The impact of turning a tax reduction into a tax credit to subsidize in-home services: an evaluation of the 2007 reform in France

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Abstract

Since 1991, French taxpayers who employ someone to work at their home (for care, cleaning, etc.) can deduct 50% of the employment cost from their income tax. In 2007, the tax reduction was turned into a tax credit, making lower income households eligible. However, this change was limited to economically active home employers, which narrowed the scope of the reform. To measure its impact, we use exhaustive tax data, built into a panel covering the 2006-2008 period. First, we study the changes in the amounts refunded, in the number and in the characteristics of home employers. In 2008, households spent 7.8 billion euros on in-home services. 2.6 billion were refunded to them in tax reduction, only 151 million in actual tax credit. Among home employers that did not benefit from the tax reduction scheme in 2006, only 14% later became recipients of the tax credit. This is because the requirement to be economically active excludes the elderly, who make up most of the less well-off home employers. Next, we try to measure the causal change in the consumption of in-home services attributable to the new tax credit. Depending on the definition of the incentive, either 15% or 25% of households are impacted. Combining matching and difference-in-difference estimates, we find a significant increase both in the number of home employers and in their expenditure.

Keywords: Tax credit, home employers, in-in-home services, tax incentives, policy evaluation, matching, difference-in-difference estimates
JEL Classification: D13, H23, H31

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1 Introduction

Since 1991, the tax reduction scheme for home employers has been one of the key policy features to encourage the development of in-home services in France. It is a comprehensive measure covering a wide range of services, potentially targeting all kinds of households: families looking for childcare, elderly households requiring care for dependent persons... Its potential financial impact is also significant since as much as half of the expenses can be refunded.

The 50% refund rate has not changed since 1991, but the maximum reduction has varied over time (see chart 1). The substitution of a credit for a reduction, between fiscal years 2006 and 2007, is the latest major change in the scheme. Until 2006, taxpayers could deduct half of their expenses in in-home services from their income tax, but only if the amount of their tax allowed so. If their income tax was lower than half of the expense, the refund would be limited to the income tax amount due. From 2008 on - when taxes were paid on 2007 income -, the reduction turns into a credit, meaning that the tax amount due is no longer a limit to the refund: the French IRS gives money to the recipient if the tax amount became negative. But only economically active tax households are eligible to the tax credit: the household must either be made up of one economically active individual, or by a couple whose members are both active, i.e. either working or unemployed (in what follows, we refer to such households as "active households"). Retirees are consequently not eligible.

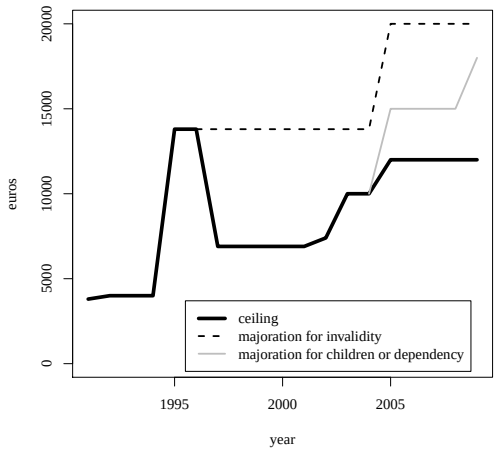

Figure 1: Changes in the maximum tax reduction

Turning a tax reduction into a tax credit was an answer to persistent criticism of the anti-redistributive character of the former. Together with age, living standards are the most important factor accounting for the use of in-home services, as well as for the amounts of such services purchased (Marbot, 2008). This, together with the fact that only taxable households could benefit from the tax reduction scheme, explained why its beneficiaries were massively to be found in top income brackets. More than 3/4th of the tax reduction money

went to households from the top decile in terms of living standards.

The tax credit increased the number of potential beneficiaries, making lower income households eligible. However, the change was restricted to economically active households, which limited the impact of the reform. The first aim of this paper is to describe to what extent less affluent households actually started benefiting from tax refunds, and how the activity criteria capped the effect of the change.

2 Data

We use tax data from three different sources, matched so as to build a panel of households covering the 2006-2008 period over which the policy change under study took place.

The first and main data source consists in income tax returns. The database contains all the information provided by households when filing their tax returns. It includes the amount spent by the household on in-home services because in order to obtain a refund (through the tax reduction of the tax credit), the household must provide that amount. The tax returns data also has information on the composition of the household, the age of its members, their income and employment status.

Table 1: Percentage of households with more than one tax return (1 tax return = 1 "tax household")

		2006	2007	2008
More than one tax return		22,2	22,0	21,8
of which:	2 tax returns	19,4	19,2	19,1
	3 tax returns	2,8	2,8	2,7

Source : Yearly tax data, 5 percent sample - 2006, 2007, 2008

We also use local residence tax data, in order to match households (defined as people sharing a dwelling) with income tax returns (defining "tax households"). The income tax data contains information on people filing the same return, but doesn't allow to reconstruct households when separate returns are filed, as in the case of unmarried couples. Table 1 shows the percentage of households in which more than one return is filed. Using local residence tax data together with income tax data, we can treat the actual household (people sharing a dwelling) as a unit instead of being limited to the "fiscal household". This is more relevant since in France, unmarried couples are very numerous and should be analyzed in the same way as married couples when we observe the outcome of labor supply and childcare decisions, for instance.

Finally, a follow-up file from the French IRS (Direction Générale des Impôts) allows us to link income tax returns to a taxpayer identification number that doesn't change when people move, and thus to build a 5-year panel database.

Using tax data guarantees a high level of accuracy in the reported variables, including income and amounts spent on home employment. Taxpayers must be able to prove these expenses, and the administration in charge of collecting social security contributions on the employee's wages provides them with a statement, to be handed in to the IRS together with the tax return. This ensures that

the entirety of the expenditure is reported, and not only the part entitling the recipient to a tax refund or credit.

3 Descriptive Statistics

3.1 Trends in the consumption of in-home services

12,5% of households purchased at least one euro of (legal) in-home services in 2008. Their average expenditure was 2 400 euros yearly. A household's probability of using in-home services increases with its living standards (figure 2). The amount spent by households belonging to the most affluent 10% is particularly high (almost 4 000 euros a year), and constrasts with the lack of large variations in the expenditures of the less well-off 80% of households (they spent between 1 400 and 2 000 euros).

Consumption is strongly linked with age, and sharply increases after 70. 37% of the households whose head is above 80 and 19% of those in the 71-80 age bracket use in-home services (figure 4). Conversely, households in their 20s seldom use them and when they do, they spend less (1 350 euros in 2008). The average spending is at its highest for intermediate age groups (around 2 700 euros between 30 and 50) and for those over 80 (close to 2 900 euros)

Differences are less marked by household type. Households without children are more likely to use in-home services because they are older on average. Among households with children, the percentage of users increases with the number of children (11% of couples with one child vs. 15% of couples with two children, figure 5). It is not the case for single-parent families, probably because single parents with two or more children are less likely to have a job. Yet, among those with the same marital status, spending always increases with the number of children.

A rising proportion of households use in-home services: 10,8% in 2006, 12,5% in 2008. The proportion increases across living standards (figure 3). The average expenditure of users however remained stable, around 2 400 euros yearly. According to Marbot (2008), 6,4% of households used in-home services in 1996. This figure being based on tax data, it is directly comparable to ours. The percentage of users seems to have doubled in 12 years.

3.2 Effect of the creation of the tax credit on the redistributive impact of the tax relief scheme

In what follows, we call "tax reduction" the refund that a household would have obtained under the tax reduction scheme, before 2007. Indeed, households that were eligible automatically entered the tax credit scheme from 2007 on, event thought they would sometimes have received the exact same refund under the tax reduction scheme - in the latter case, the introduction of the tax credit is economically neutral. This is the case for all households whose BRIT is equal or superior to half their expenses on in-home services. We therefore consider separately the amounts that would have been refunded by the tax reduction, and those that were newly refunded by the tax credit. This yields a decomposition of the expenditure into three parts:

Use and expenditure by living standards, age, household type

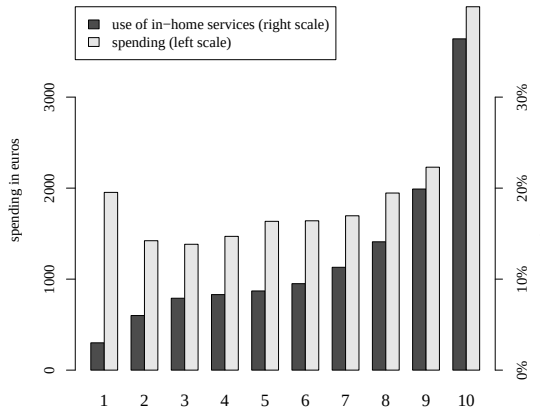

Figure 2: Use and expenditure by living standards decile

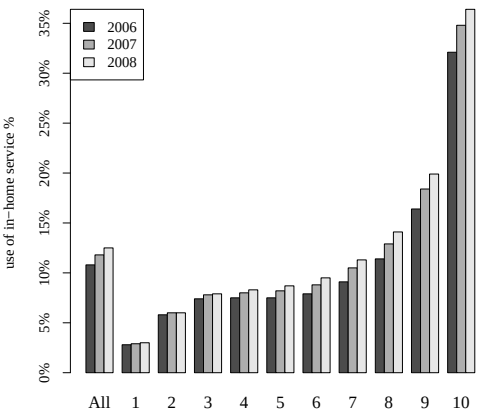

Figure 3: Change in use by living standards decile

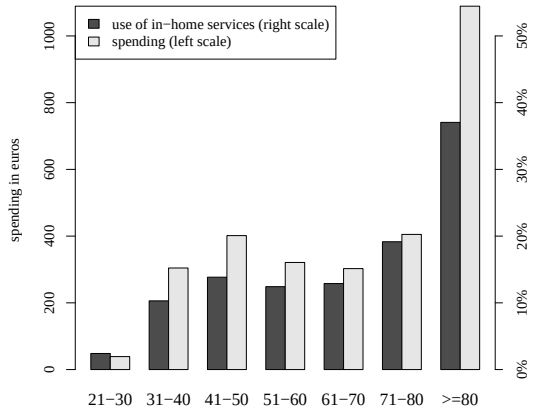

Figure 4: Use and expenditure by age group

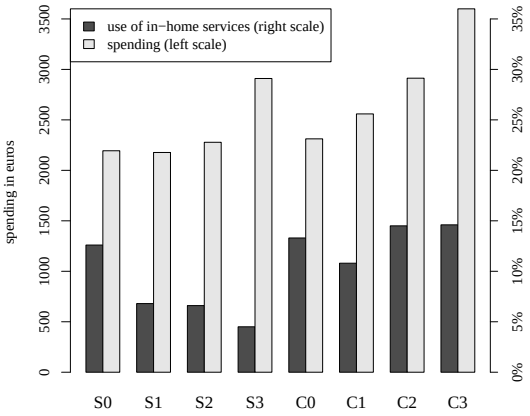

Figure 5: Use and expenditure by household type

S0: 1 adult, no child, S1: 1 adult, 1 child, S2: 1 adult, 2 children, S3: 1 adult, 3 children, C0: 2 adults, no child, C1: 2 adults, one child, C2: 2 adults, 2 children, C3: 2 adults, 3 children.

– the amount refunded as tax reduction, or refunded as tax credit but that would have been refunded all the same under the tax reduction scheme;
– the amount refunded as tax credit, and that would not have been refunded under the tax reduction scheme: it represents the *net* increase in tax relief that resulted from the shift from reduction to credit;
– the amount eventually paid by the household: it is always at least equal to 50% of the expenditure because the tax credit as well as the tax reduction are limited to 50% of the expenditure.

Households that are eligible to the tax credit and whose BRIT is under half the expenditure on in-home services are considered as benefiting from both schemes. The part of the refund that cancels out the BRIT is considered as a tax reductio, since it would have been paid to the household under the pre-2007 tax ruless. Beyond that point, the refund makes the household's income tax negative, and we consider that this is where the tax credit actually begins to have an effect.

3.2.1 Impacted households and amounts involved in 2006

In 2006, the tax reduction was the only tax relief scheme in existence regarding home service. 3/4 of users benefited from the reduction (figure 8. Since benefiting from this relef scheme means paying taxes, it is strongly linked with income and we see that 99,8 % of users belonging to the most well-off 10% took advantage of the reduction, against only 0,3% among users belonging to the most modest 10%, who most often pay no income tax [1].

A household resorting to household services spent on average 2 436 euros, of which 806 euros were refunded by the tax reduction and 1 629 euros remained at their charge (see table 19 in the appendix).

All in all, 6,6 billion euros were spent on in-home services in 2006. 2,2 billions were paid for by the tax reduction. 81% of the refund went to the most affluent 20% households (table 18). However, these households also accounted for more than half of what was not paid for by the tax reduction but left to be paid for by households.

3.2.2 Changes consecutive to the introduction of the tax credit

The introduction of the tax credit changes the picture only marginally, because the households that can take advantage of the new scheme are few and do not consume a lot of in-home services.

With the implementation of the tax credit, 5,3% of households using in-home services receive a refund while they wouldn't have under the former reduction scheme. This proportion rises to 6,1% in 2008, representing 195 000 households (appendix table 17). The share of users not receiving any refund simultaneously decreases by 5 percentage points between 2006 (figure 8) and 2008 (figure 9). It drops by 24 percentage points among the poorest 10% (from 99,8% to 76%) and by 13 points among the least well-off 30% (from 98% to 82%).

Yet these proportions remain high, and among in-home services users who did not benefit from a tax reduction in 2006 (meaning their BRIT is zero or negative), only 11,5% en 2007 et 13,5% en 2008 become tax credit recipients.

1. living standards decile refer to the general population, not just to in-home services users

Living standards of households purchasing in-home services and benefiting from either tax relief scheme

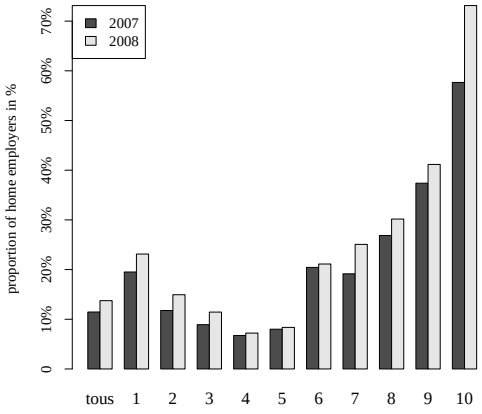

Figure 6: Percentage of home service users not benefiting from the tax reduction that benefited from the tax credit, in 2008

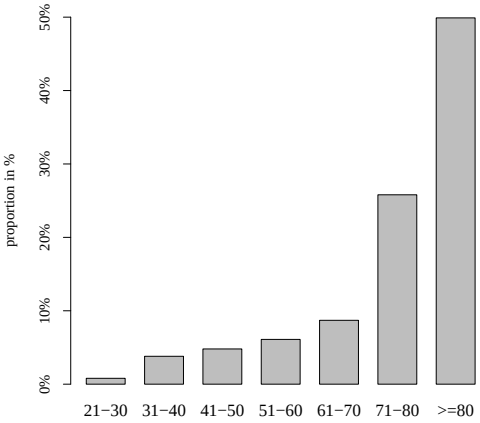

Figure 7: Distribution across age groups of home service users not benefiting from the tax reduction, in 2008

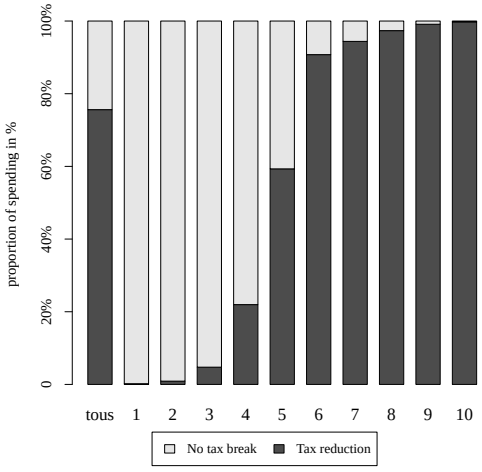

Figure 8: Share of home service users benefiting from a tax relief scheme in 2006, by living standards decile

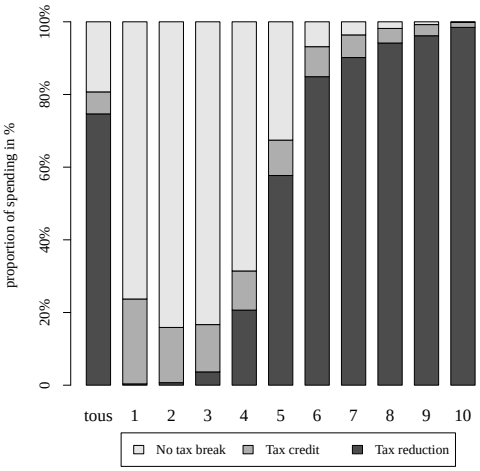

Figure 9: Share of in-home services users benefiting from a tax relief scheme in 2008, by living standards decile

Note : home service users who receive both a tax credit and a tax reduction are considered as benefiting from the tax reduction

Repartition of sums refunded depending on the standard of living of consumers in 2008

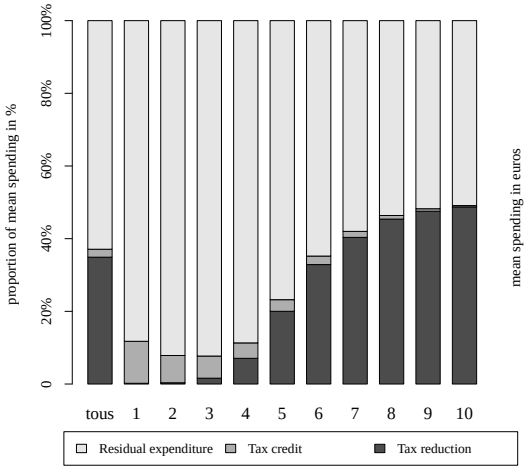

Figure 10: Share of the average in-home services expenditure by living standards decile, broken up by refund status

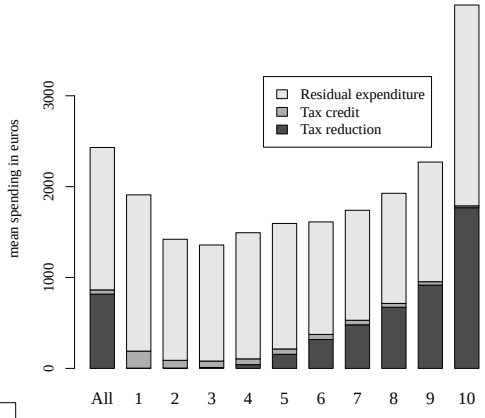

Figure 11: Average refund from the tax reduction and tax credit, and household average net expenditure

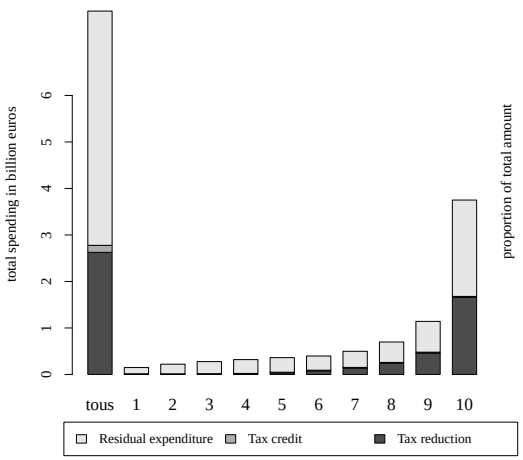

Figure 12: Total refund from the tax reduction and tax credit, and household net expenditure

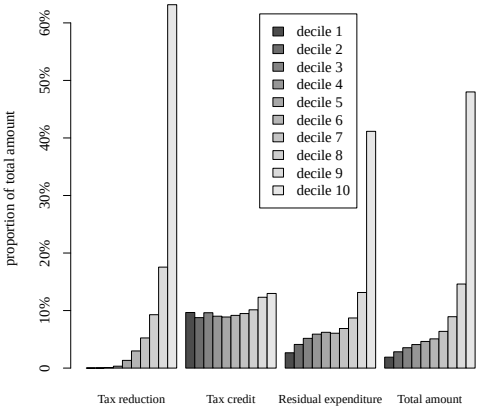

Figure 13: Distribution of the total refunds and household residual spending across living standards deciles

Again, the explanation lies in the activity criterion for eligibil;ity: more than 80% of households using in-home services without getting a tax reduction in 2006 were over 60 and more than half were even over 80 (figure 7). The activity criteria therefore excludes from the benefit of the tax credit the main population using in-home services without paying income tax: the elderly.

The fiscal change therefore only concerns a small number of taxpayers and in-home services users, going against its initial ambition to make the incentive to use these services more equally distributed across the income distribution. In 2008, 63% of the refunds paid back to households went to the most well-off 10% (figure 13). The tax credit alone is more homogenously distributed, as 13% of the refund it generates go to the most well-off 10%, against 10% to the poorest 10%. All in all, the tax credit scheme is more redistributive but its scope is limited and the amounts at stake are relatively small (trouver un synonyme).

The refund attributable to the sole tax credit - that is, which would not have been refunded under the "reduction only" scheme - amounts to 1.9% of the average user expenditure in 2007, 2.2% in 2008 (see appendix figure 10 and table 20). On average, a household using in-home services spends 2 431 euros on them : 817 euros are refunded by the tax reduction, and 47 by the tax credit, while 1 567 euros remain at their charge (figure 11 et table 19). The share refunded by the tax credit is inversely correlated with living standards. It goes from 11,6% int he first decile, to 7,5% in the second, 3,2% in the fifth and less than 1% for the top three deciles.

All in all, the additional refund induced by the introduction of the tax credit amounts to 122 million euros in 2007 and 151 millions in 2008 (figure 12 and table 18), respectively 1,7% et 1,9% of the total in-home services expenditure of the year, against 34% for the tax reduction.

3.3 Changes in the amounts refunded to households, in the percentage of users and in their expenditure

4 Evaluating the impact of the introduction of the tax credit

4.1 Defining the treatment and control groups

The shift from tax reduction to tax credit alters the incentive to hire someone to work at home for some categories of households only. The change can be summed up as follows:

- Within the tax reduction scheme, households could get as much as 50 % of their expenses back, but the refund was limited by the maximum reduction and, more importantly, by the income tax amount due before the reduction.
- Within the tax credit scheme, eligible households get 50 % of their expenses back, with only the maximum reduction as a limit, no matter how much income tax they pay.

Being "treated", in this context, means experiencing a change in incentive as one shifts from one scheme to the other. In our data, the change occured between 2006 and 2007, so we will be comparing consumption of in-home services between 2006 and 2007 or, alternatively, between 2006 and 2008 if we assume

a lag in households' choices and allow a year for consumption to adapt to the new incentive.

Then, there are two possible ways to define the change in incentive, depending on the amount on which the subsidy is calculated.

- We define an "AVERAGE" treatment as a change in the average rate of subsidy, calculated on the total amount spent on in-home services.
- We define a "MARGINAL" treatment as a change in the marginal rate of subsidy, meaning whether the extra euro spent on in-home services is subsidized.

The first definition considers the part of the expenditure which is refunded, before and after the policy change, whereas the second definition only looks at whether half of the extra euro would be refunded, before and after. The first treatment is continuous, as the global rate of subsidy on the total expenditure can range from 0% to 50%, whereas the second treatment is binary: the marginal euro is either 50 percent subsidized, or not at all.

Being treated or not and in the first case, the intensity of the treatment, depends on 2 factors:

- *The income tax amount due before the reduction or credit is applied.* In what follows, we refer to this amount owed as the "BRIT" (Before Refund Income Tax). Knowing how much the household would have paid absent the refund under study is a key element in our analysis. Its derivation is however made somewhat complex by the existence of several tax reduction schemes, that have to be applied in sequence. The details of the calculation are presented in Appendix A.
- *The maximum refund a given household can claim*, called "HC" for "household ceiling" in what follows. As explained before, it depends on household composition: number of children, of disabled members... If a household files several tax returns, the "household ceiling" is the sum of the ceilings for each tax household (individuals filing the same tax return).

The "average" treatment entails another component:

- the *potential expenditure* of the household on in-home services. It can be interpreted as an estimated need (in childcare, housework, elderly care...) given the household's characteristics (number of children, of disabled people...). It is imputed using the coefficients of a regression modeling in-home services consumption, taking into account the selection effect (see Appendix B).

Finally, to determine the treatment status of a household, it is again more relevant to reason at the household level, and not at the "tax household" (=tax return) level. It seems reasonable to assume that households will optimize their tax burden by reporting their expenditure in a way that will maximize tax relief. For example, in an unmarried couple in which both spouses have low income but only one is economically active, childcare costs will be reported on the tax return of the active spouse, so as to be eligible for tax credit.

4.2 A comparison of the "average" and "marginal" treatments

The "marginal" definition of the treament includes in the treatment group (see table 2) :

- households that did not purchase any in-home services in 2006, and whose amount of tax due before the reduction was applied ("BRIT") was zero or negative
- households who did purchase in-home services in 2006 but whose refund was limited by the amount of tax due ("BRIT") : their tax due was less than half of their in-home services expenditure.

These two types of households could not take full advantage of the tax reduction scheme (or not at all, in the first case) because of their low tax due. For instance, a household spending 4000 euros on in-home services whose BRIT was 1000 euros was in such a situation: $0 < BRIT < \frac{D6}{2}$. With the implementation of the tax credit, the marginal rate of subsidy faced by this household went from 0 to 50 %.

Table 2: Change in the MARGINAL subsidy rate for economically active households

D6	BRIT	SUBV7	SUBV6	Δ
0	$]-\infty;0]$	50%	0	+50%
0	$]0;+\infty[$	50%	50%	0
$]0;PM[$	$]-\infty;\frac{D6}{2}[$	50%	0	+50%
$]0;PM[$	$[\frac{D6}{2};+\infty[$	50%	50%	0
$[PM;+\infty[$	$]-\infty;0]$	0	0	0
$[PM;+\infty[$	$]0;+\infty[$	0	0	0

Note : D6 and D7 are expenditure on in-home services in 2006 and 2007, respectively; BRIT6 and BRIT7 the income tax amounts due before the reduction or credit is applied; SUBV6 and SUBV7 the subsidy rates for each year
Source : Yearly tables 2006, 2007, 2008, 5% sample

Table 3: Evolution of MEAN subsidy rate for households eligible to the tax credit

DPot6	BRIT	SUBV7	SUBV6	Δ
$]0;PM[$	$]-\infty;0]$	50%	0	+50%
$]0;PM[$	$[0;\frac{DPot6}{2}[$	50%	$\frac{BRIT6}{DPot6}$	$50\% - \frac{BRIT6}{DPot6}$
$]0;PM[$	$[\frac{DPot6}{2};+\infty[$	50%	50%	0
$[PM;+\infty]$	$]-\infty;0]$	$\frac{PM}{DPot7}$	0	$\frac{PM}{DPot7}$
$[PM;+\infty]$	$]0;\frac{PM}{2}[$	$\frac{PM}{DPot7}$	$\frac{BRIT}{DPot6}$	$\frac{PM}{DPot7} - \frac{BRIT}{DPot6}$
$[PM;+\infty]$	$[\frac{PM}{2};+\infty[$	$\frac{PM}{DPot7}$	$\frac{PM}{DPot6}$	$\frac{PM}{DPot7} - \frac{PM}{DPot6} \approx 0$

Note : DPot6 et DPot7 represent the potential spending of households (we impute to all households, whether they use in-home services or not, a predicted expenditure depending on their characteristics and on the expenditure of households whose characteristics are similar. IRCI6 et IRCI7 are the tax amount before deduction of the tax reduction for employment of in-home workers and SUBV6, SUBV7 the subsidy rate. Each variable is measured in 2006 and 2007
The "household ceiling"of the tax reduction and the tax credit are considered as equal, even if there is a slight difference *(Benefiting from the subsidy for dependency (the so-called "Allocation Personnalisée d'Autonomie") entitles to a majoration of ceiling for the tax reduction but not for the tax credit.)*

The definition of the treatment based on the average rate of subsidy adds two categories of households to the previous ones (see table 4 for a comparison)

Table 4: Comparison fo the definition of MEAN and MARGINAL treatments

D6	DPot6	BRIT	Δmarg	Δmoy	Tmarg	Tmoy
0	$]0; PM[$	$]-\infty; 0]$	+50%	+50%	1	1
0	$]0; PM[$	$]0; \frac{DPot6}{2}[$	0	$50\% - \frac{BRIT6}{DPot6}$	0	1
0	$]0; PM[$	$[\frac{DPot6}{2}; +\infty]$	0	0	0	0
$]0; PM[$	$]0; PM[$	$]-\infty; 0]$	+50%	+50%	1	1
$]0; PM[$	$]0; PM[$	$]0; \frac{D6}{2}[$	+50%	$50\% - \frac{BRIT6}{DPot6}$	1	1
$]0; PM[$	$]0; PM[$	$[\frac{D6}{2}; +\infty]$	0	0	0	0
$[PM; +\infty[$	$[PM; +\infty[$	$]-\infty; 0]$	0	$\frac{PM}{DPot7}$	0	1
$[PM; +\infty[$	$[PM; +\infty[$	$]0; \frac{PM}{2}[$	0	$\frac{PM}{DPot7} - \frac{BRIT}{DPot6}$	0	1
$[PM; +\infty[$	$[PM; +\infty[$	$[\frac{PM}{2}; +\infty[$	0	$\frac{PM}{DPot7} - \frac{PM}{DPot6} \approx 0$	0	0

Note : D6 et D7 are the spending, BRIT6 and BRIT7 are the tax amount before deduction of the tax reduction for in-home services and SUBV6, SUBV7 are the subsidy rates, each variable being measured in 2006 and 2007 respectively ; Tmarg and Tmoy and the dummies for MARGINAL *and* MEAN *treatment respectively.*

:

- households not resorting to in-home services, but whose refund on their potential expenditure would be limited by the amount of tax due (BRIT)
- households that spend more than the maximum subsidized amount and whose BRIT is less than half of that ceiling.

The household previously given as an example, with an expenditure of 4000 euros and a BRIT of 1000 euros, goes from a 25% subsidy rate (1000 euros refunded on a 4000 euros expenditure) to a 50% subsidy rate. The intensity of the treatment is then equal to 25%, the increase in the subsidy rate. The maximum intensity of the treatment is 50%. It corresponds to a household whose expenditure was completely unsubsidized before the policy change, and became fully subsidized afterwards - as in the case of a household owing no income tax at all (BRIT=0).

The "average treatment" is continuous by definition, but given the few households with a treatment intensity strictly comprised between 0 and 50, we will consider that it boils down to a binary treatment. Those few households will be considered as treated (see Appendix B).

Using the "average treatment" definition amounts to assuming that households first compute the expense in in-home services that would correspond to their needs, and the income tax they expect to be paying. They derive the amount of subsidy they would receive from the tax reduction scheme. If they anticipate that their BRIT will be less than half of the expense, and find the cost of the service too high, they will choose not to purchase it.

Conversely, the idea behind the "marginal treatment" is that households think in terms of the next euro to be spent on in-home services: it is either 50% subsidized, or not. In the institutional context of France, it has become fairly easy to purchase only a few hours of in-home services, with little red tape of fixed costs. It is plausible that households reason at the margin and decide to consume "a little" or "a little more" of these services if the additional consumption is subsidized.

4.3 Characteristics of treated and not treated households

15,5% of households are treated under the "marginal" definition of the treatment, 24,2% under the "average" one (see tables 5 et 6). Under whichever definition, they are unequally distributed accross age groups and living standands deciles. The percentage of treated is inverserly correlated with living standards. With the average treatment for example, it goes from 0,2% (among the 10% most affluent households) to 54,1% (among the 10% with the lowest living standards). The trend is very similar with the marginal treatment. This is because the more well-off the household, the more likely it is that they pay a positive amount of income tax - thus benefiting from the tax reduction scheme -, and therefore the more likely it is that the shift to a tax credit scheme makes no difference.

Table 5: Proportion of treated households in each decile of standard of living, MARGINAL treatment

	Proportion of treated		Proportion of users					
	Among everyone	Among eligible	Treated 2006	Treated 2007	Δ	Controls 2006	Controls 2007	Δ
All households	15.5%	98.1%	2.0%	2.9%	0.9%	12.8%	14.5%	1.7%
Standard of living								
Decile 1	54.1%	91.1%	0.0%	0.7%	0.7%	6.5%	6.9%	0.4%
Decile 2	47.9%	65.4%	0.1%	1.2%	1.2%	11.3%	11.2%	-0.1%
Decile 3	33.8%	24.4%	0.5%	1.8%	1.3%	11.1%	11.8%	0.7%
Decile 4	13.5%	9.3%	3.1%	4.0%	0.9%	8.0%	9.1%	1.0%
Decile 5	5.6%	4.4%	10.9%	10.8%	-0.1%	7.4%	8.6%	1.3%
Decile 6	2.8%	2.1%	23.0%	21.1%	-1.9%	7.6%	9.3%	1.7%
Decile 7	1.4%	1.2%	38.2%	35.0%	-3.2%	9.0%	10.8%	1.9%
Decile 8	0.8%	0.7%	47.3%	44.2%	-3.1%	11.3%	13.4%	2.1%
Decile 9	0.5%	0.4%	48.6%	47.8%	-0.8%	16.5%	19.2%	2.7%
Decile 10	0.2%	0.0%	31.9%	35.8%	3.9%	32.8%	35.8%	3.0%
Age								
21-30 years old	29.7%	31.9%	0.2%	0.6%	0.4%	1.6%	2.6%	1.0%
31-40 years old	23.7%	26.7%	1.5%	2.4%	1.0%	9.4%	11.6%	2.1%
41-50 years old	22.5%	25.5%	2.4%	3.2%	0.8%	13.0%	14.6%	1.6%
51-60 years old	14.2%	19.5%	2.3%	3.0%	0.6%	10.5%	11.9%	1.3%
61-70 years old	5.5%	26.4%	2.6%	3.5%	1.0%	10.4%	12.3%	1.9%
71-80 years old	3.4%	34.1%	5.9%	8.6%	2.7%	18.3%	20.8%	2.5%
Over 80 years old	2.5%	35.2%	16.2%	21.2%	5.0%	36.6%	38.7%	2.1%

Source : 1/20 Panel 2006/2007

If we only consider the households that are eligible to the tax credit - i.e. "economically active households" as previously defined -, discrepancies in treatment status by living standards are even more pronounced. Almost all of the poorest 10% of eligible households are treated. The main criteria to be treated indeed is not to previously benefit from the tax reduction scheme, because one pays no, or little, income tax. Almost none of the poorest households pays a positive income tax, whereas all of the most well-off households do, meaning they could benefit from a tax deduction. Treated households are therefore less well-off than average.

They are also younger: the percentage of treated decreases with age. It drops sharply after 60 because tax households that include a retiree are not eligible to the tax credit. It does not reach zero however, because a household may include a retiree and still be eligible if it is made up of (at least) two tax households:

Table 6: Proportion of treated households in each decile of standard of living, MEAN treatment

	Proportion of treated		Proportion of users					
	Among everyone	Among eligible	Treated 2006	Treated 2007	Δ	Control 2006	Control 2007	Δ
All households	24.2%	39.9%	2.4%	3.1%	0.7%	13.9%	15.7%	1.8%
Standard of living								
Decile 1	55.0%	99.8%	1.1%	1.4%	0.3%	5.3%	6.3%	0.9%
Decile 2	51.8%	98.5%	1.6%	2.2%	0.5%	10.5%	11.0%	0.5%
Decile 3	49.4%	95.5%	1.9%	2.6%	0.7%	13.0%	14.1%	1.1%
Decile 4	43.1%	78.1%	2.4%	3.2%	0.8%	11.1%	12.3%	1.2%
Decile 5	27.5%	45.6%	3.7%	4.7%	1.0%	9.0%	10.3%	1.3%
Decile 6	12.9%	20.2%	4.7%	5.9%	1.2%	8.5%	10.2%	1.7%
Decile 7	4.8%	7.3%	7.3%	8.7%	1.4%	9.5%	11.3%	1.8%
Decile 8	2.1%	3.1%	9.4%	11.6%	2.1%	11.6%	13.7%	2.1%
Decile 9	0.8%	1.2%	16.6%	19.3%	2.7%	16.7%	19.4%	2.7%
Decile 10	0.4%	0.7%	29.6%	32.3%	2.8%	32.8%	35.8%	3.0%
Age								
21-30 years old	45.4%	48.9%	0.4%	0.8%	0.4%	1.3%	2.2%	0.9%
31-40 years old	36.7%	41.2%	1.7%	2.6%	0.9%	8.7%	10.8%	2.1%
41-50 years old	35.2%	40.0%	2.5%	3.2%	0.7%	13.4%	15.1%	1.7%
51-60 years old	22.9%	31.5%	2.4%	2.9%	0.5%	10.8%	12.1%	1.3%
61-70 years old	8.4%	40.6%	3.0%	3.6%	0.6%	10.3%	12.1%	1.9%
71-80 years old	5.2%	52.0%	9.1%	10.7%	1.6%	17.0%	19.4%	2.5%
Over 80 years old	4.2%	58.6%	22.0%	23.3%	1.3%	35.3%	37.6%	2.2%

Source : 1/20 Panel 2006/2007

one includes the retiree, the other is an economically active tax household. It can be the case if for instance, an economically active couple in their 50s live with the eldery parent of one of the spouses [2].

Finally, it is important to remark that the more treated there are in a group, the less users of in-home services it is likely to contain. Again, this is because the treated are the youngest and more modest, i.e. those groups that are the least likely to use in-home services.

These stark differences between the treated and the others, in living standards as well as in home services consumption (the two are linked), make it impossible to plainly compare them. In order to constitute a control group that can relevantly be compared to the treated group, we use matching methods.

4.4 Evaluation using matching

In order to build a control group for our treatment, we use matching methods. The validity of the results of such methods crucially relies on two assumptions :

1. overlap
2. conditional independence (*"CIA"*)

2. The "age of the household" was determined as follows. If there is only one couple filing the same tax return, the mean of the spouses' ages is taken. If there are several couples filing tax returns as couples, the oldest couple (i.e. the one with the highest mean age) is chosen as reference. If there is no tax return filled by a couple as such, but two individuals of matching age and gender, a couple can be reconstituted, and its mean age calculated. Otherwise, the household consists of cohabiting single individuals, and the "age of the household" is the age of the oldest individual.

The first assumption means that for any setting of the covariates in the population, there is a chance of seeing units in both the treatment and control groups that presents this combination of covariates and can be compared to one another.

The second assumption means that absent the treatment, conditional on observable variables, the consumption of treated households would have been identical to that of control households. This in turn supposes that unobserved determinants of the consumption of in-home services play the same role regardless of the intensity of the treatment. In the present case, treated and control households have different consumption behaviors even once their observable characteristics are taken into account, if only because the latter were previously impacted by the tax reduction scheme. It is therefore not unreasonable to believe that unobserved characteristics have a different impact at different levels of treatment intensity, which goes agains the CIA. Yet, since we have panel data, we can weaken the CIA and state it in terms of variation : assume that there are no unobservables that affect the *change* in consumption differently among the treated and control households.

This amounts to deriving an estimator combining classical matching and difference-in-difference estimators. This strategy was first introduced by Heckman, Ichimura, Smith & Todd (1998) and is detailed in Blundell & Costa Dias (2002), among others.

We use two alternative matching methods:

1. in the first one, we match households belonging to the same cell of a table defined by the crossing of several observables.
2. in the second one, we match households using the Mahalanobis metric.

4.4.1 Matching within cells

This approach consists in building many "cells", each defined by a combination of observables. In each cell, we compute a double difference in consumption: between 2006 and 2007 and between treated and control groups. The treatment effect (on the treated) is estimated by the weighted average of these double differences. The weight for each cell is the number of treated in that cell. Standard errors are estimated using bootstrap.

We try three different specifications, differing in the number of categories for each variable, and therefore in the number of cells (see table 7).

Theoretically, interacting all variable categories defines between 1,152 (specification 'A') and 2,688 cells (specification 'C'). But since some interactions are impossible (for example a household with no child under 18 but one child under 3), the actual number of cells ranges between 554 and 1 019 (see table 8). In order for the overlap assumption to hold, we only retain those cells containing both treated and control households. This leaves between 531 and 968 cells, excluding between 63 and 143 households.

Table 7: Constitution of the "cells"

Cellules	Household contains a couple	Age	Living standards	Number of children ≤3	Number of children ≤18	Change in the number of children or disabled
Specification A	2	4	6	2	4	3
Specification B	2	7	6	2	4	3
Specification C	2	7	8	2	4	3

Note : Variables used to constitute the cells are the following :

1. *Household contains a couple* : equals one if the household contains a couple, zero if only single persons
2. *Age* : average age of the reference couple or person of the household, in four age brackets (20-39, 40-59, 60-79, over 80) or seven (20-29, 30-39, 40-49, 50-59, 60-69, 70-79, over 80)
3. *Living standards* : 6 or 8 categories based on living standards deciles ([1-2, 3-4, 5-6, 7-8, 9, 10] or [1-2, 3-4, 5, 6, 7, 8, 9, 10])
4. *Number of children under 18 in the household* : 0, 1, 2, 3 or more
5. *Number of children under 3 in the household* : 0, 1 or more
6. *Change in the number of children or disabled* : between 2006 and 2007, was there at least one more / one less in the household, or no change

Table 8: Number of cells

	possible cells	non-empty cells	cells with treated	excluded cells *(*)*	excluded households *(*)*
Specification A	1,152	554	531	23	63
Specification B	2,016	845	799	46	139
Specification C	2,688	1,019	968	51	143

(*) Cells or households excluded from the analysis because the cell contains no potential counterfactual household

4.4.2 Matching using the Mahalanobis metric

The second matching technique implemented consists in using the Mahalanobis metric to match each treated household with one or several control households. The Mahalanobis metric allows to compute the distance between two households as the weighted sum of the difference between the two households on each covariate. The weights are given by the covariance matrix of the covariates. We then choose to perform kernel matching, which consists in using a combination of all control households as a match for each treated household. In the combination, each control household has a weight that inversely depends on its distance to the treated household under consideration. In the end, we obtain for each treated housheols a composite control household, built from all control households and constituting a credible counterfactual.

Households from the control group are much more frequent users of in-home services that those from the treatment group, respectively 14,5% and 2,9% in 2007 before matching. After matching, the reweighting of the control households yields a counterfactual percentage of users of 5,7% in 2007, significantly reducing the discrepancy (table 9).

Using the reweighted sample, we then compare changes in consumption between 2006 and 2007. This amounts to a difference-in-difference regression analysis on the reweighted sample. The estimated treatment effect is positive (+2.5%), while it appeared negative (-0.8%) before reweighting, due to the lack of comparability between treated and control households (table 9).

Table 9: Percentage of users among treated and control, before and after matching

	2006	2007	Δ
Before matching			
Control	12.8%	14.5%	1.7%
Treated	2.0%	2.9%	+0.9%
	-10.7%	-11.6%	-0.8%
After matching			
Control	7.3%	5.7%	-1.6%
Treated	2.0%	2.9%	+0.9%
	-5.3%	-2.8%	+2.5%

Source : 1/20 Panel data 2006/2007
Note : calculations made with kernel estimation and the "marginal" definition of the treatment

4.5 Results

Both methods concur to suggest that there exists a significant impact on the percentage of treated households using in-home services. The introduction of the tax credit boosted this percentage by 0.6 to 1.3 percentage points if we consider the average treatment, by 1.9 to 2.9 points with the marginal one. These two estimated ranges are not contradictory because they apply to the treated population only, whose size is not the same in the two cases. The two definitions of the treatment give close conclusions regarding the additional number of households using in-home services: between 35 000 and 108 000 households seem to have newly hired someone to work at their home, thanks to the introduction of the tax credit [3].

The average expenditure of all households also seems to have increased significantly, by as much as 53 € with the marginal treatment and 35 € with the average one.

This preliminary assesment, based on the comparison between the years 2006 and 2007, must be complemented with a comparison between 2006 and 2008. It is indeed possible that the incentive effect of policy change fully kicked in in 2008 only, because of the time it takes households to become fully aware of the tax schemes they could benefit from, and to react to it.

4.6 Public policy implications

Starting from the estimated number of households that started using in-home services when the tax credit was introduced, and under a number of hypotheses, it is possible to compute the number of jobs created (in full-time equivalent) and their cost (table 11). Since the number of households using in-home services and the total number of hours of work they purchased are available, we derive the average number of hours purchased by one household. In 2007, this number was

3. If the percentage of users among the treated increases by x percentage points, since there are respectively 3,6 and 5,7 million treated households with the "marginal" and the "average" definitions, the increase represents x*3.6 or x*5.7 extra users. 3.6 million is 15% of the 23.6 million French households, and 5.7 million is 24% of the same population, as seen above.

Table 10: Estimated effects on the number of users and amounts spent

	Cells A	Cells B	Cells C	Kernel
Effect on the percentage of users *(in percentage points)*				
Moyen	0.86* [0.62;1.09]	0.87* [0.62;1.13]	1.15* [0.68;0.91]	0.97* [0.66;1.29]
Marginal	2.23* [1.91;2.55]	2.25* [1.96;2.53]	2.25* [1.96;2.55]	2.52* [2.10;2.94]
Effect on speding				
Marginal	19.37* [6.86;30.18]	19.78* [4.42;35.14]	20.27* [6.56;33.98]	12.04* [0.41;23.67]
Moyen	22.39* [7.43;37.35]	23.30* [8.20;38.40]	23.57* [9.38;37.76]	36.27* [20.01;52.53]

Source : 1/20 Panel 2006/2007
Note : Because of the large data processing time, the estimates with cells were provisionally made on a 1/20 panel and the matching estimates on a 1/100 panel.
(*) : NN = Nearest neighbour

250 hours a year, which amounts to 12% of the workload of a full-time employee of the same sector. Under the non-trivial assumption that new users purchase on average the same number of hours than others, the policy change resulted in 4 300 to 13 300 jobs created (in full-time equivalent). The (direct) cost for public finances of each job created would thus range between 9 000 and 28 000 euros.

This calculation is based only on the new users (the extensive margin), and therefore omits the effect on employment of a possible increase in the consumption of households previously using such services (the intensive margin). Besides, since we use tax data, the estimated effect is an effect on the consuption of *legal* in-home services (as opposed to informal work or illegal moonlighting). If the tax incentives encourages taxpayers to report - and therefore make legal - previously illegal work, our analysis does not distinguish this phenomenon from genuine job creations. It is potentially momentous: Marbot (2008) estimates that 70% of the increase in tax-reported in-home services consumption witnessed over the 1996-2005 period was in fact previously illegal work being made legal. Such a shift can however be seen as a positive outcome too, just like job creations, since legal work generates social protection for the employee (health and retirement benefits) and income for the social and fiscal administrations. Trying to distinguish jobs created from jobs made legal is therefore not necessarily relevant.

Table 11: Calculation of the cost of a new job creation due to the introduction of the tax reduction

	Lower limit	Central scenario	Upper limit
(1) **Effect on the proportion of consumers - "mean" treatment**			
	1.90%	**2.40%**	**2.90%**
(A) Total number of households	23,600,000	23,600,000	23,600,000
(B) Proportion of treated households	15.5%	15.5%	15.5%
(C) Number of households who are evaluated	3,658,000	3,658,000	3,658,000
(2) **Number of additional households using in-home services**	**69,502**	**87,792**	**106,082**
(2) **Effect on the proportion of consumers - "marginal" treatment**			
	0.60%	**0.95%**	**1.30%**
(A) Total number of households	23,600,000	23,600,000	23,600,000
(B) Proportion of treated households	24%	24%	24%
(C) Number of households who are evaluated	5,664,000	5,664,000	5,664,000
(2) **Number of additional households using in-home services**	**33,984**	**53,808**	**73,632**
(2) **Number of additional households using in-home services**	**35,000**	**70,000**	**108,000**
(C) Number of hours of in-home services which are consumed in a year (2007)	767,000,000	767,000,000	767,000,000
(D) Number of households using in-home services (2007)	3,064,000	3,064,000	3,064,000
(E) Mean number of hours consumed by a home services consumer in a year	250	250	250
(F) Number of hours of a full-time job in in-home services (2007)	2,028	2,028	2,028
(G) Average proportion of a full-time job for which a household employs a worker	12%	12%	12%
(3) **Number of full-time jobs creations**	**4,320**	**8,640**	**13,331**
(4) **yearly budgetary cost of the tax reduction** (2007)	**122,000,000**	**122,000,000**	**122,000,000**
(5) Cost of a full-time job creation	**28,239**	**14,120**	**9,152**

Sources :

(1) Present results
(A) 2007 tax data
(B) Calculated as :(A)*(B)
(2) Calcul : (C) * (1)
(C) Chol (Ould Younes, 2010)
(D) 2007 tax data
(E) Calculated as : (C) / (D)
(F) Calculated as : 39 h / week * 52 weeks
(G) Calculated as :(E) / (F)
(3) Calculated as : (G) * (2)
(4) 2007 tax data
(5) Calculated as : (4) / (3)

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A Calculation of the tax amount due before reduction of credit

Table 12 presents the way tax administration calculates the tax amount from which the tax reduction for in-home services is deducted. This amount defines the maximal amount from which it is possible to deduct half of the expenditure, that we call "Before Reduction Income Tax" of "'BRIT". The extract of the tax calculation form which is presented in figure 14 shows the correspondance between the lines of this table and the tax assessment.

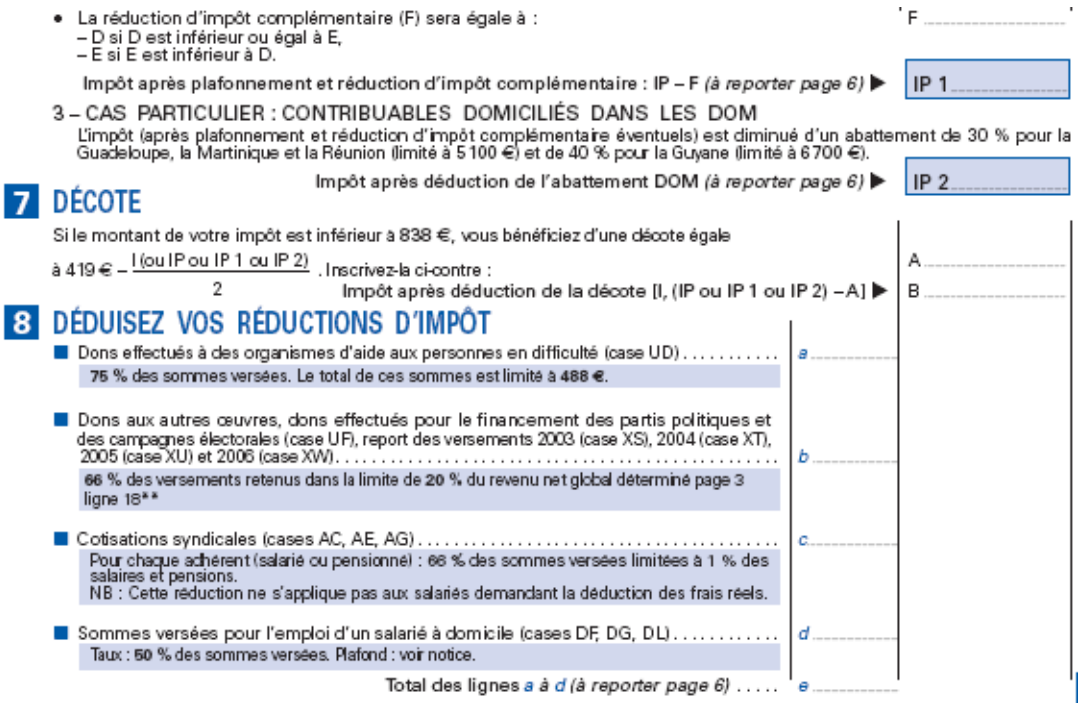

Figure 14: Extract of the tax assessment form

Table 12: Calculation of the BRIT

(IP2) Amount of the net tax amount
- (A) Tax relief
- Tax reductions (a) Donations to charities dedicated to people experiencing difficulties (b) Donations to others charities (c) Trade unions contributions (g) Compensatory benefits (h) Subscription to innovation funds (i) Subscription to some firms (”SOFICA”) capital (j) Subscription to the capital of small-size firms (k) Loan interests for the purchase of a society (l) Forest work and investments (m) Defence of forests against fire (n) Spending on facilities for a dependent elderly (o) Particular savings (akin to life insurance) (p) Locative investments in tourism (q) Overseas investments in housing (s) Accounting expenditures (u) Dependent children having secondary or higher education (v) Overseas investments in a firm
= Tax amount before deduction of the tax reduction for in-home services (’BRIT’)

B Calculation of the intensity of the "mean"treatment

This calculation requires to impute a potential spending on in-home services to the households who do not use in-home services : if the household should begin consuming, what would be its spending, given its characteristics and the tax amount it pays. To answer this question, we have to take into account the fact that the households for whom a spending is observed are those who consume. They are then particular : there exists a selectivity which must be taken into account to estimate the potential spending of those who do not consume.
The calculation step of the treatment intensity are the following :

- We modelize in-home services spending, taking into account selectivity thanks to a Tobit model including an in-home services use equation and a spending equation. We cannot include the subsidy rate in equations since it depends on the quantity consumed. Instead we can include the variables that determine it : the BRIT and an activity status of each "tax household". The esimation results are presented in table 13.
- The latter model enables us to obtain the potential spending of non-consumers (to determine how much they would have paid, if they had used in-home services). The distribution of this potential spending is presented and compared with the effective spending of actual consumers in table 14.
  We then obtain a theoretical subsidy rate : that which could apply to the household if it decided to use in-home services.
- The household subsidy rate is an indicator of the incentive to consume which is created by the tax reduction, and after 2007 by the tax credit. The variation in this subsidy rate between these two kinds of tax breaks is then a measure of the incentive change when the tax reduction turns into a tax credit.

In table 15 we report the distribution of the treatment intensity. 91.3 % have a treatment intensity which equals 0 or 1. We then consider, at least in a first step, that the treatment is binary. The households for which treatment intensity is strictly positive are considered as treated.

Table 13: Prediction model of in-home services expenditure

	Use		Spending	
Intercept	-1,8832	0.0187	6,4531	0.0917
Number of "tax households"	-	-	0.0257	0.0099
Local density of in-home workers	-0.0183	0.0006	-	-
Local density of collective child care facilities	0.0049	0.0002	-	-
"BRIT" (log)	0.0045	0.0012	0.0462	0.0024
Number of children				
under 3	0.1373	0.0064	-0.0110	0.0135
under 18	0.3218	0.0030	0.2021	0.0114
Standard of living deciles dummies				
deciles 1-4	-0.4197	0.0096	-0.1729	0.0230
deciles 5-6	-0.1856	0.0074	-0.0153	0.0161
decile 7	Réf.	Réf.	Réf.	Réf.
decile 8	0.1749	0.0078	0.0775	0.0162
decile 9	0.4443	0.0075	0.2474	0.0196
decile 10	1,0288	0.0075	0.7099	0.0334
Mean age of referent adults of the households				
20-29 years old	-0.8023	0.0142	-0.4857	0.0464
30-39 years old	-0.3798	0.0079	-0.1859	0.0208
40-49 years old	-0.1268	0.0067	-0.0992	0.0146
50-59 years old	Réf.	Réf.	Réf.	Réf.
60-69 years old	0.2109	0.0079	0.0152	0.0174
70-79 years old	0.7293	0.0088	0.1573	0.0286
Over 80 years old	1,3434	0.0092	0.4826	0.0438
log(Woman's wage)	0.0075	0.0007	-0.0119	0.0014
Type of household dummy				
Monoactive couple	0.1042	0.0082	0.1199	0.0196
Biactive couple	0.1645	0.0070	0.1216	0.0162
Inactive couple	0.2451	0.0099	0.0136	0.0233
Inactive single person	0.3944	0.0099	0.0504	0.0248
Active single person	Réf.	Réf.	Réf.	Réf.
Coefficient of correlation	-	-	*-0.1031*	*0.0330*

Table 14: Distribution of in-home services spending

	Potential spending	Effective spending of users
D1	210	570
D2	420	657
D3	672	755
D4	978	861
Median	1,299	910
D6	1,708	997
D7	2,241	1,090
D8	3,164	1,254
D9	5,293	1,766

Table 15: Distribution of the treatment intensity

Intensity	Number of households	Proportion of households
0	847,219	75.8%
1-10	19,578	1.8%
11-20	19,194	1.7%
21-30	19,408	1.7%
31-40	19,276	1.7%
41-49	20,143	1.8%
50	173,305	15.5%

Source : Panel 2006/2007

C Complementary descriptive statistics

Table 16: Proportion of households benefitting from the tax breaks

	2006	2007	2008	Δ
Tax reduction				
	75.6%	77.4%	77.6%	2%
décile 1	0.2%	0.7%	0.8%	1%
décile 2	0.9%	1.1%	1.1%	0%
décile 3	4.8%	5.8%	5.9%	1%
décile 4	22.0%	25.9%	26.1%	4%
décile 5	59.3%	67.1%	64.5%	5%
décile 6	90.8%	91.4%	91.3%	1%
décile 7	94.4%	95.2%	95.2%	1%
décile 8	97.4%	97.2%	97.4%	0%
décile 9	99.1%	98.6%	98.7%	0%
décile 10	99.8%	99.5%	99.4%	0%
Tax credit				
	0%	5.3%	6.1%	6%
décile 1	0%	19.5%	23.4%	23%
décile 2	0%	12.0%	15.2%	15%
décile 3	0%	10.3%	13.0%	13%
décile 4	0%	10.0%	10.8%	11%
décile 5	0%	9.0%	9.7%	10%
décile 6	0%	7.8%	8.3%	8%
décile 7	0%	5.3%	6.2%	6%
décile 8	0%	3.9%	4.0%	4%
décile 9	0%	2.8%	3.1%	3%
décile 10	0%	1.1%	1.4%	1%
No tax break				
	24.4%	20.1%	19.3%	-5%
décile 1	99.8%	79.9%	76.3%	-24%
décile 2	99.1%	87.3%	84.1%	-15%
décile 3	95.2%	85.8%	83.3%	-12%
décile 4	78.0%	69.1%	68.6%	-9%
décile 5	40.7%	30.2%	32.6%	-8%
décile 6	9.2%	6.8%	6.8%	-2%
décile 7	5.6%	3.9%	3.6%	-2%
décile 8	2.6%	2.1%	1.8%	-1%
décile 9	0.9%	0.9%	0.8%	0%
décile 10	0.2%	0.2%	0.2%	0%

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the two adult members of the household are active
Note : A household may benefit from both the tax reduction and the tax credit, if there are two "tax households" in this household, one benefiting from the tax reduction and the other from the tax credit, or if part of the expenditure is refunded by the tax reduction and the other by the tax credit

Table 17: Number of consumer households depending on the refund by a tax break

	2006		2007		2008		Δ	Δ(%)
Tax reduction								
	2 062 660	100%	2 307 600	100%	2 495 680	100%	433 020	21%
decile 1	140	0.0%	520	0.0%	600	0.0%	460	329%
decile 2	1,360	0.1%	1,640	0.1%	1,740	0.1%	380	28%
decile 3	8,840	0.4%	11,360	0.5%	12,040	0.5%	3,200	36%
decile 4	40,780	2.0%	52,420	2.3%	55,880	2.2%	15,100	37%
decile 5	113,000	5.5%	138,280	6.0%	146,220	5.9%	33,220	29%
decile 6	182,760	8.9%	204,380	8.9%	225,120	9.0%	42,360	23%
decile 7	217,680	10.6%	251,940	10.9%	272,860	10.9%	55,180	25%
decile 8	277,200	13.4%	315,900	13.7%	352,880	14.1%	75,680	27%
decile 9	411,380	19.9%	455,660	19.7%	496,200	19.9%	84,820	21%
decile 10	809,520	39.2%	875,500	37.9%	932,140	37.4%	122,620	15%
Tax credit								
	-	-	158 860	100%	194 580	100%	194 580	-
decile 1	-	-	14,240	9.0%	18,180	9.3%	18,180	-
decile 2	-	-	18,100	11.4%	23,640	12.1%	23,640	-
decile 3	-	-	20,240	12.7%	26,540	13.6%	26,540	-
decile 4	-	-	20,300	12.8%	23,060	11.9%	23,060	-
decile 5	-	-	18,560	11.7%	22,100	11.4%	22,100	-
decile 6	-	-	17,540	11.0%	20,360	10.5%	20,360	-
decile 7	-	-	14,000	8.8%	17,860	9.2%	17,860	-
decile 8	-	-	12,820	8.1%	14,540	7.5%	14,540	-
decile 9	-	-	13,140	8.3%	15,440	7.9%	15,440	-
decile 10	-	-	9,920	6.2%	12,860	6.6%	12 860	-
No tax break								
	665 180	100%	598 200	100%	620 060	100%	-45 120	-7%
decile 1	71,360	10.7%	58,320	9.7%	59 360	9.6%	-12 000	-17%
decile 2	149,560	22.5%	132,120	22.1%	130 860	21.1%	-18 700	-13%
decile 3	177,240	26.6%	167,800	28.1%	169 920	27.4%	-7 320	-4%
decile 4	144,880	21.8%	139,560	23.3%	146 800	23.7%	1 920	1%
decile 5	77,500	11.7%	62,320	10.4%	73 840	11.9%	-3 660	-5%
decile 6	18,620	2.8%	15,260	2.6%	16 880	2.7%	-1 740	-9%
decile 7	12,920	1.9%	10,220	1.7%	10 340	1.7%	-2 580	-20%
decile 8	7,520	1.1%	6,700	1.1%	6 620	1.1%	-900	-12%
decile 9	3,660	0.6%	4,020	0.7%	3 860	0.6%	200	5%
decile 10	1,920	0.3%	1,880	0.3%	1 580	0.3%	-340	-18%
Total								
	2,727,840	100%	3,064,660	100%	3,310,320	100%	582,480	21%
decile 1	71,500	2.6%	73,080	2.4%	78,140	2.4%	6,640	9%
decile 2	150,920	5.5%	151,860	5.0%	156,240	4.7%	5,320	4%
decile 3	186,080	6.8%	199,400	6.5%	208,500	6.3%	22,420	12%
decile 4	185,660	6.8%	212,280	6.9%	225,740	6.8%	40,080	22%
decile 5	190,500	7.0%	219,160	7.2%	242,160	7.3%	51,660	27%
decile 6	201,380	7.4%	237,180	7.7%	262,360	7.9%	60,980	30%
decile 7	230,600	8.5%	276,160	9.0%	301,060	9.1%	70,460	31%
decile 8	284,720	10.4%	335,420	10.9%	374,040	11.3%	89,320	31%
decile 9	415,040	15.2%	472,820	15.4%	515,500	15.6%	100,460	24%
decile 10	811,440	29.7%	887,300	29.0%	946,580	28.6%	135,140	17%

Yearly tables 2006, 2007, 2008.
(*) A household is considered as active if the adult member or the two adult members of the household are active

Table 18: Repartition of in-home services spending (in thousands euros) depending on their refund by a tax break

	2006		2007		2008		Δ
Tax reduction							
	2,199,242	2,516,576	2,777,314		2,625,983		426,741
- - decile 1	58	11,480	14,768	0.5%	196	0.0%	138
decile 2	458	10,441	13,829	0.5%	605	0.0%	147
decile 3	1,590	12,896	16,486	0.6%	1,975	0.1%	385
decile 4	6,785	20,111	22,295	0.8%	8,692	0.3%	1,907
decile 5	28,684	45,946	48,591	1.7%	35,177	1.3%	6,493
decile 6	64,762	84,511	92,227	3.3%	78,375	3.0%	13,613
decile 7	114,701	141,851	152,046	5.5%	137,694	5.2%	22,993
decile 8	196,278	236,207	259,128	9.3%	243,771	9.3%	47,493
decile 9	387,474	433,100	479,564	17.3%	460,894	17.6%	73,420
decile 10	1,398,453	1,520,032	1,678,381	60.4%	1,658,605	63.2%	260,152
Tax credit							
	-	-	121 790		150 763		150 763
- - decile 1	-	-	11 272	9.3%	14 567	9.7%	14 567
decile 2	-	-	9 896	8.1%	13 217	8.8%	13 217
decile 3	-	-	11 136	9.1%	14 503	9.6%	14 503
decile 4	-	-	11 454	9.4%	13 593	9.0%	13 593
decile 5	-	-	12 256	10.1%	13 393	8.9%	13 393
decile 6	-	-	12 828	10.5%	13 813	9.2%	13 813
decile 7	-	-	11 549	9.5%	14 299	9.5%	14 299
decile 8	-	-	13 029	10.7%	15 279	10.1%	15 279
decile 9	-	-	14 973	12.3%	18 551	12.3%	18 551
decile 10	-	-	13 396	11.0%	19 548	13.0%	19 548
No tax break							
	4 444 505		4 631 260		5 037 707		593 202
- - - decile 1	138,940	3.1%	126,144	2.7%	133,876	2.7%	-5,065
decile 2	223,650	5.0%	197,876	4.3%	207,254	4.1%	-16,396
decile 3	254,537	5.7%	268,440	5.8%	260,370	5.2%	5,833
decile 4	279,353	6.3%	281,787	6.1%	297,126	5.9%	17,773
decile 5	287,075	6.5%	293,863	6.3%	313,257	6.2%	26,182
decile 6	280,357	6.3%	288,626	6.2%	305,115	6.1%	24,758
decile 7	311,106	7.0%	319,910	6.9%	346,727	6.9%	35,621
decile 8	359,425	8.1%	396,943	8.6%	439,017	8.7%	79,592
decile 9	555,935	12.5%	593,244	12.8%	662,148	13.1%	106,214
decile 10	1,754,127	39.5%	1,864,426	40.3%	2,072,816	41.1%	318,690
Total							
	6,643,748		7,530,363		7,814,453		1,170,705
decile 1	138,998	2.1%	152,184	2.0%	148,638	1.9%	9,641
decile 2	224,109	3.4%	221,600	2.9%	221,077	2.8%	-3,032
decile 3	256,128	3.9%	296,062	3.9%	276,848	3.5%	20,720
decile 4	286,138	4.3%	315,537	4.2%	319,411	4.1%	33,273
decile 5	315,759	4.8%	354,710	4.7%	361,827	4.6%	46,068
decile 6	345,119	5.2%	393,681	5.2%	397,303	5.1%	52,184
decile 7	425,806	6.4%	483,505	6.4%	498,720	6.4%	72,914
decile 8	555,703	8.4%	669,100	8.9%	698,066	8.9%	142,363
decile 9	943,409	14.2%	1,087,780	14.4%	1,141,594	14.6%	198,185
decile 10	3,152,580	47.5%	3,556,203	47.2%	3,750,969	48.0%	598,389

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the tw oadult members of the household are active

Table 19: Repartition of mean sums (in thousand euros) spent for in-home services depending on their refund by a tax break

	2006	2007	2008	Δ	Δ(%)
Tax reduction					
	806	803	817	11	1.3%
decile 1	1	3	3	2	209.9%
decile 2	3	4	4	1	28.0%
decile 3	9	9	10	1	13.3%
decile 4	37	43	41	4	11.1%
decile 5	151	163	155	5	3.0%
decile 6	322	321	318	-4	-1.1%
decile 7	497	492	480	-17	-3.4%
decile 8	689	686	673	-17	-2.4%
decile 9	934	905	917	-17	-1.8%
decile 10	1,723	1,712	1,768	45	2.6%
Tax credit					
	-	41	47	47	-
decile 1	-	155	187	187	-
decile 2	-	65	85	85	-
decile 3	-	57	71	71	-
decile 4	-	57	64	64	-
decile 5	-	60	59	59	-
decile 6	-	57	56	56	-
decile 7	-	44	50	50	-
decile 8	-	40	42	42	-
decile 9	-	32	37	37	-
decile 10	-	15	21	21	-
No tax break					
	1,629	1,552	1,567	-62	-3.8%
decile 1	1,943	1,728	1,720	-223	-11.5%
decile 2	1,482	1,307	1,332	-150	-10.1%
decile 3	1,368	1,373	1,277	-91	-6.7%
decile 4	1,505	1,395	1,388	-117	-7.8%
decile 5	1,507	1,426	1,381	-126	-8.3%
decile 6	1,392	1,291	1,238	-154	-11.1%
decile 7	1,349	1,209	1,210	-140	-10.3%
decile 8	1,262	1,221	1,212	-51	-4.0%
decile 9	1,339	1,284	1,317	-22	-1.7%
decile 10	2,162	2,119	2,210	48	2.2%
Total					
	2,436	2,396	2,431	-4	-0.2%
decile 1	1,944	1,886	1,910	-34	-1.7%
decile 2	1,485	1,376	1,421	-64	-4.3%
decile 3	1,376	1,438	1,358	-19	-1.4%
decile 4	1,541	1,494	1,492	-49	-3.2%
decile 5	1,658	1,649	1,595	-62	-3.7%
decile 6	1,714	1,669	1,612	-102	-6.0%
decile 7	1,847	1,745	1,740	-107	-5.8%
decile 8	1,952	1,948	1,927	-25	-1.3%
decile 9	2,273	2,221	2,271	-2	-0.1%
decile 10	3,885	3,846	3,999	114	2.9%

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the tw oadult members of the household are active

Table 20: Repartition of sums spent for in-home services depending on their refund by a tax break

	2006	2007	2008	Δ
Tax reduction				
	34.0%	34.8%	34.9%	0.9%
decile 1	0.1%	0.2%	0.2%	0.1%
decile 2	0.3%	0.3%	0.3%	0.1%
decile 3	1.2%	1.6%	1.6%	0.4%
decile 4	5.6%	7.1%	7.1%	1.4%
decile 5	17.7%	20.4%	20.0%	2.3%
decile 6	31.5%	32.4%	32.9%	1.4%
decile 7	39.7%	40.7%	40.4%	0.7%
decile 8	45.2%	45.2%	45.4%	0.2%
decile 9	47.9%	47.6%	47.6%	-0.3%
decile 10	49.0%	48.9%	48.7%	-0.3%
Tax credit				
	0.0%	1.9%	2.2%	2.2%
decile 1	0.0%	9.7%	11.6%	11.6%
decile 2	0.0%	5.9%	7.5%	7.5%
decile 3	0.0%	4.9%	6.1%	6.1%
decile 4	0.0%	3.9%	4.2%	4.2%
decile 5	0.0%	2.9%	3.2%	3.2%
decile 6	0.0%	2.3%	2.3%	2.3%
decile 7	0.0%	1.3%	1.7%	1.7%
decile 8	0.0%	1.0%	1.0%	1.0%
decile 9	0.0%	0.6%	0.7%	0.7%
decile 10	0.0%	0.3%	0.4%	0.4%
No tax break				
	66.0%	63.3%	62.9%	-3.1%
decile 1	99.9%	90.1%	88.2%	-11.7%
decile 2	99.7%	93.8%	92.1%	-7.6%
decile 3	98.8%	93.5%	92.3%	-6.5%
decile 4	94.4%	89.0%	88.7%	-5.7%
decile 5	82.3%	76.7%	76.8%	-5.5%
decile 6	68.5%	65.3%	64.8%	-3.7%
decile 7	60.3%	58.0%	58.0%	-2.3%
decile 8	54.8%	53.8%	53.6%	-1.2%
decile 9	52.1%	51.8%	51.8%	-0.4%
decile 10	51.0%	50.8%	50.9%	-0.1%

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the tw oadult members of the household are active

Table 21: Tax break, proportion of users and total spending - Biactive couples with children under 6

	2006	2007	2008	Δ	Δ(%)
Total tax break					
	389,044	445,302	495,063	106,019	27.3%
decile 1	-	711	1,611	1,611	-
decile 2	86	1,552	1,980	1,895	2213%
decile 3	133	2,767	3,162	3,028	2275%
decile 4	1,180	4,227	4,847	3,667	311%
decile 5	3,806	6,941	8,871	5,065	133.1%
decile 6	8,087	11,634	12,481	4,394	54.3%
decile 7	14,485	20,131	21,417	6,932	47.9%
decile 8	29,470	36,831	39,706	10,235	34.7%
decile 9	69,328	79,558	84,337	15,009	21.6%
decile 10	262,469	280,950	316,652	54,183	20.6%
Proportion of users					
	11.3%	12.5%	13.4%	2.1%	18.6%
decile 1	1.8%	1.9%	2.3%	0.5%	28.0%
decile 2	1.9%	2.1%	2.4%	0.5%	27.1%
decile 3	2.1%	2.7%	3.1%	1.1%	53.4%
decile 4	2.7%	3.4%	4.0%	1.2%	46.2%
decile 5	3.9%	4.7%	5.6%	1.7%	44.6%
decile 6	6.1%	6.6%	7.8%	1.7%	28.1%
decile 7	9.1%	11.1%	11.3%	2.2%	24.2%
decile 8	15.5%	17.5%	18.6%	3.0%	19.6%
decile 9	27.1%	29.5%	30.6%	3.6%	13.1%
decile 10	53.8%	55.7%	56.3%	2.5%	4.6%
Number of consumers					
	270,940	300,620	321,860	50,920	18.8%
decile 1	1,780	1,920	2,360	580	32.6%
decile 2	4,380	4,880	5,720	1,340	30.6%
decile 3	5,360	7,020	8,200	2,840	53.0%
decile 4	7,740	9,480	11,260	3,520	45.5%
decile 5	11,740	14,240	16,720	4,980	42.4%
decile 6	18,120	19,880	22,820	4,700	25.9%
decile 7	24,920	30,140	30,380	5,460	21.9%
decile 8	38,100	42,800	45,040	6,940	18.2%
decile 9	57,360	62,600	64,540	7,180	12.5%
decile 10	101,440	107,660	114,820	13,380	13.2%
Total spending					
	863,105	939,341	1,054,642	191,537	22.2%
decile 1	1,772	1,957	3,532	1,760	99.3%
decile 2	5,990	3,930	5,136	-854	-14.3%
decile 3	5,343	6,562	7,708	2,365	44.3%
decile 4	6,885	10,158	10,243	3,358	48.8%
decile 5	13,726	14,520	18,847	5,121	37.3%
decile 6	21,660	24,787	26,783	5,123	23.7%
decile 7	35,203	41,979	43,424	8,222	23.4%
decile 8	64,203	75,161	81,198	16,995	26.5%
decile 9	147,503	162,211	171,821	24,318	16.5%
decile 10	560,820	598,075	685,950	125,130	22.3%

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the tw oadult members of the household are active

Table 22: Tax break, proportion of users and total spending - Biactive couples with at least 2 children under 6

	2006	2007	2008	Δ	Δ(%)
Total tax break					
	174,512	197,916	229,856	55,343	31.7%
decile 1	-	241	570	570	-
decile 2	29	717	1,136	1,106	3771%
decile 3	55	1,420	1,345	1,290	2350%
decile 4	619	2,292	2,563	1,944	314%
decile 5	1,857	3,187	4,188	2,330	125.5%
decile 6	3,967	4,983	5,997	2,030	51.2%
decile 7	6,626	8,748	10,312	3,685	55.6%
decile 8	13,593	17,653	18,379	4,786	35.2%
decile 9	30,580	36,925	41,040	10,461	34.2%
decile 10	117,186	121,750	144,326	27,141	23.2%
Proportion of consumers					
	15.2%	16.2%	17.5%	2.2%	14.7%
decile 1	2.4%	2.5%	2.4%	0.1%	3.0%
decile 2	2.7%	2.4%	3.1%	0.4%	14.7%
decile 3	3.3%	3.8%	4.0%	0.7%	21.0%
decile 4	4.5%	5.1%	5.9%	1.4%	30.2%
decile 5	6.5%	7.2%	8.5%	2.0%	30.6%
decile 6	10.7%	10.7%	12.8%	2.0%	18.9%
decile 7	15.6%	17.3%	18.7%	3.1%	20.0%
decile 8	25.3%	27.7%	28.4%	3.0%	12.0%
decile 9	39.3%	43.2%	45.2%	5.8%	14.8%
decile 10	65.8%	66.7%	69.1%	3.3%	5.0%
Number of consumers					
	,115,160	,122,140	,134 600	,19 440	16.9%
decile,1	1,040	1,100	,1,140	100	9.6%
decile 2	2,580	2,280	3,060	480	18.6%
decile 3	3,120	3,600	3,780	660	21.2%
decile 4	4,240	4,600	5,500	1,260	29.7%
decile 5	5,840	6,420	7,700	1,860	31.8%
decile 6	8,900	8,940	10,720	1,820	20.4%
decile 7	11,460	12,620	13,780	2,320	20.2%
decile 8	16,200	18,020	18,480	2,280	14.1%
decile 9	22,920	25,340	26,720	3,800	16.6%
decile,10	38,860	39,220	43,720	4,860	12.5%
Total spending					
	394,990	419,129	494,379	99,390	25.2%
decile,1	891	509	1,168	277	31.1%
decile 2	4,374	1,884	2,826	-1,547	-35.4%
decile 3	3,052	3,260	3,379	327	10.7%
decile 4	3,609	5,323	5,419	1,811	50.2%
decile 5	7,246	6,474	8,514	1,268	17.5%
decile 6	10,933	10,498	12,371	1,438	13.2%
decile 7	16,683	18,117	20,951	4,268	25.6%
decile 8	30,422	36,179	37,820	7,397	24.3%
decile 9	65,930	75,287	84,081	18,152	27.5%
decile 10	251,852	261,598	317,850	65,999	26.2%

Source : Yearly tables 2006, 2007, 2008
(*) A household is considered as active if the adult member or the tw oadult members of the household are active

Table 23: Amounts refunded, percentage of users and total expenditure

	2006	2007	2008	Δ	Δ(%)
Total amounts refunded					
	2,199,242	2,516,063	2,776,746	577,504	26.3%
- decile 1	58	11,476	14,763	14,705	2,5521%
decile 2	458	10,436	13,822	13,364	2,917%
decile 3	1,590	12,890	16,477	14,887	936%
decile 4	6,785	20,101	22,284	15,500	228%
decile 5	28,684	45,927	48,570	19,886	69.3%
decile 6	64,762	84,480	92,188	27,426	42.3%
decile 7	114,701	141,803	151,993	37,293	32.5%
decile 8	196,278	236,137	259,050	62,772	32.0%
decile 9	387,474	432,987	479,446	91,971	23.7%
decile 10	1,398,453	1,519,825	1,678,153	279,699	20.0%
Percentage of users					
	10.9%	11.8%	12.6%	1.7%	15.8%
decile 1	2.9%	2.9%	3.1%	0.2%	7.2%
decile 2	6.1%	6.0%	6.1%	0.1%	0.9%
decile 3	7.4%	7.7%	8.0%	0.6%	7.4%
decile 4	7.4%	8.0%	8.4%	1.0%	13.2%
decile 5	7.6%	8.1%	8.9%	1.3%	16.8%
decile 6	8.0%	8.8%	9.7%	1.7%	20.7%
decile 7	9.2%	10.4%	11.3%	2.1%	22.5%
decile 8	11.3%	12.8%	14.2%	2.9%	25.3%
decile 9	16.6%	18.2%	19.8%	3.3%	19.6%
decile 10	32.4%	34.9%	36.6%	4.2%	12.9%
Number of users					
	2,727,840	2,983,240	3,214 540	486,700	17.8%
decile 1	71,500	72,980	77,820	6,320	8.8%
decile 2	150,920	151,380	155,580	4,660	3.1%
decile 3	186,080	195,580	203,920	17,840	9.6%
decile 4	185,660	202,060	214,100	28,440	15.3%
decile 5	190,500	206,020	226,800	36,300	19.1%
decile 6	201,380	223,560	246,520	45,140	22.4%
decile 7	230,600	264,580	286,660	56,060	24.3%
decile 8	284,720	325,060	362,360	77,640	27.3%
decile 9	415,040	462,080	502,760	87,720	21.1%
decile 10	811,440	879,940	938,020	126,580	15.6%
Total expenditure					
	6,643,748	7,147,323	7,814,453	1,170,705	17.6%
decile 1	138,998	137,620	148,638	9,641	6.9%
decile 2	224,109	208,312	221,077	-3,032	-1.4%
decile 3	256,128	281,330	276,848	20,720	8.1%
decile 4	286,138	301,889	319,411	33,273	11.6%
decile 5	315,759	339,790	361,827	46,068	14.6%
decile 6	345,119	373,106	397,303	52,184	15.1%
decile 7	425,806	461,713	498,720	72,914	17.1%
decile 8	555,703	633,080	698,066	142,363	25.6%
decile 9	943,409	1,026,231	1,141,594	198,185	21.0%
decile 10	3,152,580	3,384,251	3,750,969	598,389	19.0%

Source : Yearly tables 2006, 2007, 2008