Labour and income effects of caregiving across Europe: an evaluation using matching techniques^{*}

David Casado Marín^{a(+)}, Pilar García Gómez^a and Ángel López Nicolás^{ab}

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^a Departament d'Economia i Empresa and CRES, Universitat Pompeu Fabra, 08005-Barcelona, Spain

^b Departamento de Economía. Universidad Politécnica de Cartagena. 30203-Cartagena, Spain.

Abstract

This paper offers evidence on the effects of caregiving (i.e. looking after a dependent person within or outside the household) on labour outcomes such as employment, full time employment (conditional on employment), and income for women aged between 30 and 60 across different European countries. It does so by exploiting data from the European Community Household Panel (1994-2001) in order to match women who have become caregivers with "control" women who are deemed to be comparable in all relevant characteristics and compute a non-parametric measure of the effect of becoming a caregiver on the outcomes mentioned above. Our results suggest that, for women who are working before becoming a caregiver there is no statistically significant change in the chances of being employed. However, in the case of women who were not working prior to becoming a caregiver, there is a statistically significant effect on labour income, which tends to be offset by a parallel increase in social transfers, except in the case of women with low levels of education in the Southern countries.

JEL classification: JI4, J2

Keywords: informal elderly care, female labour force participation, ECHP, matching

(+) Corresponding author: Departament d'Economia i Empresa. Universitat Pompeu Fabra. c/ Ramon Trias Fargas, 25. 08005 Barcelona. Fax:+34 935421746 Tel. +34 93 5422490. E-mail: <u>david.casado@upf.edu</u>

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1. Introduction

European societies are predicted to follow a demographic aging process over the next few decades, and the foreseeable consequences of this phenomenon raise social and economic concerns. Among these, there are the well-known debates about the sustainability of public pensions and public health care systems (European Comission, 2006). However, a less heard of issue that deserves equal attention is the problem of providing and financing the care needed by old dependent people.

While all European countries provide basic health care, there exist wide differences in the provision of social care services for the elderly across countries, specially in aspects such as the coverage (i.e. who can use the services?), the entitlements (ie. what services are provided to those covered?) and the sources of funding (Gibson et al, 2003). For instance, in Scandinavian countries, these services are universally offered and funded out of general tax revenues. In Austria, Germany, the Netherlands, Belgium and Luxemburg there are also universal long-term programs, but they are offered as part of social insurance programs, so they are partially funded by enrollees' contributions and tend to absorb less tax revenues than in Scandinavia. Public expenditure on long-term care services in the United Kingdom and France is similar to that in countries with universal social insurance, but whether individuals are eligible depends not only on the level of their disability, but also on their income. Means testing is also present in the Mediterranean countries and Ireland, but in these countries the amount of public expenditure on long-term care services is much lower than in the rest of Europe.

There are also important differences in the expectations that European societies have about the role of the family in the provision of care for old and/or dependent people. This leads to different combinations of formal versus informal care, and differing degrees of recognition for the role fulfilled by informal caregivers (Mestheneous and Triatafillou, 2005). In this respect, in Portugal, Spain, Austria, Germany, Ireland, Italy and Netherlands there exist stronger expectations about the family as a provider of care than in Denmark, Luxemburg, Finland, Sweden, United Kingdom, Belgium and Norway. This explains why in countries such as Denmark and Finland "informal" caregivers are oficially recognised as salaried employees. Despite of the differences mentioned above, all countries face similar challenges as the vast majority of care is provided by individual family members within the informal care sector (Mestheneous and Triatafillou, 2005). On the supply side, these challenges are due to the expected (and -according to the Lisbon agenda- desired) increase in female labour participation, and other concomitant demographic changes such as lower fertility rates, lower marriage rates, higher rates of divorce and the increase of single person households. This means that informal care will probably have increasing opportunity costs in terms of present and future labour income, career prospects and pension income. On the demand side, the number of old dependent people will also increase due to increased longevity. These compositional changes are expected to reduce the amount of informal care available to any person for whom the need arises.

One of the objectives repeatedly stated by European politicians is to facilitate a new equilibrium between informal and formal care whereby the desired higher female participation is not jeopardized by the expected greater needs from the population of dependent people. In this sense it is important to estimate, for the population of interest, the effects of caregiving (i.e. looking after a dependent person within or outside the household) on labour outcomes such as employment, full time employment (conditional on employment), and income. This paper aims to provide such evidence for women aged between 30 and 60 across different European countries. It does so by exploiting data from the European Community Household Panel (1994-2001) in order to apply treatment evaluation techniques whereby the treatment consists in becoming a caregiver. In particular we match women who have become caregivers with "control" women who are deemed to be comparable in all relevant characteristics and compute a non-parametric measure of the effect of becoming a caregiver on the outcomes mentioned above. The panel nature of the ECPH is crucial in providing confidence about the possibility of comparing "treated" women with "control" women in this non-experimental setting. Our results suggest that, for women who are working before becoming a caregiver there is no statistically significant change in the chances of being employed. However, in the case of women who were not working prior to becoming a caregiver there is a statistically significant decrease in the chances of entering employment. We also detect a negative and significant effect on labour income, which tends to be offset by a parallel increase in social transfers, except in the case of women with low levels of education in the Southern countries.

In the next section we present a brief review of previous relevant studies. In section 3 we describe the methodological approach. We also discuss features of the ECHP of special interest for this study. Next we present the empirical results, and finally section 6 concludes and discusses the main findings.

2. Background

The first methodological challenge to be solved when analysing the relationship between informal care and labour behaviour is that informal care is usually endogenous in the process determining labour outcomes. This endogenity can be due to two different sets of elements. On one hand, as the caregiver has a limited amount of time the decision about labour supply and the amount of care spent on informal care are the result of a simultaneous process, in which there are also other influential factors: use of formal services, previous labour status, the availability of other informal caregivers, etc. On the other hand, even if the simultaneous decision is satisfactoryly modeled, there could still exist an endogeneity problem if there exists individual unobserved characteristics related to both the propensity to provide care to dependent relatives and their labour preferences. Preferences about time spent with other family members could be an example of these, usually unobserved, factors.

According to these methodological problems, to which we will refer from now on as simultaneity and unobserved individual heterogeneity problems respectively, it is possible to classify previous studies depending on whether they tackle both problems, just one of them or none of them. The two papers by Carmichel and Charles (1998 and 2003) can be placed in the last group. They use 1985 and 1990 cross-sectional data from the General Household Survey in order to analize the relationship between informal care and labour behaviour in the United Kingdom. Their results show that informal care is negatively associated to both the probability of being employed and the number of working hours.

There exists a second group of studies that, although limited by the use of cross-sectional data, have tackled the endogeneity problem by specifying labour supply equations in an instrumental variables setting [Wolf and Soldo (1994); Ettner (1995 and 1996); Heitmueller (2004); Crespo (2006)]. Typical instruments in these papers are the health status of the women's parents (i.e. they assume that the parent's health status affect the caregiver labour

supply only through its effect on the intensity of care) or the number of brothers and sisters (i.e. they assume that the number of siblings is related to the chances of becoming a caregiver but can be excluded from the labour supply equation). With the exception of Wolf and Soldo, these authors find, (despite using data for different countries at different time periods) that becoming a caregiver generates costs in terms of labour supply. In particular, Ettner (1995 and 1996) uses data from the US and finds that women who look after someone living within the same household have a lower probability of participating in the labour market, and also that that women who look after someone who lives outside her household do not have a smaller probability of being employed, but tend to work less hours than non caregivers.

The results found by Ettner have been confirmed by recent work with European data. Heitmueller (2004), using the 2002 wave from the British Household Panel to estimate labour supply equations with instrumental variables, finds that only women who give care at home have a smaller probability of being employed. Similarly, Crespo (2006) uses the first wave (2004) of the Survey of Health, Ageing and Retirement in Europe (SHARE) to estimate a bivariate probit for the effects of informal care on female labour supply in two groups of countries: southern european countries (Spain, Italy and Greece) and northern european countries (Sweden, Denmark and Netherlands). Her results show that women who provide intensive care, either because they are live-in caregivers or because they have to look after someone outside the household on a daily basis, have a lower probability of being in employment, both in southern and in northern European countries.

Spiess and Schneider (2002) use the first three waves of the European Community Household Panel (ECHP) and estimate the effect on the number of hours worked caused by the three following events: to start caregiving, to continue caregiving and to stop caregiving. They use a difference-in-differences strategy on two groups of european countries: Mediterranean (in this group they also include Ireland), and non-Mediterranean countries. They find that in Mediterranean countries the number of hours worked are affected only when women continue giving care, while for the rest of countries the effects are found when they start caregiving.

Viitanen (2005) uses the eigth waves of the ECHP to analyse the effects of informal caregiving on labour behaviour for women aged 20 to 59 using dynamic probit models

which control for unobserved individual heterogeneity, state dependence and attrition bias. The results are country specific and show that the probability of being in employment is affected by being an informal caregiver only in the case of Germany. However, when she separates the analysis for different subgroups of the population, she finds statistically significant effects for middle aged women (Belgium, Finland and Germany) and single women (Greece, Netherlands, Italy and Germany) in different countries.

Finally, Johnson and Lo Sasso (2000) and Heitmueller and Michaud (2006) have analysed the relationship between informal care and labour behaviour tackling both simultaneity and unobserved individual heterogeneity. Johnson and Lo Sasso (2000) use two waves from the Health and Retirement Study to estimate a simultaneous equation model with panel data. They estimate the impact of looking after an elderly parent for more than 100 hours in a given year on the number of working hours within the same year. The results show that the labour supply for both men and women in such situation is 23% and 28% lower than the labour supply of middle age men and women (53-63 years) who do not provide care. On the other hand, Heitmueller and Michaud (2006) use 13 waves of the British Household Panel (1991-2003) to estimate a bivariate probit adjusting both for state dependence and unobserved heterogeneity. They first analyse the effects of providing care on labour supply for all caregivers regardless of whether they look after someone living in the same household or living elsewhere and they find that their labour supply is not statistically different than that of non caregivers. However, their results show that the probability of being employed is lower for women (-6%) and men (-4.7%) when they look after a live-in dependent.

As we shall explain with detail in the next section, our approach uses the matching methodology. No published study of the effects of caregiving on labour outcomes has done so before. Our results are therefore a useful complement to the existing studies.

3. Methods

3.1 Outcomes of interest

In this paper we focus on labour market outcomes potentially affected by becoming a caregiver. Although care to dependent people can be supplied by both men and women, it is women who provide the bulk of care presently, so we will ignore the male population in this study. Also, we are particularly interested in working age women, so we focus on the 30 to 60 age group. For this group of the population, the labour outcomes evaluated in this study are the probability of being in employment, the probability of working full-time (conditional on being employed), and the levels of income from labour and other sources.

3.2 Estimating Average Treatment Effects on the Treated

As in any other evaluation exercise with non-experimental data, the problem in our setting consists in obtaining a credible counterfactual against which we may measure the impact of becoming a caregiver. Let T=1,0 indicate "treatment", that is, becoming a caregiver, and lack of treatment respectively and let Y_{i1} and Y_{i0} denote the outcome of interest for individual i with treatment and without treatment respectively. Since we will observe individual i either with treatment or without treatment, we cannot observe the distribution of the Treatment Effect $B=Y_{i1}-Y_{i0}$. Some features of such distribution are estimable, nevertheless. In particular, we may consider the Average Treatment Effect on the Treated

This magnitude measures how much the outcome of interest changes on average for those individuals who undergo the treatment. Clearly, simply computing the difference in the average outcomes of those in treatment and those out of treatment is open to bias. That is,

$$E(Y_{1}|T=1)-E(Y_{0}|T=0) =$$

$$E(Y_{1}|T=1)-E(Y_{0}|T=1)+E(Y_{0}|T=1)-E(Y_{0}|T=0) =$$

$$E(Y_{1}-Y_{0}|T=1)+E(Y_{0}|T=1)-E(Y_{0}|T=0) =$$

$$ATET+BIAS$$

(2)

Only if we can guarantee that the outcomes of the control group are equal on average to what the outcomes of the treatment group would have been in the absence of treatment does this consistently estimate the ATET. However, the labour outcomes of caregivers, had they not become caregivers, are not likely to coincide with the labour outcomes of the no caregivers, even if we consider averages. For instance, caregivers might be older and less educated than the non caregivers and these differences would in general lead to differences in employment rates between the two groups even in the first group did not supply care.

Now suppose that by conditioning on an appropriate set of observables, X, assignment to the treatment group becomes random (or, at least, independent of the outcomes). This is the conditional independence assumption (see Heckman et al. 1997 or Wooldridge 2002)

$$Y_o \perp T \mid X$$

This implies that

$$E(Y_0|T=1, X)-E(Y_0|T=0, X)=0$$

(4)

Therefore we could estimate the ATET from the difference in outcomes between treated and controls within each cell defined by the conditioning variables X (see Blundell and Costa Dias 2002). Using the law of iterated expectations and the conditional independence assumption, the ATET can be retrieved from observed data in the following way

$$ATET = E(Y_{1} | T=1) - E(Y_{0} | T=1) =$$

$$E_{X}[(E(Y_{1} | X, T=1) - E(Y_{0} | X, T=1)) | T=1] =$$

$$E_{X}[(E(Y_{1} | X, T=1) - E(Y_{0} | X, T=0)) | T=1]$$
(5)

The sample counterpart to equation (5) is

$$ATET = \sum_{i \in \{T=1\}} \left[Y_{i1} - \sum_{j \in \{T=0\}} W_{ij} Y_{j0} \right] W_i$$
(6)

(3)

where W_{ij} denote the weights attributed to control individual j when comparing with treated individal i and w_i are weights for each one of the observations in the sample of the treated.

Equation (5) means that the treated are to be compared with controls with identical values in the vector of conditioning variables X. In terms of the weights appearing in equation (6), this means that $W_{ij} = 0$ if $X_{j \neq} X_{i}$. However, this turns out to be prohibitive in terms of data, as the size of cells of observations defined by the values of X will be small unless X has a small dimension. An alternative is to use the results of Rosenbaum and Rubin (1983, 1984) and condition on the probability of treatment as a function of X, P(X) since the conditional independence assumption also implies that

$$E(Y_0|T=1, P(X))-E(Y_0|T=0, P(X))=0$$
(7)

Therefore we could estimate the ATET from the differences in outcomes between treated and controls within each cell defined by values of P(X).

$$ATET = E(Y_{1} | T=1) - E(Y_{0} | T=1) =$$

$$E_{P(X)}[(E(Y_{1} | P(X), T=1) - E(Y_{0} | P(X), T=1)) | T=1] =$$

$$E_{P(X)}[(E(Y_{1} | P(X), T=1) - E(Y_{0} | P(X), T=0)) | T=1]$$
(8)

In practical terms, this requires matching treated individuals with controls on criteria based on the closeness of their P(X) score – also known as the "propensity score".

The ability of this estimator to retrieve consistently the ATET relies crucially on the adequacy of the conditional independence assumption. That is, that all factors that may affect treatment and the outcomes are included in the vector of conditioning variables. For this reason, the matching method applied to non-experimental data is often criticised for assuming away the potential biases induced by unobserved heterogeneity. In our context the criticism would be based on the reasonable observation that there may be women with a high preference for what we may loosely call "the traditional female" role leading to both a lower probability of employment and a greater probability of becoming a caregiver (with respect to observationally equivalent women with a lower preference for such role).

Panel data –spanning periods before and after the treatment- afford the possibility to correct for the biases arising from this situation and we shall exploit some of these advantages in our analysis. Firsly, we can first difference the outcomes of the treated and the controls in order to eliminate any unobservable fixed effects affecting selection into becoming a caregiver and the outcomes of interest.

Let the superscripts t and t+1 denote the time periods before and after treatment occurs. The identification assumption is now less stringent since it states that

$$(\mathbf{Y}^{t+1}_{0} - \mathbf{Y}^{t}_{0}) \perp \mathbf{T} \mid \mathbf{X}$$
(9)

So that,

$$E(Y_{0}^{t+1}-Y_{0}^{t} | T=1, X) - E(Y_{0}^{t+1}-Y_{0}^{t} | T=0, X) = 0$$
(10)

And therefore, the matching and "differences in differences" ATET can be estimated in the following way from observed data (Blundell and Costa Dias, 2002 and Blundell et al, 2004)

$$\text{ATET}_{\text{MDID}} = \sum_{i \in \{T=1\}} \left\{ \left[Y_{i1}^{t+1} - Y_{i1}^{t} \right] - \sum_{j \in \{T=0\}} W_{ij} \left[Y_{j0}^{t+1} - Y_{j0}^{t} \right] \right\} w_{i}$$
(11)

where W_{ij} and w_i have been defined before . The same reasoning about the propensity score applies to the ATET_{DID} estimator.

Secondly, we can use the standard ATET estimator of expression (8) including pretreatment outcomes within the vector of conditioning variables. This procedure ensures that the vector X of conditioning variables includes the unobserved factors that may lead to biased estimation, and it can be done by either including these pre-treatment outcomes in the propensity score function or restricting the sample of controls to individuals who are identical in terms of pre-treatment outcomes.

<u>3.3 Constructing treatment and control groups</u>

Our measures for the status of caregiver are based on the responses to the following questions in the ECHP: "Do your present daily activities include, without pay, looking after children or other persons who need special help because of old age, illness or disability?" and "Does the looked after person(s) (other than children) live in the household or elsewhere?". We will consider two types of treatment: (i) becoming a caregiver, regardless of the place where the cared after person lives (i.e. an affirmative answer to the first question), and (ii) becoming a caregiver for a live-in dependent person (i.e. an affirmative answer to the first question plus reporting the looked after person to be living in the same household). In both cases women who look after children are not considered to be caregivers for the purposes of this study.

As we have discussed in the previous section, it is important to allow for unobserved factors affecting both the caregiving status and labour outcomes. For this reason we carry out separate analyses for women who are in employment and women who are not employed. Also, since we wish to evaluate whether becoming a caregiver leads to changes in labour outcomes, we want to rule out the possibility that any potential anticipation of the change in labour status causes the change in the caring status. For this purpose we adopt an empirical strategy motivated by the procedures used by Lechner and Vázquez Alvarez (2004) and García Gómez and López Nicolás (2006) in order to construct the treatment and control groups.

1) Consider a window of three years for each observed individual. This creates 6 possible sequences of three years over the time span covered by our data. To these three years, regardless of the sequence, we refer as t=1, t=2 and t=3

Analysis for women who are in employment:

- For each sequence select individuals who are not giving care at t=1, the start of the sequence, and also are employed at t=1 and t=2
- The treatment group are individuals meeting selection criterion # 2 who report being a caregiver in t=2 and t=3.
- The control group are individuals meeting selection criterion # 2 who do not report being a caregiver in either t=2 nor t=3.

Analysis for women who are not in employment:

2') For each sequence select individuals who are not giving care at t=1, the start of the sequence, and also are not employed at t=1 and t=2

3') The **treatment group** are individuals meeting selection criterion # 2 who report being a caregiver in t=2 and t=3.

4') The **control group** are individuals meeting selection criterion # 2 who do not report being a caregiver in either t=2 nor t=3.

We shall match individuals in the treatment and control groups on the basis of the propensity score function (whose arguments will be specified soon). Thus we do not resort to first differences, but from the discussion in 3.2 it follows that we nevertheless exploit the longitudinal perspective of our data by conditioning on the labour status at times t=1 and t=2 (a similar strategy has also been adopted by Dano, 2004 when evaluating the effects of road accidents on labour outcomes and by García Gómez and López Nicolás, 2006 when evaluating the effect of a health shock on labour outcomes). The ATET are estimated on the basis of observed outcomes at t=3.

4. Data

4.1 Institutional factors and country grouping

The analysis in this paper is based on data from the European Community Household Panel (ECHP) from 1994 to 2001. Apart from information on labour outcomes and caregiving, the ECPH includes a rich set of socioeconomic variables (age, gender, education, health status, income, etc.) which allow us to include a rich set of covariates in the propensity score. The estimation of ATET using non-parametric matching techniques requires big simple sizes and, altough the ECPH simple sizes are greater than those for the average socio-economic survey, the sequence of conditions described above results in a relatively small number of observations in the treatment groups. This prevents us from carrying out a separate analysis for each one of the countries represented in the ECHP and, in line with other studies in the literature (Crespo, 2006 and Spiess and Schneider, 2003) we carry out separate analysis for groups of countries. The criteria that we have used to define these groups are related to factors that affect the phenomenon under study. These factors are (i) the overall participation rates of women aged 25-54 and (ii) the size of public expenditures in long-term care services as a percentage of GDP. In principle these factors can affect the way in which becoming a caregiver impacts on labour outcomes. On one hand, a wide and comprehensive public coverage against the risk of dependency will lead, *ceteris paribus*, to smaller demands on informal caregivers and therefore to less drastic changes in their labour supply. On the other hand, the female rate of participation in the labour market can be considered a *proxy* for cultural differences in the way women are expected to react to the need for care of a relative across countries. In this sense in countries with a high prevalence of "the traditional female role" that we have mentioned before we might expect the adjustment in labour supply after becoming a caregiver to be more drastic than elsewhere.

According to these two dimensions, and on the basis of the data depicted in figure 1, the countries represented in the ECPH can be classified into three groups. The first group contains Spain, Greece, Italy and Ireland. These countries, possibly as a consequence of their greater "familyism" (Esping-Andersen, 1999), are characterised by a low level of public expenditure on long term care as a proportion of GDP, and -except Portugal- their rates of female participation in the labour force are far below those of the rest of European At the other extreme, the group composed by Denmark and Finland is countries. characterised by rates of female labour force participation above 80% and levels of public expenditure on long term care that exceed twice the European average. The third group of countries contains the UK, France, Belgium, the Netherlands, Germany and Austria. In this group the rates of participation in the labour force and the level of public expenditure on long term care are intermediate. We shall refer to these three groups as "Southern", "Scandinavian" and "Continental", although the inclusion of Ireland in the first group and the UK in the third group appears counterintuitive given the usual meaning of their group names.

Figure 1. Public Long Term Care Expenditures and Women Labour Force participation across Europe



Source: Public LTC expenditures in 2003 (OECD, 2006). Women labour participation rates in 2003 (European Comission, 2006).

The ECPH data also bear out the expected differences between the three groups of countries that we have defined. Figure 2 presents the labour states of women who become caregivers (according to our definition for the treatment group) previous to the event. Before becoming a caregiver, only 37.9% of these women in Southern countries reported being employed. The corresponding figures for Continental and Scandinavian countries are 45.7% and 77.2%.

Figure 3 presents the differences between the modalities of care between the three groups. In the group of Southern countries nearly 60% of the women who become caregivers provide care within the household. For the countries in the Continental and Scandinavian group the corresponding proportion is 20%. In these two groups there are no substantial differences according to whether the caregiver works or not, but in the Scandinavian group only 15% of caregivers in employment provide care within the household, whereas the proportion among caregivers out of employment is around 30%.

Figure 2. Previous labour status of caregivers



Source: ECHP. Women aged 30-60



Figure 3. Where do individuals in different countries caregive?

Data from the SHARE (Survey of Health, Ageing and Retirement in Europe) depicted in figure 4 suggests that the reason for these differences in the modality of care are related to the fact that, in Southern countries, dependent parents tend to live with their daughters in a greater proportion than in the rest of countries. In fact, in the Southern group more than

Source: ECHP. Women aged 30-60

60% of the women who report looking after someone within their household are looking after a parent. In contrast the corresponding figure for the Scandinavian group is around 10%.

Figure 4. Who do women aged 50-60 caregive in EU? Subsample of women from SHARE that caregive their spouses or parents.



Note: Southern includes Spain, Italy and Greece; Continental includes Austria, Germany, Netherlands, France and Switzerland; Scandinavian includes Sweden and Denmark

4.2 Descriptive statistics

Table 1 shows that in the ECHP we can observe a total of 119405 of women aged 30 to 60 in Southern countries, 90455 in Continental countries and 22934 in Scandinavian countries. The sample reduces if we condition on being working (not working) in the two previous periods to 30755 (36602) in Southern countries, 26712 (19011) in Continental countries and 9505 (1969) in Scandinavian countries. The sample further reduces when we split it into the treated, as shown by the figures in the table.

	Southern	+Ireland	Conti	nental	Scandinavian	
	Caregiving	Caregiving home	Caregiving	Caregiving home	Caregiving	Caregiving home
Women 30-60	119	405	90455		22934	
Work t-2 and t-1	307	755	267	712	95	05
Treated	481	261	295	64	139	17
Treated (no missing propensity score)	426	228	262	57	125	-
High education	86	31	76	9	62	-
Sec education	134	54	129	31	47	-
Low education	206	143	57	17	16	-
Age 30-39	81	45	40	12	17	-
Age 40-49	195	100	128	26	48	-
Age 50-60	150	83	94	19	60	-
Control	230)62	210	313	74	36
Control (no missing propensity score)	209	974	187	770	6738	-
High education	58	64	5993		3756	-
Sec education	63	95	8498		2218	-
Low education	87	15	4279		764	-
Age 30-39	81	37	7138		2101	-
Age 40-49	80	46	75	45	2672	-
Age 50-60	47	91	4087		1965	-
No Work t-2 and t-1	366	602	19011		1969	
Treated	788	381	351	73	41	11
Treated (no missing propensity score)	784	379	347	71	41	-
High education	41	21	45	4	7	-
Sec education	179	63	164	29	20	-
Low education	564	295	138	38	14	-
Age 30-39	104	49	42	10	5	-
Age 40-49	301	132	129	27	4	-
Age 50-60	379	198	176	34	32	-
Control	240)63	132	214	14	09
Control (no missing propensity score)	237	713	129	978	1070	-
High education	19	34	16	17	306	-
Sec education	56	68	59	22	394	-
Low education	161	111	5439		370	-
Age 30-39	68	22	38	87	215	-
Age 40-49	72	79	39	64	255	-
Age 50-60	96	12	5127		600	-

Table 1. Observations available.

In table 2 we present a first glimpse of the sort of effects that we are aiming to estimate. The figures correspond to the proportion of women who report to be working at t=3 in each of the treatment and control groups for the three country groups and the two

modalities of caregiving that we are considering. In the upper panel of the table the figures correspond to women who were in employment before becoming caregivers, and the lower panel contains the corresponding figures for women who were not working. In the upper panel the difference of -3.4 percentage points (90.23-93.63) in the proportions of women in employment between the treated (any modality of caregiving) and control groups for the Southern countries would suggest that becoming a caregiver reduces the probability of being employed. However, these figures are most likely biased estimates of the ATET, as they are calculated according to expression (2). An illustration of the potential biases is given by the mean age of each group, in brackets below the rates of employment. The treated are on average older than the controls, so as long as age is negatively correlated with labour force participation and, as one might expect, positively correlated with the caregiver condition, the observed drop in the rate of employment could be simply due to the underlying effect of age.

	Sout	Southern		nental	Scandinavian				
	Caregiving	Caregiving home	Caregiving	Caregiving home	Caregiving	Caregiving home			
Work t-2 and t-1									
Treated	90.23	88.12	93.56	95.31	94.96	100.00			
Treated	(46.4)	(46.5)	(46.8)	(46.1)	(48.5)	(50.9)			
Carrteal	93.63	93.63	94.43	94.43	95.68	95.68			
Control	(43.2)	(43.2)	(43.0)	(43.0)	(44.6)	(44.6)			
		Nov	work t-2 and	d t-1					
Treated	2.79	2.89	2.87	2.74	9.76	18.18			
Treated	(48.5)	(49.1)	(48.9)	(48.5)	(52.4)	(50.7)			
Control	6.40	6.40	7.99	7.99	19.87	19.87			
Control	(46.3)	(46.3)	(46.1)	(46.1)	(47.7)	(47.7)			

Table 2.	Percentage	of women	working	and	(mean	age)
	0		()		`	() /

In the following section we present estimates of the ATET by means procedures that, as outlined in section 3, allow us to interpret them as the causal effects of becoming a caregiver on labour outcomes.

5. Results

In order to implement the formulae for the ATET of section 3.2, we follow the procedures outlined by Abadie and Imbens (2002) and the StataTM routines written by Abadie et al (2004). First we estimate the probability (by means of a logit specification) of becoming a caregiver, both for any modality of caregiving and for caregiving within the household. Thus for these two modalities of treatment we obtain the "propensity scores" defined in section 3.2 in the six groups of analysis (working and non working women in the three groups of countries). The propensity scores are specified as flexible functions of age and gender, educational attainment, health status, household size, number of children in the household, marital status, job characteristics (only when we analyse working women), the logarithm of equivalent household income at the start of the sequence and country and wave interactions. Subsequently we verify that these specifications satisfy the "balancing hypothesis". That is, there are no systematic differences in observable characteristics between treated and controls once we condition on the propensity score. Next we match treated individuals with controls using two alternative methods: i) nearest neighbour matching, ii) four nearest neighbour matching and finally we obtain the estimated ATET on the following outcomes: i) the probability of being employed, ii) the probability of being in full time employment (conditionally on being employed), iii) total household income (all money figures are in equivalent units expressed in annual euro adjusted for purchasing power parity at 1994 prices), iv) total household labour income, v) total household private transfers, vi) total household social transfers xi) total personal income, xii) total personal labour income and xiii) total personal social transfers. We further divide total household social transfers according to the different sources, i.e., a) total household unemployment benefits, b) total household old age benefits, c) total household family-related allowances, d) social assistance allowances, e) sickness benefits.

Table A1 contains the estimates for women who are in employment before becoming caregivers either within or outside the household. Tables A2 to A7 contain estimates for different subgroups of these women: tables A2, A3 and A4 are for the high, middle and low levels of education respectively and tables A5, A6, and A7 are for age groups 30-39, 40-49 and 50-60 respectively. The estimates for women who are not in employment before becoming caregivers either within or outside the household are presented in tables A8 to A14. The sequence of demographic groups to which the estimates in the tables correspond

is identical to that of tables A1 to A7. Finally, the ATET for becoming a caregiver within the household are presented in tables A15 to A28. These tables are organized according to the same sequence as tables A1 to A14. The columns headed M1 contain the ATET estimate using the nearest neighbor match while the columns headed M4 contain the ATET estimate using the four nearest neighbors matches.

In order to easily visualize the results presented in the tables, we have also graphed the ATET and their 90% and 95% confidence intervals for a selection of outcomes. Figures A1 to A4 contain the ATET's of becoming a caregiver in either of the two modalities, and figures A5 to A8 show the corresponding figures for becoming a caregiver within the household.¹

5.1 <u>Effects of becoming a caregiver (either within or outside the household) for women</u> who were previously working

The point estimates for the ATET in figure A1 show that the probability of remaining in employment drop by around 1.6% in the Southern countries and 1.9% in the Continental countries. On the other hand, it seems that caregiving has a positive effect on the probability of remaining in employment for women living in Scandinavian countries. This result is not unexpected, as in Denmark and Finland family carers can be officially recognised and employed as carers with a salary, employment benefits and a pension (Mestheneous and Triantafillou, 2005). Therefore, some of the women that would have left the labour market (had they not become a caregiver) remain in employment as a caregiver. As shown in the graphs, however, the confidence intervals for these ATET's include 0.

In Southern countries, labour household income significantly decreases (figure A3), although this is balanced by the concomitant increase in social transfers (figure A4), thus the effect on total household income is null (figure A2). In table A1 we can observe that the social transfers that produce this balancing effect are old age benefits and sickness benefits. For Scandinavian countries the general pattern is similar, i.e a drop in labour income and a concomitant increase in social transfers but the bulk of these transfers

¹ The analysis for women who are caregiving at home is not done for Scandinavian countries as the sample size is too small (see table 1).

corresponds to sickness benefits (table A1). This is consistent with the fact that in the Scandinavian group tend to look after spouses rather than parents. In Continental countries, the point estimates for the ATET on total household income is greater than in Southern countries, but its confidence interval includes 0 (figure A2). Unlike in Southern countries and Scandinavian countries (for the case of sickness benefits), in the Continental group there are no significant effects on either labour income or social transfers (figures A3 and A4 and table A1).

The results for the different educational groups confirm the general pattern described above. However, in the Southern countries, total social transfers to the household are smaller than the drop in labour income for women with the lower level of education.

Concerning differences in ATET's over age groups, we can firstly observe that women in the 30 to 39 age group in Southern countries that continue working after becoming a caregiver have a 9% lower probability of being in full-time (table A5). Secondly, in the Continental countries, we observe that total household equivalent income decreases by about 2000 \notin when women aged 40 to 60 become caregivers (table A6). Finally, income from private transfers appears to increase by about 225 \notin in the case of women aged 50 to 60 in the Continental countries after becoming a caregiver (table A7).

5.2 <u>Effects of becoming a caregiver (either within or outside the household) for women</u> who were not working previously

The results show that the ATET on the probability of working is negative (that is, women who become caregivers are less likely to enter employment) and significant in the Southern and Continental countries (figure A1). The size of the effects are 2.4% in Southern countries and 3.5% in Continental countries (table A8), but there are minor differences across educational groups. The biggest impact, around 5%, is found for women with secondary school (table A10). In contrast the effect for for women with the higher level of education is null. These smaller chances of employment have a substantial negative impact on household equivalent income amounting to around 1000 \in (figure A2). In this case we can observe that the smaller level of labour income is not compensated by social transfers.

5.3 <u>Effects of becoming a caregiver within the household for women who were previously</u> <u>working</u>

For women who are working, becoming a caregiver to someone who lives within the same household causes similar effects to those found in the situations where care is given either within or outside the household. Thus in general there are no statistically significant effects either on the probability of working or on total household income. However, we find that household labour income decreases in Southern countries, although such decrease is compensated by an increase in social transfers (table A15). The latter also increase in Continental countries.

5.2 Effects of becoming a caregiver within the household for women who were not working previously

We find a pattern of effects that is similar to the findings for the case of giving care either within or outside the household. However the magnitude of the ATET's is greater in the current case. An exception is the probability of working for the Southern group of countries, where the corresponding ATET is null (table A22). This contrasts with the ATET estimate of -7% in the Continental group of countries (table A22). For both groups of countries we find that household total equivalent income is smaller after becoming a caregiver. In Southern countries the estimated ATET is around 3000 \in . This magnitude varies across educational groups: women in the secondary education group have the greatest estimated ATET (table A25) whereas women in the higher education group have the smallest estimated ATET (table A23).

6. Discussion and conclusion

In this paper we have provided evidence on the effects of becoming a caregiver on the probability of employment and different measures of income for women aged 30 to 60 in the countries represented in the ECPH. Our main results suggest that, for women who are working before becoming a caregiver there is no statistically significant change in the chances of being employed. This result is independent on whether care is given within or outside the household, and it differs from previous evidence (Heitmueller and Michaud,

2006) where it was found that only individuals who give care at home adjust their labour supply.

In the case of women who were not working prior to becoming a caregiver there is a statistically significant decrease in the chances of entering employment. The magnitude of this effect is 2.5% in the Southern countries and 3.5% in the Continental countries. This differential effect according to prior employment status suggests that becoming a caregiver exacerbates the factors that maintain women out of employment, but does not affect substantially women who are in employment. This heterogeneity of effects highlights the importance of controlling for state dependence in labour outcomes in a full non-parametric way when assessing the causal effects of informal care.

Concerning the effects of becoming a caregiver on income, we detect a negative and significant ATET on labour income which tends to be offset by a parallel increase in social transfers, except in the case of women with low levels of education in the Southern countries, for whom we find that social transfers do not compensate the reduction in labour income. Since a large proportion of caregivers in the Southern countries look after their ascendants, and the main origin of the transfers in this group are old age benefits accruing to the dependent person, this particular result signals the inadequacy of a system whereby the only source of compensation for the caregiver is the pension entitlements of the receiver of care.

Our results suggest an increase in the probability of working for women who become caregivers and were already employed in the countries belonging to the Scandinavian group. These results are consistent with the evidence found by Viitanen (2005) in Finland, and reflect the possibility for carers to be formally recognised as workers.

There are a series of methodological issues that call for further research. Firstly, there might be some measurement error in the interpretation of the responses to the question that allow us to create the caregiver indicator. That is, some women might report to be caregivers when in fact they are simply sharing a dwelling with an older relative. A way forward in this sense would consist in further refining the definition of caregiver by requiring a minimum level of hours dedicated to this task. A second important issue is the potential lack of statistical power of our procedures. This is a result of the small sample

sizes of caregivers in some of the groups that we have considered, a common problem when the matching methodology is used (Browning et al, 2006). Further work should consider the calculation of statistical power measures and suggest possible ways to define groupings in the population of interest.

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Figure A1. Average treatment effect on the treated on the probability of working. Treatment caregiving

Figure A2. Average treatment effect on the treated on Household Total Equivalent Income. Treatment caregiving



Figure A3. Average treatment effect on the treated on Household Total Labour Equivalent Income. Treatment caregiving



Figure A4. Average treatment effect on the treated on Household Total Social Transfers Equivalent Income. Treatment caregiving





0

-.05

7

-.15

Worker

Figure A5. Average treatment effect on the treated on Prob(Employment). Treatment caregiving at home

Figure A6. Average treatment effect on the treated on Household Total Equivalent Income. Treatment caregiving at home

Worker

Non-worker

H IC 95%

ATT

IC 90%

Non-worker



Figure A7. Average treatment effect on the treated on Household Total Labour Equivalent Income. Treatment caregiving at home.



Figure A8. Average treatment effect on the treated on Household Total Equivalent Social Security Transfers. Treatment caregiving at home



	Southern	+Ireland	Conti	nental	Scandi	navian			
	M1	M4	M1	M4	M1	M4			
Labour Behaviou	ır								
Employed	-0,016	-0,017	-0,019	-0,007	0,056 ⁱⁱ	0,006			
Full time	-0,034	-0,028	-0,013	-0,034	0,000	0,002			
Household income (€ PPP, equiv.)									
Total (anual)	-131,881	-486,702	-1037,429	-1128,005	369,313	-248,171			
Labour	-1500,406	-1592,390	-1331,097	-1232,395	-508,802	-898,936			
Private transfers	-3,878	4,898	43,518	91,370	321,515	322,983			
Social transfers	1263,103	1137,715	-193,632	-365,433	361,293	397,147			
Unemployment benefits	2,427	-9,094	-92,282	- <i>191,346</i> i	-35,278	-75,615			
Old-age benefits	1059,667	936,630	252,036	-191,550	6,367	90,066			
Family-related allowances	-24,117	-17,024	-19,943	15,327	-139,901	-46,304			
Social assistance	5,892	3,172	11,811	8,054	9,559	2,203			
Sickness benefits	179,963	193,558	-326,875	16,260	<i>476,984</i> ⁱ	451,167			
Personal income (€PPP)									
Total (anual)	107,659	-178,579	-1341,692	-1101,459	1186,813	1000,678			
Labour income	85,535	-223,902	-1460,818	-1025,958	587,293	354,527			
Social transfers	-73,483	-4,643	-249,756	-295,760	105,068	197,250			

Table A1. Treatment caregiving. Subsample of workers

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used

ii.Significantly different from zero at 10% when robust standard errors are used

Table A2. Treatment caregiving. Subsample of workers high education

	Southern	Southern+Ireland		nental	Scandinavian					
	M1	M4	M1	M4	M1	M4				
Labour Behaviour										
Employed	0,012	-0,017	-0,013	0,003	0,048	0,024 ⁱ				
Full time	-0,061	- 0,085 ⁱⁱ	-0,015	-0,026	0,082	0,086				
Household incor	ne (€ PPP, e	quiv.)								
Total (anual)	182,517	-20,723	-319,478	498,208	-1022,246	-779,276				
Labour	-869,064	-992,876	1,247	484,217	-2334,943	-1656,760				
Private	50 866	9.610	261 713i	16 912	607 298	589 174				
transfers	30,000	5,010	201,715	40,042	007,200	505,174				
Social transfers	821,860	873,147 ⁱⁱ	452,668	378,197	-62,871	326,840				
Unemployment	9 659	-22 502	-92 256	-130 113	-79 122	-112 773				
benefits	0,000	22,002	52,230	100,110	10,122	112,110				
Old-age	1049 415	919 294	348 598	462 643	-136 952	31 029				
benefits	1045,415	515,254	540,550	402,045	-130,332	51,025				
Family-related	16 661	11 778	-112 794	-61 505	-191 935	-85 899				
allowances	10,001	11,770	112,704	01,000	101,000	00,000				
Social	821,860	873,147	DROPPE	-81,033	4,975	4,975				

assistance			D					
Sickness benefits	-199,742	-3,357	300,724	225,099 ⁱⁱⁱ	585,206	55 4,810 ⁱⁱⁱ		
Personal income (€PPP)								
Total (anual)	-372,283	73,717	1121,714	483,162	1234,137	1231,443		
Labour income	-294,740	-152,878	2247,414	1149,207	694,941	1495,881		
Social transfers	-200,723	145,199	-565,192	-600,900 ⁱⁱ	-203,014	-18,731		

Table A3. Treatment caregiving. Subsample of workers middle education

	Southern	+Ireland	Conti	nental	Scand	inavian				
	M1	M4	M1	M4	M1	M4				
Labour Behaviou	Labour Behaviour									
Employed	-0,015	-0,013	-0,016	0,010	0,043	-0,011				
Full time	0,016	0,024	-0,033	-0,019	-0,024	-0,077				
Household income (€ PPP, equiv.)										
Total (anual)	-421,534	-432,591	-605,585	-1129,984	812,037	353,342				
Labour	-1817,797	-1797,282	-2094,572	-1352,883	435,162	-140,460				
Private transfers	19,015	17,270	33,727	14,635	31,240	-2,401				
Social transfers	1538,098	1500,069	656,344	-361,480	1342,710	1083,778 ⁱⁱ				
Unemployment benefits	97,365	89,115	-208,475	-131,715	123,237	163,368				
Old-age benefits	1176,685	1215,467	779, 604 ⁱⁱⁱ	-87,980	395,980	335,270				
Family-related allowances	-7,981	-27,888	105,905	-55,513	-80,873	-71,798				
Social assistance	0,000	-0,916	45,178	37,613 ⁱⁱⁱ	19,177	18,311				
Sickness benefits	259,021 ⁱⁱⁱ	201,032	-60,902	-90,752	931,951	640, 848 ⁱⁱⁱ				
Personal income	(€PPP)									
Total (anual)	151,314	105,960	-2247,620 ⁱ	-1587,738	953,143	714,031				
Labour income	-184,589	-267,883	-3033,843	-1688,876	192,163	-78,579				
Social transfers	174,139	237,231	363,211	-183,383	725,106	801,996 ⁱⁱⁱ				

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A4. Treatment caregiving. Subsample of workers low education

	Southern+Ireland		Continental		Scandinavian		
	M1	M4	M1	M4	M1	M4	
Labour Behaviour							
Employed	-0,039	-0,040 ⁱⁱⁱ	0,000	0,013	-0,063	-0,063	
Full time	-0,034	-0,031	0,188 ⁱⁱ	0,104	-0,077	-0,154	

Household incor	ne (€ PPP, e	quiv.)				
Total (anual)	-639,856	-761,724	-166,547	241,895	2657,753 ⁱⁱⁱ	749,167
Labour	-1574,073	-1588,404	-1370,063	-607,626	1844,019	-513,058
Private	0.774	10.069	199.312	265.855	148.815	145.097
transfers	-,	_ = ; = = =	,		,	,
Social transfers	988,801	939,371	261,353	281,844	-81,543	-286,346
Unemployment	-28 001	-56 228ü	-399 324	-254 230i	-77 623	-480 907
benefits	20,001	00,220	000,021	201,200	11,020	100,007
Old-age	769.587	770.531	458 615	92 908	-277 647	-182 416
benefits	100,001	110,001	100,010	02,000	211,011	102,110
Family-related	-18 650	-11 777	176 334	219 359	95 588	106 062
allowances	10,000	11,777	170,004	210,000	00,000	100,002
Social	-1 720	2 044	-1 962	-13 623	-52 051	- 91 412 i
assistance	1,720	2,011	1,002	10,020	52,001	51,412
Sickness	199 192	181 000	203 191	250 420	320 323	473 650
benefits	100,102	101,000	200,101	200,420	520,525	470,000
Personal income	(€PPP)					
Total (anual)	-1108,975	-804,946	-580,279	286,774	-118,071	-2504,283
Labour income	-1100,057	-689,272	-582,609	-197,289	-465,590	-2528,355
Social transfers	-15,458	-126,887	-22,697	347,918	2,942	-215,560

	Southern	+Ireland	Conti	nental	Scandinavian					
	M1	M4	M1	M4	M1	M4				
Labour Behaviou	Labour Behaviour									
Employed	-0,012	-0,012	0,000	-0,050	-0,059	-0,015				
Full time	- 0,092 ⁱⁱ	-0,072	0,111	0,007	0,000	-0,067				
Household income (€ PPP, equiv.)										
Total (anual)	-697,731	-1677,380¤	4801,956 ⁱⁱⁱ	3636,438 ⁱⁱⁱ	1651,370 ⁱⁱⁱ	30,835				
Labour	-1991,822	-2670,156	4178,200	3301,184	2233,802	605,915				
Private	-97 134	- 40 588 ii	80.611	29 821	142 487	107 740				
transfers	-21,104	-40,500-	00,011	25,021	142,407	107,740				
Social transfers	1259,462	1176,685	408,480	493,369	-321,035	-123,925				
Unemployment	-4 229	35 196	119 695	204 869	255 804 <i>i</i> ii	93 925				
benefits	1,220	00,100	110,000	201,000	200,001	00,020				
Old-age	1027,973	881.125	177 872	227 298	(dropped)	(dropped)				
benefits	1021,010		111,012	221,200	(uroppeu)	(uroppeu)				
Family-related	1,979	-7.969	14,491	-91.394	-584,160	-139.778				
allowances	1,010	.,	11,101							
Social	-1.760	-0.173	(dropped)	(dropped)	47.942	-30.058				
assistance	1,100	0,110	(aroppoa)	(aroppea)						
Sickness	195.650	245.228	49.317	85,906	45.829	-7.918				
benefits	100,000		10,011	00,000	10,020	.,010				
Personal income	(€PPP)									
Total (anual)	-892,433	-1226,348	1868,571	200,730	1743,682	2215,585				
Labour income	-871,618	-1082,353	1460,460	526,734	2412,602	2018,003				

Table A5. Treatment caregiving. Subsample of workers 30-39

Social transfers	28,211	-42,210	311,836	20,551	-819,542	152,610

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Tuble No. Treatment curegiving, Subsample of Workers to 10										
	Southern	+Ireland	Conti	nental	Scandi	inavian				
	M1	M4	M1	M4	M1	M4				
Labour Behaviou	ır									
Employed	-0,021	-0,006	-0,008	0,000	0,042	0,010				
Full time	0,006	0,010	-0,025	-0,057	0,067	0,050				
Household incor	Household income (€ PPP, equiv.)									
Total (anual)	-454,718	-155,658	-2120,169 ⁱ	-1765,726	-1680,942	-1035,548				
Labour	-1 450,353 ii	-1180,635	-1933,220	-2348,072	-2119,400	-857,091				
Private transfers	29,384	55,008	54,474	65,860	551,655	547,339				
Social transfers	974,621	1041,171	-670,846	-64,954	45,618	-23,846				
Unemployment benefits	-49,615	-72,500¤	-113,028	-97,511¤	-71,010	-39,333				
Old-age benefits	877,192	955,087	-27,359	-42,725	-92,896	-34,895				
Family-related allowances	-17,061	-29,595	-94,291	10,380	6,724	118,319				
Social assistance	-6,539 ⁱ	-7,760 [;]	-70,453	3,955	6,219	-1,895				
Sickness benefits	159,100	185,335	-310,906	94,029	157,390	-20,020				
Personal income	(€PPP)									
Total (anual)	-291,725	329,160	-1360,204	-1094,999	2526,584	1135,967				
Labour income	-419,416	286,228	-839,393	-1025,481	1829,439	1497,108				
Social transfers	119,836	-59,370	-774,552 ⁱⁱ	-277,582	34,594	107,639				

Table A6. Treatment caregiving. Subsample of workers 40-49

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

	Southern	+Ireland	Conti	nental	Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou	ır					
Employed	-0,027	-0,012	0,021	0,024	0,017	-0,013
Full time	0,000	-0,045	0,037	0,012	0,036	0,009
Household incor	ne (€ PPP, e	quiv.)				
Total (anual)	-1030,855	-1143,079	-2070,526	-637,846	158,159	-597,974
Labour	-2464,601	-2239,146	-1822,704	-878,092	-1349,946	-2769,600 ⁱⁱ
Private transfers	-0,178	-5,528	230,114	214,537	-106,674	128,049
Social transfers	1351,311	1188,446	211,017	201,602	1062,699	907,903
Unemployment benefits	19,358	3,056	-154,422	-241,790 ⁱ	77,814	-92,954

Table A7. Treatment caregiving. Subsample of workers 50-60

Old-age benefits	1148,372	958,504	540,104	519,357	83,216	104,157
Family-related allowances	-6,988	-7,668	48,417	13,221	38,651	29,938
Social assistance	15,099	9,638	41,285	34,461	-44,400	-21,543¤
Sickness benefits	233,969	197,091	-256,314	-106,829	890,568 ⁱⁱⁱ	932,957 11
Personal income	(€PPP)					
Total (anual)	-739,861	-1150,834	-2178,918	-868,426	-265,680	-913,296
Labour income	-966,528	-1105,867	-2164,333	-699,966	-696,531	-1681,718
Social transfers	112,499	-129,402	351,377	-339,370	571,643	650,057 ⁱⁱⁱ

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A8. Treatment caregiving. Subsample of non-workers

	Southern	+Ireland	Conti	nental	Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou						
Employed	-0,024	-0,023	-0,035	-0,033	0,000	-0,043
Full time	0,045	0,000	0,000	0,028	0,250	0,375 ⁱⁱ
Household incor	ne (€ PPP, eo	quiv.)				
Total (anual)	-1140,956 ⁱⁱⁱ	-1283,206 ⁱ	-822,548	-897,249 ⁱⁱ	-796,310	-1349,520
Labour	-1231,407	-1711,990	-1299,003 ⁱⁱ	- <i>1140,927</i> ⁱ	-288,973	-828,747
Private						
transfers	37,306	12,697	-3,303	7,766	-33,697	-29,580
Social transfers	389,760	432,977	417,490	413,367	381,820	513,243
Unemployment						
benefits	-16,311	-46,116	-7,930	38,518	654,792 ⁱⁱ	431,009
Old-age						
benefits	289,351	396,728	169,864	67,346	844,663	886,827
Family-related						
allowances	22,578	-0,648	57,246	73,873	-128,192	-223,981 ⁱ
Social						
assistance	13,417	13,235 ⁱⁱ	-6,144	0,635	-36,147	-126,360 ⁱⁱ
Sickness						
benefits	94,377	85,907	245,072	265,559	-751,816	-385,390
Personal income	(€PPP)					
Total (anual)	-514,201 ⁱ	-342,298 ⁱ	-797,108	-803,856	-472,744	-477,546
Labour income	-203,208	-156,869	-629,282	-432,380	-34,884	-254,227
Social transfers	-173,862	-198,642	-129,241	-175,329	-552,086	-219,639

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A9. Treatm	ent caregiving.	Subsample of	non-workers	high education
Tuble Tio. Treatin		bubbuiiipic or	mon wormens	ingli caacation

Southern	+Ireland	Conti	nental	Scandi	navian
M1	M4	M1	M4	M1	M4

Labour Behaviou	Labour Behaviour								
Employed	0,024	0,049	-0,044	-0,056	-0,429	-0,250 ⁱ			
Full time	<i>0,400</i> ⁱⁱⁱ	0,200	0,000	0,125	(dropped)	(dropped)			
Household income (€ PPP, equiv.)									
Total (anual)	-814,063	-2151,909	-4978,714	-260,183	-8563,065	-4620,048			
Labour	-1988,902	-3396,638 ⁱ	142,874	106,770	-11388,570	-7495,212			
Private transfers	-27,766	17,608	10,934	3,367	-25,168	-6,945			
Social transfers	764,520	1101,016 ⁱⁱ	619,474	838,384	-720,550	606,966			
Unemployment benefits	-19,824	33,034	-134,907	-340,212	-3097,263 ⁱⁱ	-827,724			
Old-age benefits	808,406	830,711	-473,506	241,187	667,352	520,422			
Family-related allowances	38,553	109,975	385,860	260,796	-771,178	-310,242			
Social assistance	8,614	7,908	(dropped)	-27,109	-1283,545	-320,886			
Sickness benefits	-45,140	129,625	816,902	717,777	3183,946 ^m	1007,431			
Personal income (€PPP)									
Total (anual)	495,413	288,834	-2099,046	-1655,012	-3348,270	-1986,831			
Labour income	940,710	404,859	-836,097	-944,136	-450,816	-1983,677			
Social transfers	-914,229 ⁱⁱⁱ	$-\overline{490,110}$	$1\overline{110,59}\overline{3}$	-104,968	-3745,670	-1018,880			

Table A10. Treatment caregiving. Subsample of non-workers middle education

	Southern	+Ireland	Conti	nental	Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou	ır					
Employed	-0,050	-0,039	-0,049	-0,043	0,000	0,025
Full time	0,200	0,200	-0,333	- 0,667 "	(dropped)	(dropped)
Household incor	ne (€ PPP, e	quiv.)				
Total (anual)	-3313,516	-9675,219 ⁱ	-3360,409	-1311,011 ⁱⁱ	1356,670	606,270
Labour	- 2005,144 ⁱⁱⁱ	-9201,394 ⁱ	-3671,052	-1448,605 ü	1020,607	-131,182
Private transfers	10,150	61,196	4,738	-36,712 i	22,403	39,206
Social transfers	242,551	91,172	-137,390	-124,526	987,499	1061,203
Unemployment benefits	-24,931	27,702	58,164	47,887	-702,330	-388,257
Old-age benefits	254,509	95,260	-609,013	-350,951	3308,648	3181,410
Family-related allowances	32,827	23,657	112,542	31,042	-172,236 ⁱⁱⁱ	-158,647
Social assistance	19,081	8,934	215,198	124,470	(dropped)	(dropped)
Sickness benefits	-1,088	-34,560	87,095	34,475	-1497,320	-1644,650
Personal income	(€PPP)					

Total (anual)	-2232,003 ⁱ	-1181,160 [;]	-1237,624	-1440,711	1132,367	730,547
Labour income	-546,301	-247,371	-1012,157	-903,865	412,657	-489,154
Social transfers	-415,440	-494,907 ⁱ	-188,356	-487,980	851,075	1271,792

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A11. Treatment caregiving. Subsample of non-workers low education

	Southern	+Ireland	Conti	nental	Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou						
Employed	-0,037	-0,027	-0,022	-0,016	0,000	0,000
Full time	-0,083	-0,021	0,000	0,125	(dropped)	(dropped)
Household incom	ne (€ PPP, e	quiv.)				
Total (anual)	-219,055	53,096	578,459	444,460	-2367,816	-1802,035
Labour	-793,152	-629,076	-35,324	-147,276	-2790,825	-134,367
Private	8 100	-12 748	62 1 2 2	54 804	-12 584	-18 405
transfers	0,100	12,740	02,122	51,001	12,004	10,400
Social transfers	474,804	568,30 5	307,020	418,054	403,761	- 1888,426 ⁱⁱ
Unemployment	-21 149	-74 592i	148 555	55 084	1967 219	1600 436 ⁱ
benefits	21,110	7 1,002	110,000	00,001	1007,210	1000,100
Old-age	453,691	529.646	401,991	124,297	-1629.064	-2077.733
benefits	100,001	0	101,001	12 1,201	1020,001	,
Family-related	-39,493	-13.424	-79.033	-14,102	-42,603	-62.697
allowances	00,100	10,121	,		12,000	02,001
Social	6 962	12 842	-200 454	-129 301	15 314	-139 712
assistance	0,002	12,012	200,101	120,001	10,011	100,112
Sickness	83,240	121.741	170.183	433.224	86.014	-1033.088
benefits	00,210	121,711	110,100	100,221	00,011	1000,000
Personal income	(€PPP)					
Total (anual)	- 399,003 ⁱⁱ	-264,867	-148,157	24,204	711,041	-1387,713 ⁱⁱⁱ
Labour income	- 198,262 ⁱⁱⁱ	-168,999	234,941	126,984	-2,939	42,876
Social transfers	-267,291	-148,619	$-\overline{408,520}$	-102,404	723,238	-1273,490

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A12, Treatment caregiving, Subsample of non workers of o	Table A12.	Treatment	caregiving.	Subsample	of non-	-workers	30-39
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		0			-	
	Southern	+Ireland	Continental		Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou	ır					
Employed	-0,058 ⁱⁱⁱ	-0,043 ⁱⁱ	-0,071	-0,030	-0,200	0,050
Full time	0,167	-0,083	(dropped)	-0,250	dropped	dropped
Household incor	ne (€ PPP, e	quiv.)				
Total (anual)	-1473,796	-1579,834	-793,107	-857,008	2958,025 ⁱⁱ	198,440
Labour	-2039,870	-2143,694	-2407,812	-1489,813	-2020,363 iii	-6238,508
Private transfers	33,145	24,353	1,811	-161,821	(dropped)	-64,988
Social transfers	464,616 ⁱⁱ	466,518i	858,809 ⁱⁱⁱ	171,977	4457,948 ⁱⁱ	4107,595

Unemployment benefits	149,833	89,847	274,179	94,639	628,419	570,850		
Old-age benefits	88,184	149,539	349,934	207,651	(dropped)	-215,850		
Family-related allowances	97,951	114,026 ¹¹	247,485	106,228	-1191,526 ^m	-1080,589		
Social assistance	72,671	71,136 ⁱⁱⁱ	7,995	-166,868	- <i>39,682</i> iii	-411,028		
Sickness benefits	56,402	25,028	19,615	44,111	<i>5814,449</i> i	5236,970		
Personal income (€PPP)								
Total (anual)	94,227	238,864	-1668,867	-2778,351	-1586,075	-1198,858		
Labour income	-200,800	-98,422	-649,929	-1021,165	-2827,278	-2757,242		
Social transfers	229,363	344,228	-952,769	-1267,055	1242,810	1706,106		

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

Table A13.	Treatment	caregiving.	Subsam	ble of	non-workers	40 - 49

	Southern	+Ireland	Continental		Scandinavian		
	M1	M4	M1	M4	M1	M4	
Labour Behaviou	ır						
Employed	-0,027	-0,038	-0,070	-0,059	0,250	0,125	
Full time	-0,083	-0,042	0,000	0,000	dropped	dropped	
Household incor	ne (€ PPP, e	quiv.)					
Total (anual)	-184,687	-456,529	-468,802	-50,314	3758,030	2380,388	
Labour	- 831,889 ⁱⁱ	-984,044	-1135,102	-706,564	7065,269	3706,076	
Private	-9,026	16,900	31,966	27,131	-317,543	-124,170 ⁱⁱ	
transfers	- ,	-,	- ,	., -	,	,	
Social transfers	716,963	533,710	787,265	635,676 ⁱⁱⁱ	- 1875,213 ⁱⁱⁱ	-1419,398	
Unemployment	-27 106	-82,039	103 858	32 626	202 113	1048 804	
benefits	21,100	02,000	100,000	02,020	202,110	1010,001	
Old-age	708.624	595.975	12,303	42.710	(dropped)	-526.952	
benefits			12,000	12,110	(uroppeu)	010,001	
Family-related	0.321	-13,128	-143.328	-11.231	-232.744	-179.213	
allowances	0,021	10,120	110,020	11,201	202,111	110,210	
Social	6 844	1 682	53 955	54 131	-134 462	-128 587	
assistance	0,011	1,002	00,000	01,101	101,102	120,001	
Sickness	47.044	59.620	769.649	583,398	-1273.3491	-1404.708	
benefits	11,011	00,020		000,000	1210,010	1101,700	
Personal income (€PPP)							
Total (anual)	-723,611	-420,746	-1071,409	-288,969	-658,992	-310,977	
Labour income	$-\overline{325,206^{i}}$	-62,276	-971,776	-406,181	2914,635 ⁱⁱⁱ	1361,182	
Social transfers	-374,716	-351,815	32,026	223,523	- 3507,151 iii	-1936,346	

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used

iii. It is not significantly different from zero when robust standard errors are used

	Southern	+Ireland	Conti	nental	Scandinavian	
	M1	M4	M1	M4	M1	M4
Labour Behaviou	ır					
Employed	-0,026	-0,018	-0,017	-0,019 ⁱⁱ	0,031	-0,008
Full time	0,000	-0,063	(dropped)	0,250	dropped	dropped
Household incor	ne (€ PPP, e	quiv.)				
Total (anual)	-160,490	-86,130	538,384	-608,596	-1327,844	-1 489, 303 iii
Labour	-1110,390	-904,145	267,056	-11,796	-146,611	-802,653
Private transfers	15,075	-6,943	-70,229	-2,191	26,137	-14,469
Social transfers	620,743	537,276	-76,265	37,247	-85,082	-152,967
Unemployment benefits	-2,783	-36,747	-171,055	-44,126	548,932	72,005
Old-age benefits	387,227	433,774	167,139	-118,707	1206,245	1195,964 [.]
Family-related allowances	-13,904	-19,300	198,137	191,289	5,605	2,964
Social assistance	7,205	5,285	-37,283	-24,860	8,295	-18,297
Sickness benefits	249,186	159,931	-208,266	41,140	-1806,270	-1463,655 ¤
Personal income	(€PPP)					
Total (anual)	53,363	-117,686	-79,832	-306,366	200,746	-511,727
Labour income	-35,494	-128,066	213,490	-21,422	89,500	-145,444
Social transfers	-116,372	-150,693	-218,577	11,129	-93,427	-309,020

Table A14. Treatment caregiving. Subsample of non-workers 50-60

Table A15. Treatment nome caregiving . Subsample of worker.	Table A15	. Treatment	home	caregiving	. Subsam	ple of	workers
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	Southern	+Ireland	Conti	nental
	M1	M4	M1	M4
Labour Behaviou	ır			
Employed	-0,018	-0,034	0,018	0,009
Full-time	-0,040	-0,029	0,170	0,033
Household incom	ne (€ PPP, e	quiv.)		
Total (anual)	-780,812	-1048,775	1552,609	922,264
Labour	-2220,465	-2443,292	-335,175	-600,285
Private	5 733	5 608	284 855	267 558
transfers	5,755	3,000	204,000	201,330
Social transfers	1585,076	157 8 ,137	1254,404	811,225 ⁱ
Unemployment	-109 202ii	-59 205 ii	-109 749	-78 646
benefits	100,000	55,205	100,742	70,040
Old-age	1398 410	1330 199	1300 136	1001 014
benefits	1020,40	1000,120	1000,100	1001,014
Family-related	18 057	-11 370	-75 093	-138 174
allowances	10,007	11,570	10,000	100,174
Social	3,042	0,646	21,884	55,316

assistance				
Sickness benefits	285,325	278,293	112,895	-34,024
Personal income (€ PPP)			-
Total (anual)	-242,462	-915,164	124,926	-1150,813
Labour income	-284,628	-930,827 ⁱⁱ	500,823	-568,293
Social transfers	-1,819	-4,780	-98,195	-341,421

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I able AIR I reatment	home carediving	Subcample of	workers high education
Table ATO. Treatment	nome caregiving	S. Subsample of	workers mgn cuucation

	Southern	i+Ireland	Continental					
	M1	M4	M1	M4				
Labour Behaviou	Labour Behaviour							
Employed	0,000	-0,016	-0,222 ⁱⁱ	- 0,222 iii				
Full-time	-0,069	-0,086	- <i>0,286</i> ⁱⁱⁱ	-0,036				
Household incor	ne (€ PPP, e	quiv.)						
Total (anual)	-537,601	454,043	8009,215	-554,508				
Labour	-3236,345	-1419,975	5944,742	-732,075				
Private transfers	(dropped)	-115,872 ⁱⁱ	-1337,511	-625,788 [#]				
Social transfers	2809,550	2213,159	2004,437 ⁱⁱⁱ	1716,292				
Unemployment benefits	-244,797	-110,705	(dropped)	-12,204				
Old-age benefits	2928,548	2244,495	1919,288	1356,563				
Family-related allowances	-26,885	-23,300	218,015	624,360				
Social assistance	(dropped)	(dropped)	-132,865	-33,216				
Sickness benefits	152,684	118,857	(dropped)	-159,817				
Personal income (Personal income (€ PPP)							
Total (anual)	-3459,111	-3136,784	-7837,655	-4321,722				
Labour income	-2778,603	-2384,250	-3836,418	56,980				
Social transfers	-912,739	-391,031	-646,234 ⁱⁱⁱ	-3040,144 ⁱ				

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

	Table A17. Treatment	home caregiving.	Subsample	of workers	middle educati	on
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	Southern	+Ireland	Continental				
	M1	M4	M1	M4			
Labour Behaviour							
Employed	0,019	-0,014	0,129	0,024			
Full-time	0,042 ⁱⁱ	0,078	0,000	0,025			
Household income (€ PPP, equiv.)							
Total (anual)	-1522,128	-1095,030	4191,080	944,417			

Labour	-4165,626	-3985,648	3268,478	-254,613			
Private	3 747	-16 123	-40 862	-46 783			
transfers	0,7 17	10,120	10,002	10,700			
Social transfers	3150,602	3022,786	697,578	827,717 ⁱⁱ			
Unemployment	35 605	47 748	-304 401i	-129 166 i			
benefits	00,000	17,710	001,101	120,100			
Old-age	2617 386	2451 034	1470 350	1201 806			
benefits	2017,000	~ 101,001	11/0,000	1201,000			
Family-related	5 012	-14 903	-326 807	-168 032			
allowances	0,012	11,000	020,001	100,002			
Social	(dropped)	(dropped)	118 469	118 469iii			
assistance	(uroppeu)	(uroppeu)	110,100	110,100			
Sickness	506 139	535 321i	-305 223	-252 666			
benefits	000,100	000,021	000,220	202,000			
Personal income (€ PPP)							
Total (anual)	374,920	-138,515	-429,924	- <i>3094,853</i> ⁱⁱⁱ			
Labour income	-291,004	-707,439	1218,049	-2556,227			
Social transfers	493,239	423,897	-1460,455 ⁱⁱ	-443,420			

Table A18.	Treatment home	caregiving.	Subsample	of workers	low education
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	Southern	+Ireland	Continental	
	M1	M4	M1	M4
Labour Behaviou	ır			
Employed	0,014	-0,021	0,118	0,074 ⁱ
Full-time	-0,032	-0,030	0,125	0,125
Household income (€ PPP, equiv.)				
Total (anual)	-1234,863 ⁱ	-855,635	-179,677	-226,316
Labour	-1917,192	-1607,633	-1908,701	-2149,096 ⁱⁱ
Private	26 047ii	21 931	785 695	967 351
transfers	20,047-	21,001	705,055	507,551
Social transfers	834,877	886,723	630,258	597,860
Unemployment	-162,683	-99.359	-58 218	-70 770
benefits	102,000	00,000	00,210	10,110
Old-age	666.615	711,695	-271 299	-236 990
benefits	000,010	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	211,200	200,000
Family-related	3 887	0 184	21 790	154 468
allowances	0,001	0,101	21,100	101,100
Social	11 334	2 052	(dropped)	-21 187
assistance	11,001	2,002	(aroppou)	
Sickness	218,747	180.761	925 272	714 828
benefits	110,111	100,101	020,212	11,020
Personal income (€ PPP)			
Total (anual)	203,698	226,999	-3167,362	1948,212
Labour income	477,221	389,953	-1984,289	1605,769
Social transfers	-256,354	-142,709	-632,415	493,762

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

	Southern	Southern+neianu		Continental		
	M1	M4	M1	M4		
Labour Behaviou	ır	-	-			
Employed	0,000	0,000	0,000	-0,063		
Full-time	- 0,119 ª	-0,065	-0,182	0,000		
Household incor	Household income (€ PPP, equiv.)					
Total (anual)	-1377,718	-1592,292 ⁱⁱ	8592,293	10606,950		
Labour	-2927,866	-2724,094	9221,208	10336,200		
Private transfers	-29,000	2,728	222,380	-145,438		
Social transfers	1860,433	1501,751	-511,798	145,718		
Unemployment benefits	25,131	17,361	-294,117	-73,529		
Old-age benefits	1249,309	945,951	-295,514	127,369		
Family-related allowances	-16,887	-3,483	-50,266	-138,771		
Social assistance	(dropped)	-4,118	(dropped)	(dropped)		
Sickness benefits	526,018	482,962 ¹¹¹	-108,367	35,453		
Personal income (Personal income (€ PPP)					
Total (anual)	-1104,165	-2053,847 ^{<i>ii</i>}	6224,112	2229,723		
Labour income	-991,551	-1914,194 ^{<i>ii</i>}	4314,419	1738,706		
Social transfers	118,148	78,502	1872,810	1008,764		

 Table A19. Treatment home caregiving. Subsample of workers 30-39

 Southern+Ireland
 Continental

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

1 able A20. 1 reatment nome caregiving. Subsample of workers 40-4	eatment home caregiving. Subsample of workers 4	caregiving. Subsample of workers 40	regiving. Subsa	atment home	Table A20.
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	Southern	Southern+Ireland		Continental	
	M1	M4	M1	M4	
Labour Behaviou	ur				
Employed	-0,060	-0,038	0,038	0,019	
Full-time	0,011	-0,003	0,038	0,048	
Household incom	me (€ PPP, e	quiv.)			
Total (anual)	-817,429	-375,717	-3491,445	-4055,763	
Labour	-2544,706	-1890,321	-5041,545	-6423,094	
Private	19,536	-14.607	536,993	670.287	
transfers	10,000	1,000	000,000	010,201	
Social transfers	1852,948	1630,262	866,648	1441,818	
Unemployment	-4 648	-28 185	-45 853	-40 045	
benefits	1,040	20,100	10,000	10,040	
Old-age	1623,430	1439,270	270,855	601,399	

benefits				
Family-related	-6 705	-14 248	80 513	108 782
allowances	-0,703	-14,240	00,010	100,702
Social	-10.066	-16 207i	(dropped)	(dropped)
assistance	-10,000	-10,207	(uroppeu)	(uroppeu)
Sickness	253 709	236 669	790 593	800 038 iii
benefits	200,700	200,000	100,000	000,000-
Personal income (€ PPP)				
Total (anual)	-375,890	-239,713	-5245,012	-3896,390
Labour income	-490,107	-145,758	-3981,377	-3882,087
Social transfers	96,475	-93,801	-696,527	182,122

	Southern	+Ireland	Continental	
	M1	M4	M1	M4
Labour Behaviou	ır			
Employed	0,048	0,006	0,105	0,039
Full-time	-0,014	-0,025	0,000	-0,016
Household income (€ PPP, equiv.)				
Total (anual)	481,074	71,744	186,413	-886,096
Labour	-542,511	-1260,356	-447,356	-2056,329
Private transfers	35,654	26,631	-174,879	-53,477
Social transfers	981,918	1287,311	463,108	962,293
Unemployment benefits	-79,210	-59,228	47,154	-146,954
Old-age benefits	935,004	1126,121	2850,935	1686,361 ⁱ
Family-related allowances	-33,452	-10,476	-1161,557	-416,918
Social assistance	25,057	25,057	115,933	174,954
Sickness benefits	38,137	85,254	-1406,434¤	-355,205
Personal income (Personal income (€ PPP)			
Total (anual)	1064,910	529,350	-2331,219	-2641,996
Labour income	933,075	252,447	-147,369	-1551,193
Social transfers	-78,941	64,722	-2170,030 ii	-1175,097 ⁱ

Table A21. Treatment home caregiving. Subsample of workers 50-60

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

	Southern	ı+Ireland	Continental	
	M1	M4	M1	M4
Labour Behaviou	ır	-		
Employed	-0,005	-0,013	-0,070 ⁱ	0,042
Household incom	ne (€ PPP, e	quiv.)		
Total (anual)	-2905,182 ⁱ	-1553,3591	-1520,561	-746,061
Labour	-3968,822	-2704,984	-2470,875 ⁱⁱ	-2116,674
Private	0 991	-1 999	60 117	53 179
transfers	0,001	-1,222	00,117	55,475
Social transfers	1196,594	1216,627	885,546	684,403
Unemployment	-17 035	-10/13/	-12 624	199 115
benefits	-17,000	-10,454	-12,024	120,110
Old-age	961 433	960 391	-145 002	-233 710
benefits	501,455	500,551	-140,002	-200,710
Family-related	-52 171	-99 179	211.016	1/12 183
allowances	-52,474	-22,172	211,010	142,105
Social	12 020	8 388	98 918	23 020
assistance	12,020	0,000	50,510	20,020
Sickness	329 818	301 319	762 251ü	619 888
benefits	0~0,010	001,010	102,201	010,000
Personal income (€ PPP)			
Total (anual)	-496,78 2	-309,609	-346,261	-196,504
Labour income	-64,398	-92,039	-900,675	-687,371
Social transfers	-313,283	-183,805	574,193	452,968

Table A22. Treatment home caregiving. Subsample of non-workers

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10

i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

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Table A23. Treatment nom	ie caregiving. Subsam	ple of non-workers	nign education

	Southerr	n+Ireland	Continental		
	M1	M4	M1	M4	
Labour Behaviou	ır				
Employed	0,000	-0,036	-	-0,063	
Household incom	Household income (€ PPP, equiv.)				
Total (anual)	1114,761	-398,158	$-4690,973^{i}$	-2940,118	
Labour	-694,072	-2117,426	-9943,760	-7944,309	
Private	-26 840	86 088	(dropped)	-71 009	
transfers	20,010	00,000	(uroppeu)	11,000	
Social transfers	2024,213	1966,993	914,508	477,332	
Unemployment	136 601	51 324	441 922	502 456	
benefits	100,001	01,021	111,0~~	002,100	
Old-age	978.307	1173.082	(dropped)	-413,783	
benefits	010,000	11.0,002	(aroppea)	110,100	
Family-related	357.210 ⁱⁱⁱ	260.883	396.969	315,909	
allowances	001,410	200,000	000,000	010,000	
Social	16.721	14.720 ⁱⁱⁱ	(dropped)	(dropped)	
assistance	10,1 21	1 1,7 20	(mopped)	(aroppou)	
Sickness	504.747	446.078	(dropped)	(dropped)	
benefits	<i>201,11</i>		(moppou)	(moppou)	

Personal income (€ PPP)				
Total (anual)	2088,537	1637,648	-210,475	184,965
Labour income	821,207	495,075	-538,381	-583,944
Social transfers	935,254	791,199	228,903	512,811

Table A24. Treatment	home caregiving.	Subsample of	non-workers	middle education
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	Southern	+Ireland	Continental		
	M1	M4	M1	M4	
Labour Behaviou	ır				
Employed	-0,063	-0,052	-0,103	-0,069 ⁱⁱ	
Household incom	ne (€ PPP, e	quiv.)			
Total (anual)	-3001,461	-6935,723 ü	-1882,303	-301,616	
Labour	-4265,226	-7548,111 ⁱⁱ	-3071,339	-1830,303	
Private transfers	26,658	-5,717	-14,370	11,007	
Social transfers	949,888	1051,396	1817,099 ⁱⁱ	905,945	
Unemployment benefits	202,268	135,733	340,568	358,276	
Old-age benefits	721,192	915,028	575,067	-50,624	
Family-related allowances	28,680	-6,587	313,761	272,498	
Social assistance	3,145¤	2,818	154,619	-15,908	
Sickness benefits	51,055	46,633	447,178	310,282	
Personal income (€ PPP)				
Total (anual)	-497,375	-614,213	-35,230	-194,962	
Labour income	-551,932 ⁱⁱ	-535,021	-798,751	-546,519	
Social transfers	-79,707	-20,953	818,558	220,857	

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

Table A25.	Treatment	home	caregiving.	Subsamp	le of	non-workers	low	education

	Southern	+Ireland	Conti	nental
	M1	M4	M1	M4
Labour Behaviou	ur			
Employed	0,003	-0,016	0,000	-0,053
Household incom	me (€ PPP, e	quiv.)		
Total (anual)	-663,716	-745,530	548,112	795,565
Labour	-1948,531	-1892,242	-833,568	-62,639
Private transfers	-9,840	-17,483 ⁱ	168,140	157,162
Social transfers	1225,849	1149,922	1109,310	859,015
Unemployment benefits	3,203	-31,377	- 505,105 ¤	-300,634

Old-age benefits	897,044	860,304	81,164	87,837
Family-related allowances	-42,906	-32,287	-93,775	-13,777
Social assistance	12,995	9,090	89,772	-175,557
Sickness benefits	404,090	369,932	1420,234 ⁱⁱⁱ	1295,277 ii i
Personal income (€ PPP)			
Total (anual)	-126,507	-211,538	-1092,611	-583,220
Labour income	-46,751	-128,576 ⁱ	14,203	-367,753
Social transfers	-107,268	-88,200	-1231,120	-229,114

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used

ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

	Southern	+Ireland	Continental	
	M1	M4	M1	M4
Labour Behaviou	ır			
Employed	-0,061	-0,061	0,100	0,025
Household incor	ne (€ PPP, e	quiv.)		
Total (anual)	-1470,381	-1623,575 ⁱ	-2365,400	-1344,339
Labour	- 2882,159	-2748,407	-4529,825	-3687,881
Private transfers	74,001	1,689	(dropped)	-78,254
Social transfers	1700,469	1398,451	1230,834	1264,322
Unemployment benefits	63,074	117,270	950,899 ⁱⁱ	856,362
Old-age benefits	1095,176	931,937	-354,396	220,980
Family-related allowances	172,507	38,053	114,643	51,815
Social assistance	40,780	62,133	(dropped)	-103,362
Sickness benefits	372,550	249,714	567,701	335,255
Personal income (€ PPP)			
Total (anual)	-97,089	-512,309	2668,436 ⁱⁱⁱ	-355,053
Labour income	-283,004	-159,905	(dropped)	-672,607
Social transfers	418,864	-27,971	2668,436 ⁱⁱⁱ	519,885

 Table A26. Treatment home caregiving. Subsample of non-workers
 30-39

Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used

 Table A27. Treatment home caregiving. Subsample of non-workers
 40-49

Southern+Ireland		Continental	
M1	M4	M1	M4

Labour Behaviou	ır			
Employed	-0,030	-0,047 ⁱ	- <i>0,148</i> ⁱⁱⁱ	-0,065
Household incom	ne (€ PPP, e	quiv.)		
Total (anual)	-1038,587	-1108,374	-927,219	596,176
Labour	-2425,259	-2225,293	- <i>3343,384</i> ⁱⁱⁱ	-1045,584
Private transfers	3,935	29,152	64,671	19,543
Social transfers	1236,902	1018,797	1127,978	639,269
Unemployment benefits	-6,884	-61,991	-155,445	-281,904
Old-age benefits	1235,820	1022,197	1176,118	722,654
Family-related allowances	-8,875	13,899	88,200	162,521
Social assistance	20,901 ¹¹	17,218 ⁱ	95,053	-454,034 ⁱ
Sickness benefits	57,614	84,993	-234,652	447,667
Personal income (€ PPP)			
Total (anual)	-1004,491	-698,103	-1740,043	- <i>1669,162</i> ⁱ
Labour income	-566,863 ⁱ	-377,358	-943,447 ⁱⁱⁱ	-581,132
Social transfers	- 524,339 ⁱⁱ	$-377,363^{i}$	-1045,139	-1209,058

	Southern	+Ireland	Conti	nental
	M1	M4	M1	M4
Labour Behaviou	ır	-	-	
Employed	-0,005	-0,015	-0,059	-0,051 ⁱ
Household incor	ne (€ PPP, e	quiv.)		
Total (anual)	-379,411	-825,144	-4549,144	-1740,325
Labour	-1940,324	-1780,860	-3482,011	-2060,053
Private			123 966	13 610
transfers	-46,130	- <i>34,386</i> iii	123,300	40,010
Social transfers	1511, 848	1309,402	337,617	15,761
Unemployment			-409 865	-164 967
benefits	-40,582	-26,315	400,000	104,007
Old-age			-1735 016	-1283.006
benefits	1233,067	1002,189	1755,010	1200,000
Family-related			41 537	62 228
allowances	-49,582 ⁱⁱ	-34,250	41,557	02,220
Social			268 602	-109 072
assistance	-15,857	-10,860 ⁱ	200,002	100,072
Sickness			2131 746 ii	1541 713 ii
benefits	369,765	385,328	2101,740	1011,710
Personal income (€ PPP)			
Total (anual)	-133,494	-375,660	-102,602	-303,710
Labour income	-114,582	-99,719	-847,691	<i>-934,713</i> i

Table A28. Treatment home caregiving. Subsample of non-workers 50-60

Social transfers	-14,233	-52,576	1007,531	726,585	
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Note: Values significantly different from zero: at P<0.05 in bold typeface; in italics at P<0.10 i. Significantly different from zero at 5% when robust standard errors are used ii. Significantly different from zero at 10% when robust standard errors are used iii. It is not significantly different from zero when robust standard errors are used