary in SILC in order to arrive at a gross amount. The large differences at that level can possibly be explained by an inaccurate net-gross imputation. However, the qualification must again be made that these aggregated figures conceal large individual differences. Difference scores of the net amounts also show very large deviations (both positive and negative) for a substantial proportion of the self-employed.

22 In IPCAL, a number of respondents were 'lost'. These are respondents who declare exactly the same amount of professional costs as income. Since they declare an income, they have to pay social security contributions, but in our calculation they do not have to pay taxes because their taxable income is zero. They had a gross value equal to their social contribution (income - cost + social contributions), but no net value (income - cost - tax).

Table 17: Comparison of net profit or loss as a self-employed person in SILC and IPCAL expressed in euros

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	614	614	625	625	619	619
Mean	21,439	18,343	20,515	18,430	19,687	18,531
Difference in mean	-3,096		-2,085		-1,156	
Difference in mean (%)	**-14.44%**		**-10.16%**		**-5.87%**	
Standard deviation	21,941	21,554	21,204	21,416	19,466	20,129
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	595	595	625	625	620	620
Mean	19,645	17,936	20,911	19,435	20,336	20,196
Difference in mean	-1,709		-1,476		-140	
Difference in mean (%)	**-8.70%**		**-7.06%**		**-0.69%**	
Standard deviation	22,494	17,921	22,069	20,374	16,718	18,895

5.3. Conclusion

On the basis of the above analysis, it is clear that caution is advisable in administrative data regarding the income of the self-employed. Not only are there large differences between the two data sources on an aggregated level, they are also significant on an individual level. Moreover, this discussion is not necessarily relevant, as the information is only available in IPCAL and not in Belcotax. This means that the future SILC is a priori - and independently of the above results - required to estimate the income of the self-employed via survey questions. Company managers (not in employment - they are included in the employee income) also have timely administrative information in Belcotax. However, double counting of incomes should be avoided, which is why we choose to enquire about the profits and losses of the self-employed through the survey anyway. We need to be cautious here, for example for respondents who have an annual salary as an employee in Belcotax, and at the same time report an annual income as a self-employed person during the interview. However, given the availability of royalties as a very specific part of the income from independent activities in Belcotax, these will be collected administratively.

6. PENSIONS FROM INDIVIDUAL PRIVATE PENSION PLANS (PY080)

As indicated in point 4 above, the Belgian pension system consists of three pillars. This section deals with the third pillar pension, the pension that is built up individually and privately by Belgians. Once again, a gross (PY080G) and a net (PY080N) variant must be supplied to Eurostat.

6.1. Linking concepts and codes

Again, we start with the definition: what is requested by Eurostat, and how does this relate to the information available in SILC and in the tax datasets? The third pillar of the pension is defined by Eurostat as "*any pension coming from an organized scheme where contributions are solely at the individual's discretion*" (SILC doc065). As also mentioned in point 4, there are two ways to build up such a pension: through pension savings and through long-term savings, which is a kind of life insurance. During the SILC interview, respondents are asked how much they received from one or both of these pension systems during the income reference period.

For both pension savings and long-term savings, beneficiaries are encouraged to withdraw the capital only after retirement, and definitely not before their 60th birthday. Capital taken up earlier than the 60th birthday are taxed very heavily through personal income tax: 33% tax has to be paid on it (in some exceptional cases this is only 16.5% or 10%). This implies that the withdrawal of the capital is present in both Belcotax and IPCAL. On the other hand, in the case of a normal course of affairs, the available capital is taxed at source (tax on long-term savings) at the age of 60 when the tax benefit has been requested at least once. Up to the age of 65, payments can still be made and, as a result, the tax benefit can still be enjoyed without paying additional tax. If the tax benefit has never been requested, the entire capital is tax-free. Most people therefore collect their capital after the age of 60, a time when the tax has already been paid. As a result, the third pillar pension received is not present in the Belcotax and IPCAL tax datasets. The information is only available for the minority who withdraw their capital before the age of 60.

The minority present in the administrative databases need to use tax codes that are also used for the second pillar pension that is part of PY100 - as described below. Since these codes are used relatively often, while we know that only a limited number of third pillar pensions are involved, the amounts in these specific tax codes will a priori be allocated to the second pillar pension (PY100). The codes used are shown in Annex 5.

In order to get to a net amount, the taxes have to be deducted. For the amounts that are taxable separately, the specific tax rate is used. For progressive taxable incomes, the tax rate can be 25%, 30%, 40%, 45% or 50%, depending on the other income. Since only a limited number of respondents use this code, the 25% tax rate is used here.

Finally, it should also be mentioned that in the event of the death of the beneficiary, the survivors receive the third pillar pension. In SILC these amounts belong to survivor's pensions (PY110). Based on the young age of the beneficiaries in Belcotax and IPCAL, we might suspect that this is a survivor rather than the beneficiary itself, but this is not 100% certain. As this again concerns a limited number of respondents, all incomes are included in the relevant codes in PY080[23].

6.2. Comparison between SILC, IPCAL and Belcotax

Due to the limited presence of the 3rd pillar pension in the tax datasets, we cannot fully supply PY080 administratively. In this part of the analysis, we will first look at the frequencies in SILC, as well as the prevalence of the above-mentioned tax codes. On the one hand, it is noticeable that very few SILC respondents report a 3rd pillar pension: 35 in 2009, 28 in 2010, 44 in 2011, 19 in 2012, 31 in 2013 and 22 in 2014. Almost all of them are over 60 years of age - with the exception of 5 respondents in 2009 and 3 respondents in 2011 - and should in theory have a 3rd pillar pension taxed at source, and therefore not present in

[23] As will be discussed below with regard to sickness and disability benefits, the SILC interview enquires about a benefit in the event of the death of a family member. None of the young respondents who have a 2nd or 3rd pillar pension in IPCAL or Belcotax report this type of benefit during the SILC interview. There is therefore no risk of double counting.

IPCAL and Belcotax. This appears to be the case, only in 2010 are there just 2 of them (both 60 years old) who declare a 3rd pillar pension in the tax files.

On the other hand, there are also respondents that we find with a 3rd pillar pension in the tax files in Belcotax, but not in SILC: 32 in 2009, 28 in 2010, 26 in 2011, 28 in 2012, 33 in 2013 and 36 in 2014. Of these, we can assume that these are 3rd pillar pensions collected before the 60th birthday, which respondents forgot to mention in SILC. Before adding these tax incomes to what is already available in SILC for PY080, it should be ruled out that these amounts were reported by the respondents under a different heading during the interview. Terminological confusion can arise with a 2nd pillar pension via a pension fund or pension insurance. It could be that their actual 3rd pillar pension was reported as a 2nd pillar pension during the interview. This does not seem to be the case, since only one of these respondents reported a second pillar pension during the SILC interview in 2009. However, the amount in SILC differs fundamentally from the amount in Belcotax. A second argument supporting the claim that these incomes are simply forgotten in SILC is the age of the beneficiaries in the tax files. They are all under the age of 60 - with the exception of 1 respondent in 2009 and 5 in 2010. In the construction of an administrative 3rd pillar pension, on the one hand the SILC information was used for respondents over 60 years of age, and on the other hand the tax information for younger respondents. Table 18 shows the number of beneficiaries in each data source since 2011 because the 3rd pillar pension only became part of disposable income (HY020) at that time. Note that the SILC respondents are always added in the lines for IPCAL and Belcotax. As both data sources cover a different part of the beneficiaries, the amounts cannot be compared. However, from these figures we can deduce that the number of beneficiaries would increase fundamentally by using the tax data.

Table 18: Number of beneficiaries of 3rd pillar pension (PY080)

	2011	2012	2013	2014
IPCAL (I)	70	52	67	58
SILC (S)	44	19	31	22
BELCOTAX (B)	70	47	64	58
I+S+B	44	19	31	22
I+B	69	47	63	57
Fiscal only I	1	5	4	1
Fiscal only B	1	0	1	1

6.3. Conclusion

As the analysis shows, it is not possible to remove third pillar pensions from the questionnaire and extract the information from Belcotax since the majority of beneficiaries receive a third pillar pension that is taxed at source. As such, the question will only be asked to respondents over 60 years of age. For younger people, administrative information will be added. However, it is certain that the use of Belcotax will substantially improve the quality of PY080.

7. UNEMPLOYMENT BENEFITS (PY090)

With unemployment benefits (PY090), we arrive at the first social benefit. This includes a very wide range of replacement incomes. Again, SILC has to deliver both a gross (PY090G) and a net (PY090N) variant to Eurostat. While employees and the self-employed described above pay into the social security system, the beneficiaries of unemployment benefits, among others, are at the receiving end. A logical consequence of this is that no social security contributions are paid on these replacement incomes. However, Eurostat's definition is much broader than what is regarded as unemployment benefit in the strict sense of the term. For example, severance pay and early retirement pensions also fall under this category, but social security contributions are paid on them. Different types of unemployment benefits will therefore be treated differently. In this section of the report, the possibilities of IPCAL and Belcotax are examined more closely.

7.1. Linking concepts and codes

As indicated, PY090 covers a wide range of benefits, which are defined by Eurostat in SILC document 065 as follows: "*Full unemployment benefits; Partial unemployment benefits; Early retirement for labour market reasons; vocational training allowance; Mobility and resettlement benefits; Severance and termination payments; Redundancy compensation; Other cash benefits".*

Currently, the following are enquired about in the SILC interview: severance pay; early retirement; hiring allowance; ordinary unemployment benefit; benefit for career break or time credit; income guarantee benefit; benefit from a livelihood security fund; allowance for attending vocational training; child care or mobility allowance; and other types of unemployment benefit. The latter form of unemployment benefits includes many minor benefits such as temporary unemployment in, for example, the construction sector, youth holidays, senior holidays, allowances for host parents in very specific circumstances, allowances for teachers during holidays in specific circumstances, start-up bonus, transfer premium, premium for individual vocational training, incentive bonus, ... All these types of unemployment benefits are included in IPCAL and Belcotax, and are shown in Appendix 6. Again, there are a number of challenges that are first explored before looking at the actual results.

7.1.1. Challenge 1: Social security contributions

As briefly mentioned as an introduction to unemployment benefits, no social contributions are due on most unemployment benefits. In other words, the amounts in the tax databases are gross amounts. For other types of unemployment benefits, however, these contributions are due, and the amounts in IPCAL and Belcotax are taxable on a gross basis in such cases. For the gross taxable amounts, social security contributions are estimated: 6.5% for early retirement and 13.07% for severance pay and hiring allowances.

7.1.2. Challenge 2: Insufficient detail in IPCAL and Belcotax

As was the case for employees, there are a number of tax codes for which the amounts do not exclusively fall under the definition of unemployment benefits (IPCAL 2710, 2720 and 3020 - and equivalent codes in Belcotax). IPCAL code 2710 (Belcotax code 18_2066) covers various types of replacement income including career break and time credit (including parental leave), Flemish incentive bonus, allowance from a livelihood fund, allowance from unions, and social fund benefit. These all fall under the definition of unemployment benefits, with the exception of parental leave and the corresponding Flemish incentive bonus which falls under family benefits (HY050). Several options were tested in order to estimate, based on available information, whether the amount in this code is a parental leave benefit or an unemployment benefit. This estimate is then compared with the reported parental leave during the SILC interview. The best result is obtained by allocating the amount in this code to parental leave only when respondents indicate in the survey that they have been on parental leave (full-time or part-time) for at least 1 month during the income reference period. An illustration based on SILC 2011: there are 60 respondents who answered the specific questions about parental leave[24] during the SILC interview. 51 of them have an amount in the relevant IPCAL and Belcotax code. Back to the total of those 60 respondents, 45 of them indicated at least one month of parental leave in the calendar question. All in all, there were 12 respondents with an amount in IPCAL

[24] Specifically, this relates to the amounts received as compensation for loss of income due to parental leave.

and Belcotax who answered the questions about parental leave, but did not refer to parental leave in the calendar. Only for these 12 will the income therefore be incorrectly considered as unemployment benefit, rather than as family benefit.

The arrears indicated in IPCAL code 2720 (Belcotax code 18_2067) as well as the December payments in IPCAL code 3020 (Belcotax code 18_2074) do not exclusively refer to arrears and December payments of the 'other replacement incomes' discussed above, but also to arrears and December payments for the supplementary sickness or accident benefit (IPCAL code 2690 - Belcotax code 14_2061) and occupational disease and accident benefits (IPCAL code 2700 - Belcotax code 14_2062) both of which belong to sickness (PY120) or disability benefits (PY130). The IPCAL codes 2690, 2700 and 2710 can give an indication of the type of income contained in codes 2720 and 3020, but nothing more. If at least one of the basic codes is present, income is divided proportionally in codes 2720 and 3020[25]. If these basic codes are not present, income in codes 2720 and 3020 goes to unemployment benefits because there are more beneficiaries of this type of replacement income than of sickness or disability benefits. An important nuance, however, is that these codes are not used very frequently.

7.1.3. Challenge 3: Withholding tax on professional income

The same tax codes are used for the construction of gross and net unemployment benefits. As is the case for employees, taxes are paid via withholding tax on professional income, so they are deducted from the gross taxable unemployment benefits declared. However, a specific number of groups do not pay withholding tax on professional income (e.g. people living alone, people living together with a family, unemployed people who benefit from an exemption for social and family reasons). Their taxes due will of course be settled in the final settlement of the personal income tax. The IPCAL and Belcotax codes therefore only cover part of the tax due, as is the case for employees. However, the exemption from withholding tax on professional income means that for a number of unemployed people we will have a net amount equal to the gross taxable amount. This does not prevent a comparison with SILC as the respondents have actually received the gross taxable amounts and will therefore also report this during the interview.

The same two IPCAL codes for employee withholding tax are also used here. Once again, a factor is calculated which reflects the unemployment benefit part in relation to the other incomes concerned. Through this factor, a proportional part of the withholding tax on professional income is then allocated to unemployment benefits. Given that some unemployed people do not pay withholding tax on professional income, but may have other incomes on which withholding tax on professional income has been paid, this way of working may lead to an inaccurate estimate. A part of the withholding tax will - incorrectly - be deducted from the gross taxable amount. At the same time, the withholding tax on professional income will be underestimated for the other incomes concerned, resulting in an overestimation of the net amounts[26].

The information in Belcotax is more detailed. Sheets 281.13 and 281.17 only contain unemployment benefits and the withholding tax on professional income can be deducted in full. Sheets 281.10 and 281.20 primarily contain income from employment, as well as the severance pay and hiring allowance, which are defined as unemployment benefits. Here again, a factor is calculated to allocate a proportional part of the withholding taxes on professional income.

7.2. Comparison between SILC, IPCAL and Belcotax

Now that the administrative variables have been constructed, they can be compared with the empirical variables from SILC. Similarly to the previously discussed incomes, again no perfect one-to-one correlation appears between the three sources in terms of the number of beneficiaries (Table 19). On the contrary, there is a clear difference between SILC on the one hand and the fiscal sources on the other, which indicates that a substantial share of unemployment benefits is forgotten about in

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25 In the first instance, the sum is made of IPCAL codes (and equivalent Belcotax codes) 2690, 2700 and 2710. It is then examined to what extent the amount needs to be allocated to parental leave in 2710. If this is not the case, the share of 2710 in that total sum is looked at. This ratio is then also applied to allocate the appropriate fraction of the amounts declared in 2720 and 3020 to unemployment benefits.

26 A hypothetical example with simple figures: A person has declared 5,000 euros gross taxable unemployment benefits. Owing to their personal situation, no withholding tax was withheld. The same person also declares 2,000 euros gross taxable income as an employee, together with 200 euros already withheld withholding tax on professional income. According to the calculation used, 5,000/(5,000+2,000) or 71.4% of the withholding tax on professional income (142.8 euros) is deducted from the gross taxable unemployment benefit and 28.6% (57.2 euros) from the gross taxable employee income. Net unemployment benefit would then be 4,857.2 euros instead of 5,000 euros, and employee income would be 1,942.8 euros instead of 1,800 euros.

SILC. This concerns around 1,000 people every year, which is about half of the number of people receiving unemployment benefits in the tax files. Analysis shows that it is 'actual' unemployment benefits that are forgotten about, rather than severance pay or early retirement.

Table 19: Number of beneficiaries of unemployment benefits (PY090)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	2.398	2.504	2.347	2.375	2.326	2.338
SILC (S)	1.425	1.441	1.431	1.340	1.245	1.281
BELCOTAX (B)	2.395	2.494	2.343	2.374	2.349	2.346
I+S+B	1.336	1.321	1.318	1.246	1.149	1.186
I+B	2.369	2.471	2.335	2.360	2.315	2.325
Fiscal only I	29	33	12	15	11	13
Fiscal only B	26	23	8	14	34	21

However, the amounts of unemployment benefits which are only in the tax datasets are overwhelmingly small[27]. Since workers may receive small unemployment benefits in a number of specific situations - while at work, or owing to a short break - it is not surprising that they answer 'no' to the filter question of whether they have received unemployment benefits, even if this gives a comprehensive overview of potential benefits. A detailed look at these cases indeed shows that it is primarily income that respondents forget about during the SILC interview:

- Unemployment benefits in the tax datasets, which only consist of arrears, are easily forgotten about during the interview.
- Respondents who do not report any income in SILC, only unemployment benefits in the tax sources.
- Respondents who do not mention any severance pay in SILC, which is strange since the question is explicitly asked. The same applies to hiring fees, but this is not requested in the same terms.
- Respondents who have a pension in the three sources, but apparently forgot to mention a small period of unemployment or early retirement during the interview
- Respondents who have an employee's income in the three sources, but also early retirement in the tax files.
- Respondents who have an employee's income in the three sources, but also appear to be entitled to a small unemployment benefit based on the tax files, e.g. youth holidays or senior holidays.

In addition to these overlooked incomes in SILC, it also appears that incomes are misclassified during the SILC interview:

- Respondents who declare a pension in SILC, but only an early retirement pension in the tax files.
- Respondents who declare a pension in SILC, but declare fiscal unemployment benefits that apply specifically to people over 50 years of age.
- Respondents who declare employee income or sickness benefit in SILC, but only the traditional unemployment benefit in the tax files.

While the overlap between IPCAL and Belcotax is very good, there are only a limited number of people who have an unemployment benefit in one of the tax files. On the other hand, there are also about 100 respondents each year who only receive unemployment benefit in SILC and not in the tax files. There is no national register number for some of these people, and no tax information can therefore be linked to them, while others have no tax information. Around half of them have a tax record, but which does not contain any unemployment benefit. This is primarily income misclassified as unemployment benefits in SILC:

- In SILC people report early retirement, while in the tax files ordinary pension, employee income or sickness benefit.
- In SILC people report conventional unemployment benefit, while in the tax files employee income or sickness benefit.

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27 The median fluctuates around 1,000 euros each year, and the mean between 2,000 and 3,000 euros. The mean is significantly higher than the median, suggesting that the benefits are predominantly small and only a limited number are higher.

- In SILC, people report benefits for career break or time credit (not parental leave), in combination with employee income while in the tax files they reportonly employee income. It may still be an unpaid form of career break or time credit.
- In SILC as well as in the tax files, people have an employee income. They also have severance pay, but only in SILC. Based on the tax datasets, it is clear that the respondents have indeed changed jobs (cf. early holiday pay is listed). It is possible that the respondent confuses the early holiday pay with severance pay.

7.2.1. Gross unemployment benefits

Differences and similarities between gross unemployment benefits in IPCAL, Belcotax and SILC are again examined at both aggregate and individual levels. The aggregated data are shown in Table 20 and still show rather large differences between the six years of analysis in terms of SILC versus tax sources, and at the same time the great similarity between the two tax sources. Every year, the average in IPCAL and Belcotax is significantly higher than the SILC average (between 9% and almost 19% higher). It should be borne in mind that this analysis only focuses on respondents who are present in the three datasets, which - as shown above - is therefore only a fraction of the available tax data. These large differences between the two types of sources may suggest that SILC respondents who do report at least one type of unemployment benefit may still forget about another type. In addition, large differences in standard deviations are noticeable, which are fundamentally higher in IPCAL and Belcotax, and also fluctuate strongly over the years. This is mainly attributable to severance pay.

Table 20: Comparison of gross unemployment benefit in SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	1,336	1,336	1,336	1,321	1,321	1,321	1,318	1,318	1,318
$\bar{x}$	8,221	8,973	9,001	8,293	9,249	9,270	8,180	9,360	9,385
$\Delta\bar{x}$		752	780		956	977		1,180	1,205
$\Delta\bar{x}$ %		**9.15%**	**9.49%**		**11.53%**	**11.78%**		**14.43%**	**14.73%**
s	7,885	12,038	12,045	6,582	8,485	8,498	6,848	9,475	9,475
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	1,246	1,246	1,246	1,149	1,149	1,149	1,186	1,186	1,186
$\bar{x}$	8,808	9,871	9,911	8,541	10,130	10,159	8,122	9,174	9,202
$\Delta\bar{x}$		1,063	1,103		1,589	1,618		1,502	1,080
$\Delta\bar{x}$ %		**12.07%**	**12.52%**		**18.60%**	**18.94%**		**12.95%**	**13.30%**
s	7,706	11,822	11,838	7,175	23,530	23,532	5,741	12,481	12,505

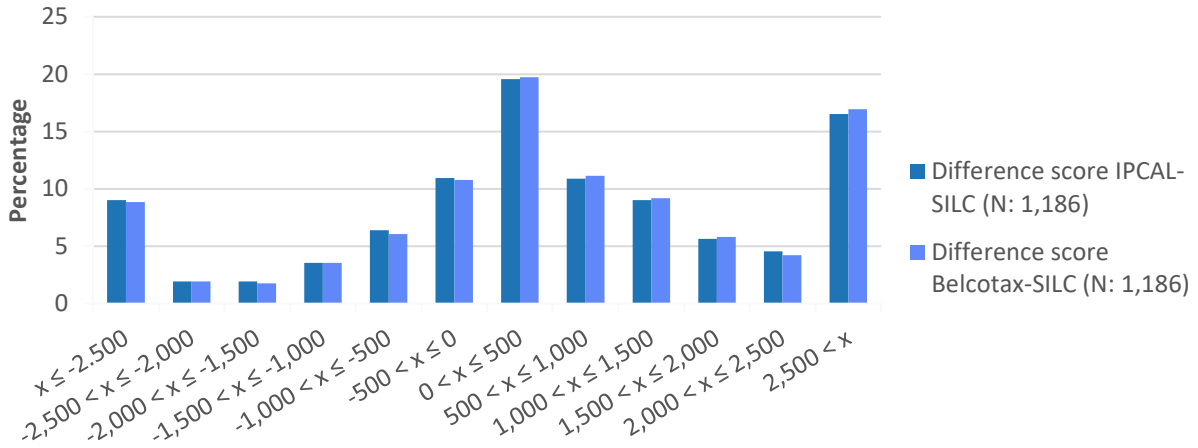
A comparison between the two tax sources is shown in Table 21, and shows remarkable similarity between IPCAL and Belcotax at the aggregate level. The differences in the mean are a maximum of 38 euros. This - together with the good match between the two in number of beneficiaries - shows that using Belcotax can substantially improve the quality of SILC.

Table 21: Comparison of gross unemployment benefit in IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,369	2,369	2,471	2,471	2,335	2,335
Mean	6,266	6,282	6,430	6,443	6,906	6,913
Difference in mean	16		13		7	
Difference in mean (%)	**0.26%**		**0.20%**		**0.10%**	
Standard deviation	10,230	10,308	9,570	9,578	9,995	9,992
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,360	2,360	2,315	2,315	2,325	2,325
Mean	6,677	6,698	7,125	7,163	6,580	6,596
Difference in mean	21		38		16	
Difference in mean (%)	**0.31%**		**0.53%**		**0.24%**	
Standard deviation	10,250	10,268	18,930	19,581	11,311	11,329

As a final step in the gross comparison, difference scores are calculated at the individual level. Since the differences are very small, minor categories were also used to classify them (Figure 5). The two categories around zero are clearly the largest, which refers to very small individual differences between SILC and the tax sources. The two extremes are also rather high - so on an aggregate level they have averaged each other out. It should be noted, however, that the extremes are still remarkably smaller than those of employees and the self-employed. Finally, the figure also shows that the majority of the respondents have a higher amount in the tax datasets than in SILC, as the majority of the observations are on the right side of the zero point.

Figure 5: Difference scores between SILC, IPCAL and Belcotax for gross unemployment benefit expressed in euros (SILC 2014)



An analysis of the respondents with the largest difference scores - i.e. those who are a priori already present in all three data sources - shows that there are different reasons for this:

- Both SILC and IPCAL and Belcotax include the same type of unemployment benefit, but their amounts differ (in both directions):
  - Sometimes the amounts are simply different for no clear reason.
  - Sometimes it can be due to incorrect reporting of the number of months that someone received a given benefit in the SILC interview. For example, the situation where the amount in IPCAL and Belcotax corresponds to the monthly amount reported in SILC, but the respondent indicated that they had received the benefit for twelve months, so the amount was multiplied by twelve. Or, for example, the reverse

situation where only one month is reported in SILC, while in the tax files the amount is almost 12 times higher.
    - Sometimes the unemployment benefits in IPCAL and Belcotax are complemented by other sources of income such as employee income, pensions or sickness benefits, and it is the combination of all these incomes that matches what is reported as unemployment benefits in SILC.
- In the tax files different types of unemployment benefits are declared, whereas in SILC only one of them is reported.
- An amount similar to the reported unemployment benefit in SILC is declared in the tax file as another type of income (e.g. pension, employee income) supplemented by a small amount of unemployment benefit.
- Sometimes a small unemployment benefit is mentioned in SILC, but no severance pay or hiring allowance, while this can be found in the tax files.

7.2.2. Net unemployment benefits

After comparing the gross amounts, we now focus on the net amounts. The results of the aggregated analysis are shown in Table 22. Although there are again large differences between the years of analysis, the absolute and relative differences in mean between SILC on the one hand and the tax sources on the other hand are much smaller. The reason for this may lie in the treatment of severance pay in SILC that are only enquired about on a net basis during the interview. Up to and including SILC 2015, there was no net-to-gross conversion, but this has been the case since SILC 2016. This implies that the gross SILC data were a priori underestimated, which artificially increased the difference with the tax datasets. This does not apply in the net comparison. Moreover, it is notable that the net means of IPCAL and Belcotax are still higher than the net mean of SILC - as was the case for the gross averages. In the case of employees and the self-employed, we saw that the fiscal mean for the gross analysis was higher than SILC and lower for the net analysis.

Table 22: Comparison of net unemployment benefit in SILC, IPCAL and Belcotax expressed in euro[28]

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	1,336	1,336	1,336	1,322	1,322	1,322	1,318	1,318	1,318
$\bar{x}$	7,655	7,764	7,907	7,801	8,054	8,226	7,716	8,051	8,202
$\Delta\bar{x}$		109	252		253	425		335	486
$\Delta\bar{x}$ %		**1.42%**	**3.29%**		**3.24%**	**5.45%**		**4.34%**	**6.30%**
s	7,201	7,450	7,462	5,939	6,240	6,296	6,292	6,606	6,685
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	1,247	1,247	1,247	1,149	1,149	1,149	1,186	1,186	1,186
$\bar{x}$	8,224	8,429	8,577	8,165	8,562	8,689	7,778	8,134	8,214
$\Delta\bar{x}$		205	353		397	524		356	436
$\Delta\bar{x}$ %		**2.49%**	**4.29%**		**4.86%**	**6.42%**		**4.58%**	**5.61%**
s	6,985	7,571	7,611	6,839	12,011	11,952	5,466	8,134	7,575

Whereas the comparison between IPCAL and Belcotax for gross unemployment benefits was still very close, this is not the case for the net amounts (Table 23). The differences remain small, but not as small as in the gross analysis. The reason for this lies in the assumptions made at IPCAL in the allocation of the withholding tax on professional income, which clearly fail to approach the tax complexity, as also mentioned above. This artificially increases the differences between IPCAL and Belcotax in net unemployment benefits. Indeed, one-to-one comparison of the codes shows that - with the exception of

[28] For some years, N is smaller than in the gross analysis due to the calculation of the withholding tax on professional income. For a very limited number of respondents, the allocated withholding tax is lower than the gross taxable amount. In this table, only respondents with an unemployment benefit greater than zero are included.

withholding tax on professional income - the amounts in IPCAL and Belcotax for equivalent codes are identical in the vast majority of cases.

Table 23: Comparison of net unemployment benefit in IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,368	2,368	2,472	2,472	2,335	2,335
Mean	5,324	5,456	5,453	5,592	5,801	5,927
Difference in mean	132		139		126	
Difference in mean (%)	**2.48%**		**2.55%**		**2.17%**	
Standard deviation	6,706	6,750	6,422	6,486	6,785	6,839
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2.361	2.361	2.314	2.314	2.323	2.323
Gemiddelde	5.631	5.759	5.921	6.018	5.638	5.713
Verschil gemiddelde	128		97		75	
Verschil gemiddelde (%)	**2,27%**		**1,64%**		**1,33%**	
Standaardafwijking	7.002	7.080	10.897	10.442	8.033	7.390

7.3. Conclusion

Based on the above results, the conclusion is rather obvious; the use of fiscal data for unemployment benefits will fundamentally improve the quality of SILC. Not only do the tax datasets include more beneficiaries of unemployment benefits, for respondents present in both types of datasets, the differences are rather small.

8. OLD AGE BENEFITS (PY100)

The next income component discussed concerns the first and second pillar pensions (PY100). Third pillar pensions have already been discussed in PY080 above. Once again, old age benefits must be communicated both gross (PY100G) and net (PY100N). For older people it can be difficult to know what type of pension they receive and how much of it they receive (gross). Using administrative data in these cases could not only reduce the survey burden for these respondents, it is also likely to fundamentally improve the quality of the data. This section of the report explores the options of administrative data.

8.1. Linking concepts and codes

In document SILC 065, Eurostat defines old age benefits as benefits received to compensate for loss of income due to old age, more specifically: "*Old age pensions, Anticipated old age pensions, Partial retirement pensions, Care allowances, Disability cash benefits paid after the standard retirement age, Lump-sum payments at the normal retirement dates, Other cash benefits, Survivor's benefits paid after retirement age*". The SILC interview then enquires about: survivor's pension; retirement pension; income guarantee for the elderly (IGO); assistance to the elderly (THAB); unknown type of statutory pension; supplementary pension from a pension fund; and supplementary pension from group insurance. Different codes are used to construct the concept administratively (cf. Appendix 7), although these again throw up a number of challenges which are discussed below.

8.1.1. Challenge 1: Dual use of IPCAL codes

IPCAL codes 2110, 2120 and 2160 are used not only for pensions (including IGO), but also for benefits in the event of accidents at work and occupational diseases. In Belcotax, this problem does not arise because pensions are included in sheet 281.11 and sickness and disability benefits in sheet 281.14. Analysis of these codes shows that there was only one respondent in 2013 and 2014 who indicated an amount in IPCAL code 2110 that came from Sheet 281.14. For all other respondents with these IPCAL codes, the amounts are taken from Sheet 281.11. Consequently, there is no problem in Belcotax and only a limited problem in IPCAL.

In addition, it has already been indicated above that a number of codes are shared for second and third pillar pensions, i.e. PY100 and PY080 (IPCAL codes 2130, 2140 and 2150, and equivalent Belcotax codes). Only in a number of exceptional cases is this a second pillar pension, as previously argued. The amounts are thus allocated in full to PY100, except when a third pillar pension is reported in the SILC interview, in which case no tax information is used. Respondents who report both second and third pillar pensions in SILC are also allocated these amounts on the basis of the tax sources.

8.1.2. Challenge 2: Conversion interest

Amounts indicated in IPCAL code 2160 (and equivalent Belcotax code) do not refer to the amount received during the income year, but only to a percentage of it. The percentage varies between 1% and 5% depending on the age of the beneficiary when the pension capital is collected. On receipt of the capital before the age of 65, this percentage must be declared for thirteen years. Elderly people only have to declare this for ten years. Some self-employed people, for example, have a second pillar pension through this system. As such, only a fraction of the amount is taxed every year. SILC only includes income earned during the income reference period. In other words, it is particularly important to know when the pension was received - regardless of how long fractions of it are taxed. When IPCAL code 2160 (and equivalent Belcotax code) is filled in, this means that the capital was received in the income year, while the following years IPCAL code 2180 (and equivalent Belcotax code) is used to indicate the fraction. Based on the age of the respondent, the amount in IPCAL code 2160 is converted to the pension capital received. Belcotax contains additional information about the full amount.

8.1.3. Challenge 3: Deductions from the pension

A third challenge concerns the construction of the gross old age benefits on the basis of the gross taxable income. Just as social security contributions are deducted from employee income, a number of social deductions are also deducted from gross old age benefits. However, the simulation is not as simple as for employees because it takes into account monthly gross amounts - amounts that we do not have available in the tax files. In the case of retired officials, for example, 0.5% funeral allowance is withheld; but this status is not available in the tax datasets. For example, for pensioners with a gross monthly

pension higher than an indexed limit, 3.55% 'ZIV' contribution[29] is withheld, but this limit varies depending on the household composition, and the deduction is stopped when a certain lower limit is reached. All information that is not available in SILC or administrative. Finally, the solidarity contribution between 0% and 2%, which is also deducted, is calculated progressively on the basis of limits that take account of the composition of the household. Once again, the necessary information to make this correction is missing. Consequently, no adjustments are made in the construction of the gross old age benefits; the gross taxable old age benefits declared for tax purposes is used to this end.

8.1.4. Challenge 4: Withholding tax on professional income

The familiar problem with regard to withholding tax on professional income also arises with regard to pensions. In IPCAL, withholding tax on employee income, benefits in kind, unemployment benefits, sickness and disability benefits are combined with pensions. In Belcotax there is a shared code for retirement and survivors' pensions. Once again, the same strategy is applied; a proportional part of the withholding tax on professional income is allocated to pensions on the basis of the calculated factor.

Moreover, in SILC only the net second pillar pensions are used, also for PY100G, which straight away has a negative effect on the comparison. This will be rectified in the future SILC.

8.1.5. Challenge 5: Cover for assistance for the elderly

Fifthly, there is no cover for assistance to the elderly in the tax datasets because this is a non-taxable benefit. As such, SILC information is used in the construction of the administrative concepts. At the same time, this implies that these questions cannot be removed from the SILC questionnaire.

8.1.6. Challenge 6: death grants

As a final challenge, we need to take into account the fact that the beneficiary of a second pillar pension may also be death grants. In such cases, the income does not fall under pensions (PY100) but to survivors' pensions (PY110) if this heir has not yet reached the legal pension age. However, the tax datasets do not have enough detail to distinguish between beneficiaries and heirs, as 'young people' can also take up their second pillar pension earlier than when they retire. All amounts are therefore included for PY100. An additional problem is that the net death grant - i.e. incorrectly allocated to pensions - is overestimated because inheritance tax paid on it is not taken into account.

8.2. Comparison between SILC, IPCAL and Belcotax

Now that the administrative constructs have been made, they can be compared with the variables from SILC. As Table 24 shows, there is strong alignment between beneficiaries in the three datasets, although it is not perfect.

Table 24: Number of beneficiaries of pension (PY100)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	2.516	2.549	2.538	2.525	2.735	2.676
SILC (S)	2.331	2.422	2.376	2.292	2.625	2.532
BELCOTAX (B)	2.478	2.518	2.494	2.498	2.706	2.661
I+S+B	2.256	2.295	2.276	2.208	2.458	2.408
I+B	2.465	2.512	2.493	2.492	2.701	2.652
Fiscal only I	51	37	45	33	34	24
Fiscal only B	13	6	1	6	5	9

Again, a number of respondents only have a pension in the tax datasets and not in SILC. In most cases, these amounts are rather low:

[29] Sickness and disability insurance

- Some respondents only have arrears in the tax files. Because the SILC interview enquires about a monthly gross and net amount, and the number of months this was received, it is not surprising that these arrears are forgotten about during the interview.
- A large proportion of these respondents are younger than 50, which substantially reduces the likelihood that they will actually be in retirement. In all sources, we see that they have an employee income, but also a second pillar pension in the tax files. This may be an earlier collection of this pension, or a death grant.
- Some respondents have not yet reached the legal retirement age, have an employee income in all sources, but also a survivor's pension in the tax files, and an amount in IPCAL code 2160 (and equivalent Belcotax code). The latter may refer again to a death grant.
- Some respondents do not have a pension in SILC, but do have a 'different type of pension' in the tax files, possibly a benefit that they do not consider to be a pension.
- Some respondents report a sickness and/or disability benefit in SILC, but only a pension in the tax files. These are all probably misclassifications.
- There are also several respondents who indicate during the interview that they are in early retirement (unemployment benefit), while it appears from IPCAL and Belcotax that they receive a statutory pension. Note that the opposite scenario - reporting an early retirement pension as a statutory pension - was reflected in unemployment benefits.
- Finally, there are also respondents who report 12 months of pension in SILC without a benefit received, while it is clear from IPCAL and Belcotax that they did receive a pension benefit.

On the other hand, SILC also includes respondents with a pension while there is no trace of this tax-wise. The main reason for this is that their national register number is missing and that the information cannot a priori be linked. For the others, a number of trends stand out:

- Some report having received an employee income and a pension during the interview. The employee income is indeed present in the tax datasets, but also an amount under IPCAL code 2170 (and equivalent Belcotax code), which can refer to 'other replacement incomes' that - as indicated above - are allocated to unemployment benefits.
- Some report that they have received a statutory pension but they do not know which type, however in the tax datasets it becomes clear that it is a sickness benefit.
- This are once again respondents who in the tax files appear to be receiving an early retirement pension, but that this is incorrectly reported in SILC, in this case, as an ordinary pension.

8.2.1. Gross pensions

Table 25 presents the gross aggregated comparison between SILC, IPCAL and Belcotax. The table shows an IPCAL mean for 2009, 2010, 2013 and 2014 that is approximately 6% higher than the SILC mean. For the same years, the relative difference between SILC and Belcotax is slightly smaller than that; results comparable to those of employee's incomes and lower than those of unemployment benefits. In contrast to these are larger differences in 2011 and 2012, which exceed 10%. From 2011 to 2012 there is a large jump in the average in IPCAL and Belcotax; a similar trend can be seen in SILC, but there is also an additional decrease from 2010 to 2011. The combination of these two trends immediately explains the larger difference between the two sources in 2011 and 2012. Moreover, this trend in SILC is not due to a selectivity in respondents, a weighted analysis with all SILC respondents gives the same result. However, the reason for this is unclear. What is also striking is that the standard deviations fluctuate very sharply over the years, for each of the sources - and since 2011 they have been much larger from a fiscal perspective. This may be due to the second pillar pensions. Every year, only a limited number of respondents retire and receive a second pillar pension, but the amounts of these pensions are noticeably high. So high that they have a strong impact on the overall results.

Table 25: Comparison of gross pension for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	2,256	2,256	2,256	2,295	2,295	2,295	2,276	2,276	2,276
$\bar{x}$	16,810	17,872	17,502	17,123	18,130	17,728	16,235	18,283	17,969
$\Delta\bar{x}$		1,062	692		1,007	605		2,048	1,734
$\Delta\bar{x}$ %		**6.3%**	**4.1%**		**5.9%**	**3.5%**		**12.6%**	**10.7%**
s	21,297	22,882	22,810	9,116	11,594	11,334	8,672	15,326	15,185
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	2,208	2,208	2,208	2,458	2,458	2,458	2,408	2,408	2,408
$\bar{x}$	18,134	19,962	19,599	18,948	20,118	19,781	19,316	20,546	20,160
$\Delta\bar{x}$		1,828	1,465		1,170	833		1,230	844
$\Delta\bar{x}$ %		**10.1%**	**8.1%**		**6.2%**	**4.4%**		**6.4%**	**4.4%**
s	9,187	18,959	18,883	9,988	16,578	17,028	11,333	14,889	14,756

In order to gain a clearer view of this, the above analysis is repeated, taking into account only the first pillar pensions (Table 26). The differences in the average have clearly decreased, and the results for 2012 are now more in line with the other years. In 2011, however, the relative differences remain large, but the standard deviations have now stabilised.

Table 26: Comparison of gross 1st pillar pension for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	2,253	2,253	2,253	2,295	2,295	2,295	2,276	2,276	2,276
$\bar{x}$	16,078	16,782	16,413	16,997	17,826	17,423	15,969	17,645	17,309
$\Delta\bar{x}$		704	335		829	426		1,676	1,340
$\Delta\bar{x}$ %		**4.4%**	**2.1%**		**4.9%**	**2.5%**		**10.5%**	**8.4%**
s	8,642	9,466	9,240	9,022	10,049	9,738	7,689	9,809	9,548
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	2,206	2,206	2,206	2,454	2,454	2,454	2,405	2,405	2,405
$\bar{x}$	18,106	18,750	18,383	18,906	19,438	19,035	19,031	19,905	19,516
$\Delta\bar{x}$		644	277		532	129		874	485
$\Delta\bar{x}$ %		**3.6%**	**1.5%**		**2.8%**	**0.7%**		**4.6%**	**2.5%**
s	9,181	10,030	9,889	9,976	11,799	11,622	9,243	10,806	10,612

The full comparison between IPCAL and Belcotax again shows large similarities between the two tax sources (Table 27). The differences are in the same order of magnitude as that of employees' income and therefore larger than that of unemployment benefits. Here, too, we see that the standard deviations vary greatly between years, but are rather stable within the same year across the two sources.

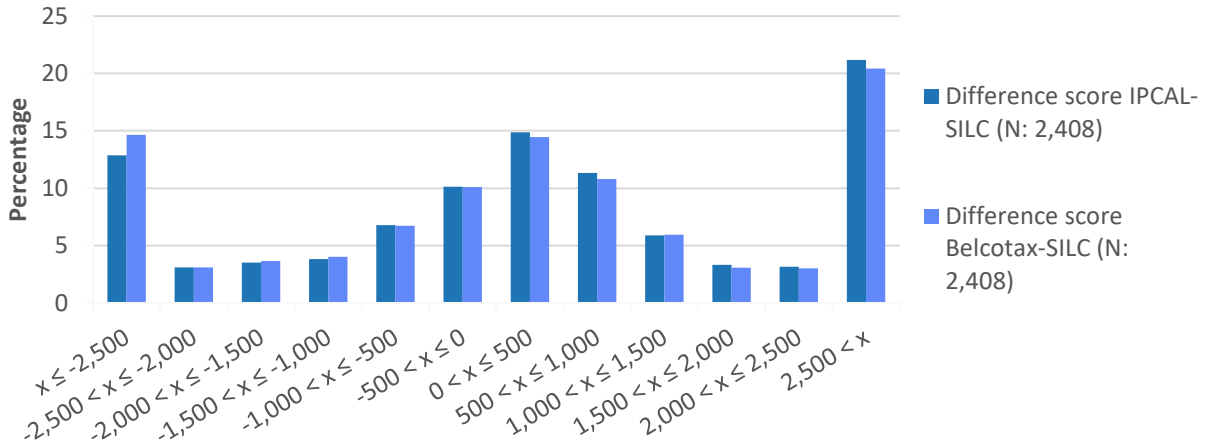
Table 27: Comparison of gross pension for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,465	2,465	2,512	2,512	2,493	2,493
Mean	17,183	16,846	18,399	18,011	17,934	17,600
Difference in mean	-337		-388		-334	
Difference in mean (%)	**-1.96%**		**-2.11%**		**-1.86%**	
Standard deviation	24,136	24,063	25,051	24,939	21,467	21,348
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,492	2,492	2,701	2,701	2,652	2,652
Mean	18,879	18,505	19,184	18,851	19,404	19,045
Difference in mean	-374		-333		-359	
Difference in mean (%)	**-1.98%**		**-1.74%**		**-1.85%**	
Standard deviation	19,871	19,706	17,842	18,186	15,833	15,702

Individual difference scores show a similar picture to that of unemployment benefits (Figure 6). Again, there are both respondents with large positive and large negative difference scores, which make the mean difference rather small. Moreover, it is striking that the trends for IPCAL and Belcotax are very similar, but that there are more positive difference scores in IPCAL and more negative scores in Belcotax. Respondents with those large difference scores are often in one of the situations below:

- Some only report a statutory pension, which corresponds to the three sources, but for tax purposesin the tax files a 'different type of pension' is also indicated, which is not reported during the interview.
- Most respondents have the same types of pensions in SILC on the one hand and IPCAL and Belcotax on the other, but in one source the amount is fundamentally higher than in the others. This applies to both first and second pillar pensions.
- There are also respondents who report a second pillar pension in addition to their statutory pension in SILC, but there is no trace of that second pillar pension in the tax files. This may be another form of remuneration.
- Some respondents may have made a mistake in the interview regarding the number of months they received a certain type of pension. This often concerns a pension for one month in SILC, while the same amount times 12 approximates the amount in the tax sources.

Figure 6: Difference scores between SILC, IPCAL and Belcotax for gross pensions expressed in euros (SILC 2014)



8.2.2. Net pensions

As with the income components discussed above, a comparison of the net amounts is also made for pensions (Table 28). As with the gross results, the differences in 2011 and 2012 are significantly higher than in the other years. What is striking is that the Belcotax average in 2009 is lower than the SILC average.

Table 28: Comparison of net pension for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	2,255	2,255	2,255	2,295	2,295	2,295	2,276	2,276	2,276
$\bar{x}$	15,265	15,564	15,043	14,770	15,643	15,195	14,718	15,835	15,431
$\Delta\bar{x}$		299	-222		873	425		1,117	713
$\Delta\bar{x}$ %		**1.96%**	**-1.45%**		**5.91%**	**2.88%**		**7.59%**	**4.84%**
s	20,476	21,859	19,450	6,711	8,940	7,868	7,341	13,564	11,781
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	2,208	2,208	2,208	2,456	2,456	2,456	2,408	2,408	2,408
$\bar{x}$	15,534	17,233	16,688	16,188	17,247	16,720	16,674	17,598	17,121
$\Delta\bar{x}$		1,699	1,154		1,059	532		924	447
$\Delta\bar{x}$ %		**10.94%**	**7.43%**		**6.54%**	**3.29%**		**5.54%**	**2.68%**
s	6,396	17,459	15,090	7,102	14,569	12,684	9,190	12,583	11,228

The comparison between the two fiscal datasets is shown in Table 29, and is slightly less close than the comparison of gross pensions. Again, the assumptions regarding withholding tax on professional income in IPCAL are the main reason. Nevertheless, the differences remain rather small, which is a good result.

Table 29: Comparison of net pension for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,465	2,465	2,511	2,511	2,492	2,492
Mean	15,048	14,477	16,083	15,421	15,655	15,123
Difference in mean	-571		-662		-532	
Difference in mean (%)	**-3.79%**		**-4.12%**		**-3.40%**	
Standard deviation	23,193	20,455	24,057	20,364	20,270	17,443
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	2,492	2,492	2,698	2,698	2,652	2,652
Mean	16,364	15,772	16,536	15,973	16,708	16,199
Difference in mean	-592		-563		-509	
Difference in mean (%)	**-3.62%**		**-3.40%**		**-3.05%**	
Standard deviation	18,397	15,866	16,017	13,990	13,700	12,267

8.3. Conclusion

This part of the report examined how accurately the first and second pillar pension can be constructed on the basis of IPCAL and Belcotax. Overall, the results are positive. The tax amounts are generally higher than those in SILC, and there are a number of beneficiaries who forget to report their pensions in SILC, which can be retrieved by using administrative data.

9. SURVIVORS' PENSIONS (PY110)

For Eurostat, survivors' pensions received after the statutory retirement age fall under normal pensions. The variables PY110 only cover the survivors' pensions for beneficiaries below the statutory retirement age. The discussion of PY080 and PY100 already addressed the death grants of second and third pillar pensions which fall under the definition of survivors' pensions but cannot be distinguished from the actual second and third pillar pensions. Consequently, part of the income to be discussed in this section of the report is overlooked as it is already included in the previous variables. This part of the report examines the possibilities offered by IPCAL and Belcotax for constructing an administrative gross (PY110G) and net survivor's pension (PY110N).

9.1. Linking concepts and codes

As survivor's pensions received above the statutory retirement age had already been discussed earlier, only a brief summary is needed here. According to the Eurostat definition, these refer to benefits "*that provide a temporary or permanent income to people below the retirement age who have suffered from the loss of their spouse, partner or next-of-kin, usually when the latter represented the main breadwinner for the beneficiary*". They include: "*Survivor's pension, Death grant, Other cash benefits*". In the SILC interview, people are literally asked about survivor's pensions[30].

The specific codes for these are also already included in the overview of first and second pillar pensions (PY100), but are repeated in Appendix 8. Consequently, the following elements of the challenges discussed here also apply to survivor's pensions: deductions, withholding tax on professional income and death grants.

9.2. Comparison between SILC, IPCAL and Belcotax

Table 30 shows the number of beneficiaries of survivors' pensions in each of the three sources and the linked sources. This number is very small, which means that the results of this analysis should be treated with caution. Indeed, one respondent counts for more than 1%. Nevertheless, there is an almost perfect match between IPCAL and Belcotax. However, SILC has a number of beneficiaries less than the tax sources. Those who only have a survivor's pension in the tax datasets either have no income in SILC or report another type of income (employee income, unemployment benefit, etc.) which is also present in IPCAL and Belcotax, and forgot to mention a small survivor's pension during the interview.

Table 30: Number of beneficiaries of survivor's pension (PY110)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	105	96	93	94	99	99
SILC (S)	98	103	88	82	88	88
BELCOTAX (B)	105	96	96	95	100	99
I+S+B	86	88	75	80	79	83
I+B	103	95	93	94	98	98
Fiscaal only I	2	1	0	0	1	1
Fiscaal only B	2	1	3	1	2	1

On the other hand, there are also a number of SILC respondents who report a survivor's pension during the interview of which there are no traces tax-wise. Firstly, these are once again respondents without a national register number whose information could not be linked. Secondly, a number of respondents were not found in the tax datasets. For a third group

30 In addition, the survey also enquires about death grants in the event of the death of a family member following a work (road) accident or an occupational disease. Up to and including SILC 2016, this was incorrectly allocated to disability benefits (PY130) instead of survivor's pension (PY110). This has been corrected since SILC 2017. This has no impact on the final poverty indicators as the (equivalent) disposable income remains stable.

there is tax information, but no survivor's pension in the tax files. Instead, we find a statutory pension, an early retirement pension or a pension in the tax filesin the 'other pension' code.

9.2.1. Gross survivors' pensions

The differences and similarities with regard to gross survivor's pension are first aggregated and then discussed at the individual level. Differences in averages vary greatly from year to year - obviously a consequence of the small sub-sample - but the mean in SILC is systematically lower than the average in IPCAL and Belcotax (Table 31).

Table 31: Comparison of gross survivor's pension for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	86	86	86	88	88	88	75	75	75
$\bar{x}$	13,418	13,547	13,523	13,999	14,645	14,562	13,288	14,767	14,743
$\Delta\bar{x}$		129	105		646	563		1,479	1,455
$\Delta\bar{x}$ %		**0.96%**	**0.78%**		**4.61%**	**4.02%**		**11.13%**	**10.95%**
s	4,676	4,337	4,361	5,236	4,908	4,934	4,401	5,628	5,635
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	80	80	80	79	79	79	83	83	83
$\bar{x}$	15,608	16,124	15,975	15,022	15,908	15,879	15,925	16,617	16,591
$\Delta\bar{x}$		516	367		886	857		692	666
$\Delta\bar{x}$ %		**3.31%**	**2.35%**		**5.90%**	**5.70%**		**4.3%**	**4.2%**
s	5,995	6,598	6,548	4,888	6,283	6,314	5,865	6,137	6,188

A comparison between the two tax sources without taking SILC into account is presented in Table 32. It is striking that differences in average and standard deviations are very small. In other words, the results are comparable to those of gross unemployment benefits.

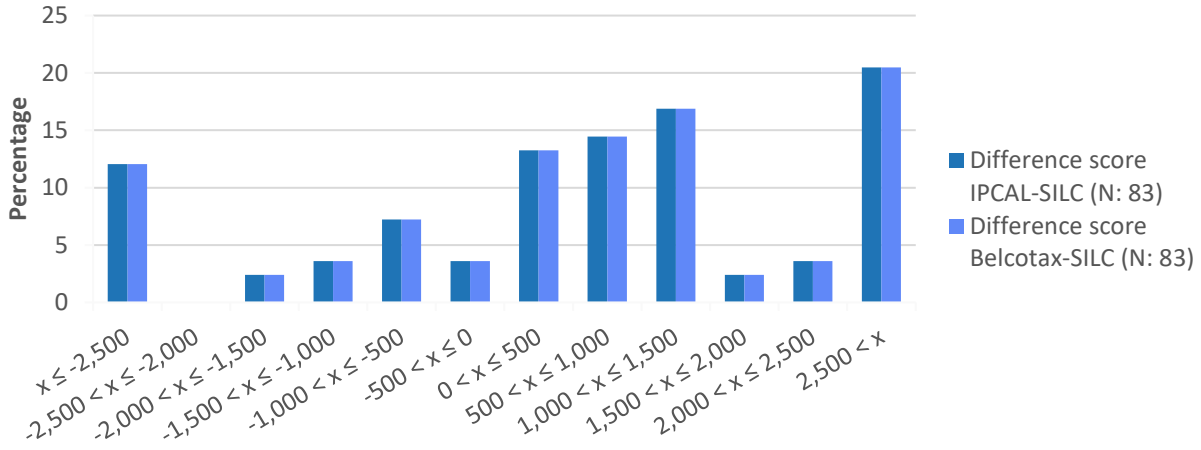
Table 32: Comparison of gross survivor's pension for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	103	103	95	95	93	93
Mean	13,273	13,252	14,062	13,985	13,576	13,536
Difference in mean	-21		-77		-40	
Difference in mean (%)	**-0.16%**		**-0.55%**		**-0.29%**	
Standard deviation	4,904	4,920	5,532	5,545	6,256	6,294
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	94	94	98	98	98	98
Mean	15,418	15,271	15,792	15,730	16,598	16,562
Difference in mean	-147		-62		-36	
Difference in mean (%)	**-0.95%**		**-0.37%**		**-0.2%**	
Standard deviation	6,698	6,684	6,410	6,352	6,136	6,101

However, good aggregated results can hide a variety of differences at the individual level. Figure 7 shows the individual difference scores for SILC 2014. In view of the small number of respondents involved, the figures for the different years are

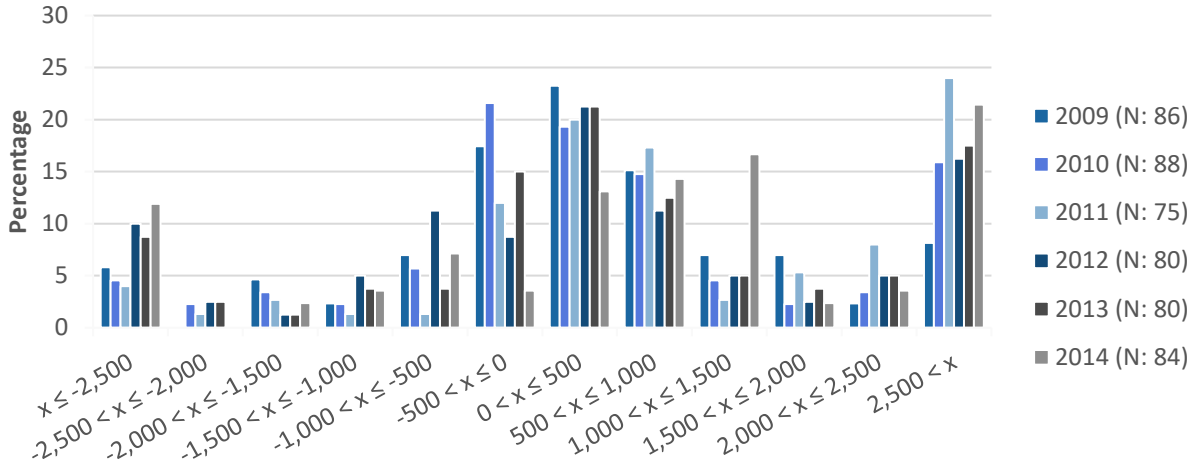
very different from each other; indeed, each respondent weighs more than 1%. In 2014, for example, the distribution of IPCAL was identical to that of Belcotax, but this is not the case every year.

Figure 7: Difference scores between SILC, IPCAL and Belcotax for gross survivor's pensions expressed in euros (SILC 2014)



By way of illustration, Figure 8 shows the difference scores between IPCAL and SILC for all years of analysis. In any event, it is striking that there are more positive difference scores annually than negative ones, which indicates that for most respondents the tax amounts are higher than those reported in SILC. Although the number of respondents with a large difference score is rather small, they could provide additional insight, but for most of them it is unclear what the difference is between SILC on the one hand and IPCAL and Belcotax on the other. A number of other respondents also have other types of pension in the tax datasets that are not mentioned in SILC. This may be a second pillar pension received as an heir.

Figure 8: Difference scores between SILC and IPCAL for gross survivor's pensions expressed in euros



9.2.2. Net survivors' pensions

This section focuses on net survivors' pensions, but these are fully in line with expectations: with the exception of 2009, the tax averages are above the SILC average, and the differences in relative terms have narrowed - which is also logical since the net amounts are lower than the gross amounts (Table 33).

Table 33: Comparison of net survivor's pension for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	86	86	86	88	88	88	75	75	75
$\bar{x}$	12,696	12,644	12,655	13,048	13,574	13,500	12,775	13,451	13,426
$\Delta\bar{x}$		-52	-41		526	452		676	651
$\Delta\bar{x}$ %		**-0.41%**	**-0.32%**		**4.03%**	**3.46%**		**5.29%**	**5.10%**
s	3,609	3,288	3,248	4,118	3,583	3,585	3,957	4,086	4,090
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	80	80	80	79	79	79	83	83	83
$\bar{x}$	13,987	14,418	14,271	13,794	14,333	14,320	14,498	14,992	14,979
$\Delta\bar{x}$		431	284		539	526		494	481
$\Delta\bar{x}$ %		**3.08%**	**2.03%**		**3.91%**	**3.81%**		**3.41%**	**3.32%**
s	3,969	4,316	4,172	4,325	4,172	4,205	4,102	4,118	4,177

The results of the IPCAL-Belcotax comparison again show a good result: the differences between both tax averages and standard deviations are extremely small (Table 34).

Table 34: Comparison of net survivor's pension for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	103	103	95	95	93	93
Mean	12,331	12,340	13,013	12,945	12,398	12,358
Difference in mean	9		-68		-40	
Difference in mean (%)	**0.07%**		**-0.52%**		**-0.32%**	
Standard deviation	3,927	3,900	4,343	4,333	4,941	4,979
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	94	94	98	98	98	98
Mean	13,882	13,737	14,265	14,215	14,897	14,869
Difference in mean	-145		-50		-28	
Difference in mean (%)	**-1.04%**		**-0.35%**		**-0.19%**	
Standard deviation	4,636	4,558	4,425	4,359	4,213	4,177

9.3. Conclusion

This chapter looked at the possibility of using tax sources to construct the SILC variable PY110 - survivor's pension. All things combined, the results are positive. The administrative sources have more beneficiaries and higher amounts, although the results fluctuate strongly over the years. This is due to the very small sub-sample of beneficiaries. A decision on using Belcotax will only be taken after all personal income variables have been examined, but in this case, on the one hand, four questions could be removed from the questionnaire and, on the other hand, the burden on respondents could be reduced.

10.SICKNESS AND DISABILITY BENEFITS (PY120 & PY130)

The last two social benefits are taken together in this part of the report: sickness benefits (PY120) and disability benefits (PY130). The difference between the two lies in the duration of the incapacity for work: up to and including one year is regarded as a sickness benefit, from one year it is a disability benefit. For Eurostat, the difference is also in duration, but then expressed in relative terms. Sickness benefits are for temporary incapacity for work (but this temporary period can be longer than one year) and disability benefits are for permanent incapacity for work. Some tax codes clearly include disability benefits because they refer to that permanent state of incapacity for work. Other codes combine both, e.g. the code referring to 'statutory benefits' refers to both sickness and disability benefits. It is therefore not obvious how to make the distinction between the two. As such, this part of the report explores the possibilities of the administrative data for both replacement incomes together. For the future SILC, it will be examined how the relevant distinction between the two can be made.

10.1. Linking concepts and codes

Both variables are defined in the Eurostat document SILC 065. Sickness benefits refer to "*cash benefits that replace, in whole or in part, the loss of earnings during a temporary inability to work due to sickness or injury*". These cover: "*Paid sick leave, Paid sick leave in case of sickness or injury of a dependent child, Other cash benefits*". Disability benefits refer to "*benefits that provide an income to persons below the standard retirement age whose ability to work and earn is impaired beyond a minimum level laid down by legislation by a physical or mental disability*", and cover: "*Disability pension, Early retirement in the case of a reduced ability to work, Care allowance, Economic integration of the handicapped, Disability benefits to disabled children in their own right, Other cash benefits*".

During the SILC interview, respondents are asked about disability benefit; income replacement benefit or integration benefit; primary incapacity benefit; benefit for work accident or road accident resulting in temporary incapacity for work; benefit for work accident or road accident resulting in permanent incapacity for work; benefit for occupational disease resulting in temporary incapacity for work; benefit for occupational disease resulting in permanent incapacity for work; benefit for death of a family member as a result of an accident at work or occupational disease[31]; personal assistance budget; and finally other benefits relating to sickness or accident.

The codes used are given in Appendix 9, but before making a comparison of the variables, a number of challenges need to be explored for a final time, which are largely similar to those already discussed for other income components.

10.1.1. Challenge 1: Insufficient detail in IPCAL and Belcotax

When discussing unemployment benefits, the problem of the IPCAL codes (and equivalent Belcotax codes) for 'replacement incomes' 2690 (full sickness and disability), 2700 (full sickness and disability), 2710 (part unemployment, part family benefits), 2720 (sickness and disability arrears, unemployment and family benefits) and 3020 (December payments sickness and disability, unemployment and family benefits) was already addressed. In order to isolate the sickness and disability benefits in this regard, the same strategy is applied as for unemployment benefits. The amounts in codes 2720 and 3020 are allocated proportionally according to the ratio in codes 2690, 2700 and 2710.

A second difficulty here concerns maternity leave, breastfeeding leave and paternity leave. These are declared for tax purposes as sickness benefits (PY120) in IPCAL code 2660 and Belcotax code 12_2060, while conceptually they should fall under family/children-related allowances (HY050). The amounts in these codes are allocated to family/children-related allowances (HY050) when the survey shows that the mother reports maternity leave and/or breastfeeding leave. For paternity leave, several possibilities were considered, and it is chosen to allocate the amount in these tax codes to family/children-related benefits (HY050) and not to sickness benefits (PY120) when the same tax code is filled in by the female partner and her amount is allocated to HY050 based on the survey data. In 2014 the amount in IPCAL code 2660 for 78 women was allocated to HY050. In the same year, only 15 men answered the questions on paternity leave, 11 of which were answered using the method described above. On the other hand, 19 other men also received a paternity leave allowance through this

[31] As already indicated for survivor's pensions, up to and including SILC 2015, this component was incorrectly allocated to disability benefits instead of survivor's pensions.

method - one that is forgotten about during the SILC interview. The amounts declared for tax purposes by these 19 men are rather small (as it should be). This brings the total number of fathers on paternity leave to 30, which seems more realistic than the 15 in SILC. Nevertheless, the difference with 78 maternity and/or breastfeeding leave remains large.

Thirdly, as already indicated for pensions (PY100), the IPCAL codes 2110, 2120 and 2160 can also refer to a disability allowance in addition to a pension. The amounts are - as previously argued - allocated in full to pensions. This problem does not arise in Belcotax because there are separate sheets for both types of income.

10.1.2. Challenge 2: Withholding tax on professional income

The problem of withholding tax on professional income in IPCAL is now familiar and does not need further explanation (cfr. Chapter 2 on employees' income, Chapter 7 on unemployment benefits and Chapters 8 and 9 on old age benefits). To a limited extent, the same problem arises with Belcotax. Sheets 281.14 and 281.16 only include sickness and disability benefits. Sheet 281.12 may also include family benefits for paternity, maternity or breastfeeding leave. Sheet 281.18 also contains double information on unemployment benefits on the one hand and sickness and disability benefits on the other hand. A proportional factor is also used to split the withholding tax on professional income.

10.1.3. Challenge 3: Conversion interest

The challenge with regard to conversion interest is not new either, but has already been discussed in relation to old age benefits (PY100). The amount indicated in IPCAL code 2260 and Belcotax code 16_2066 does not refer to the amount received, but to a percentage of it. As with pensions, this percentage is recalculated to the amount received during the income reference period.

10.1.4. Challenge 4: Non-taxable benefits

Finally, two benefits relating to sickness and disability are not taxable and therefore not available for tax purposes: (1) income replacement allowance or integration cover and (2) personal assistance budget. In order to take this into account, we include the SILC information on these benefits in the administrative construct.

10.2. Comparison between SILC, IPCAL and Belcotax

Now that the administrative variables have been created, for these last variables we can compare the number of beneficiaries in the three sources (Table 35). The results are in line with those of unemployment benefits, which means that the tax datasets contain significantly more beneficiaries than SILC. Nevertheless, every year there are a number of respondents who only have a sickness and/or disability benefit in SILC, some of whom are excluded anyway due to a missing (coded) national register number. In addition, it also appears that some of these respondents are permanent civil servants for whom the government - depending on the capital saved in sick days - pays full wages in the event of illness. Consequently, they do not have any sickness benefit in the tax datasets.

Table 35: Number of beneficiaries of sickness and disability benefits (PY120 & PY130)

	2009	2010	2011	2012	2013	2014
IPCAL (I)	1,311	1,302	1,311	1,300	1,291	1,345
SILC (S)	668	644	725	669	738	797
BELCOTAX (B)	1,311	1,305	1,318	1,306	1,313	1,357
I+S+B	529	518	574	549	549	614
I+B	1,287	1,282	1,301	1,283	1,281	1,336
Fiscaal only I	24	20	10	17	10	9
Fiscaal only B	24	23	17	23	32	21

The proportion of respondents who receive only sickness and/or disability benefits for tax purposes is noticeably higher. Generally speaking, the amounts involved are rather low (average is around 2,500 euro per year), which may indicate that they were not periodic payments and are therefore easily forgotten about during the interview. Indeed, the vast majority of

them combine this with an employee income or unemployment in SILC and in the tax files. Once again, there is very good alignment between IPCAL and Belcotax.

10.2.1. Gross sickness and disability benefits

Table 36 shows the descriptive results at an aggregated level, but only for respondents who have sickness and/or disability benefits in each of the three data sources. Again, it is striking that the averages in the tax sources are higher than the SILC average. In terms of relative differences, there are again fluctuations throughout the years with the smallest difference in 2010 and the highest in 2011.

Table 36: Comparison of gross sickness and disability benefits for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	529	529	529	518	518	518	5,74	5,74	5,74
$\bar{x}$	9,115	9,637	9,600	9,820	10,167	10,110	9,762	10,507	10,481
$\Delta\bar{x}$		522	485		347	290		745	719
$\Delta\bar{x}$ %		**5.73%**	**5.32%**		**3.53%**	**2.95%**		**7.63%**	**7.37%**
s	5,565	6,869	6,849	5,823	6,735	6,672	6,275	6,937	6,904
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	548	548	548	549	549	549	614	614	614
$\bar{x}$	10,475	11,015	11,006	11,218	11,935	11,915	11,060	11,802	11,829
$\Delta\bar{x}$		540	531		717	697		742	769
$\Delta\bar{x}$ %		**5.16%**	**5.07%**		**6.39%**	**6.21%**		**6.71%**	**6.95%**
s	5,888	7,230	7,159	7,063	7,377	7,317	6,086	7,254	7,261

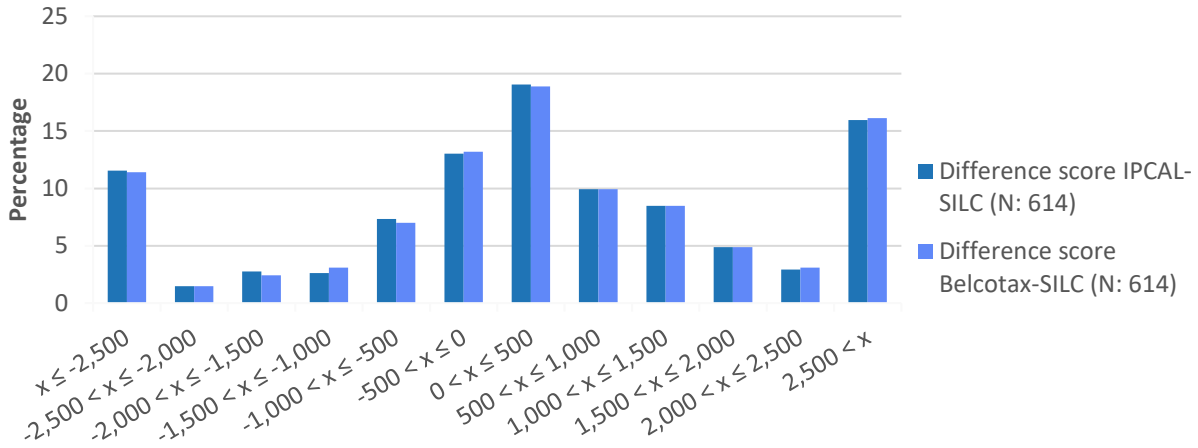
Given the strict assumption above that a respondent should have a sickness and/or disability benefit in each of the three files, a lot of interesting information about the tax sources is lost. Therefore, Table 37 presents the comparison between IPCAL and Belcotax. As is the case for unemployment benefits, the results are particularly good: there are hardly any differences in the average. What is striking is that the averages in IPCAL and Belcotax have clearly decreased in comparison with SILC, which again indicates that it is mainly small sickness and/or disability benefits that respondents forgot to mention during the SILC interview.

Table 37: Comparison of gross sickness and disability benefits for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	1,287	1,287	1,282	1,282	1,301	1,301
Mean	5,209	5,202	5,539	5,517	5,910	5,897
Difference in mean	-7		-22		-13	
Difference in mean (%)	**-0.13%**		**-0.40%**		**-0.22%**	
Standard deviation	6,338	6,322	6,347	6,298	6,697	6,679
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	1,283	1,283	1,281	1,281	1,336	1,336
Mean	6,232	6,231	6,647	6,633	6,724	6,741
Difference in mean	-1		-14		17	
Difference in mean (%)	**-0.02%**		**-0.21%**		**0.25%**	
Standard deviation	6,905	6,876	7,351	7,319	7,235	7,245

The distribution of individual difference scores between SILC and IPCAL on the one hand and SILC and Belcotax on the other hand is once again the same (Figure 9). The majority of SILC respondents have a rather small (predominantly positive, i.e. higher tax-wise than SILC) difference score, but again there are also respondents with larger difference scores, most of which cannot be explained.

Figure 9: Difference scores between SILC, IPCAL and Belcotax for gross sickness and disability benefits expressed in euros (SILC 2014)



10.2.2. Net sickness and disability benefits

This section analyses net sickness and disability benefits. The descriptive data are presented in Table 38 and show a similar trend to the gross data. What is striking is that IPCAL is closer to SILC than to Belcotax, but both tax averages remain higher than the SILC average. Once again, however, there are fluctuations in the order of magnitude of the differences over the years, with the best result for 2010 and the worst for 2014.

Table 38: Comparison of net sickness and disability benefits for SILC, IPCAL and Belcotax expressed in euro

	2009			2010			2011		
	S	I	B	S	I	B	S	I	B
N	529	529	529	517	517	517	574	574	574
$\bar{x}$	8,888	9,149	9,307	9,499	9,736	9,811	9,563	9,993	10,151
$\Delta\bar{x}$		261	419		237	312		430	588
$\Delta\bar{x}$ %		**2.94%**	**4.71%**		**2.49%**	**3.28%**		**4.50%**	**6.15%**
s	5,335	6,339	6,479	5,446	6,330	6,233	5,937	6,532	6,505
	2012			**2013**			**2014**		
	S	I	B	S	I	B	S	I	B
N	548	548	548	549	549	549	614	614	614
$\bar{x}$	10,214	10,556	10,723	10,953	11,399	11,597	10,777	11,303	11,516
$\Delta\bar{x}$		342	509		446	644		526	739
$\Delta\bar{x}$ %		**3.35%**	**4.98%**		**4.07%**	**5.88%**		**4.88%**	**6.86%**
s	5,737	6,920	6,878	6,539	7,102	7,095	5,867	6,859	6,909

A comparison based solely on tax datasets again shows a similar trend (Table 39). The averages have once again fallen fundamentally, confirming that they are rather small benefits that people forget to mention during the SILC interview. The differences in average between the two tax sources are small, but the IPCAL average is annually lower than the Belcotax average.

Table 39: Comparison of net sickness and disability benefits for IPCAL and Belcotax expressed in euro

	2009		2010		2011	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	1,286	1,286	1,281	1,281	1,301	1,301
Mean	4,813	4,961	5,149	5,264	5,486	5,640
Difference in mean	148		115		154	
Difference in mean (%)	**3.08%**		**2.23%**		**2.81%**	
Standard deviation	5,932	6,024	6,013	5,988	6,345	6,378
	2012		**2013**		**2014**	
	SILC	IPCAL	SILC	IPCAL	SILC	IPCAL
N	1,283	1,283	1,280	1,280	1,336	1,336
Mean	5,785	5,969	6,157	6,349	6,297	6,496
Difference in mean	184		192		199	
Difference in mean (%)	**3.18%**		**3.12%**		**3.16%**	
Standard deviation	6,604	6,629	6,996	7,064	6,902	6,974

10.3. Conclusion

This part of the report covered the last two individual income variables: sickness benefits (PY120) and disability benefits (PY130). The results clearly show that the use of administrative data not only reduces the response burden, but also results in a significant increase in the number of beneficiaries of sickness and disability benefits, and the amounts for tax purposes are also higher than the reported survey data.

11.IMPACT OF FISCAL DATA ON POVERTY INDICATORS

The analyses discussed in this report show good results for employee income, contributions to individual private pension schemes, pensions from individual private pension plans, unemployment benefits, old age benefits, survivors' pensions, as well as sickness and disability benefits. In total there are about 140 questions that can be deleted from the questionnaire - disregarding a number of new questions that need to be added to fill in gaps in Belcotax. The response burden falls in any case, but this last part of the report therefore also looks at what the impact would be if administrative information were used for the poverty indicators - bearing in mind that for non-taxable income components the SILC information is incorporated into the administrative construct. However, the results are less positive for the benefits in nature and the income from self-employment. These variables are therefore left to one side.

It became clear from the analyses that when there were discrepancies between SILC on the one hand and the two tax sources on the other, there were two main reasons for this. Firstly, it appears that a number of income components are vulnerable to being forgotten about in the SILC interview (= forgotten income). Secondly, it also appeared that respondents were not always correctly informed about the types of income they received (= incorrectly placed income). Poverty indicators are recalculated using total disposable income at household level (HY020)[32]. Income that was placed in the wrong category during the interview in theory has no impact on this - assuming that the amounts are the same in all sources. The disposable income of these households does not change by using administrative data; only the specific income variables are adjusted. However, incomes that were forgotten during the interview do have an impact on disposable income; for these households, several incomes are included in the calculation.

A first attempt to recalculate the poverty indicators on the basis of fiscal data led to alarmingly high poverty rates, due to a number of problems inherent in the research situation. These are respondents for whom we know for certain that (part of) their incomes cannot be present in IPCAL or Belcotax in any way and therefore have an 'artificially' low or even no income when the disposable income is recalculated:

- Respondents earning an income from undeclared work
- Respondents without a coded national register number that could not be linked
- Respondents who do not file a tax return in Belgium
- International public officials

On the basis of the data available in SILC and the tax datasets, we can identify these respondents. In a new SILC, this missing data can be anticipated and all survey questions can be asked in these cases[33]. Therefore, in the recalculation for these respondents, the necessary SILC information is transferred to the administrative construct. Before looking at the indicators themselves, it should be stressed again that this is not backcasting, for the reasons given in the introduction.

11.1. AROP

The risk of monetary poverty (AROP - at risk of poverty) is the most widely used indicator of poverty and also the one that can potentially be most affected by using administrative data. Indeed, it is calculated by examining what percentage of Belgians have an equivalised disposable income lower than 60% of the median equivalised disposable income. People in this situation are at risk of poverty. Several tables are shown below, each containing the SILC indicator, a re-calculation based on IPCAL and a re-calculation based on Belcotax. The last column always shows the difference between SILC and Belcotax, because - as already argued - Belcotax is the only possible tax source for SILC. A negative difference score implies a lower Belcotax indicator, a positive difference score implies a lower SILC indicator. First of all, the median equivalised disposable income is calculated (Table 40): this is higher in Belcotax than in SILC in each of the years of analysis, with the biggest

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32 More information on the poverty indicators and their calculation is available at this URL: https://statbel.fgov.be/en/themes/households/poverty-and-livingconditions/plus

33 Example 1: After the SILC reform, it is asked for whether the person is an international public official or works for a foreign employer. If this is the case, the respondent will still have to answer all income questions related to that income in order to fill the information gap.
Example 2: A long questionnaire is presented a priori to respondents for whom we suspect at the start of the fieldwork that no tax information will be present.

difference in 2010. In most years, IPCAL fluctuates between SILC and Belcotax. The median in Belcotax also follows the SILC trend; each year the median is higher than the previous year.

Table 40: Median equivalised disposable income expressed in euro

	Median SILC	Median IPCAL	Median BELCOTAX	Δ B-S
2009	19,312.56	19,274.89	19,521.66	209.10
2010	19,464.00	20,051.58	20,330.52	866.52
2011	20,007.89	20,181.82	20,485.09	477.20
2012	20,280.43	20,376.03	20,788.25	507.82
2013	21,482.78	21,456.12	22,056.24	573.46
2014	21,704.70	21,738.70	22,241.36	536.66

Table 41 shows that the official SILC AROP indicator is close to the recalculated Belcotax indicator. With the exception of 2010 and 2012, the difference between the two remains below one percentage point. It is also noticeable that in some years SILC AROP is higher, and in other years Belcotax AROP. This is logical; Belcotax always has a higher poverty threshold than SILC, but that does not mean anything for the final poverty rate. Taking into account all the differences in measurement between SILC on the one hand and Belcotax on the other, this is a very positive result: both sources validate each other.

Table 41: Recalculation of AROP

	AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	14.57%	14.03%	14.68%	0.11pp
2010	14.59%	15.01%	15.73%	1.14pp
2011	15.30%	14.43%	15.13%	-0.17pp
2012	15.29%	13.55%	14.28%	-1.01pp
2013	15.06%	14.65%	15.25%	0.19pp
2014	15.46%	15.28%	15.37%	-0.09pp

Traditionally, a risk of monetary poverty is also calculated on the assumption that the poverty threshold is not 60% of the median, but 40%, 50% or 70%[34]. For the 40% threshold Belcotax always has a higher poverty rate than SILC, but for the 50% and 70% limit there are again both positive and negative differences. All in all, the differences are small, especially when the size of the changes is taken into account. Finally, a number of breakdowns are also considered: gender, age, household type, educational level and activity status during the income reference period[35]. Again, all in all, the differences - both positive and negative - are predominantly small, although there are a number of exceptions:

- Single household in 2010: Belcotax is almost 4 percentage points higher.
- 2 adults, at least 1 65+ in 2011: Belcotax is more than 4 percentage points lower, in 2012 it also approaches the 4 percentage points.
- Other households with dependent children in 2012: Belcotax is more than 4 percentage points lower.
- Unemployed: Belcotax poverty risk is noticeably lower every year, except in 2009 and 2010.

There is no need to find an explanation for the differences in household type. The size of the subgroup is insufficient to have a stable time series. It is therefore logical that the tax data is also subject to this. Since the larger differences only occur here and there in a given year, they are not systematic. This is the most important point. The differences among the unemployed are not surprising either, as the analysis showed that a particularly high proportion of unemployment-related income is forgotten about during the interview. By including these incomes based on Belcotax information, the disposable income, and consequently the probability of ending above the poverty threshold, increases - even if it increases.

34 For the results, see Appendix 10.
35 For the results, see Appendix 11.

11.2. AROPE

Using Belcotax has a (admittedly limited) impact on the AROP indicator. Given that AROP is part of AROPE (at risk of poverty or social exclusion), the latter will also be influenced by a switch to administrative data (Table 42). Indeed, the AROPE indicator refers to a risk of poverty or social exclusion and reflects the proportion of Belgians at risk of monetary poverty (AROP) and/or seriously materially deprived (SMD[36]) and/or living in a household with low work intensity (LWI[37]). Again, the differences are rather small. At first sight, it seems surprising that the difference between SILC and Belcotax is greater for AROPE than for AROP. However, this is a logical consequence of the composition of this AROPE indicator. Unweighted, there are 512 persons in 2014 going from a poverty risk to no poverty risk by using Belcotax; and 482 persons making the reverse movement. In the same year, 372 people went from non-AROPE status to AROPE status. This means that of the 482 respondents going from non-AROP to AROP status, 110 are severely materially deprived and/or live in a household with low work intensity. For them, the AROP status has no impact on their AROPE status. With regard to AROPE, there are 319 persons who go from AROPE status to non-AROPE status. This means that of the 512 respondents who went from AROP status to non-AROP status, 193 already have SMD and/or LWI status. The change in their AROP status has no impact on their AROPE status. These two data together explain the greater difference between SILC and Belcotax.

Table 42: Recalculation of AROPE

	AROPE SILC	AROPE IPCAL	AROPE BELCOTAX	Δ B-S
2009	20.18%	20.13%	20.48%	0.30pp
2010	20.83%	20.99%	21.49%	0.66pp
2011	20.98%	20.96%	21.40%	0.42pp
2012	21.61%	20.49%	21.06%	-0.55pp
2013	20.84%	20.90%	21.41%	0.57pp
2014	21.23%	21.59%	21.57%	0.34pp

11.3. S80/S20

Thirdly, the S80/S20 indicator - a measure of inequality indicating the ratio of the disposable income of the 20% richest to the 20% poorest - is also recalculated (Table 43). The Belcotax indicator is each year higher than the SILC indicator with the exception of 2010; the IPCAL indicator is usually even higher (or identical to Belcotax). This means that there is greater inequality based on tax data. The analysis above indicates that it is mainly vulnerable persons who have higher incomes in the administrative files (cf. unemployment, sickness and disability benefits), but this concerns rather small amounts that are added. However, the result of the S80/S20 indicator shows that richer people earn proportionally more by using Belcotax.

Table 43: Recalculation S80/S20

	S80/S20 SILC	S80/S20 IPCAL	S80/S20 BELCOTAX	Δ B-S
2009	3.91	3.98	3.95	+
2010	3.92	3.90	3.80	-
2011	3.86	3.96	3.97	+
2012	3.95	3.94	3.96	+
2013	3.81	4.09	3.98	+
2014	3.81	4.03	3.96	+

36 Severe material deprivation

37 Low work intensity

11.4. Gini

However, the most well-known measure of inequality is the Gini index; a measure that indicates to what extent the income distribution within a country deviates from a perfectly equal distribution. This is also calculated on the basis of SILC. Table 44 shows that the differences between SILC and Belcotax are greater one year than the next and can be both positive and negative. All in all, however, the differences are small. Moreover, in most years Belcotax is closer to SILC than IPCAL is to SILC, but even there the differences are small.

Table 44: Recalculation of Gini

	Gini SILC	Gini IPCAL	Gini BELCOTAX	Δ B-S
2009	26.39%	26.40%	26.35%	-0.04pp
2010	26.59%	27.20%	26.07%	-0.52pp
2011	26.27%	26.55%	26.46%	0.19pp
2012	26.49%	26.49%	26.42%	-0.07pp
2013	25.93%	27.12%	26.58%	0.65pp
2014	25.91%	26.55%	26.20%	0.29pp

11.5. Poverty intensity

A final poverty indicator is the poverty intensity (RMG[38]), which is the relative median at risk of poverty gap and measures the difference between the median equivalised disposable income of persons below the poverty threshold and the poverty threshold itself, expressed as a percentage of the poverty threshold. Table 45 shows that the RMG in Belcotax is always higher than that in SILC. The figure for IPCAL is even higher - with the exception of 2012. This means that persons with AROP status are generally further away from the poverty threshold when using administrative data. Again, this indicates that those at the bottom of the income distribution have proportionately less frequent higher incomes by using tax data than those at the top of the income distribution.

Table 45: Recalculation of poverty intensity

	RMG SILC	RMG IPCAL	RMG BELCOTAX	Δ B-S
2009	18.13%	19.09%	18.46%	0.33pp
2010	18.01%	18.89%	18.78%	0.77pp
2011	18.60%	21.25%	20.33%	1.73pp
2012	18.66%	19.36%	19.79%	1.13pp
2013	19.19%	21.33%	20.11%	0.92pp
2014	18.78%	21.53%	20.96%	2.18pp

38 Relative median at-risk-of-poverty gap

12.CONCLUSION

This report is the result of an exploratory study carried out by the SILC team of Statbel with the financial support of Eurostat. The main objective of the study was to examine to what extent tax data can be used to provide information for the personal income variables in SILC. To this end, two tax datasets were examined: Belcotax, which contains the preliminary tax information in good time, and IPCAL, which contains the complete tax information at a later date. However, depending on the timeliness of SILC, Belcotax is the only suitable source. In the first instance, the three datasets - SILC, IPCAL and Belcotax - were linked to each other via an anonymised national register number. It has already been noted that this crucial key is missing for a number of SILC respondents, which a priori assumes the comparison, even though the number is low. In the future, it must be ensured that this number is reduced as much as possible. The same analysis strategy was then used for each personal income variable, comparing the definitions in the SILC manual with the operationalisation in the SILC questionnaire, and the available tax codes in IPCAL and Belcotax. Once gaps in SILC and/or the tax datasets had been identified, a construct was built up on the basis of both IPCAL and Belcotax using the tax codes that correspond as closely as possible with the SILC definition.

The analysis shows that the similarity between SILC on the one hand and IPCAL and Belcotax on the other hand is very close for most variables, when averages are compared. Of course, on an individual level, they hide the fact that there are also respondents for whom both types of sources are highly divergent. Sometimes the explanation could be found, but this was not always the case. Moreover, it also appeared that more respondents than expected not only forgot to mention certain income components during the interview, but also that they were not always sufficiently aware of what type of income they had earned and consequently placed the income in the wrong category.

Based on all analyses together, it is decided to use Belcotax in the future SILC for the following variables, sometimes with an adjustment in the questionnaire:

- Employee income (PY010): Belcotax information is used, but the questionnaire checks whether (1) the respondent worked for a foreign or international employer or (2) had a tax-free PhD bursary. Respondents in these categories will still be asked income questions, just like those relating to undeclared work.
- Contributions to individual private pension plans (PY035)
- Pensions from individual private pension plans (PY080): Belcotax information is used for respondents who have not yet reached retirement age, for respondents older than this limit the question is still asked during the SILC interview.
- Unemployment benefits (PY090)
- Pensions (PY100): the survey still enquires about cover for assistance to the elderly, because this is an untaxable income.
- Survivors' pensions (PY110)
- Sickness and disability benefits (PY120 and PY130): here, too, the survey enquires about the non-taxable components, such as income replacement allowance, integration allowance, personal assistance budget and benefit from the Flemish health insurance.

For the benefits in kind and the income of the self-employed, the results were insufficient. Consequently, these components will still be collected via the survey, subject to the small qualification that royalties as part of the income of the self-employed is constructed on the basis of Belcotax.

Moreover, it was also found that a number of respondents did not have a Belcotax record, which does not mean that they did not earn any of the above incomes. This is why the new questionnaire will be built on two strands: (1) a short strand for respondents for whom Belcotax information is available, and (2) a long strand for respondents for whom Belcotax information is not available. However, as indicated in the introduction, an important remark should be made here. The data from Belcotax are available after about four months of fieldwork. This means that it only becomes clear during the fieldwork to what extent Belcotax information is available and whether the respondent has to follow the short or long strand. To resolve this, information from the most recent Belcotax will be used at the start of the fieldwork. If the respondent has tax information there, they will follow the short strand; if not, the long strand.

All in all, this constitutes a fundamental reform of SILC, which nevertheless results in the recalculated poverty indicators being very close to the SILC poverty indicators. It should also be noted that this report only looks at personal income variables, and

that there are also possibilities to use Belcotax for income variables at household level (e.g. in part the family benefits of maternity/paternity leave/paternity leave in HY050, but also the income of household members under 16 years of age H110).

APPENDIXES

Appendix 1: Description of the datasets IPCAL and SILC

Dataset	# Observations	# NISS number	# SILC	# SILC
2009				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL
2010				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL
2011				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL
2012				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL
2013				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL
2014				
SILC R	SILC R	SILC R	SILC R	SILC R
SILC P	SILC P	SILC P	SILC P	SILC P
SILC H	SILC H	SILC H	SILC H	SILC H
IPCAL	IPCAL	IPCAL	IPCAL	IPCAL
SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL	SILC_IPCAL

Appendix 2: Employee income - overview of tax codes

Income component	IPCAL	Belcotax	SILC years
Private PC: Amount of the intervention of the employer	2400	10_2130	10/11/12/13/14
Non-recurring result-related benefits	2420	10_2117	09/10/11/12/13/14
Arrears of non-recurring result-related benefits	2430	10_2127	10/11/12/13/14
Ordinary remuneration for the month of December (government)	2470	10_2070	10/11/12/13/14
Share options	2490	10_2082	09/10/11/12/13/14
Salaries, wages, etc.	2500		09/10/11/12/13/14
- Remuneration		10_2060	09/10/11/12/13/14
- Holiday pay		10_2061	09/10/11/12/13/14
- Fidelity stamps (construction workers JC 124)		10_2069	09/10/11/12/13/14
~~- Benefits of any kind~~		~~10_2076~~	~~09/10/11/12/13/14~~
Early holiday pay	2510	10_2063	09/10/11/12/13/14
Arrears	2520	10_2064	09/10/11/12/13/14
Contributions to travel expenses	2540	10_2077	09/10/11/12/13/14
Taxable at 33%: occasional workers in the horeca sector	2630	10_2141	14
Impulse fund bonus	2670	10_2066	13/14
Salaries for athletes for their sporting activities	2730	10_2119	09/10/11/12/13/14
Early holiday pay for athletes for their sporting activities	2740	10_2120	09/10/11/12/13/14
Arrears by athletes for their sporting activities	2750	10_2121	09/10/11/12/13/14
Remuneration by referees for their activities as referees during sports matches and by instructors, trainers and supervisors for their activities on behalf of sportsmen and sportswomen	2770	10_2123	09/10/11/12/13/14
Early holiday pay by referees for their activities as referees during sports matches and by instructors, trainers and supervisors for their activities on behalf of sportsmen and sportswomen	2780	10_2124	09/10/11/12/13/14
Arrears by referees for their activities as referees during sports matches and by instructors, trainers and supervisors for their activities on behalf of sportsmen and sportswomen	2790	10_2125	09/10/11/12/13/14
Work bonus	2840	10_2115	12/13/14
Withholding tax on professional income	2860	10_2074	09/10/11/12/13/14
Special social security contribution	2870	10_2075	09/10/11/12/13/14
Remuneration for notice period served which meets the conditions for exemption	3060	10_2133	13/14
Arrears for notice period served eligible for the exemption	3070	10_2134	13/14

Remuneration for the month of December (government) for notice period served eligible for the exemption	3090	10_2135	13/14
Remuneration by sportsmen and women for their sporting activities for the notice period served which is eligible for the exemption	3100	10_2136	13/14
Arrears for sportsmen and women for their sporting activities for the notice period served which is eligible for the exemption	3110	10_2137	13/14
Arrears by referees for their activities as referees during sports matches and by instructors, trainers and supervisors for their activities on behalf of sportsmen and sportswomen for notice period served which is eligible for the exemption	3120	10_2138	13/14
Arrears by referees for their activities as referees during sports matches and by instructors, trainers and supervisors for their activities on behalf of sportsmen and sportswomen for notice period served which is eligible for the exemption	3130	10_2073	13/14
Attendance fees	6500	30_2064	09/10/11/12/13/14
Withholding tax on professional income	7580	30_2063	09/10/11/12/13/14
Managers:			
Early holiday pay	4020	20_2064	09/10/11/12/13/14
Withholding tax on professional income	4070	20_2066	09/10/11/12/13/14
Special social security contribution	4090	20_2067	09/10/11/12/13/14
Managers' remuneration in employment	4110	20_2081	09/10/11/12/13/14
Non-recurring result-related benefits	4180	20_2076	09/10/11/12/13/14
Work bonus	4190	20_2083	12/13/14

Appendix 3: Benefits in kind - overview of tax codes

Income component	IPCAL	Belcotax	SILC years
Salaries, wages, etc.	2500		09/10/11/12/13/14
~~- Remuneration~~		~~10_2060~~	~~09/10/11/12/13/14~~
~~- Holiday pay~~		~~10_2061~~	~~09/10/11/12/13/14~~
~~- Fidelity stamps (construction workers JC 124)~~		~~10_2069~~	~~09/10/11/12/13/14~~
- Benefits of any kind		10_2076	09/10/11/12/13/14
Remuneration	4000		09/10/11/12/13/14
~~- Periodic remuneration~~		~~20_2060~~	~~09/10/11/12/13/14~~
~~- Other remuneration~~		~~20_2062~~	~~09/10/11/12/13/14~~
- Benefits of any kind		20_2068	09/10/11/12/13/14

Appendix 4: Self-employed income - overview of tax codes

Income component	IPCAL	Belcotax	SILC years
Gross profit of the own operation	6000		09/10/11/12/13/14
Capital gains taxable separately at 16.5%	6030		09/10/11/12/13/14
Capital gains jointly taxable	6040		09/10/11/12/13/14
Remunerations taxable separately at 16.5%	6050		09/10/11/12/13/14
Remunerations taxable separately at 12.5%	6070		10/11/12/13/14
Remunerations taxable separately at 33%	6100		09/10/11/12/13/14
Remunerations jointly taxable	6180		09/10/11/12/13/14
Other professional costs	6060		09/10/11/12/13/14
Remuneration granted to assisting spouse or legal cohabiting partner	6110		09/10/11/12/13/14
Revenue from the exercise of the profession	6500		09/10/11/12/13/14
Overdue fees	6520		09/10/11/12/13/14
Capital gains taxable separately at 16.5%	6530		09/10/11/12/13/14
Capital gains jointly taxable	6540		09/10/11/12/13/14
Remunerations and bonuses taxable separately at 16.5%	6550		09/10/11/12/13/14
Revenues received for athletes for their sporting activities	6580		09/10/11/12/13/14
Revenues received by trainers and coaches for their activities for sportspersons	6590		09/10/11/12/13/14
Remunerations and bonuses jointly taxable	6610		09/10/11/12/13/14
Remunerations and bonuses taxable separately at 33%	6670		09/10/11/12/13/14
Other professional costs	6570		09/10/11/12/13/14
Remuneration granted to assisting spouse or legal cohabiting partner	6690		09/10/11/12/13/14
Social contributions	6560		09/10/11/12/13/14
Remuneration granted to assisting spouse or legal cohabiting partner	4500		09/10/11/12/13/14
Social contributions	4510		09/10/11/12/13/14
Remuneration of managers	4000	20_2084	09/10/11/12/13/14
Rental income to be considered as remuneration	4010	20_2075	09/10/11/12/13/14
Share options	4040	20_2079	09/10/11/12/13/14
Bonus from the Impulse Fund for general practitioners obtained by an approved general practitioner to set up in a 'priority' zone	4280	20_2088	12/13/14
Withholding tax on professional income	4070	20_2066	09/10/11/12/13/14

Deduction for the special social security contribution	4090	20_2067	09/10/11/12/13/14
Gross income from the transfer or concession of royalties, related rights and statutory and compulsory licences (already taxed)	1170	45_2060	09/10/11/12/13/14
Gross income from the transfer or concession of royalties, related rights and statutory and compulsory licences (not yet taxed)	1900	45_2060	09/10/11/12
Withholding tax on income from movable assets	1190	45_2063	13/14
Cessation gains taxable separately at 16.5%	6900		09/10/11/12/13/14
Cessation gains taxable separately at 33%	6910		09/10/11/12/13/14
Cessation gains jointly taxable	6920		09/10/11/12/13/14
Bonuses and remunerations taxable separately at 12.5%	6870		09/10/11/12/13/14
Bonuses and remunerations taxable separately at 16.5%	6940		09/10/11/12/13/14
Profits and gains obtained or determined after cessation	6950		09/10/11/12/13/14
Gains obtained after the cessation for sporting activities performed during a previous professional activity as a sportsperson	6880		09/10/11/12/13/14
Gains obtained after the cessation for activities for sportspersons performed during a previous professional activity as a trainer or coach	6890		09/10/11/12/13/14

Appendix 5: 3rd pillar pension - overview of the tax codes

Income component	IPCAL	Belcotax	SILC years
Pension or interest from savings insurance taxed at the progressive rate	2190	15_2060	09/10/11/12/13/14
Capital or redemption value from savings insurance taxed at the progressive rate	2190	15_2061	09/10/11/12/13/14
Deposits from a savings account, capital and redemption values of a savings insurance taxed separately at 33%.	2200	15_2064	09/10/11/12/13/14
Deposits from a savings account, capital and redemption values of a savings insurance taxed separately at 16.5%.	2210	15_2062	09/10/11/12/13/14
Deposits from a savings account, capital and redemption values of a savings insurance taxed separately at 10%.	2220	15_2065	09/10/11/12/13/14
~~Capitals, redemption values and other allowances in capital taxed separately at 33%.~~	~~2130~~	~~11_2069~~	~~09/10/11/12/13/14~~
~~Capital, redemption values and other allowances in capital taxed separately at 16.5%.~~	~~2140~~	~~11_2080~~	~~09/10/11/12/13/14~~
~~Capital, redemption values and other allowances in capital taxed separately at 10%.~~	~~2150~~	~~11_2070~~	~~09/10/11/12/13/14~~
~~Other types of pension (including long-term savings)~~	~~2110~~	~~11_2076~~	~~09/10/11/12/13/14~~

Appendix 6 Unemployment benefits - overview of tax codes

Income component	IPCAL	Belcotax	SILC years
Early retirement company supplement	2350	17_2069	09/10/11/12/13/14
Early retirement arrears company supplement	2360	17_2071	09/10/11/12/13/14
Severance pay eligible for the exemption obtained by sportsmen and sportswomen in respect of their sporting activities	2380	10_2129	13/14
Severance pay eligible for exemption obtained by referees for their activities as referees during sporting competitions and by trainers and coaches for their activities for sportsmen and sportswomen	2390	10_2131	13/14
Hiring fee	2450	10_2066	09/10/11/12
Severance pay	2530	10_2065	09/10/11/12
Unemployment benefit without seniority allowance	2600	13_2072	09/10/11/12/13/14
Arrears unemployment benefit without seniority allowance	2610	13_2075	09/10/11/12/13/14
Unemployment benefit with entitlement to seniority allowance before 1-1-2004	2620	13_2073	09
Severance pay and hiring fee eligible for the exemption	2620	10_2128	13/14
Arrears unemployment benefit with entitlement to seniority allowance before 1-1-2004	2630	13_2076	09
Unemployment benefit with seniority allowance	2640	13_2074	09/10/11/12/13/14
Arrears unemployment benefit with seniority allowance	2650	13_2077	09/10/11/12/13/14
Bad weather stamps	2710	10_2116	09/10/11/12/13/14
Benefit arising from other events	2710	18_2066	09/10/11/12/13/14
Separately taxed arrears	2720	18_2067	09/10/11/12/13/14
Severance pay obtained by athletes for their sporting activities	2760	10_2122	09/10/11/12
Other severance pay obtained by athletes for their sporting activities	2760	10_2122	13/14
Severance pay obtained by referees for their activities as referees during sporting competitions and by trainers and coaches for their activities for sportsmen and sportswomen	2800	10_2126	09/10/11/12
Other severance pay obtained by referees for their activities as referees during sporting competitions and by trainers and coaches for their activities for sportsmen and sportswomen	2800	10_2126	13/14
Early retirement statutory unemployment benefit	2810	17_2081	09/10/11/12/13/14
Early retirement separately taxed arrears statutory unemployment benefit	2820	17_2082	09/10/11/12/13/14
Withholding tax on professional income	2860	10_2074 18_2070	09/10/11/12/13/14

		13_2078	
		17_2076	
Ordinary supplementary allowance paid or granted by a former employer under a collective labour agreement or an individual agreement with a clause stipulating continued payment upon resumption of work	2920	18_2060	09/10/11/12/13/14
Supplementary allowance arrears paid or granted by a former employer under a collective labour agreement or an individual agreement with a clause stipulating continued payment upon resumption of work	2930	18_2061	09/10/11/12/13/14
Ordinary supplementary allowance paid or granted by a former employer under a collective labour agreement or an individual agreement without a clause stipulating continued payment upon resumption of work	2940	18_2062	09/10/11/12/13/14
Supplementary allowance arrears paid or granted by a former employer under a collective labour agreement or an individual agreement without a clause stipulating continued payment upon resumption of work	2950	18_2063	09/10/11/12/13/14
Remuneration from December (government) of supplementary allowance paid or granted by a former employer under a collective labour agreement or an individual agreement with a clause stipulating continued payment upon resumption of work	3000	18_2072	11/12/13/14
Remuneration from December (government) of supplementary allowance paid or granted by a former employer under a collective labour agreement or an individual agreement without a clause stipulating continued payment upon resumption of work	3010	18_2073	11/12/13/14
Other replacement income December first paid that year	3020	18_2074	11/12/13/14
Unemployment benefit without seniority allowance paid in the month of December (public administration)	3040	13_2073	11/12/13/14
Early retirement supplementary remuneration for the month of December (public administration)	3050	17_2084	11/12/13
Other severance pay and hiring fees	3080	10_2065	13/14
Severance pay managers	4030	20_2065	09/10/11/12
Withholding tax on professional income	4070	20_2066	09/10/11/12/13/14
Hiring fee for managers	4130	20_2082	09/10/11/12
Severance pay obtained by athletes for their sporting activities as manager	4230	20_2085	09
Severance pay obtained by trainers and coaches for their activities for sportspersons as manager	4260	20_2088	09
Other severance pay and hiring fees for managers	4310	20_2065	13/14

Severance pay and hiring fee for managers eligible for the exemption	4320	20_2061	13/14

Appendix 7: Pensions - overview of the tax codes

Income component	IPCAL	Belcotax	SILC years
Other pensions	2110	11_2076	09/10/11/12/13/14
~~Benefits, allowances or interest for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases~~	~~2110~~	~~14_2064~~	~~09/10/11/12/13/14~~
Separately taxable arrears of other pension	2120	11_2078	09/10/11/12/13/14
~~Separately taxable arrears for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases~~	~~2120~~	~~14_2065~~	~~09/10/11/12/13/14~~
Capital, redemption values and other allowances in capital taxed separately at 33%.	2130	11_2069	09/10/11/12/13/14
Other capital, redemption values and other allowances in capital taxed separately at 16.5%.	2140	11_2080	09/10/11/12/13/14
Capital, redemption values and other allowances in capital taxed separately at 10%.	2150	11_2070	09/10/11/12/13/14
Withholding tax on professional income	2250	11_2066	09/10/11/12/13/14
Capital, redemption values and other allowances in capital taxed separately at 18%.	2530	11_2084	14
Capital, redemption values and other allowances in capital taxed separately at 20%.	2450	11_2083	14
Conversion interest of capital, surrender values and other allowances into capital	2160	11_2065	09/10/11/12/13/14
~~Conversion interest of capital applicable as interest for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases~~	~~2160~~	~~14_2066~~	~~09/10/11/12/13/14~~
Statutory pension, acquired as from the statutory retirement age	2280	11_2060	09/10/11/12/13/14
Survivors' pensions	2290	11_2074	09/10/11/12/13/14
Separately taxable arrears of statutory pension, acquired as from the statutory retirement age	2300	11_2063	09/10/11/12/13/14
Separately taxable arrears of survivors' pension	2310	11_2077	09/10/11/12/13/14
Capitalised value of the statutory pension, acquired as from the statutory retirement age	2320	11_2064	09/10/11/12/13/14
Capitalised value of the survivor's pension	2370	11_2079	09/10/11/12/13/14

Appendix 8: Survivors' pensions - overview of the tax codes

Income component	IPCAL	Belcotax	SILC years
Withholding tax on professional income	2250	11_2066	09/10/11/12/13/14
Survivors' pensions	2290	11_2074	09/10/11/12/13/14
Separately taxable arrears of survivors' pension	2310	11_2077	09/10/11/12/13/14
Capitalised value of the survivor's pension	2370	11_2079	09/10/11/12/13/14

Appendix 9: Sickness and disability benefits - overview of tax codes

Income component	IPCAL	Belcotax	SILC years
Benefits, allowances or interest for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases	2110	14_2064	09/10/11/12/13/14
Separately taxable arrears for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases	2120	14_2065	09/10/11/12/13/14
Conversion interest of capital applicable as interest for permanent incapacity for work with the exception of statutory allowances for accidents at work or occupational diseases	2160	14_2066	09/10/11/12/13/14
Permanent disability resulting from an accident at work or occupational disease - benefits, allowances or interest	2170	16_2064	09/10/11/12/13/14
Permanent disability resulting from an accident at work or occupational disease - separately taxable arrears	2240	16_2065	09/10/11/12/13/14
Withholding tax on professional income	2250	14_2068	09/10/11/12/13/14
		16_2068	
Permanent disability resulting from an accident at work or occupational disease - conversion interest of capital applicable as interest	2260	16_2066	09/10/11/12/13/14
Statutory benefit	2660	12_2060	09/10/11/12/13/14
Separately taxed arrears	2680	12_2061	09/10/11/12/13/14
Temporary incapacity for work - supplementary sickness or accident benefit	2690	14_2061	09/10/11/12/13/14
Temporary incapacity for work - other benefits, allowances or interest	2700	14_2062	09/10/11/12/13/14
Temporary incapacity for work - separately taxable arrears	2720	14_2063	09/10/11/12/13/14
		18_2067	
Withholding tax on professional income	2860	12_2063	09/10/11/12/13/14
		14_2067	
		18_2070	
Special social security contribution	2870	12_2064	09/10/11/12/13/14
		14_2069	
		18_2071	
Temporary incapacity for work - benefits from December (government)	3020	14_2070	11/12/13/14

		18_2074	
Benefit for the month of December (government)	3030	12_2065	11/12/13/14

Appendix 10: Recalculation 40%, 50% and 70% AROP

40% AROP	AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	3.47%	4.03%	3.78%	0.31pp
2010	4.09%	4.25%	4.11%	0.02pp
2011	3.60%	4.34%	4.38%	0.78pp
2012	3.75%	4.04%	4.34%	0.59pp
2013	3.89%	4.78%	4.51%	0.62pp
2014	3.81%	4.72%	4.59%	0.78pp

50% AROP	AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	7.87%	7.78%	7.75%	-0.12pp
2010	7.85%	8.19%	8.46%	0.61pp
2011	8.29%	8.49%	8.53%	0.24pp
2012	8.33%	7.70%	8.05%	-0.28pp
2013	8.29%	8.47%	8.72%	0.43pp
2014	8.59%	9.05%	9.04%	0.45pp

70% AROP	AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	23.45%	23.12%	23.47%	0.02pp
2010	23.83%	23.92%	24.06%	0.23pp
2011	24.05%	23.46%	23.51%	-0.54pp
2012	24.28%	22.83%	23.09%	-1.19pp
2013	24.26%	24.67%	25.02%	0.76pp
2014	24.88%	24.76%	24.43%	-0.45pp

Appendix 11: AROP recalculation for breakdowns

Gender		AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	Men	13.39%	13.27%	13.68%	0.29pp
	Women	15.71%	14.77%	15.36%	-0.35pp
2010	Men	13.94%	14.21%	14.89%	0.95pp
	Women	15.23%	15.78%	16.54%	1.31pp
2011	Men	14.62%	13.86%	14.50%	-0.12pp
	Women	15.96%	14.99%	15.73%	-0.23pp
2012	Men	14.66%	12.91%	13.57%	-1.09pp
	Women	15.89%	14.18%	14.97%	-0.92pp
2013	Men	14.64%	14.16%	14.59%	-0.05pp
	Women	15.46%	15.13%	15.90%	0.44pp
2014	Men	15.01%	14.83%	14.94%	-0.07pp
	Women	15.90%	15.72%	15.79%	-0.11pp

Age		AROP SILC	AROP IPCAL	AROP BELCOTAX	Δ B-S
2009	0 - 24 years	17.73%	17.45%	17.68%	-0.05pp
	25 - 49 years	10.82%	11.54%	11.55%	0.73pp
	50 + years	11.91%	11.10%	12.13%	0.22pp
2010	0 - 24 years	16.15%	17.43%	17.92%	1.77pp
	25 - 49 years	11.45%	12.49%	12.63%	1.18pp
	50 + years	11.81%	12.35%	12.82%	1.01pp
2011	0 - 24 years	15.06%	15.32%	15.75%	0.69pp
	25 - 49 years	13.11%	13.26%	13.60%	0.49pp
	50 + years	11.08%	10.10%	10.33%	-0.75pp
2012	0 - 24 years	16.39%	15.21%	15.25%	-1.14pp
	25 - 49 years	13.26%	13.50%	13.61%	0.35pp
	50 + years	11.78%	10.38%	10.28%	-1.50pp
2013	0 - 24 years	17.01%	19.38%	18.85%	1.84pp
	25 - 49 years	13.75%	14.99%	14.58%	0.83pp
	50 + years	10.84%	10.02%	10.24%	-0.60pp

2014	0 - 24 years	20.46%	22.25%	22.37%	1.91pp
	25 - 49 years	14.41%	15.17%	14.69%	0.28pp
	50 + years	11.97%	11.81%	11.89%	-0.08pp

Household type		**AROP SILC**	**AROP IPCAL**	**AROP BELCOTAX**	**Δ B-S**
2009	Single people	21.88%	21.04%	21.61%	-0.27pp
	2 adults < 65 years	9.54%	9.21%	9.36%	-0.18pp
	2 adults, min. 1 65+ year	20.85%	18.74%	20.49%	-0.36pp
	Other without child	5.20%	5.28%	4.80%	-0.40pp
	Single parent	36.89%	32.69%	35.40%	-1.49pp
	2 adults, 1 child	8.45%	9.57%	9.78%	1.33pp
	2 adults, 2 children	7.98%	8.22%	8.71%	0.73pp
	2 adults, 3+ children	15.81%	15.33%	15.89%	0.08pp
	Other with child	11.73%	11.88%	12.70%	0.97pp
2010	Single people	18.79%	21.31%	22.58%	3.79pp
	2 adults < 65 years	9.12%	8.68%	8.51%	-0.61pp
	2 adults, min. 1 65+ year	19.15%	18.20%	20.23%	1.08pp
	Other without child	5.33%	8.17%	7.74%	2.41pp
	Single parent	35.26%	33.78%	34.19%	-1.07pp
	2 adults, 1 child	9.23%	9.32%	10.40%	1.17pp
	2 adults, 2 children	10.57%	11.19%	11.25%	0.68pp
	2 adults, 3+ children	16.45%	16.90%	17.92%	1.47pp
	Other with child	14.10%	13.69%	14.78%	0.68pp
2011	Single people	21.37%	20.16%	22.52%	1.15pp
	2 adults < 65 years	9.92%	8.79%	9.04%	-0.88pp
	2 adults, min. 1 65+ year	22.01%	15.96%	17.86%	-4.15pp
	Other without child	6.12%	7.31%	7.06%	0.94pp
	Single parent	38.51%	35.73%	35.63%	-2.88pp
	2 adults, 1 child	9.16%	8.64%	9.22%	0.06pp
	2 adults, 2 children	8.52%	9.87%	9.66%	1.14pp
	2 adults, 3+ children	16.66%	17.53%	18.25%	1.59pp
	Other with child	14.58%	13.38%	13.84%	-0.74pp

2012	Single people	20.21%	18.63%	20.36%	0.15pp
	2 adults < 65 years	9.54%	9.84%	9.39%	-0.15pp
	2 adults, min. 1 65+ year	20.52%	12.76%	16.54%	-3.98pp
	Other without child	8.04%	6.97%	6.79%	-1.25pp
	Single parent	33.88%	32.86%	34.04%	0.16pp
	2 adults, 1 child	11.73%	10.02%	10.50%	-1.23pp
	2 adults, 2 children	8.16%	7.93%	8.07%	-0.09pp
	2 adults, 3+ children	18.20%	17.73%	17.12%	-1.08pp
	Other with child	15.93%	11.66%	11.86%	-4.07pp
2013	Single people	24.51%	22.83%	25.08%	0.57pp
	2 adults < 65 years	8.66%	8.78%	8.40%	-0.26pp
	2 adults, min. 1 65+ year	16.87%	13.50%	15.95%	-0.92pp
	Other without child	5.97%	6.81%	7.46%	1.49pp
	Single parent	34.16%	34.10%	35.42%	1.26pp
	2 adults, 1 child	10.58%	12.14%	11.24%	0.66pp
	2 adults, 2 children	7.78%	8.52%	7.61%	-0.17pp
	2 adults, 3+ children	19.86%	19.40%	19.98%	0.12pp
	Other with child	11.88%	10.66%	11.87%	-0.01pp
2014	Single people	22.43%	21.92%	22.25%	-0.18pp
	2 adults < 65 years	8.08%	8.66%	8.25%	0.17pp
	2 adults, min. 1 65+ year	14.05%	13.61%	15.78%	1.73pp
	Other without child	9.24%	8.00%	8.58%	-0.66pp
	Single parent	36.39%	35.25%	34.76%	-1.63pp
	2 adults, 1 child	10.31%	11.36%	11.10%	0.79pp
	2 adults, 2 children	10.22%	9.45%	9.25%	-0.97pp
	2 adults, 3+ children	20.04%	20.69%	20.11%	0.07pp
	Other with child	17.62%	17.82%	16.92%	-0.70pp

Education level		**AROP SILC**	**AROP IPCAL**	**AROP BELCOTAX**	**Δ B-S**
2009	Low	23.36%	21.10%	22.50%	-0.86pp
	Medium	10.54%	10.34%	10.53%	-0.01pp
	High	5.71%	6.68%	6.59%	0.88pp

2010	Low	22.39%	22.61%	23.97%	1.58pp
	Medium	10.82%	11.08%	11.49%	0.67pp
	High	5.53%	6.58%	6.83%	1.30pp
2011	Low	24.84%	20.66%	22.55%	-2.29pp
	Medium	11.88%	11.12%	11.54%	-0.34pp
	High	6.75%	8.22%	8.26%	1.51pp
2012	Low	24.39%	19.56%	21.59%	-2.80pp
	Medium	12.17%	10.48%	10.93%	-1.24pp
	High	7.39%	7.81%	7.77%	0.38pp
2013	Low	25.45%	21.76%	24.40%	-1.05pp
	Medium	11.74%	12.17%	12.48%	0.74pp
	High	7.22%	8.68%	7.89%	0.67pp
2014	Low	25.75%	24.10%	24.80%	-0.95pp
	Medium	13.26%	12.93%	13.26%	0.00pp
	High	6.74%	7.60%	7.28%	0.54pp

Activity status		**AROP SILC**	**AROP IPCAL**	**AROP BELCOTAX**	**Δ B-S**
2009	In work	4.64%	5.35%	5.16%	0.52pp
	Unemployed	33.43%	31.43%	32.87%	-0.56pp
	Pension	17.84%	15.69%	16.95%	-0.89pp
	Other inactive	25.53%	24.12%	25.39%	-0.14pp
2010	In work	4.52%	5.56%	5.51%	0.99pp
	Unemployed	30.37%	28.94%	30.67%	0.30pp
	Pension	16.09%	16.05%	17.63%	1.54pp
	Other inactive	24.49%	25.07%	26.29%	1.80pp
2011	In work	4.16%	5.34%	5.18%	1.02pp
	Unemployed	37.84%	32.79%	34.28%	-3.56pp
	Pension	17.29%	13.31%	15.59%	-1.70pp
	Other inactive	26.43%	24.31%	25.50%	-0.93pp
2012	In work	4.49%	5.30%	5.13%	0.64pp
	Unemployed	34.84%	30.74%	31.38%	-3.46pp
	Pension	16.69%	10.63%	13.26%	-3.43pp

	Other inactive	27.75%	24.55%	25.78%	-1.97pp
2013	In work	4.42%	5.78%	5.59%	1.17pp
	Unemployed	46.23%	42.04%	40.91%	-5.32pp
	Pension	15.11%	12.27%	15.22%	0.11pp
	Other inactive	29.17%	27.91%	28.60%	-0.57pp
2014	In work	4.81%	6.34%	5.71%	0.90pp
	Unemployed	42.85%	37.35%	38.01%	-4.84pp
	Pension	12.92%	11.53%	13.00%	0.08pp
	Other inactive	31.33%	29.87%	30.54%	-0.79pp

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Visit our website
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Or contact us
Email: statbel@economie.fgov.be

Statbel (Directorate-General Statistics - Statistics Belgium)
North Gate - Boulevard du Roi Albert II, 16, 1000 Brussels
Email: statbel@economie.fgov.be

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Nico Waeyaert

North Gate
Boulevard du Roi Albert II, 16
1000 Brussels