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Thinking of Incentivizing Care? The Effect of Demand Subsidies on Informal Caregiving and Intergenerational Transfers

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Abstract

We show that demand side cash subsidies to care recipients alter both caregiving and intergenerational transfer decisions. We exploit a quasi-natural experiment referring to the inception of a universal caregiving allowance (in 2007 and its reduction in 2012). We find a caregiving subsidy (of a magnitude of 530€ in 2011) to increase the probability of informal caregiving by 32% (the intensity of care in 13.5 days/year). Similarly, we find that downstream (upstream) intergenerational transfers increased (decreased) in a magnitude of 29% (15%). The effects concentrate among middle and lower income households, and were attenuated by the reduction of the subsidy.

JEL-Codes: I180, D140, G220.

Keywords: caregiving, intergenerational transfers, difference-in-differences, long-term care, family transfers, exchange motivation, caregiving allowances, demand side cash subsidies.

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1. Introduction

Public subsidization of long-term care (LTC) is more restricted than in other social services. Informal caregiving is still today the main source of support for old age people in need of support (Rodrigues *et al*, 2013, Arno, 1999)[1]. However, we still know little about how the provision of informal care responds to changes in financial incentives. Of particular interest are demand side cash subsidies, as they are often presented as a less costly alternative to the expansion of community care services. Such subsidies can be presented either as a subsidy to purchase care or compensate caregivers for care provided, and specifically their sacrifice in terms of forgone employment and time (Carmichael *et al*, 2010)[2]. However, cash subsidies can exert wider effects on household decisions which often go unexplored. Policy design ought to account of both intended and unintended effects of such subsidies on household decisions[3].

Given that in the absence of such subsidies intergenerational transfers are the most common informal credit mechanism (Laferrere and Wolff, 2006), one can expect a cash subsidy to alter an important determinants of such transfers, namely, the relative financial means of the recipient of the subsidy (Sloan *et al*, 2002). In this paper, we address two questions. First, how sensitive informal caregiving is to the introduction of demand side cash subsidies? Second, how do intergenerational transfers respond to changes in the relative income of household members after the reception of a subsidy? The causal evidence of the effects of demand side subsidies on caregiving decisions and household arrangements is still limited. One of the reasons lies in that we seldom have evidence from natural experiments such as policy interventions that exogenously change the subsidy entitlements.

[1] Informal caregiving refers to unpaid care provided by children and members of the community to individuals in need of help with everyday tasks (e.g., bathing, toileting, etc).

[2] Furthermore, they are designed to compensate caregivers for the employment and income forgone, and they can either be means tested (e.g., attendance allowance in England) or universal. Similarly, they can either take the form of conditional (e.g., vouchers) allowances, or, alternatively, offer unconditional cash payment to households with dependent elders facing significant caregiving burden.

[3] Del Pozo and Escribano (2012) showed that economic benefits for informal caregivers are responsible for a reduction in public long-term care costs.

An exception is Kim and Lim (2015) who exploits the effect of demand subsidies to access both formal home and institutional care on informal care use in South Korea[4].

We exploit evidence from the expansion of an unconditional caregiving cash subsidy to the entire Spanish population introduced in January 2007 (which we define using the Spanish acronym after the bill that implemented it, 'SAAD'[5]). The reform was largely unanticipated as it was a legislative initiative of a parliamentary agreement of a new minority government (elected after the Madrid bombings in 2004). Importantly, SAAD entailed a cash expansion of up to 530 €/month in 2011 for those who qualified after a needs test examination. An interesting feature of the reform was that its implementation was uneven across the territory because by design it depended on the involvement of regional governments (with heterogeneous political incentives) in both its regulation and funding[6]. Another unique feature of the Spanish experiment, which qualified as a second experiment, is the contraction of about 25% of the caregiving allowance in July 2012. The subsidy reduction was an austerity reform implemented shortly after the implicit bailout of the Spanish economy in June 2012.

We use a difference-in-difference strategy to examine the effect of SAAD on the provision of informal care and the probability of intergenerational transfers flows (both upward and downward). We exploit four waves of the Survey of Health, Aging and Retirement in Europe (SHARE) ranging from 2004-2013, which cover the period where both the introduction and contraction of caregiving subsidies took place. Given the potential endogeneity of the reform implementation at the regional level, we follow an instrumental variable (IV) strategy, and exploit the heterogeneous effects of the reform. In addition, we consider the fact that SAAD offered the choice of cash versus subsidised

[4] Using a regression discontinuity design, Kim and Lim (2015) find that home care is a substitute for informal care at the intensive margin, but do not find such evidence at the extensive margin. However, their work only measures the short-term effects of long-term care subsidisation, and hence further evidence that examines a larger time span might be informative.

[5] SAAD: Sistema de Autonomía y Atención a la Dependencia. It was a unique insurance expansion in Europe that only compares to a few reforms (e.g., the introduction of the German social insurance in 1994 or the Scottish free personal care in 2002.

[6] Region states run by the socialists such as Andalusia and Catalonia at the time were among the front-runners at implementing the reform, whilst regions run by the conservatives were among the slowest (see Costa-Font, 2010).

service, as well as the time of the reform implementation[7]. The final sections of the paper discuss the various mechanisms at play and offer a number of robustness checks.

We contribute to the literature in two main ways. First, we show that an expansion of an unconditional caregiving subsidy increases the probability of informal care receipt (and the supply of care of care) which in turn, further modifies the pre-reform transfer flows. Second, we show that, consistently with the previous effect, the reduction of the amount of the subsidy exerts the opposite effect on both caregiving and transfers. We find a 32% increase in the external margin of informal caregiving, a 29% increase in the probability of downstream (outflows) intergenerational transfer, and a 10% reduction in the probability upstream (inflow) transfers. These effects were attenuated by about 25% following the reduction of the caregiving allowance amidst austerity cuts in 2012. However, we find heterogeneous effects across subsidy recipients by income group and caregiving status. Our results are robust to the inclusion of specific regional time trends, as well as to a battery of checks and placebo tests. Finally, a simulation exercise suggests a 27% expenditure increase after the expansion of caregiving subsidies.

Next section contains the paper background, followed by the reform description and identification strategy. Section 4 describes the data and reviews some descriptive evidence. Section 5 contains the results, section 6 reports further extensions (and potential mechanisms), and section 7 discusses the economic cost of SAAD. Finally, section 8 concludes.

2. Background

[7] The choice between cash and service was conditional on the existence of a network of community care services which was primarily available in large cities (Peña-Longobardo *et al*, 2016).

This paper contributes to the literature on the design of public long-term care systems, and it attempts to illustrate how sensitive caregiving decisions and intergenerational transfers are to changes in economic incentives.

2.1 Informal caregiving

Informal caregiving has been a subject of extensive analysis, and some of the literature takes advantage of policy interventions. However, the underlying motivation for caregiving is relatively less explored. Carcagno and Kemper (1988) using US National Long-Term Care Demonstration, which extended the affordability of home care services, find evidence of a reduction of informal care provision. Similarly, Pezzin, Kemper and Reschovsky (1996) observe indirect effects on informal caregiving resulting from changes in living arrangements, which gave rise to small substitution effects, using the longitudinal data for a seven-year study in Massachusetts. More recently, Li (2005) analyses the Michigan's Home and Community Based Waiver Program finding an initial decline of informal care just after the provision of publicly paid home care, which ended quickly. Closer to our work is Skira (2015) considers a range of policy experiments to suggest that subsidies can influence informal care provision, unlike Eiken *et al,* (2013) who finds moderate or no effects. Finally, using the exogenous variation of the Balanced Budget Act of 1997, which reduced Medicare reimbursement for home care services, Golberstein *et al.* (2009) find increases in the probability of using informal caregiving.

In Europe, Arntz and Thomsen (2011), using German data, show that conditional cash subsidies in the form of personal budgets increase the amount of time allocated to care for former recipients of care, but without an impact on outcomes. Other related evidence can be found in the studies examining the effects of the introduction of the Scottish Community Care and Health Act in 2002, which abolished personal care charges and expanded its cash allowance. Bowes and Bell (2007) does not identify an immediate effect on informal caregiving, but a more recent estimate by

Kalsberg-Schaffer (2015) using a longer sample size finds an increase in the probability of women supplying informal care by around six percentage points. Hence, the evidence seems to be mixed. Furthermore, it remains unclear whether the effect size is of a magnitude to be concerned with.

2.2 Family Transfers

The effects of subsidies on intergenerational transfers are not well understood. Intergenerational transfers can be studied as implicit contracts (Becker, 1981) which can play the role of informal insurance both up and downstream. The family is argued to act as a substitute for credit market as means of the inter-temporal distribution of resources (Laferrère and Wolf, 2006). Typically, one would expect transfers to flow from the financially stronger member of the family to the weakest (Stark and Falk, 1998). Altonji *et al.* (1997) predicts that one-dollar increase in recipient's income reduces by one dollar the transfers between household members, and McGarry (2000) find evidence that household members adjust their altruistic motivations. Hence, a cash subsidy can modify such the motivation of such transfers, especially if they follow from insurance motivations emerging from caregiving needs (Sloan *et al,* 2002)[8]. For instance, Norton *et al.* (2013) find that, condition upon providing care, a child who provides informal care is more likely to receive intergenerational transfers than a sibling who does not. In contrast, Jiménez-Martín and Vilaplana (2015) find that the contemporaneous provision of informal care decreases the probability of receiving a transfer. Hence, there is no consensus in the literature so far.

In this paper we examine exogenous change in the eligibility and amount for a demand side cash subsidy to test examine the impact on caregiving and transfers. We are interested in the existence of a shift in the uptake of informal caregiving and monetary transfers after a reform. Specifically, we report some estimates of the effect on the internal margin through drawing on a transformation of a measure of frequency of care.

[8] Indeed, family caregiving could be interpreted as a substitute for other types of insurance (e.g., long-term care insurance).

Finally, an issue in the related literature refers to accounting for endogeneity, such as confounding unobserved characteristics that can explain informal care and intergenerational transfers. Among those unobserved effects, one can list the presence of unobserved negative health shocks, because they can exert an influence on care and might confound its effects. One way to deal with this is by taking advantage of an identification strategy relying upon an exogenous variation from a new unanticipated policy reform as we explain below.

3. Reform and identification strategy

3.1 The reform and post-reform

The Act 39/2006, of 14th December, on the Promotion of Personal Autonomy and Care for Dependent Persons[9] (SAAD), was a major public funding expansion to fund the enlargement of public support to long-term care to old age Spaniards (see Figure 1 for a calendar of events). The reform resulted from the unexpected election one moths earlier of a new and unexpected government. It was unexpected because it was the result of the 2004 Madrid bombings only three days before the election (Garcia Montalvo, 2011). The new minority decided to propose and negotiated the public subsidization of long-term care in a way that departed from the failed attempts of the previous government. However, the implementation was undertaken by region states (autonomous communities) rather than the central government, and it was faster in some regions (run by the party in the central government) than others as reflected in Appendix A (Costa-Font, 2010).[10]

[Insert Figure 1 about here]

[9] http://sid.usal.es/leyes/discapacidad/13776/3-1-2/act-39/2006-of-14th-december-on-the-promotion-of-personal-autonomy-and-care-for-dependent-persons.aspx

[10] Consequently, there was a wide variation in the percentage of beneficiaries (e.g. 3.19 per cent in Andalusia versus 1.17 per cent in the Canaries, using data for 2010). We have used this threshold given the differences in the Ranking Scale between the population under and over the age of 18. Similarly, the reliance on caregiving allowances differs across regions, representing a high dispersion rate in the cost per dependent (e.g. €5,093 in the Murcia region versus €12,715 in the Madrid region, while the percentage of informal caregivers' benefits with respect to total benefits awarded are 68.7 and 18.6 per cent, respectively; Barriga et al., 2015).

Unlike in the pre-reform period, where care was means-tested, the introduction of SAAD universalised the entitlement to a subsidy upon meeting the established needs tests. After a needs test examination, an 'individual care plan' would be designed for each applicant to determine the support that best matches its needs (after consulting the family). Individuals would be classified as in four scales 'nondependent' 'moderate', 'severe' or 'major dependent'[11] following the official ranking scale defined by SAAD[12].

The range of supports available included in-kind services (such as home care[13], day and night centres and residential care), as well as cash subsidies (caregiving allowances) to compensate for the costs of informal caregiving. Care recipients were entitled to receive a caregiving cash allowance under the following circumstances: if they were (i) both older than 18 years of age and legal residents, (ii) been co-resident of the care recipient for at least one year before the application, (iii) in the event of no co-residence, the caregiver must be registered in either the same or a neighbouring municipality for at least one year before application. Finally, other criteria referred to minimum (iv) housing conditions deemed to be suitable to the needs specified in the individual care plans[14]. The

[11] (Art. 26 of Act 39/2006, 14th December) Moderate dependency: when the person needs help in order to perform various basic activities of daily living, at least once a day or when the person needs intermittent or limited support for his/her personal autonomy. Severe dependency: when the person needs help in order to perform various basic activities of daily living two or three times a day, but he/she does not require the permanent support of a caregiver or when he/she needs extensive support for his/her personal autonomy. Major dependency: when the person needs help in order to perform various basic activities of daily living several times a day or, due to his/her total loss of physical, mental, intellectual or sensorial autonomy, he/she needs the indispensable and continuous support of another person or when he/she needs generalised support for his/ her personal autonomy.

[12] The Ranking Scale evaluates 47 tasks grouped into ten activities (eating and drinking, control of physical needs, bathing and basic personal care, other personal care, dressing and undressing, maintaining one's health, mobility, moving outside home and housework). Each task is assigned a different weight, and there exists a different scale for individuals with mental illness or cognitive disability. Additionally, the evaluation considers the degree of supervision required to perform each task. The final score is the sum of the weights of the tasks for which the individual has difficulty times the degree of supervision required. The degree of dependency is determined as the result of the sum: no eligible (less than 25 points), moderate dependent (25 to 49 points), severe dependent (50 to 74 points) and major dependent (above 74 points). Royal Decree 504/2007, of April, 20, that approves the dependency rating scale established by the law 39/2006, of December 14, of *Promoción de la autonomía personal y atención a las personas en situación de dependencia.*

[13] Home care services are provided by professional caregivers and include services related to household work and services related to personal care. Quality standards were defined and professional services to become formal caregivers were accredited by regional authorities.

[14] (Art. 29 of Act 39/2006, 14th December). In the procedure for acknowledging the situation of dependency and the applicable benefits, the relevant social services shall establish an Individual Care Program in which the modes of intervention that are most suitable to dependent's needs shall be determined, with the participation and consultation between the alternatives proposed to the beneficiary and where applicable, his/her family or the guardians representing him/her.

reception of a caregiving allowance was incompatible with other type of subsidy except for the reception of telecare.

Cash subsidies ranged between 390€/month and 487€/month in 2007 for 'major dependants', and increased to a range between 417€ and 530€ in 2011. Importantly, the amount declined to a range between 387€ and 442€ in 2013 after the 2012 austerity cuts. Subsidies for individuals with milder dependence such as 'severe dependency' were available only after 2010 and they ranged between 180€ and 300€ in 2011, but after the 2012 spending cuts they were subsumed into one group that received between 236€ and 268€ in 2013[15]. Caregiving subsidies were always below the minimum wage and were unconditional, that is, the cash was deposited in a recipient's bank account and caregivers were not required to justify with receipts how the allowance has been spent.

Figure 2 displays the uptake of caregiving allowances both in absolute and relative terms since 2008. The Figure shows that the uptake of caregiving allowances expand over time until summer 2012 where the austerity cuts. However, in relative terms the expansion flattens after September 2009 and declines mildly thereafter. Austerity cuts were an immediate reaction of the 2012 Spanish public deficit (8.9 per cent) which led to an implicit bailout of the Spanish economy and the implementation of severe budgetary cuts of SAAD in July 2012 (Royal Decree 20/2012, 13 July 2012). Among those included the reduction in home care support from 70–90 hours/month to 56–70 hours/month for 'major dependency' individuals and from 40–55 hours/month to 31–45 hours/month for 'severe dependency' individuals (see Table A3). Finally, the amount of caregiving cash allowances declined between 15 and 25 per cent conditional on dependency degree and informal caregivers lost its social security registration entitlements.

[Insert Figure 2 about here]

3.2 The identification strategy

[15] For a better understanding of the significance of the magnitude of a caregiver allowance, subsidies can be compared with minimum wage which was of 570.60 €/month (2007), 641.40 €/month (2011), 645.30 €/month (2013) (see Table A3 for further details). Although the reform planned a subsidy for 'moderate dependency', its implementation was delayed until 2015, and hence, only severe and major dependency people were supported.

Individuals that qualified for a caregiving allowance after SAAD received a cash subsidy. Hence, we attempt to examine whether the incentives to the supply of informal care and intergenerational transfers shifted with the subsidy. The uniqueness of the Spanish reform lies in that the exposure to the reform can be clearly identified on the basis of the following observables: a) the severity of their disability and the needs assessment, b) the region of residence as its affected the implementation of the reform, and c) the time the need emerged (before or after the introduction of the subsidy as well as the reduction in the amount of the subsidy).

We use data from four waves of the SHARE data for Spain, referring to 2004, 2006-07, 2011 and 2013, which capture the exposure to the reform in 2007. Specifically for the 2006-07 wave we can identify individuals interviewed before and after the reform depending on the interview date.

We estimate a difference-in-difference fixed effects model for the extensive margin of informal care as well intergenerational transfer flows, giving in the linear case:

$$Y_{ict} = X'_{ict}\beta_0 + \beta_1 E_{ct} + \beta_2 SAAD_{ict} + \beta_3 POST_t + \beta_4 POST_t * SAAD_{ict} + \\ + C_c + T_t + \varepsilon_{ict} \qquad (1)$$

$$Y_{ict} = \{ IC_{ict}, TR^R{}_{ict}, TR^G{}_{ict} \}$$

The main outcomes of interest are given by three binary variables: IC_{ict} takes the value 1 if the respondent *i* living in Autonomous Community[16] *c* in year *t* receives informal care[17] (0 otherwise). $TR^R{}_{ict}$ takes the value 1 if the respondent has received any monetary transfer from his/her informal caregiver during the last year (0 otherwise) and $TR^G{}_{ict}$ is a binary variable that takes the value 1 if the respondent has given a financial gift to his/her informal caregiver during the last year (0 otherwise). We consider the intensive margin of informal caregiving in a later section. X_{ict} refers to a vector of control variables including respondent's socio-demographic characteristics (age, gender,

[16] As there is correlation between clusters (Autonomous Communities), we obtain robust standard errors using the wild cluster bootstrap-t procedure (Cameron et al (2008).

[17] SHARE questionnaire records help received up to three people and it is possible to identity the link between the caregiver and the recipient of care. We consider that the individual receives informal care if at least one of these caregivers is a family member, friend or neighbour (that is, we exclude professional caregivers (e.g., nurses) and household employees).

marital status, level of education, dependency degree approximate by the Katz's index, income and wealth in real terms), E_{ct} is a vector of economic regional characteristics where the respondent lives (per capita GDP, unemployment rate) which control for the effect of macroeconomic conditions.

The key covariate of our specification, $SAAD_{ict}$, is a binary variable representing the exposure to the treatment that takes the value 1 if the individual receives a cash subsidy (caregiving allowance). Therefore, individuals who at the time of the survey were not receiving any type of benefit compose our control group[18]. $POST_t$ is a binary variable that takes the value 1 if the observation relates to the after reform period (taking the value of 0 otherwise). Finally, C_c and T_t denote regional fixed effects and year fixed effects, respectively, and ε_{ict} is an individual-specific error term.

In this specification, the main coefficient of interest is β_4, which measures the difference-in-difference (DiD) of the effect of caregiving allowances over the three outcomes of interest. A core assumption of the difference-in-difference model is that the time trend is common to both groups, that is, that treatment and control individuals would behave in a parallel manner without the long-term care reform, after controlling for observables. The validity of a DiD strategy lies, firstly, in the existence of common parallel trends. Figure 3 reports suggestive evidence of common parallel trends for the three main dependent variables, especially before 2007. Second, it requires a stable composition of the treatment and control groups before and after the policy. The latter is expected as the Act of the reform was presented to the parliament in January 2006, but did not include a description of either cash or in-kind benefits. Third, during the legislative process the reform was

[18] Before the onset of the SAAD, individuals receiving caregiving allowances are identified through SHARE questionnaire as those belonging to one of the following groups: major disability benefit, third-party benefits, non-contributory invalidity pensions or family benefits for dependent children. After 2007, the access to the SAAD could only result from either (i) individuals who were not receiving any type of benefit previously (major disability benefit, third-party benefits, non-contributory invalidity pensions, family benefits for dependent children) which started the application process, and they were evaluated according to the Official Ranking Scale of the SAAD, and (ii) individuals who were already receiving any of the benefits mentioned in the previous point were re-evaluated according to the Ranking Scale and re-classified as moderate, severe or major dependent.

heavily amended in Parliament (received 3 total amendments and 622 partial amendments) making practically impossible to anticipate a specific outcome.

Finally, in order to analyse the effect of the deficit cut policies introduced in 2012 and 2013, we specifically incorporate to the analysis the 2013 wave data and account for the possibility that the effect of the policy being different by the time of the 2013 interview.

3.3 Endogeneity of reform implementation

One of the potential threats to the specification strategy lies in that we do not account for the potential endogeneity in the implementation of the reform. Specifically, given that the reform was the '*star social program*' of a newly elected socialist government, and that the regions were co-financing and implementing the reform, we employ regional political information to instrument the reform (see Table A4 containing further evidence that the reform implementation was politically motivated), which we draw upon in a subsequent instrumental variable strategy. We employ an instrumental variable (2SLS) strategy using as a main instrument whether the region is run by the socialist (national incumbent) party, as the socialist party had in its electoral mandate the development and implementation of a new long-term care Act[19].

Given that we have two potential endogenous variables ($SAAD_{ict}$ and $POST * SAAD_{ict}$), we instrument them using the following equations:

$$SAAD_{ict} = \gamma_0 + \gamma_1 Soc_{ict} + \gamma_2 POST_t * Soc_{ict} + \gamma_3 Z_{ct} + E_{ct} + C_c + T_t + \vartheta_{ict} \quad (2)$$

$$POSTSAAD_{ict} = \delta_0 + \delta_1 Soc_{ict} + \delta_2 POST_t * Soc_{ict} + \delta_3 Z_{ct} + E_{ct} + C_c + T_t + \theta_{ict} \quad (3)$$

Where Soc_{ict} is a dummy variable equal to 1 if the socialist party won the last regional elections and zero otherwise (or the percentage of vote to the socialist party[20]), and Z includes other

[19] It would be expected to speed up the implementation of the reform as some previous research has documented (Costa-Font, 2010).

[20] See Table A4 in the Appendix for the percentage of voting to the socialist party. Reported results correspond to the estimation using as instrumental variable a dummy variable equal to 1 if the socialist party won the last regional elections (0 otherwise). Similar results can be obtained using the percentage of support of the socialist party in the last regional election instead.

instruments (coverage index for public home care in 2000 and 2002[21], before the onset of the SAAD, to capture the effect of regional differences in the provision of formal care).

This identification strategy exploits two source of variation. The SAAD reform provides time series variation, whereas the instrument provides exogenous cross-sectional variation. To avoid any concern regarding the estimation by 2SLS, Angrist and Krueger (2001) have shown that using 2SLS provides a causal interpretation that is not affected by the nonlinearity of the binary variables. By the contrary, using probit to generate first-stage predictions may lead to inconsistent estimations.

If for example, regions run by the same party (socialist) as the national incumbent exhibited lower percentages of informal care provision, and similalrly, lower uptake of caregiving allowances. The omission of the variable `*region with socialist government*' would cause that the covariance between the error term and caregiving allowances to be negative, and the estimated coefficient to underestimate the true causal impact. Consequently, the fraction of support for the socialist government in a region seems like a good candidate provided that individuals with a higher preference for caregiving allowances and living in a region where the socialist party has higher support, are not tempted to move to another region with lower support for the socialist party (and more generous rules regarding the granting of caregiving allowances),[22] which is likely to happen given the low level of mobility observed in the Spanish economy at least in the short run[23].

3.4 The effect of the reform on caregiving frequency

Unfortunately, SHARE questionnaire does not provide a precise estimate of the intensive margin of caregiving (namely the number of informal caregiving hours) for all the waves. However, the frequency of informal care provision is registered for all waves which can be employed as a proxy measure of the intensive margin for up to three caregivers. Hence, in a first instance we

[21] See Table A5 in the Appendix for a description of the home care coverage index.

[22] According to the article 28 of the Law of Dependency, each region is responsible of awarding long-term care benefits. Therefore, in case of moving from one region to another one, the program designed for the beneficiary in the region of origin will not be valid in the incoming region.

[23] As a matter of example, in 2012, only 200 beneficiaries out of 764,969 moved from one region to another (Tribunal de Cuentas, 2014).

identify who qualifies as an informal caregiver (e.g., family members, neighbours or friends). Then, we look at the frequency of contact of all informal caregivers. The questionnaire records four possible answers to the question "in the last twelve months, how often altogether have you received such help from this person?", namely : "almost daily", "almost every week", "almost every month" and "less often". Table A6 provides the distribution of the frequency of informal care over time, indicating an upward shift in the frequency of informal care after 2007. We draw on an interval regression estimation to transform such responses to an interval-coded variable.

Table A7 shows the full description of the transformation from frequencies to days of care. For example, the category "almost daily" has been interpreted as receiving 6 or 7 days of care per week. Considering the number of weeks per year, it implies between 313 and 365 days of care per year. After this step, we obtain an interval coded variable for the caregiving days provided by each informal caregiver. In case of receiving care from more than one informal caregiver, we define a new interval whose lower bound is the sum of the lower bounds of all informal caregiving days, and whose upper bound is the sum of all the upper bounds of informal caregiving days. Drawing on this new variable, we estimate the following interval regression:

$$ICH_{ict} = X'_{ict}\lambda_0 + \lambda_1 E_{ct} + \lambda_2 W_{ict} + C_c + T_t + \varpi_{ict} \qquad (4)$$

where ICH_{ict} is the interval-coded variable for the number of informal caregiving hours, X_{ict} is the same vector of respondent's socio-demographic characteristics defined before, E_{ct} is a vector of regional characteristics, C_c and T_t denote regional and year fixed effects respectively, and ϖ_{ict} is an individual-specific error term. As exclusion restrictions (W_{ict}), we have included the number of bedrooms in the house and both the birth order and gender of adult children. The intuition behind is that the availability of space could ease the reception of care at home and, consistently with Norton et al. (2013), older children and daughters are more likely to become informal caregivers. To obtain robust standard errors we use the score cluster bootstrap-t with 1,000 replications (Kline and Santos,

2012). We then use the estimates obtained from this model to predict the number of informal caregiving days ($\widehat{ICH}_{ict}$).

As a final step we estimate by LS a model of the predicted number of informal caregiving days using the same specification than we considered in equation (1)

$$\widehat{ICH}_{ict} = X'_{ict}\kappa_0 + \kappa_1 E_{ct} + \kappa_2 SAAD_{ict} + \kappa_3 POST_t + \kappa_4 POSTSAAD_{ict} + \\ + C_c + T_t + \xi_{ict} \qquad (5)$$

where SAAD and POSTSAAD are considered potentially endogenous and, hence, are instrumented. Finally, as the dependent and some key covariates are predicted we bootstrap the standard errors.

4. Data and Descriptive Evidence

We use data from SHARE (Survey of Health, Ageing and Retirement in Europe) for Wave 1 (2004), Wave 2 (2007), Wave 4 (2011) and Wave 5 (2013)[24]. SHARE is the European equivalent of the Health and Retirement Survey, a panel dataset of interviewees born 1960 or earlier and their partners covering Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Israel, the Czech Republic, Poland and Ireland. SHARE is the most comprehensive dataset available across Europe to examine the effects of changes in long-term care subsidies among old age individuals. While sample sizes vary between countries, the pooled dataset exceeds 100,000 individuals, from which only 20% exhibit some form of dependency (defined as some ADL or IADL they cannot perform). We take advantage that some interviews in 2006 waves were carried out in 2007 and hence they allow us to identify further the initial effects of the exposure to the public insurance expansion. Our sample contains the full Spanish subsamples for waves 1 (1,958 obs.), wave 2 (1,789), wave 4 (2,925) and wave 5 (8,233), giving a total of 14,955 observations.

[24] Unfortunately, wave 3 could not be included as it is not comparable with other waves.

The data contains information on the relevant dependent variables we are interested on: the reception of informal care on the extensive margin (probability of informal care and upward and downward transfers), a variable measuring the frequency of care for up to three caregivers (which can be transformed into an internal margin using interval regression), as well as a long list of controls including parental characteristics, demographics (including age, gender, marital status, number of children), controls for health and dependency (Katz index), personal monthly income, wealth, time of the interviews and sample weights (see Tables A9-A11 in the Appendix). Other data from aggregate sources was considered, including macroeconomic controls (regional unemployment and per capita GDP) that account for the effect of the economic downturn which was largely regional specific.

4. 1. Descriptive Evidence

Before moving to the results, Figure 4 and Table 1 display a description of the key dependent variables examined in the study. Figure 4 depicts the density function of real income for dependent variables (informal caregiving alongside inflows and outflows of intergenerational transfers) in combination with caregiving allowances. Overall, and consistent with the universal nature of SAAD, we find a shift in the probability of reception of informal care towards individuals to a higher quintile of income. In contrast, the effect of SAAD on transfers is less obvious from Figure 3. It is possible to identify a reduction of inflows of intergenerational transfers among lower income individuals and an opposite effect among individuals closer to the median of the income distribution.

[Insert here Figure 4 and Table 1]

Table 1 reports the proportion of the SHARE survey respondents that state they receive informal care (breaking down such care from different caregivers, which include a co-residential caregiver, a non-co-residential caregiver, and then specifies whether it refers to the spouse or partner alongside an adult child), and monetary transfers (both outflows and inflows). The evidence suggests a limited effect of the exposure to the reform that exhibits similar stable patterns until 2013, which

coincides with the reduction of unemployment. However, when we distinguish by type of care, those not affected by the reform do not exhibit a different pattern over time (we identify a shift in the provision of informal care by non-residential caregivers, possibly explained by compositional effects). In contrast, those affected by the reform show a higher use of informal care provided primarily by the co-resident caregivers, and specifically family members such as partner or child.

5. Results

5.1 Baseline results

Table 2 reports alternative econometric estimates of the effect of the reform SAAD on the uptake of informal care. The various specifications differ in the inclusion of alternative individual specific and macroeconomic controls given that Spain was exposed at the time to an economic downturn. All columns have been estimated using a linear probability model except the last one[25]. Overall, results suggest robust evidence of an increase in the probability of informal care after SAAD, and specifically, effects sizes point towards a 17-18% increase in the probability of informal care, which appears robust to different specifications. Importantly, we find significant and negative income and wealth effects consistent with expectations.

[Insert Table 2 and 3 about here]

Similarly, Table 3 reports the estimates of the effect of SAAD on both inflow and outflow transfers. Overall, the picture that emerges is that of a 14% increase in outflow transfers by those individuals that benefit from SAAD. Consistently, it shows a 7% decline in inflow transfers. The latter results indicate that, as expected, SAAD lead to a lesser reliance on transfers from other family member, which typically was common practice before SAAD was implemented. As expected, outflow transfers increase with income and wealth, whilst inflow transfers decline with income and wealth. The latter indicates that transfers are typically motivated by financial need.

5.2 Instrumental variable (IV) estimates

[25] At means marginal effects using a probit specification are of similar magnitude.

One of the potential concerns of the empirical strategy lies in that the heterogeneous exposure of the reform across regions. Hence, Table 4 presents for the three outcomes of interest the OLS and IV estimates using regional support of the socialist party as a main instrument of the exposure to the reform[26]. The Hausman tests rejects in all cases the null of exogeneity. However, the adequacy of these tests relies crucially on the validity of the instrument set[27].

The instrumental variables estimates are suggestive of a larger increase on informal care and outflow transfers indicating an effect size of 32% on informal care which is almost twice as the OLS estimate, and an effect of 29% increase on outflow transfers, which is even more than twice as the OLS estimates. In contrast, the effect on the reduction of inflow transfers is more modest and only increases from 7% to 10% when an IV strategy is employed. For all regressions, the comparison of standard errors reveals that the IV strategy does not significantly decrease estimation precision. Finally, note that the estimation of the IV model with regional specific time trends renders similar results[28].

[Insert Table 4 about here]

5.3 Heterogeneous effects on caregiver arrangements and socio-economic status

Baseline results can be influenced by critical sources of heterogeneity such as the type of caregiving arrangement and socio-economic status. To examine the former, Table 5 presents both the OLS and IV estimates of the effect of SAAD by type of informal care arrangement. The results indicate that the effect of SAAD was larger among both non-resident caregivers and co-resident child

[26] See Table B1 below for further detail on the instruments.

[27] Table B1 in the Appendix reports diagnosis tests for the validity of the instruments. Support of the socialist party is positive and significant in the first-stage equation for SAAD, and its interaction with the post-reform period is negative and significant in both first-stage equations. By the contrary, higher coverage of home care in 2000 and 2002 has a negative effect. Furthermore, the Kleibergen-Paap statistics rejects the underidentification hypothesis at 5% confidence level. To determine if the IV estimates are weakly identified we have performed the Stock and Yogo F-test. Given that there are two potential endogenous variables, we compare the Kleibergen-Paap *rk* statistic (7.93) with the Stock and Yogo critical values (Stock and Yogo, 2005; Kleibergen and Paap, 2006). As the Kleibergen-Paap *rk* statistic is higher than the Stock-Yogo critical value at 10% (7.03), we conclude that the null hypothesis of weak identification can be rejected. Finally, the overidentication test performed using the Hansen statistic confirms that the instruments are valid.

[28] The estimated coefficient for the interaction of the SAAD variable with the post reform period is 0.321 (s.e.=0.03) in the model for informal care, -0.108 (0.01) in the model for inflow transfers and 0.298 (0.03) for outflow transfers.

(40% even when restricted to children alone). These results are consistent with a potential income substitution effect of SAAD alongside its intended effect, which was the reduction in the caregiving burden to family caregivers. The latter can explain the difference in the effect between co-resident and non-co-resident caregivers.

[Insert Table 5 about here]

Heterogeneity in socio-economic status is a potential issue insofar as a cash subsidy can alter the household income of the subsidy recipient. To examine this point, Table 6 distinguishes the effect of SAAD by income and wealth quintile at baseline. Panel A estimates regressions using the whole sample for waves 1, 2 and 4. Our results suggest that, despite SAAD is not a means tested program, we find a significant positive effect on the probability of caregiving that concentrates in the two lowest income quintile (20.1% among the lowest income quintile and 14.7% among the lowest wealth quintile), and declines after that. This result is suggestive of a preference for formal care (both community and institutional) by higher income groups, which in turn is consistent with a reduction in inflows among individuals both at the middle and higher income quintile, and an increase among the lower income ones of a comparable magnitude (11.8% among the lowest income quintile). We identify the reverse effect on intergenerational transfer outflows, namely the largest increase in outflows is among the higher income quintile at baseline (where we find a 17% increase among the higher income quintile relative to no change among lowest income quintile).

Next, in Panel B we restrict our sample to include individuals that were not receiving any subsidy (disability allowance) at the baseline. Hence, the new sample only retains those who receive a SAAD relates subsidy. We find that there is still a sizeable and statistically significant effect on the probability of caregiving (18.3% for the lowest income quintile and 13.4% for the lowest wealth quintile) and, a robust and consistent increase in the probability of inflow transfers for the lowest income quintile (10.7%).

[Insert Table 6 about here]

5.4. The effect of the 2012/13 budget cuts on behaviour

One of the unique features of the implementation of SAAD lies in that in encompassed a counter experiment entailing the reduction of the caregiving subsidy due to the immediate austerity budget cuts imposed by the implicit bailout of the Spanish economy (OECD, 2014). The reduction of the caregiving subsidy offers a complementary quasi-experiment that allows testing the extent to which there is a reversion of the effects of SAAD which we have documented in the previous sections. As expected, Table 7 shows that the effect of the reform coefficient partially reverts. Specifically, the estimated coefficient points to a 5.7% reduction in the probability of receiving informal care, as well as an increase in the probability of inflow transfers by 6.1% and, consistently, a reduction in outflow transfers by 9.3%. Note that the table suggests that the effect on caregiving is driven by a reduction in the probability of non-resident caregiving (9.1%), and again, a reduction in the probability of caregiving from partners (1.2%).

[Insert Table 7 about here]

So far, the analysis suggests that SAAD was effective at increasing the probability of informal caregiving by about 30%, as well as an equivalent increase on outflow transfers (and a 10% reduction of the inflow transfer). These effects are heterogeneous by income and co-resident status, and more importantly decrease with the reduction of the subsidy. Our results are suggestive of a reduction that ranges between 21-33% of the external margin of informal care. Next, we present some extensions.

6. Extensions

6.1 The effect on the frequency of informal caregiving

The estimation results of the interval regression are shown in Table A8. The exclusion restrictions are significant and show the expected sign. The more intense effect corresponds to the number of bedrooms. Each additional bedroom increases caregiving days by 14.6 days/year.

Informal caregiving days increase by 6.2 days/year if the eldest child is a daughter and by 3.5 days/year if the eldest child is between 40-65 years old.

Results analysing the relationship between the predicted frequency of care and SAAD are shown on Table 8 for two sub-periods: the 2004-2011 period, to estimate the effect of the introduction of the dependency law, as well as 2004-2013, to estimate the net effect after the 2012/2013 austerity adjustments. Our findings indicate that the introduction of the SAAD increased the average number of informal caregiving days by 13.5 days/year. However, when we distinguish the different sub-periods, we find that as a consequence of the austerity 2012 and 2013 Royal Decrees, the number of informal caregiving days decreased by 6.2 days per year.

[Insert Table 8 about here]

6.2 Robustness Checks

The effect among those receiving care at baseline. We have examined whether the effect of the reform remains when we disentangle the effect anong those individuals that received care at baseline after the reform in Table 9. One could expect that individuals who received informal care in 2004 are likely to receive it in 2007 onwards. However, the interaction with the treatment variable is never significant, and neither was the effect on the (predicted) number of informal caregiving days, indicating that the implementation of the SAAD did not modified the number of caregiving days for caregivers at baseline. Hence, we conclude that the observed effects are mainly driven by the introduction of SAAD as opposed to the expansion of the subsidy to individuals who would qualify in the pre-reform period.

[Insert Table 9 about here]

Testing the existence of an exchange motive for care. Implicit in our argument is that intergenerational transfers are determined by the sypply of care. However, we have not explicitly tested this so far. Table 10 reports that individuals exposed to SAAD who received informal have experienced an increase of 30.5% (decrease by 18.9%) in the probability of outflow (inflow)

transfers when receiving a caregiving allowance in the period 2007-2011. In contrast, transfers do not change for those who do not receive a subsidy. When we account for the subsidy reduction and we examine the effect for the period 2007-2013, the magnitude of these effects diminishes to around 25% (which coincides with the magnitude of the subsidy reduction). Similar results are obtained when we exclude from the sample those receiving a disability allowance at baseline.

[Insert Table 10 about here]

Additional Instruments. One additional robustness check we carry out refers to the inclusion of an additional instrument. If all instruments are valid, then an additional instrument should not alter the estimates[29]. A common instrument in the caregiving literature refers to the presence of daughters, who traditionally have been more likely to play the role of informal caregivers (van Houtven and Norton, 2004). Given that beneficiaries of the SAAD (and their families) are not a random sample of the population, we follow an IV strategy where the proportion of co-resident daughters with respect to total household members as an additional instrumental variable[30]. Table B2 compares the IV estimates using 4 (the reference results reported in Table IV) or 5 instruments. As it can be easily detected the differences in all cases between the two sets of estimates IV-4 and IV-5 are, at the most, minor.

6.3 Mechanisms

The effect on the supply of caregivers. To conclude this section we examine two different potential mechanisms that underpin the effects of SAAD. First, we examine whether SAAD expanded the supply of informal caregivers. Second, we test whether SAAD boosted the creation of non-institutionalised care jobs. To examine the expansion of caregiving supply, the SHARE questionnaire allows us identify respondents who provide informal care, distinguishing between co-resident

[29] Furthermore, an additional instrument may be used as a complement of traditional over-identification tests (Wooldridge, 2010).

[30] Instrument validity exhibit comparable diagnostics and are available upon request.

informal caregivers and not co-resident informal caregivers. Descriptive statistics for the supply of informal caregivers are displayed in Table A9.[31] As for co-residents caregivers (CG_{CR}), we focus in the probability that a co-resident provides care as a function of the care reform. Hence, we estimate the following model:

$$CG_{CR,ict} = X'_{ict}\tau_0 + \tau_1 E_{ct} + \tau_2 SAAD_{ict} + \tau_3 POST_t + \tau_4 POST * SAAD_{ict} + C_c + T_t + \psi_{ict} \quad (6)$$

As before, we instrument SAAD and POSTSAAD and bootstrap standard errors.

Table 11 displays the estimates for both types of informal caregiving behaviour. In each case, panel A shows the results for period 2004-2011 and panel B for the whole period 2004-2013. Estimates suggest that that the introduction of the SAAD increased the supply of co-resident informal caregivers by 29%.

[Insert Table 11 about here]

Effect on formal care employment. Given that the introduction of the SAAD can affect both types of care, informal and formal, in addition to the above exercise we analyse the creation of formal caregiver's jobs. We use data from the Labour Force Survey (Encuesta de Poblacion Activa), which contains data on "employees in social services for non-institutionalized dependent people" (code 811) for 2008, 2011 and 2013. Table A13 shows that the number of formal caregivers increased from 58,803 in 2008 to 102,348 in 2011 and remained stable in 2013 (103,146). We then merged the records in the SHARE survey with the labour force survey data and estimated the effect of SAAD on the number of professional caregivers in region *c* and year *t* (EMP_{ct}):

$$EMP_{ct} = \mu_1 E_{ct} + \mu_2 SAAD_{ct} + \mu_3 T_{11} * SAAD_{ct} + \mu_4 T_{13} * SAAD_{ct} + C_c + T_t + \pi_{ct} \quad (7)$$

Where T_{11} and T_{13} are binary variables for the year effects corresponding to 2011 and 2013, respectively. Results are shown on Table 12 and suggest a clear substitution between caregiving

[31] The percentage of informal caregivers (among the subsample of those not receiving informal care) rose from 16.80% in 2006 to 24.74% in 2007 and 31.71% in 2011, but decreased to 23.31% in 2013. This pattern is also observed for co-resident and not co-resident informal caregivers and those who develop both roles at the same time.

allowances and formal care employment. More importantly, the interactions between SAAD and the temporal dummies reveal that SAAD reduced the supply of about 2,400 employments in 2011, which represents 4% of employment in 2007. Consistently, this negative effect was strongly mitigated in 2015 (-125 employments).

[Insert Table 12 about here]

7. Economic Costs of SAAD

In this section, we propose to estimate the economic impact of informal care subsidization, that is, the cost associated to the provision of long-term care benefits to individuals who otherwise would have chosen informal care. We consider three seprate values: (i) the estimated coefficients of the interaction terms between receiving caregiving allowance and the corresponding year dummy (2007, 2011, 2013) as in Table 7, (ii) the number of beneficiaries of caregiving allowances affected by the reform and (iii) the average caregiving allowance received by them. (ii) is obtained multiplying the sample of beneficiaries of caregiving allowances in each year by the corresponding calibrated weight[32]. In contrast (iii) es computing using information on the expenditures on caregiving allowances corresponding to each dependency degree in 2007, 2011 and 2013. The average caregiving allowance has been computed as the product of the amount corresponding to each dependency degree times the percentage of beneficiaries for each degree (see Table A12 for the distribution of beneficiaries by dependency degree).

Table 13 provides (in the upper A panel) a comparison between beneficiaries of caregiving allowances and population estimates using calibrated weights. We find that in per capita terms, the cost increase in the provision of informal care due to the implementation of the SAAD is estimated

[32]SHARE provides two types of weights. Sampling design weights are defined as the inverse of the probability of being included in the sample of any specific wave. Although these weights compensate for unequal selection probabilities of the sample units, obtaining unbiased estimators of the population parameters is only possible under the ideal situation of complete response. Unfortunately, given that the SHARE data are affected by problems of unit non-response and sample attrition, estimators constructed using sample design weights alone may be biased (Lessler and Kalsbeek. 1992). The strategy used by SHARE to cope with these problems relies on the ex-post calibration procedure of Deville and Särndal (1992).The present simulation uses these calibrated weights.

to be at 0.09 €/year in 2007 and to rapidly increase to 8.09 €/year in 2011. However, budgetary cuts implemented in 2012 reduced costs by 1.92 €/year in per capita terms.

[Insert Table 13 about here]

In a lower panel B, we use our estimates alongside data from National Institute for Statistics (INE) to obtain an economic estimation of the value of informal care provided by informal caregivers who received the caregiving allowance. We have used the predicted number of informal caregiving days from equation (4) and the wage (euro/day) of public employees who provide social services to non-institutionalized dependent people. Results, indicate that the informal care subsidy is estimated to amount to 0.01% of GDP in 2007, 0.37% in 2011and slightly decreased to 0.32% of GDP in 2013. This implies a 14% contraction of the value of informal care subsidies by SAAD.

8. Conclusions

This paper examines the effect of an unconditional demand side cash subsidy on caregiving and intergenerational transfers. We exploit evidence of the introduction of the introduction of the Spanish Promotion of Personal Autonomy and Care for Dependent Persons (so-called SAAD in Spanish) which universalized the entitlement (previously means tested) to a caregiving cash subsidy (caregiving allowance) to those individuals that qualified based on needs (disability falling in a certain scale).

Our results suggest causal evidence of a rise in informal care both at the internal and external margin and a net surge (decrease) in downstream (downstream) intergenerational transfers after the reception of a cash subsidy. Second, the reduction in the amount of the subsidy (has allowed for further testing the robustness of our estimates), consistently shows that a counter effect on informal caregiving and intergenerational transfers.

We find a 32% increase in the probability of informal caregiving and a subsequent 29% increase in the probability of a downstream intergenerational transfer alongside a 10% reduction in the probability of an upstream transfer. The effect on informal caregiving concentrates among low-

income households despite the caregiving allowance not being a means-tested entitlement. Additionally, we find that the introduction of the SAAD increased the average anual number of informal caregiving days by 13.5. However, SAAD did not modify the caregiving intensity for those receiving an allowance before the reform. Hence, the effect is driven by those who were newly entitlemented to a subsidy after SAAD.

Further analysis indicates a positive (negative) relationship between informal care in the post reform period and the outflow (inflow) of intergenerational transfers. Furthermore, we show that SAAD particularly incentivised co-resident caregiving by 29% in the period 2007-2011 (e.g., individuals who became informal caregivers), and that consistently, a reduction of the subsidy in 2012 discouraged this caregiving behaviour, and the supply of co-resident caregivers decreased by nearly 14%. The latter exerted a significant effect on caregiver's employment.

The paper offers three main policy suggestions. First, unconditional cash subsidies can significantly alter the decision to provide care and its intensity. Second, intergenerational transfers, which act as an informal credit mechanisms, are modified by such subsidies accordingly.Finally, a reduction in the incetivie produces the expected counter effect on both caregiving and transfer decisions.

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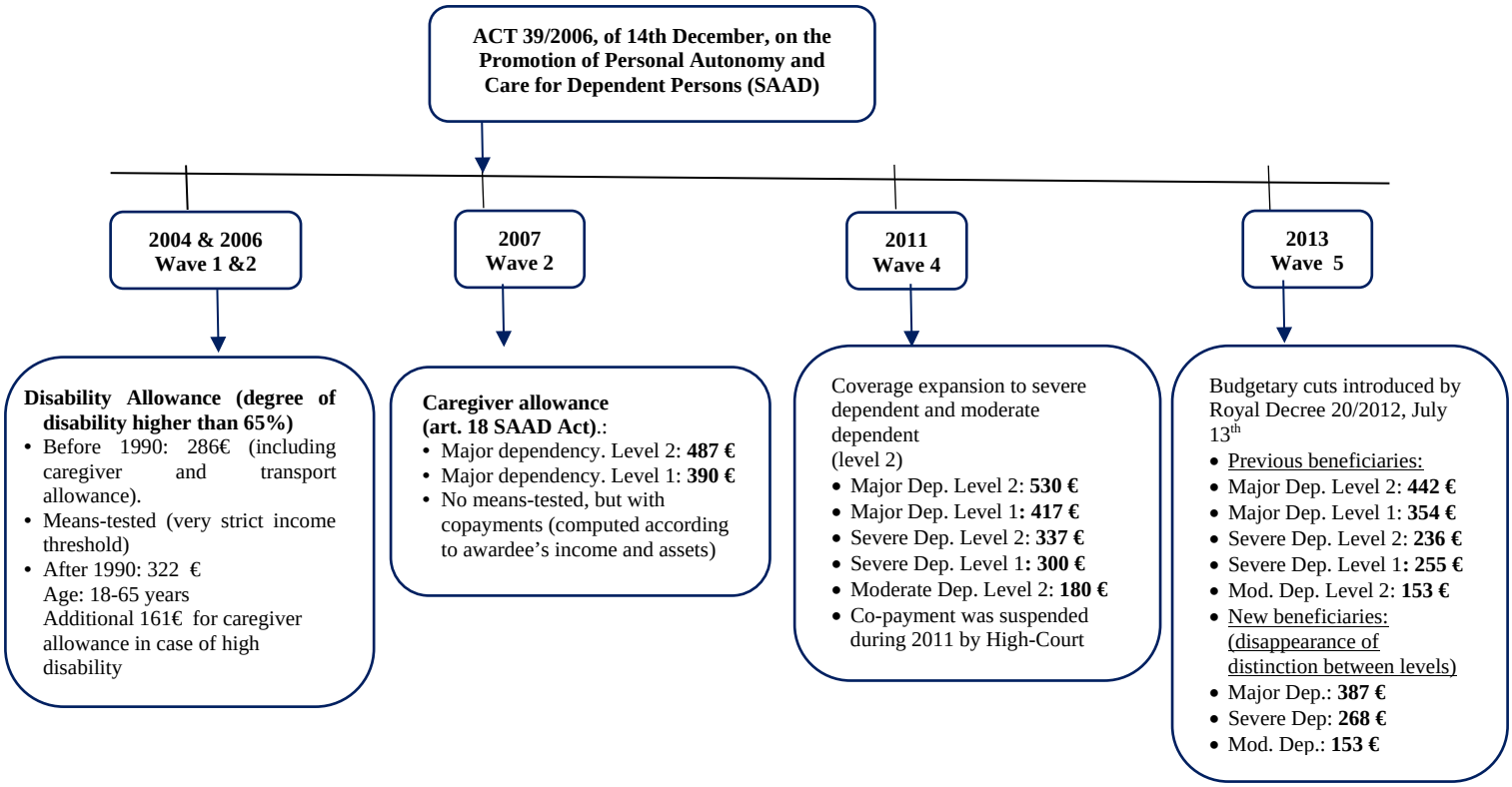
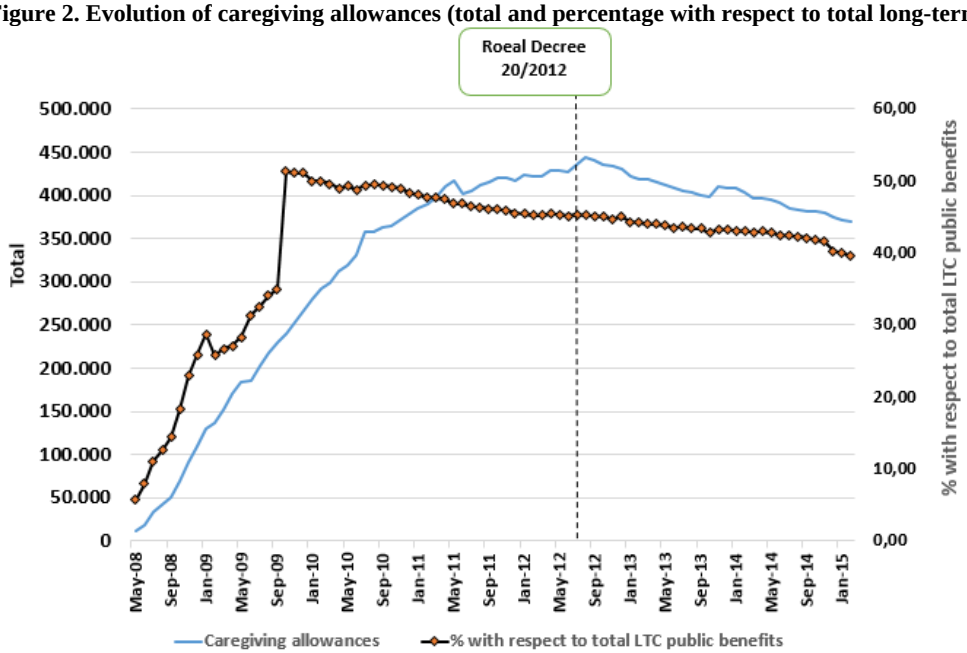
Tables and Figures

Figure 1. Disability and caregiver allowance entitlements by Spain per SHARE wave



For a better understanding of the amount of caregiver allowance and disability allowance, they can be compared with minimum wage: 460.50 €/month (2004), 540.90 €/month (2006), 570.60 €/month (2007), 641.40 €/month (2011), 645.30 €/month (2013).

Figure 2. Evolution of caregiving allowances (total and percentage with respect to total long-term care benefits). (2008-2015)

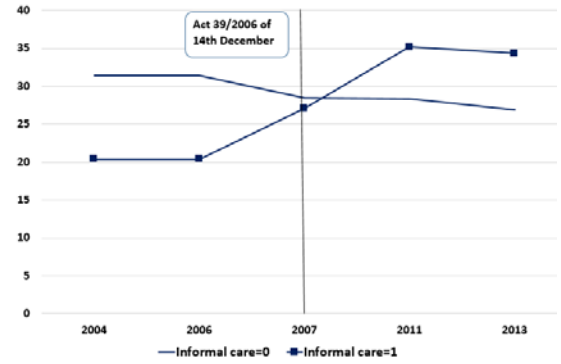


Source: Own work using data from the Ministry of Health, Social Issues and Equality.

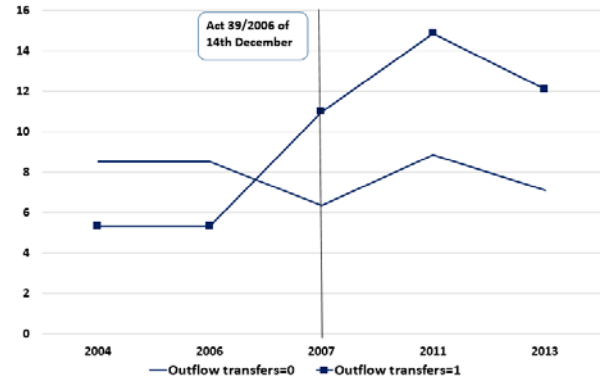
http://www.dependencia.imserso.es/dependencia_01/index.htm

Figure 3. Trends for Caregiving and Intergenerational Transfer Decisions

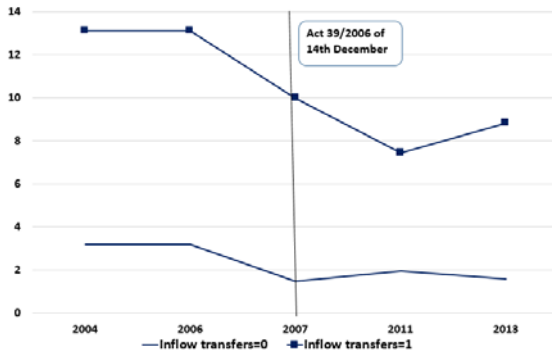
C1. Percentage of respondents who receive caregiving subsidy (allowance) conditioned on receiving or not informal care



C2. Percentage of respondents who receive caregiving allowance conditioned on receiving or not inflow intergenerational transfers

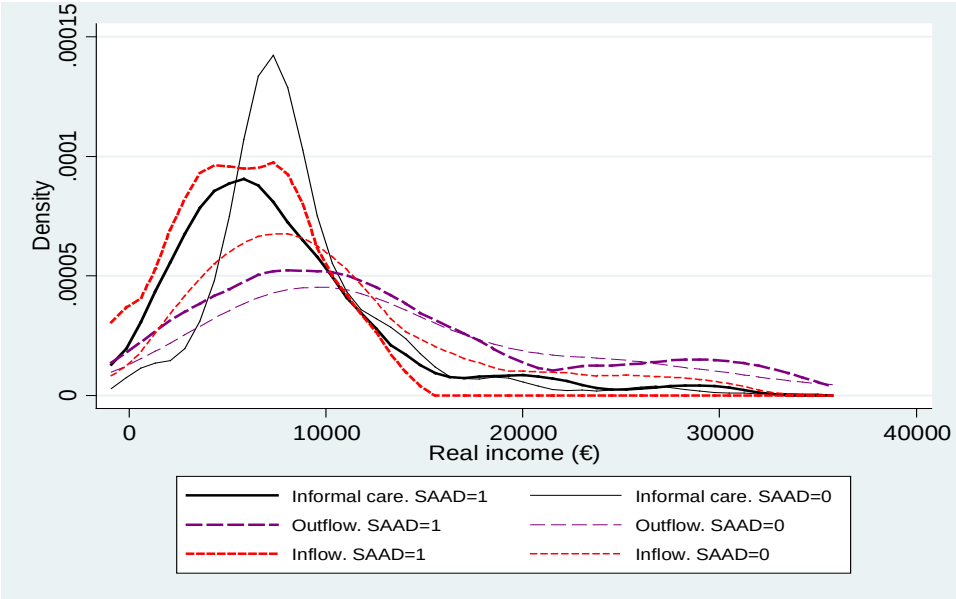


C3. Percentage of respondents who receive caregiving allowance conditioned on receiving or not outflow intergenerational transfers



Note: the three figures reported display on a vertical line the evolution of informal care and transfers among those exposed and not exposed to the implementation of the SAAD (Act 39/2006 of 14th December).
Source: Own work using SHARE (waves 1, 2, 4 ad 5)

Figure 4 Density function of real income conditioned on informal care, inflow transfers and outflows transfers and in combination with caregiving allowances (SAAD) for the period 2007-2013.



Note: SAAD=0 refers to the period before the reform (2004 and 2006). SAAD=1 refers to the period after the reform (2007, 2011 and 2013).

Table 1. Percentage of individuals receiving informal care, inflow intergenerational transfers and outflow intergenerational transfers distinguishing between those that benefit from SAAD

	Does not receive Caregiving Allowance (SAAD=0)			Receives Caregiving Allowance (SAAD=1)		
	2004-2006	2011	2013	2004-2006	2011	2013
Receives informal care	18.63	18.32	13.49	37.16	37.86	34.01
Informal care from:						
Co-resident caregiver	58.04	48.80	48.71	34.71	65.22	69.64
Not co-resident caregiver	53.42	62.00	62.36	71.17	54.89	48.86
Partner/spouse	32.63	29.60	29.90	6.14	49.28	42.83
Adult child	35.36	33.60	48.86	55.05	21.21	39.12
Inflow intervivos transfer	1.13	2.09	1.99	2.34	2.55	2.86
Outflows intervivos transfer	5.68	7.48	7.81	7.23	9.18	7.14
N	1,879	2,729	7,933	299	196	350

Note: This estimates have been computed form SHARE data (waves 1, 2, 4 and 5). In this table, we exclude 2007 to observe more clearly the difference between the pre and post-reform.

Table 2. Regressions for the probability of receiving informal care (2004-2011)

	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)
Receives SAAD	-0.029*	-0.029*	-0.029*	-0.034*	-0.036**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Interaction Year=2007 or 2011	0.175***	0.174***	0.174***	0.174***	0.173***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
Year=2006	0.045**	0.045**	0.040**	0.004**	0.043**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year=2007	0.004	0.004	-0.011	0.025**	0.008
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year=2011	-0.078***	-0.078***	-0.074***	-0.073***	-0.070***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Real income					
(million € 2011)	-	-0.020***	-0.021***	-0.022***	-0.021***
		(0.00)	(0.00)	(0.00)	(0.00)
Real wealth					
(million € 2011)	-	-0.009***	-0.009***	-0.009***	-0.009***
		(0.00)	(0.00)	(0.00)	(0.00)
Demographics	Yes	Yes	Yes	Yes	Yes
Dependency	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes
Unemployment	No	No	Yes	No	Yes
Regional GDP	No	No	No	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes
Constant	-0.099***	-0.094**	-0.107**	0.100***	-0.051**
	(0.03)	(0.05)	(0.04)	(0.08)	(0.03)
N	6,672	6,672	6,672	6,672	6,672
R^2	0.248	0.259	0.270	0.282	0.288
F-statistic	612.24	568.93	334.17	296.52	284.57
p-value	0.000	0.000	0.000	0.000	0.000

Note: This table reports from OLS regressions for the probability of receiving informal care. All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographic characteristics, dependenty level approximated by the Katz's index, level of education, time and regional dummies. Additionally, column (2) includes real income and real wealth, column (3) includes unemployment rate, column (4) includes regional GDP per capita and column (5) includes all the covariates. These regressions consider waves 1, 2, and 4 and in this case, the post-reform period refers to years 2007 and 2011.Omitted variables: year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parenthesis. . Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008).

Table 3. Regressions for the probability of intergenerational outflow (O) and inflows transfers (I) (2004-2011)

	Inflow					Outflow				
	O1-OLS	O2-OLS	O3-OLS	O4-OLS	O5-OLS	I1-OLS	I2-OLS	I3-OLS	I4-OLS	I5-OLS
Receives SAAD	0.024**	0.026**	0.026**	0.026*	0.027*	0.044***	0.046***	0.045***	0.045***	0.044***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
Interaction Year=2007 or 2011	0.140***	0.143***	0.145***	0.145***	0.145***	-0.072***	-0.071***	-0.075***	-0.073***	-0.073***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year=2006	0.009	0.011	-0.008	-0.008	-0.009	-0.004	-0.014*	-0.013*	-0.013*	-0.016**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year=2007	0.050***	0.052***	0.052***	0.051***	0.050***	-0.016***	-0.016***	-0.017***	-0.020***	-0.021***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Year=2011	-0.122***	-0.124***	-0.124***	-0.123***	-0.123***	0.014**	0.014**	0.017**	0.015**	0.016**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Real income (million € 2011)	-	0.101***	0.101***	0.102***	0.102***	-	-0.042**	-0.044*	-0.047**	-0.045**
		(0.03)	(0.03)	(0.03)	(0.03)		(0.01)	(0.01)	(0.01)	(0.01)
Real wealth (million € 2011)	-	0.023***	0.022***	0.022**	0.021**	-	-0.011**	-0.012**	-0.011**	-0.012**
		(0.00)	(0.00)	(0.01)	(0.01)		(0.00)	(0.00)	(0.00)	(0.00)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Katz Index	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment	No	No	Yes	No	Yes	No	No	Yes	No	Yes
Regional GDP	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.201***	0.202***	0.198***	0.204***	0.195***	0.077***	0.075***	0.075***	0.068***	0.071***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
N	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672
R^2	0.108	0.109	0.110	0.107	0.111	0.127	0.132	0.135	0.130	0.125
F-statistic	70.45	71.59	75.35	74.87	71.58	57.86	61.63	62.36	62.78	60.74
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table reports the OLS regressions for the probability of inflow and outflow intergenerational transfers. All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographic characteristics, dependenty level approximated by the Katz's index, level of education, time and regional dummies. Additionally, column (2) includes real income and real wealth, column (3) includes unemployment rate, column (4) includes regional GDP per capita and column (5) includes all the covariates. These regressions consider waves 1, 2, and 4 and in this case, the post-reform period refers to years 2007 and 2011.Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parenthesis. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008).

Table 4. Comparison OLS and IV estimates. (2004-2011)

	Informal care		Outflow transfers		Inflow transfers	
	OLS	IV	OLS	IV	OLS	IV
Receives SAAD	-0.036**	-0.024**	0.027*	0.043***	0.044***	0.032***
	(0.011)	(0.012)	(0.011)	(0.015)	(0.011)	(0.013)
Interaction Year=2007 or 2011	0.173***	0.317***	0.145***	0.293***	-0.073***	-0.103***
	(0.031)	(0.037)	(0.031)	(0.036)	(0.014)	(0.016)
Year=2006	0.043**	0.044***	-0.009	-0.0011	-0.016	-0.018
	(0.011)	(0.013)	(0.012)	(0.018)	(0.013)	(0.015)
Year=2007	0.008	0.008	0.050***	0.053***	-0.021***	-0.023***
	(0.014)	(0.017)	(0.012)	(0.017)	(0.003)	(0.005)
Year=2011	-0.070***	-0.073***	-0.123***	-0.127***	0.016***	0.015**
	(0.011)	(0.015)	(0.031)	(0.037)	(0.004)	(0.005)
Real income (million € 2011)	-0.021***	-0.022***	0.102***	0.100**	-0.045***	-0.043**
	(0.002)	(0.005)	(0.033)	(0.035)	(0.014)	(0.017)
Real wealth (million € 2011)	-0.009***	-0.0010***	0.021**	0.023**	-0.012***	-0.011***
	(0.002)	(0.003)	(0.010)	(0.011)	(0.002)	(0.003)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes
Katz Index	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment rate	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.051**	-0.079***	0.195***	0.151***	0.071***	0.041***
	(0.03)	(0.02)	(0.04)	(0.03)	(0.02)	(0.01)
N	6,672	6,672	6,672	6,672	6,672	6,672
R^2	0.288	0.297	0.111	0.120	0.125	0.131
F-statistic	284.57	122.80	71.58	55.23	60.74	44.65
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table reports the results of the OLS and IV regressions for the probability of receiving informal care, inflow transfers and outflow transfers. All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographic characteristics, dependenty level approximated by the Katz's index, level of education, real income, real wealth, unemployment rate, regional GDP per capita, time and regional dummies. These regressions consider waves 1, 2, and 4 and in this case, the post-reform period refers to years 2007 and 2011.
Note: Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parentheses. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ 'support for PSOE (Spanish socialist party), home care coverage index (2000, 2002) as an instrument. Instrument first stages are reported in Appendix B.

Table 5. OLS and IV regressions for the probability of receiving informal care according to different profiles of caregivers. (2004-2011)

Dependent variabl: The dependant receives care from...	Co-resident		Not co-resident		Partner		Co-resident child		Not co-resident child	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Receives SAAD	-0.037***	-0.025**	-0.031**	-0.021*	-0.028**	-0.017*	-0.030***	-0.024**	-0.021**	-0.025**
	(0.010)	(0.012)	(0.014)	(0.015)	(0.012)	(0.013)	(0.010)	(0.011)	(0.011)	(0.012)
Interaction with Year=2007 or 2011	0.165***	0.302***	0.218***	0.403***	0.142***	0.240***	0.197**	0.214**	0.220**	0.285**
	(0.024)	(0.027)	(0.014)	(0.018)	(0.012)	(0.018)	(0.008)	(0.010)	(0.006)	(0.07)
Year=2006	0.040***	0.041***	0.041***	0.041***	0.043***	0.045***	0.038**	0.039**	0.039***	0.040***
	(0.012)	(0.013)	(0.012)	(0.016)	(0.011)	(0.013)	(0.012)	(0.014)	(0.012)	(0.013)
Year=2007	0.008**	0.009**	0.009	0.008	0.008	0.008	0.009	0.009	0.010	0.011
	(0.003)	(0.003)	(0.015)	(0.017)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)	(0.007)
Year=2011	-0.058**	-0.059**	-0.068***	-0.067***	-0.071**	-0.073**	-0.068**	-0.069**	-0.063**	-0.065**
	(0.002)	(0.002)	(0.006)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Real income (million € 2011)	-0.022**	-0.022**	-0.033***	-0.035***	-0.015*	-0.017*	-0.028***	-0.027***	-0.035***	-0.034**
	(0.010)	(0.011)	(0.014)	(0.015)	(0.010)	(0.012)	(0.010)	(0.012)	(0.011)	(0.013)
Real wealth (million € 2011)	-0.010**	-0.011**	-0.014***	-0.014**	-0.005**	-0.006**	-0.013**	-0.014**	-0.017***	-0.018**
	(0.004)	(0.007)	(0.003)	(0.005)	(0.002)	(0.003)	(0.003)	(0.005)	(0.004)	(0.007)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Katz index	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment rate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.112***	-0.173***	0.052***	0.081***	-0.051***	-0.080***	-0.011	-0.017*	0.027***	0.042***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
N	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672	6,672
R^2	0.312	0.330	0.322	0.328	0.370	0.375	0.350	0.359	0.352	0.361
F-statistic	520.12	418.23	785.23	689.23	312.56	289.26	358.89	345.70	201.58	185.71
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table compares the results from the OLS and IV estimation for the probability of receiving informal care, inflow intergenerational transfers and outflow intergenerational transfrs, and informal care from different care providers (co-resident, non co-resident, parther, co-resident adult child and non-co-resident adult child). All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographic characteristics, dependenty level approximated by the Katz's index, level of education, real income, real wealth, unemployment rate, regional GDP per capita, time and regional dummies. These regressions consider waves 1, 2, and 4 and in this case, the post-reform period refers to years 2007 and 2011. Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parentheses. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ support for PSOE (Spanish socialist party) and home care coverage index (2000, 2002) as an instrument. Instrument first stages are reported in Appendix B.
The number of observations is always the same because there are no missing values. See footnote on Tables A9, A10 and A11 regarding the use of variables for which SHARE has already performed imputation of missing values.

Table 6. OLS and IV regressions for the probability of receiving informal care and intergenerational transfers by income quintile and wealth quintile (2004-2011)

	Informal care		Outflow transfers		Inflow transfers	
	OLS	IV	OLS	IV	OLS	IV
Panel A: Using all sample						
INCOME QUINTILES						
Interaction SAAD & YEAR==2007 or 2011	0.175***	0.320***	0.140***	0.282***	-0.070**	-0.098***
	(0.031)	(0.033)	(0.020)	(0.022)	(0.022)	(0.024)
Interactions SAAD & YEAR=2007 or 2011						
1st quintile income	0.112***	0.201***	-0.002**	-0.005**	0.087**	0.118***
	(0.041)	(0.043)	(0.001)	(0.002)	(0.032)	(0.033)
2nd quintile income	0.078***	0.132***	0.015*	0.032**	0.046***	0.065***
	(0.013)	(0.014)	(0.011)	(0.013)	(0.010)	(0.012)
3rd quintile income	-0.035**	-0.054***	0.075***	0.154***	-0.097**	-0.130***
	(0.013)	(0.013)	(0.010)	(0.014)	(0.030)	(0.032)
4th quintile income	-0.085***	-0.151***	0.086***	0.170***	-0.112***	-0.158***
	(0.012)	(0.013)	(0.012)	(0.014)	(0.011)	(0.013)
WEALTH QUINTILES	Informal care		Outflow transfers		Inflow transfers	
Interaction SAAD & YEAR==2007 or 2011	0.174***	0.301***	0.141***	0.272***	-0.071***	-0.093**
	(0.042)	(0.053)	(0.021)	(0.042)	(0.020)	(0.035)
Interactions SAAD & YEAR=2007 or 2011						
1st quintile wealth	0.084***	0.147***	-0.023*	-0.039***	0.028**	0.030**
	(0.022)	(0.023)	(0.011)	(0.001)	(0.011)	(0.011)
2nd quintile wealth	0.023***	0.044***	-0.015**	-0.031***	0.011**	0.015**
	(0.000)	(0.001)	(0.001)	(0.001)	(0.004)	(0.005)
3rd quintile wealth	-0.014***	-0.027**	0.023**	0.041***	-0.023**	-0.032***
	(0.000)	(0.001)	(0.001)	(0.002)	(0.010)	(0.011)
4th quintile wealth	-0.078***	-0.150***	0.044**	0.091***	-0.030**	-0.047***
	(0.011)	(0.013)	(0.012)	(0.014)	(0.011)	(0.012)
Panel B: Without individuals who received a subsidy at baseline						
INCOME QUINTILES						
SAAD	0.159***	0.291***	0.127***	0,257***	-0,064**	-0,089***
	(0.022)	(0.024)	(0.021)	(0.024)	(0.020)	(0.023)
Interactions SAAD						
1st quintile income	0.102**	0.183***	-0.002**	-0.005**	0.079***	0.107***
	(0.042)	(0.043)	(0.000)	(0.001)	(0.021)	(0.023)
2nd quintile income	0.071***	0.120***	0.014*	0.029**	0.042***	0.059***
	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)	(0.013)
3rd quintile income	-0.032**	-0.049***	0.068***	0.140***	-0.088***	-0.118***
	(0.011)	(0.012)	(0.014)	(0.014)	(0.022)	(0.024)
4th quintile income	-0.077***	-0.137***	0.078***	0.155***	-0.102***	-0.144***
	(0.011)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)
WEALTH QUINTILES						
SAAD	0.158***	0.274***	0.128***	0.248***	-0.065***	-0.085***
	(0.040)	(0.055)	(0.022)	(0.045)	(0.021)	(0.025)
Interactions SAAD						
1st quintile income	0.076***	0.134***	-0.021*	-0.035***	0.016**	0.027**
	(0.020)	(0.027)	(0.010)	(0.005)	(0.007)	(0.013)
2nd quintile income	0.021***	0.040***	-0.014**	-0.028***	0.010***	0.014***
	(0.001)	(0.007)	(0.000)	(0.008)	(0.000)	(0.003)
3rd quintile income	-0.013***	-0.025**	0.021**	0.037***	-0.021**	-0.029**
	(0.001)	(0.005)	(0.001)	(0.007)	(0.010)	(0.012)
4th quintile income	-0.071***	-0.137***	0.040**	0.083***	-0.027**	-0.043***
	(0.011)	(0.015)	(0.011)	(0.014)	(0.011)	(0.013)

Note: This table compares the OLS and IV regressions for the probability of receiving informal care and the probability of inflow and outflow intergenerational transfers considering the effect of income and wealth by quintiles. Panel A considers the whole sample for the period 2004-2011. All regressions include the following explanatory variables: receiving a caregiving allowance, income (or wealth; 5th quintile of income or wealth rate is the omitted category by quintiles, interaction between income (or wealth) and caregiving allowance, interaction between caregiving allowance and the post-reform period, interaction between income (or wealth) and the post-reform period, triple interaction between caregiving allowance, the post reform period and income (or wealth) by quintiles, demographic characteristics, dependenty level approximated by the Katz's index, level of education, real income, real wealth, unemployment rate, regional GDP per capita, time and regional dummiesPanel B excludes those individuals who received a disability allowance at baseline. In this case, the explanatory variables are the following ones: receiving a caregiving allowance, income (or wealth; 5th quintile of income or wealth rate is the omitted category) by quintiles, interaction between income (or wealt) and caregiving allowance demographic characteristics, dependenty level approximated by the Katz's index, level of education, real income, real wealth, unemployment rate, regional GDP per capita, time and regional dummiesOmitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parenthesis. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ support for PSOE (Spanish socialist party) and home care coverage index (2000, 2002) as an instrument. Sample size for regressions using the whole sample: 6,672 observations. Sample size for regressions excluding in all waves individuals receiving disability allowance in the baseline: 6,380 observations.

Table 7. Effect of austerity reforms. (2004-2013).

	Informal care	Outflow intervivos transfers	Inflow intervivos transfers	IC Co-resident	IC Not co-resident	IC Partner	IC Co-resident child	IC Not co-resident child
OLS Estimates								
Receives SAAD	-0.040**	0.029*	0.046***	-0.039***	-0.032***	-0.027**	-0.029***	-0.024**
	(0.011)	(0.012)	(0.010)	(0.012)	(0.010)	(0.010)	(0.010)	(0.010)
Interaction 2007 or 2013	0.076***	0.100***	-0.032**	0.090***	0.061***	0.121***	0.073***	0.042***
	(0.024)	(0.030)	(0.013)	(0.022)	(0.017)	(0.015)	(0.002)	(0.006)
Interaction 2007 or 2011	0.174***	0.146***	-0075***	0.167***	0.219***	0.144***	0.198***	0.221**
	(0.034)	(0.028)	(0.014)	(0.033)	(0.038)	(0.035)	(0.035)	(0.035)
IV Estimates								
Receives SAAD	-0.025**	0.043***	0.033***	-0.027**	-0.022**	-0.017*	-0.022**	-0.028**
	(0.012)	(0.013)	(0.011)	(0.014)	(0.011)	(0.010)	(0.011)	(0.011)
Interaction 2007 or 2013	0.261***	0.202***	-0.043**	0.257***	0.313***	0.230***	0.228***	0.320***
	(0.027)	(0.035)	(0.015)	(0.024)	(0.020)	(0.018)	(0.012)	(0.012)
Interaction 2007 or 2011	0.318***	0.295***	-0.104***	0.301***	0.404***	0.242***	0.302***	0.407***
	(0.037)	(0.030)	(0.017)	(0.038)	(0.040)	(0.037)	(0.040)	(0.040)
Income and wealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dependency	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports the results of the OLS and IV regressions for the probability of receiving informal care, inflow transfers, outflow transfers and informal care from different providers (co-resident caregiver, non co-resident caregiver, partner, co-resident adult child and non co-resident adult child). All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographic characteristics, dependenty level approximated by the Katz's index, level of education, unemployment rate, regional GDP per capita, time and regional dummies. These regressions consider waves 1, 2, 4 and 5, and in this case, we introduce two interaction terms: with year 2007-2013 and 2007-2011. The difference between both interaction terms indicates the effect of the cutbacks introduced in 2012.Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parenthesis. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ support for PSOE (Spanish socialist party) and home care coverage index (2000, 2002) as an instrument.

Table 8. OLS regression for the predicted number of informal caregiving days (after first-stage regression for SAAD and POSTSAAD)

	(8.1)	(8.2)
Panel A: 2004-2011		
Receives SAAD	15.569***	15.432***
	(5.09)	(5.05)
Interaction Year=2007 or 2011	13.318***	13.117***
	(2.62)	(2.61)
N	1,321	1,321
F	484.98	485.27
p-value	0.000	0.000
R^2	0.569	0.574
Panel B: 2004-2013		
Receives SAAD	16.231***	13.220***
	(5.32)	(5.30)
Interaction Year 2007 or 2013	7.282***	7.288***
	(1.20)	(1.21)
Interaction Year 2007 or 2011	13.525***	13.500***
	(2.65)	(2.64)
N	2,302	2,302
F	510.08	510.27
p-value	0.000	0.000
R^2	0.692	0.695
Real income (million € 2011)	No	Yes
Real wealth (million € 2011)	No	Yes
Demographics	Yes	Yes
Dependency	Yes	Yes
Marital status	Yes	Yes
Education	Yes	Yes
Unemployment	No	Yes
Regional dummies	Yes	Yes

Note: This table reports the results of the OLS regression for the predicted number of caregiving days (obtained after the interval regression shown on Table A8). All regressions include the following explanatory variables: caregiving allowance and its interaction with the post-reform period, demographics, dependency level approximated by the Katz's index, marital status, educational level, time and regional dummies. Additionally, regressions labelled (8.2) include real income, real wealth and unemployment rate. Panel A considers only waves 1, 2 and 4 and thus we include the interaction term with years 2007 and 2011. Panel B considers waves 1, 2, 4 and 5, and in this case, we introduce two interaction terms: with year 2007-2013 and 2007-2011. The difference between both interaction terms indicates the effect of the cutbacks introduced in 2012.Standard errors between parenthesis. Clustered estimates at regional level and score bootstrap with 1,000 replications. First-stage regressions using four instruments: support socialist party, support socialist party*post-reform dummy, home care coverage index in 2000 and 2002.

Table 9. Effect of informal care at baseline

	Excluding wave 5				Including wave 5			
	Informal care	Outflow transfers	Inflow transfers	Number of caregiving days	Informal care	Outflow transfers	Inflow transfers	Number of caregiving days
Receives SAAD	-0.030	-0.003	0.001	32.667***	-0.015	-0.013	0.000	38.573***
	(0.02)	(0.02)	(0.01)	(0.93)	(0.02)	(0.02)	(0.01)	(0.66)
Informal care (2004/06)	0.790***	-0.002	0.108***	2.343***	0.769***	0.000	0.106***	2.589***
	(0.02)	(0.02)	(0.01)	(0.56)	(0.02)	(0.02)	(0.01)	(0.47)
SAAD * IC(2004/06)	-0.013	-0.013	-0.019	0.057	0.041	-0.025	-0.007	0.023
	(0.05)	(0.04)	(0.02)	(0.49)	(0.04)	(0.03)	(0.02)	(0.32)
IC(2004/06)*Post-reform	-0.674***	-0.002	-0.111***	10.320***	-0.660***	-0.004	-0.109***	6.471***
	(0.03)	(0.02)	(0.01)	(1.58)	(0.03)	(0.02)	(0.01)	(1.14)
SAAD * IC(2004/06)*Post-reform	0.061	-0.037	0.034	0.432	0.059	0.008	0.012	1.251
	(0.07)	(0.06)	(0.03)	(1.00)	(0.04)	(0.03)	(0.02)	(0.83)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dependency	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.211***	0.153***	0.045***	165.42***	-0.219***	0.187***	0.051**	164.29***
	(0.02)	(0.02)	(0.01)	(1.62)	(0.04)	(0.03)	(0.01)	(1.10)
N	3,396	3,396	3,396	3,396	5,094	5,094	5,094	5,094
R2	0.387	0.097	0.086	0.456	0.366	0.110	0.105	0.487
F-statistic	200.447	9.404	10.821	640.148	203.362	9.945	10.415	827.59

Note: This table reports the results of IV regressions for the probability of receiving informal care, outflow intergenerational transfers and inflow intergenerational transfers and OLS regression for the predicted number of caregiving days. All regressions include the following covariates: receiving a caregiving allowance, receiving informal care at the baseline, the interaction between caregiving allowance and informal care at the baseline, the interaction between informal care at the baseline and the post-reform period, the interaction between caregiving allowance and the post-reform period, the triple interaction between caregiving allowance, informal care and post reform period, demographis, dependency level approximated by Katz's index, marital status, educational level, unemployment rate, regional GDP per capita, time and regional dummies. The left part of the table only considers waves 1, 2 and 4, whereas the right part of the table also includes wave 5.Omitted variables: women, no elementary education, widow, Katz index equal to zero and time dummies. The first three regressions have been performed over the subsample of individuals who have answered waves 1, 2 and 4, whereas the last three regressions have been performed over the subsample of individuals who have answered waves 1, 2, 4 and 5. Standard errors between parenthesis.

Clustered estimates at regional level and wild (score in columns 4 & 8) bootstrap with 1,000 replications (Cameron et al., 2008).

Table 10. Exchange motivations for intergenerational transfers

	Outflow transfers				Inflow transfers			
	Using all sample		Excluding those receiving disability allowance at at baseline		Using all sample		Excluding those receiving disability allowance at baseline	
	2004-2011 (1)	2004-2013 (2)	2004-2011 (3)	2004-2013 (4)	2004-2011 (1)	2004-2013 (2)	2004-2011 (3)	2004-2013 (4)
Receives SAAD	0.017*	0.018*	0.014*	0.015*	0.001	0.001	0.001	0.001
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Receives informal care	0.031	0.030	0.022	0.027	0.031***	0.030***	0.025***	0.023***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
SAAD *Post-reform	-0.013	-0.013	-0.009	-0.010	0.016	0.016	0.013	0.014
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
SAAD *Informal care	-0.019	-0.017	-0.015	-0.013	0.101***	0.102***	0.090***	0.091***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)
Informal care * Post-reform	-0.016	-0.015	-0.014	-0.013	-0.01	-0.009	-0.00	-0.008
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
SAAD * Informal care * Post-reform	0.305***	0.233***	0.274***	0.212***	-0.189***	-0.140***	-0.172***	-0.127***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.03)	(0.03)	(0.03)	(0.03)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Katz index	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment rate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.296***	0.285***	0.221***	0.258***	0.087***	0.086***	0.207***	0.243***
	(0.03)	(0.03)	(0.04)	(0.03)	-0.02	-0.02	(0.04)	(0.04)
N	6,672	14,955	6,380	14,663	6,672	14,955	6,380	14,663
R2	0.125	0.133	0.122	0.130	0.128	0.133	0.125	0.131
F-statistic	8.835	9.025	8.726	9.001	12.035	10.975	11.982	10.886
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table reports the results of IV regressions for the probability of inflow and outflow intergenerational transfers. For each type of transfer we consider four possible samples: (1) the full sample for the period 2004-2011, (2) the full sample for the period 2004-2013, (3) the sample for the period 2004-2011, but excluding those who received a disabily allowance in 2004/06 (4) the sample for the period 2004-2013, but excluding those who received a disabily allowance in 2004/06. All regressions include the following covariates: receiving a caregiving allowance, receiving informal care, the interaction between caregiving allowance and informal care, the interaction between informal care and the post-reform period, the interaction between caregiving allowance and the post-reform period, the triple interaction between caregiving allowance, informal care and post reform period, demographis, dependency level approximated by Katz's index, marital status, educational level, unemployment rate, regional GDP per capita, time and regional dummies. Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parenthesis. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ support for PSOE (Spanish socialist party) and home care coverage index (2000, 2002) as an instrument. Sample size after excluding those receiving at the baseline is 6,380 observations (2004-2011) and 14,663 observations (201042013). Post-reform refers to years 2007 and 2011 when wave 5 is excluded, but covers the years 2007, 2011 and 2013 when wave 5 is included.

Table 11. Effect of the SAAD over informal caregiving behaviour

	Supply of co-resident informal caregivers				
	OLS-1	OLS -2	OLS -3	OLS -4	OLS -5
Panel A: 2004-2011					
Care recipient receives SAAD	0.027	0.028	0.028	0.028	0.028
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Interaction Year=2007 or 2011	0.287***	0.290***	0.290***	0.290***	0.290***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
N	6,672	6,672	6,672	6,672	6,672
F	7.780	7.925	7.985	8.025	8.065
p-value	0.000	0.000	0.000	0.000	0.000
R^2	0.206	0.207	0.210	0.212	0.215
Panel B: 2004-2013					
Care recipient receives SAAD	0.114***	0.117***	0.118***	0.118***	0.118***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Interaction Year 2007 or 2013	0.150***	0.152***	0.153***	0.153***	0.153***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Interaction Year 2007 or 2011	0.289***	0.289***	0.289***	0.289***	0.289***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
N	14,955	14,955	14,955	14,955	14,955
F	27.463	27.485	27.493	27.512	27.525
p-value	0.000	0.000	0.000	0.000	0.000
R^2	0.221	0.225	0.230	0.232	0.234
Real income (million € 2011)	No	Yes	Yes	Yes	Yes
Real wealth (million € 2011)	No	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes
Dependency	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes
Unemployment	No	No	Yes	No	Yes
Regional GDP	No	No	No	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes

Note: This table reports the results for OLS regressions corresponding to the probability of being co-resident informal caregiver. All regresions include as covarites demographic indicators, dependency level approximated by Katz's index, marital status, level of education, if the carereceiver is receiving a caregiving allowance and its interaction with the post-reform period, time and regional ddummies. Panel A considers only waves 1, 2 and 4 and thus we include the interaction term with years 2007 and 2011. Panel B considers waves 1, 2, 4 and 5, and in this case, we introduce two interaction terms: with year 2007-2013 and 2007-2011. The difference between both interaction terms indicates the effect of the cutbacks introduced in 2012. Colum (2) includes as additional covariate real income and real wealth, column (3) includes unemployment rate, column (4) includes regional GDP per capita and column (5) includes all covariates.Omitted variables: Year=2004, women, no elementary education, widow, Katz index equal to zero. Standard errors between parentheses. Wild cluster at the regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008). IV regressions employ 'support for PSOE (Spanish socialist party), home care coverage index (2000, 2002) as an instrument.

Table 12. Effect of caregiving subsidies on formal care employment (employees in social services to non-institutionalized dependent people)

	OLS-1	OLS-2	OLS-3	OLS-4
SAAD	-87.89***	-88.02***	-88.23***	-88.56***
	(12.58)	(12.50)	(12.49)	(12.48)
Interaction Year 2011	-2,392.57***	-2,390.81***	-2,389.67***	-2,388.54***
	(523.58)	(523.14)	(522.96)	(521.87)
Interaction Year 2013	-125.68***	-125.47***	-125.12***	-124.74***
	(33.21)	(32.15)	(32.17)	(31.78)
Year=2011	8,269.13***	8,269.01***	8,269.02***	8,268.96***
	(1.126.22)	(1.126.18)	(1.126.17)	(1.126.15)
Year=2013	842.45***	842.34***	841.32***	841.11***
	(223.15)	(223.07)	(223.08)	(222.15)
Constant	7,392.81***	7,391.14***	7,391.25***	7,390.87***
	(1,058.11)	(1,057.16)	(1,057.24)	(1,057.01)
Unemployment	No	Yes	No	Yes
Regional GDP	No	No	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes
N	12,508	12,508	12,508	12,508
F	460.73	462.25	468.71	478.92
p-value	0.000	0.000	0.000	0.000
R2	0.391	0.410	0.411	0.423

Note: This table summarizes OLS regressions the number of employees in social services for non-institutionalized dependent people. All regressions include as covariates caregiving allowances and its interaction with years 2011 and 2013, regional and time dummies. Additionally, column (2) includes unemployment rate, column (3) includes regional GDP per capita and column (4) includes all covaraites. Regressions performed only over wave 2 (2007), wave 4 and 5 because the number of employees is only provided by the Active Population Survey since 2008.Standard errors between parenthesis. Clustered estimates at regional level and wild bootstrap with 1,000 replications (Cameron et al., 2008).

Table 13. Monthly estimate of the economic impact of SAAD (panel A) and economic value of informal care (panel B)

A. Monthly Estimate of SAAD	(1)	(2) Beneficiaries	(3)	Product (1)*(2)*(3) (€/month)	(4) % with respect to SAAD expenditure	(5) Per capita expenditure (€/year)
2007	0.100	6,612	476,31	327,538	1.296%	0.086
2011	0.220	400,086	357,34	31,881,548	21.216%	8.09
2013	-0.057	408,296	299,78	-7,466,456	-7.416%	1.92

B. Economic Value	Beneficiaries (6)	Predicted number of caregiving days (7)	Wage[c] (€/year)	Wage (€/day) (8)	Economic value of informal care (€) (6)*(7)*(8)	GDP (10^6 €)	% with respect to GDP (9)
2007	6,612	215.47	15,150.36	41.51	59,138,784	1,080,807	0.01
2011	400,086	239.18	15,230.32	41.73	3,993,250,924	1,070,413	0.37
2013	408,296	206.32	14,439.92	39.56	3,332,519,791	1,025,634	0.32

Note: Panel A shows the estimated value of caregiving allowances awarded since the implementation of the SAAD with resepct to total expenditure of SAAD and with respect to total Spanish population. Panel B shows the estimated economic value of caregiving received by dependent individuals with a caregiving allowance, taking in to account the intensity of caregiving provided by the informal caregiver. For this purpose, we use the wage (per day) received by employees in social services for non-institutionalized dependent people. Finally, we compare the economic value of informal care with respect to GDP.

(1) Coefficient of the interaction SAAD & year dummy (Table 7)

(2) and (6): Population beneficiaries using calibrated weights. For comparison purposes, total umber of registered beneficiaries in the SAAD was: 11,385 (May 2008), 401,176 (June 2011), 409,435 (June 2013).

(3) Average Caregiving Allowance (multiplying average monthly benefit for each dependency degree by the distribution of beneficiaries by dependency degree: Table B4)

(4) To obtain the percentage with respect to total expenditure of SAAD, we have multiplied the monthly estimation by 12 and divided by annual expenditure corresponding to that year. Total expenditure in the SAAD: 302,563,029€ (2007); 1,802,975,359€ (2011); 1,206,789,133€ (2013)

(5) Per capita expenditure is obtained multiplying monthly estimation (1)*(2)*(3) by 12 and dividing by total population. Total population: 45,668,938 (2007), 47,265,312 (2011), 46,771,341 (2013). Source: National Institute of Statistics. http://www.ine.es/

(7) Predictions obtained with the results of the interval regression.

(8) Annual Survey of Labour Costs (National Institute of Statistics). Wage corresponding to employees in social services without lodging.

(9) National Accounts (National Institute of Statistics). Nominal Gross Domestic Product.

Appendix A

Table A1. Working of SAAD according to the main political affiliation of the regional government (%)

	$\frac{Assessments}{Applications}$	$\frac{Awardees}{Assessments}$	$\frac{Awardees}{Applications}$	$\frac{Receiving}{Awardees}$	$\frac{Econ.benefit}{Receiving}$	$\frac{Econ.benefit}{Applications}$
2007						
Socialist	91.35	72.99	66.67	57.58	35.14	13.49
Non- socialist	68.95	81.24	56.01	53.43	63.06	18.87
Total	81.05	76.21	61.77	55.85	46.27	15.96
2011						
Socialist	91.05	71.65	65.24	70.16	59.29	27.14
Non- socialist	95.18	72.89	69.38	69.02	55.38	26.52
Total	93.50	72.40	67.70	69.46	56.92	26.77

Note: Socialist regional government: 2007 (Andalusia, Aragón, Asturias, Community of La Mancha, Catalonia, Extremadura); 2011 (Andalusia, Aragón, Asturias, Community of La Mancha, Extremadura).
Application: total number of applications received.
Assessments: official valuation of applicant's long-term care needs using the Ranking Scale of the SAAD (it includes positives and negatives valuations).
Awardees: favourable evaluations that recognize the entitlement to publicly funding long-term care (but does not imply the reception of any benefit).
Receiving: awardees that in addition are receiving some type of long-term care public benefit (economic or in-kind).
Source: own work using data from http://www.dependencia.imserso.gob.es/dependencia_01/index.htm

Table A2. Working of SAAD according to the speed of implementation of the regional government (%)

	$\frac{Assessments}{Applications}$	$\frac{Awardees}{Assessments}$	$\frac{Awardees}{Applications}$	$\frac{Receiving}{Awardees}$	$\frac{Econ.benefit}{Receiving}$	$\frac{Econ.benefit}{Applications}$
2007						
Slow regions	25.27	87.59	22.13	57.58	60.59	7.72
Front running regions	75.39	82.99	62.56	57.45	44.49	15.99
Total	64.35	83.38	53.66	55.85	46.27	13.87
2011						
Slow regions	91.27	75.66	69.05	54.61	57.22	21.58
Front running regions	93.95	71.77	67.43	72.49	56.88	27.80
Total	93.50	72.40	67.70	69.46	56.92	26.77

Note: Slow regions 2007: Asturias (22.04%), Balearic Islands (7.09%), Canary Islands (30.15%), Galicia (31.47%), average for Spain (64.35%). Slow regions 2011: Canary Islands (61.28%), Balearic Islands (42.09%), Community of Valencia (57. 85%), Galicia (54.63%), average for Spain (70.37%).
Applications: total number of applications received.
Assessments: official valuation of applicant's long-term care needs using the Ranking Scale of the SAAD (it includes positives and negatives valuations).
Awardees: favourable valuations that recognize the existence of long-term care need (but does not imply the reception of any benefit).
Receiving: awardees that are receiving some type of long-term care public benefit (economic or in-kind).
Source: own work using data from http://www.dependencia.imserso.gob.es/dependencia_01/index.htm

Table A3. Home care hours before and after Royal Decree 20/2012

	Before Royal Decree 20/2012	After Royal Decree 20/2012	
		Old beneficiaries	New beneficiaries
Major dependency. Level 2	70-90	56-70	
Major dependency. Level 1	55-70	46-55	46-70
Severe dependency. Level 2	40-50	31-45	
Severe dependency. Level 1	30-40	21-30	21-45
Moderate dependency. Level 2	21-30	Max. 20	Max. 20

After Royal Decree 20/2012, the distinction between dependency levels inside the same dependency degree disappeared.
Source: Royal Decree 20/2012, July 13th.

Table A4. Voting percentages to the socialist party in regional elections.

	Wave 1	Wave 2		Wave 4	Wave 5
	2004	2006	2007	2011	2013
Andalusia	51.07	51.07	51.07	48.41	39.52
Aragón	37.91	37.91	41.03	41.03	21.41
Asturias	40.30	40.30	42.04	42.04	26.45
Balearic Islands	24.60	24.60	31.75	31.75	18.94
Canary Islands	25.50	25.50	34.72	34.72	19.96
Cantabria	29.91	29.91	24.33	24.33	14.01
Community of León	36.74	36.74	37.49	37.49	37.77
Community of La Mancha	57.81	57.81	51.92	51.92	36.11
Catalonia	31.16	31.16	27.38	18.32	14.43
Community of Valencia	46.92	46.92	34.49	34.49	20.30
Extremadura	51.62	51.62	52.90	52.90	41.50
Galicia	22.20	33.64	33.64	31.02	20.61
Madrid	33.46	33.46	33.47	33.47	25.44
Murcia	34.03	34.03	31.81	31.81	23.96
Navarra	21.14	21.14	22.40	22.40	13.43
P. Vasco	17.90	22.68	22.68	30.70	19.14
Rioja	38.29	38.29	40.47	40.47	26.70
Ceuta	8.76	8.76	8.71	8.71	11.70
Melilla	11.92	11.92	18.49	18.49	8.44

Source: own work using http://www.congreso.es/consti/elecciones/autonomicas/

Aragón, Asturias, Balearic Islands, Canary Islands, Cantabria, Community of León, Community of La Mancha, Community of Valencia, Extremadura, Madrid, Murcia, Navarra, La Rioja, Ceuta and Melilla:

- Results from regional elections May 25th 2003 have been applied to waves 1 and 2.
- Results from regional elections May 27th 2007 have been applied to wave 4.
- Results from regional elections May 22th 2011 have been applied to wave 5.

Andalusia:

- Results from regional elections March 14th 2004 have been applied to waves 1 and 2.
- Results from regional elections March 9th 2008 have been applied to wave 4.
- Results from regional election March 25th 2012 have been applied to wave 5.

Catalonia

- Results from regional elections November 16th 2003 have been applied to wave 1 and wave 2 (only 2006).
- Results from regional elections November 1st 2006 have been applied to wave 2 (only 2007).
- Results from regional elections November 28th 2010 have been applied to wave 1
- Results from regional elections November 25th 2012 have been applied to wave 5.

Basque Country

- Results from May 13th 2001 have been applied to wave 1.
- Results from regional elections April 17th 2005 have been applied to wave 2.
- Results from regional elections March 1st 2009 have been applied to wave 4.
- Results from regional elections October 21st 2012 have been applied to wave 5.

Galicia

- Results from October 21st 2001 have been applied to wave 1.
- Results from regional elections June 19th 2005 have been applied to wave 2.
- Results from regional elections March 1st 2009 have been applied to wave 4.
- Results from regional elections October 21st 2012 have been applied to wave 5.

Table A5. Coverage index public home care

	2000	2002
Andalusia	1.79	2.04
Aragón	2.52	2.44
Asturias	1.51	1.79
Balearic Islands	2.28	2.78
Canary Islands	1.9	1.88
Cantabria	1.51	1.55
Community of León	2.54	2.48
Community of La Mancha	2.13	2.55
Catalonia	1.23	1.3
Community of Valencia	0.78	2.16
Extremadura	4.69	4.86
Galicia	1.16	1.35
Madrid	1.98	1.89
Murcia	1.44	1.60
Navarra	3.33	3.02
P. Vasco	2.3	2.85
Rioja	2.76	2.84
Ceuta	2.79	1.76
Melilla	1.82	2.07

Coverage index: ratio of number of home care beneficiaries divided by population aged 65 and older and multiplied by 100.
Source: “Las personas mayores en España” (IMSERSO, 2000, 2002)

Table A6. Distribution of informal care by frequency of provision (%)

	2004	2006	2007	2011	2013
IC: less frequently than monthly	37.69	37.50	26.79	13.66	14.04
IC: almost every monthly	18.46	18.75	13.69	10.93	10.32
IC: almost every weekly	21.92	21.88	29.17	33.06	40.78
IC: almost daily	21.92	21.88	30.36	42.35	34.86
Number of bedrooms	4.19	4.17	4.15	4.14	4.13
Eldest child: daughter	46.75	47.78	45.09	47.74	49.64
Eldest child: age between 40 and 65	32.42	33.33	35.78	34.55	35.40
N	394	59	299	569	981

Note: This table reports the frequency of informal care provision, as well as other covariates included in the interval regression for the interval-coded number of informal caregiving days (see table A7 for the definition of lower and upper bounds corresponding to each different frequency).
Source: Own work using SHARE (waves 1, 2, 4 and 5).

Table A7. Definition of the interval variable for the frequency of informal care

	Interpretation	Interval proposed in terms of days per year	
		Lower bound	Upper bound
IC: less frequently than monthly	4-6 times/year	4	6
IC: almost every monthly	11-12 times/year	11	12
IC: almost every weekly	4-5 times/month	48	52
IC: almost daily	6-7 days/week	313	365

Note: This table reports the approximation used for each different frequency of informal care. This interpretation is based on the number of times (per week, per month or per year) that the dependent individual receives informal care and the computation over 52 weeks in one year.

Table A8. Interval regression estimation for the frequency of informal care

	IR-1	IR-2	IR-3	IR-4	IR-5
Number of bedrooms	14.595***	14.602***	14.602***	14.602***	14.602***
	(3.23)	(3.20)	(3.20)	(3.20)	(3.23)
Eldest child: Daughter	6.225***	6.231***	6.231***	6.231***	6.231***
	(1.70)	(1.68)	(1.68)	(1.68)	(1.68)
Eldest child: Age between 40 and 64	3.498***	3.502***	3.498***	3.498***	3.498***
	(1.45)	(1.43)	(1.45)	(1.45)	(1.45)
Real income (million € 2011)	No	Yes	Yes	Yes	Yes
Real wealth (million € 2011)	No	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes
Dependency	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes
Unemployment	No	No	Yes	No	Yes
Regional GDP	No	No	No	Yes	Yes
Time and Regional dummies	Yes	Yes	Yes	Yes	Yes
N	2,302	2,302	2,302	2,302	2,302
sigma	216.49	216.51	216.53	216.87	216.90
	(7.61)	(7.61)	(7.60)	(7.60)	(7.60)
LR chi2	165.31	170.25	178.89	181.20	183.63
p-value	0.000	0.000	0.000	0.000	0.000

Note: This table reports the results of the interval regression for the number of caregiving days (per year) that the dependent individual receives informal care (defined according to Tabla A7). All regressions include as explanatory variables demographic indicators, dependency level approximated by Katz's index, marital status, level of education, number of bedroorms, if the eldest child is a daughter, if the eldest child is aged between 40 and 64 years time and regional dummies. Additionally, columns (2), (3), (4) and (5) include as covariates real income and real wealth, unemployment rate and regional GDP per capita.Using score bootstrap-t to obtain robust standard errors within clusters (autonomous communities) with 1,000 replications (Kline and Santos, 2012).

Table A9. Descriptive statistics for Informal care.

	Informal care=0				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	5.90	2.63	3.24	2.50	1.89
Men	41.24	41.88	45.32	45.80	43.26
Age	65.98	67.03	64.01	62.86	66.96
	(10.10)	(9.67)	(10.10)	(10.14)	(10.59)
Dependency degree(♣)					
Katz_1	11.06	18.75	10.15	9.34	3.82
Katz_2	1.92	0.63	1.10	1.78	0.93
Katz_3	0.70	1.88	1.02	1.91	1.16
Marital status					
Married/cohab.	77.43	76.53	77.58	76.87	77.85
Separated/div.	2.43	2.96	2.45	2.32	2.12
Single	5.82	5.64	4.76	4.96	4.07
Widow	14.32	13.12	13.14	12.87	13.23
Level of education					
College	6.07	1.25	3.62	4.50	5.73
Secondary	12.28	3.13	6.06	8.62	34.36
Elementary	67.33	13.75	25.57	34.55	34.12
Not elementary	14.32	81.88	64.75	52.33	53.27
Is an informal caregiver	16.79	16.80	24.74	31.71	23.31
Only co-resident	9.20	9.42	9.84	12.96	9.05
Only non co-resident	6.80	6.74	13.23	16.44	12.53
Co-resid. & non co-resid	0.79	0.64	1.67	2.31	1.73
Income	44,507	47,258	46,238	43,568	41,257
(real € 2011)	(86,278)	(85,458)	(77,268)	(68,267)	(65,275)
Wealth	495,234	497,258	488,235	462,237	458,268
(real € 2011)	(329,726)	(343,287)	(321,822)	(314,287)	(327,879)
N	1,564	161	1,271	2,356	7,302
	Informal care=1				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	16.64	6.24	7.55	11.06	11.15
Men	33.50	28.81	35.12	34.62	37.37
Age	73.82	70.46	71.60	71.02	76.05
	(11.99)	(9.81)	(11.38)	(10.92)	(11.37)
Dependency degree (♣)					
Katz_1	33.76	32.20	27.09	26.19	20.12
Katz_2	11.17	20.34	10.37	16.17	11.68
Katz_3	9.90	11.86	14.72	18.10	15.69
Marital status					
Married/cohab.	52.54	53.68	53.41	54.14	52.87
Separated/div.	2.79	2.78	2.96	2.45	2.73
Single	8.12	8.75	8.86	8.68	8.63
Widow	36.54	33.56	34.58	33.87	34.54
Level of education					
College	2.79	0.00	2.68	2.64	3.39
Secondary	4.82	1.69	2.01	2.81	19.84
Elementary	57.61	10.17	18.39	30.93	41.66
Not elementary	34.77	88.14	76.92	63.62	60.41
Income	23,727	21,715	20,838	18,005	17,430
(real € 2011)	(100,412)	(96,856)	(85,785)	(72,386)	(70,458)
Wealth	471,719	468,256	464,896	437,238	433,248
(real € 2011)	(229,426)	(223,256)	(212,128)	(202,156)	(198,425)
N	394	59	299	569	981

Note: This table displays the descriptive statistics (mean and standard deviation) of the Spanish population in the sample that received and did not receive informal care support during the years of the data 2004-2013. Missing values for income and wealth have been imputed following De Luca et al. (2015). The final variables with imputations included in the file gv_imputations, which can be downloaded from the SHARE website.

Source: Own work using SHARE (waves 1, 2, 4 and 5). Standard errors between parentheses.

(♣): results from the Katz's Index (Katz, 1983) has been grouped in the following categories: Katz_1 for levels 0, 1 and 2: Katz_1 for levels 3 and 4, Katz_3 for levels 5 and 6.

(*): disability allowance for 2004 and 2006; SAAD benefit for 2007 onwards

Table A10. Descriptive statistics for Outflow intervivos transfers

	Outflow itransfers=0				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	12.26	4.69	5.19	5.57	4.62
Men	39.10	37.06	42.94	43.69	41.94
Age	67.89	68.37	65.77	64.80	68.58
	(10.96)	(9.95)	(10.70)	(10.82)	11.30
Dependency degree (♣)					
Katz_1	15.50	22.84	13.23	12.69	5.92
Katz_2	3.85	6.09	2.92	4.70	2.58
Katz_3	2.68	5.08	3.73	5.36	3.49
Marital status					
Married/cohab.	72.78	73.31	73.62	74.70	73.97
Separated/div.	2.23	1.80	1.37	1.96	2.17
Single	6.30	6.12	5.83	6.02	6.58
Widow	18.69	17.65	16.87	16.58	16.15
Level of education					
College	4.63	1.02	3.19	3.55	4.77
Secondary	9.43	3.05	5.16	6.66	31.74
Elementary	65.92	13.20	24.49	34.11	36.06
Not elementary	20,02	82,74	67,16	55,68	54.39
Income	46,732	49,621	48,550	45,746	43,320
(real € 2011)	(90,592)	(89,731)	(81,131)	(71,680)	68,539)
Wealth	505,139	507,203	498,000	471,482	467,433
(real € 2011)	(336,321)	(350,153)	(328,258)	(320,573)	(334,437)
N	1,793	197	1,474	2,703	7,763
	Outflow transfers=1				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	16.66	0.00	7.18	7.07	4.44
Men	46.06	50.00	50.00	42.79	48.01
Age	63.94	64.23	60.57	60.19	66.05
	(10.42)	(7.67)	(10.66)	(9.50)	(9.80)
Dependency degree (♣)					
Katz_1	16.97	18.18	15.63	11.71	9.48
Katz_2	3.03	4.55	2.08	3.15	1.52
Katz_3	1.21	0.00	2.08	1.35	0.72
Marital status					
Married/cohab.	68.48	71.23	73.62	72.94	74.20
Separated/div.	5.45	4.55	4.17	5.21	5.97
Single	6.06	5.64	5.02	4.95	1.86
Widow	20.00	17.56	13.74	13.12	14.47
Level of education					
College	13.94	0.00	7.29	11.26	12.92
Secondary	25.45	0.00	7.29	17.57	38.46
Elementary	59.39	9.09	19.79	30.63	24.86
Not elementary	1,21	90,91	65,62	40,54	53.33
Income	42,282	44,895	43,926	41,390	39,194
(real € 2011)	(81,964)	(81,185)	(73,405)	(64,854)	(62,011)
Wealth	445,711	447,532	439,412	416,013	412,441
(real € 2011)	(296,753)	(308,958)	(289,640)	(282,858)	(295,091)
N	165	22	96	222	520

Source: Own work using SHARE (waves 1, 2, 4 and 5). Standard errors between parenthesis.
Missing values for income and wealth have been imputed following De Luca et al. (2015). The final variables with imputations included in the file gv_imputations, which can be downloaded from the SHARE website.
(♣): results from the Katz's Index (Katz, 1983) has been grouped in the following categories: Katz_1 for levels 0, 1 and 2: Katz_1 for levels 3 and 4, Katz_3 for levels 5 and 6.
(*): disability allowance for 2004 and 2006; SAAD benefit for 2007 onwards

Table A11. Descriptive statistics for Inflow intervivos transfers

	Inflow intervivos transfers=0				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	12.57	3.80	5.24	5.92	4.46
Men	40.39	37.56	43.85	43.97	42.37
Age	67.49	67.91	65.42	64.52	68.42
	(10.92)	(9.88)	(10.75)	(10.74)	(11.18)
Dependency degree (♣)					
Katz_1	15.31	21.60	13.21	12.36	6.09
Katz_2	3.75	6.10	2.72	4.58	2.49
Katz_3	2.27	4.69	3.56	5.10	3.27
Marital status					
Married/cohab.	73.28	74.15	74.85	74.60	74.32
Separated/div.	2.43	2.31	2.11	2.20	2.31
Single	6.28	5.87	5.50	5.41	5.33
Widow	18.00	17.35	16.08	15.43	15.66
Level of education					
College	5.28	0.94	3.43	4.02	5.38
Secondary	10.77	2.82	5.38	7.23	32.23
Elementary	65.42	13.15	24.35	33.85	35.02
Not elementary	18,53	83,10	66,84	54,91	54.52
Income	46,732	49,621	48,550	45,746	43,320
(real € 2011)	(90,592)	(89,731)	(81,131)	(71,680)	(68,539)
Wealth	519,996	522,121	512,647	485,349	481,181
(real € 2011)	(346,212)	(360,451)	(337,913)	(330,001)	(344,273)
N	1,894	213	1,544	2,863	8,147
	Inflow intervivos transfers=1				
	2004	2006	2007	2011	2013
Disability allowance/ SAAD(*)	36.82	14.52	10.00	6.94	6.18
Men	18.75	66.67	15.38	27.42	44.00
Age	69.70	69.50	67.31	60.95	66.44
	(12.18)	(7.21)	(11.55)	(12.30)	12.33
Dependency degree (♣)					
Katz_1	25.00	50.00	23.08	24.19	11.29
Katz_2	4.69	0.00	11.54	4.84	2.86
Katz_3	10.94	0.00	7.69	3.23	3.57
Marital status					
Married/cohab.	46.88	58.68	63.25	67.23	68.14
Separated/div.	4.69	5.09	4.82	4.12	3.48
Single	6.25	6.17	6.47	6.58	6.89
Widow	42.18	27.58	23.07	18.12	16.86
Level of education					
College	9.38	0.00	3.85	9.68	5.71
Secondary	10.94	0.00	0.00	19.35	32.86
Elementary	64.06	0.00	15.38	33.87	45.29
Not elementary	15,63	100,00	80,77	37,10	43.57
Income	35,606	37,806	36,990	34,854	33,006
(real € 2011)	(69,022)	(68,366)	(61,814)	(54,614)	(52,220)
Wealth	371,426	372,944	366,176	346,678	343,701
(real € 2011)	(247,295)	(257,465)	(41,367)	(235,715)	(245,909)
N	64	6	26	62	136

Source: Own work using SHARE (waves 1, 2, 4 and 5). Standard errors between parenthesis.
Missing values for income and wealth have been imputed following De Luca et al. (2015). The final variables with imputations included in the file gv_imputations, which can be downloaded from the SHARE website.
(♣): results from the Katz's Index (Katz, 1983) has been grouped in the following categories: Katz_1 for levels 0, 1 and 2: Katz_1 for levels 3 and 4, Katz_3 for levels 5 and 6.
(*): disability allowance for 2004 and 2006; SAAD benefit for 2007 onwards

Table A12. Average caregiving allowance and number of beneficiaries

	2007		2011		2013	
	Careg. Allow. (€/month)	Beneficiaries (%)	Careg. Allow. (€/month)	Beneficiaries (%)	Careg. Allow. (€/month)	Beneficiaries (%)
High dependency. Level 2	487	88.98	520.69	17.54	442.59	13.95
High dependency. Level 2	390	11.02	416.98	25.40	354.43	22.63
Severe dependency. Level 2			337.25	17.66	286.66	17.14
Severe dependency. Level 2			300.90	24.50	255.77	26.05
Moderate dep. Level 2			180.00	14.90	153.00	13.61
High dependency(*)					387.64	2.91
Severe dependency(*)					268.79	3.71
Average Careg. Allow.	476.31		357.34		299.78	

Source: Real Decreto 727/2007, June 8th; Real Decreto 570/2011, April 20th; and, Real Decreto-Ley 20/2012, July 13th.
(*) The reform implemented in 2012 unified levels inside the same degree of dependency. Therefore, new beneficiaries were only qualified as high dependents, severe dependents or moderate dependents.
The distribution of beneficiaries by dependency degree corresponds to May 2008 (the most recent data available at the System of Information of the SAAD), June 2011 and June 2013 (to gather an average perspective of the distribution at mid-year).
http://www.dependencia.imserso.gob.es/dependencia_01/index.htm

Table A13. Employees in social services with dependent people without lodging

	2008	2011	2013
Andalusia	6,893	18,769	27,324
Aragón	1,348	3,065	2,507
Asturias	2,926	2,999	3,036
Balearic Islands	209	1,537	1,369
Canary Islands	960	1,170	1,940
Cantabria	1,021	3,494	1,953
Community of León	6,425	9,294	6,344
Community of La Mancha	2,376	4,340	3,585
Catalonia	7,055	19,872	14,132
Community of Valencia	1,667	4,802	4,151
Extremadura	2,688	3,393	4,957
Galicia	4,420	7,125	6,168
Madrid	8,973	11,716	15,243
Murcia	2,070	1,784	1,334
Navarra	2,435	529	798
P. Vasco	6,209	6,440	7,265
Rioja	848	1683	567
Ceuta	189	38	98
Melilla	93	296	374
Spain	58,803	102,348	103,146

Note: This table shows the number of employees in social services for non-institutionalized dependent people. This information is only provided in the Active Population Survey since 2008.
Source: Own work using data from the Active Population Survey (National Institute of Statistics)

Appendix B. First stage estimates and instrument robustness

Table B1. First Stage Estimates

	Using 4 instruments		Using 5 instruments	
	SAAD	SAAD interacted with year=2007, 2011	SAAD	SAAD interacted with year=2007, 2011
Support socialist party	0.021*	0.015	0.026*	0.002
	(0.01)	(0.01)	(0.01)	(0.05)
Interaction year=2007 or 2011	-0.089***	-0.044**	0.092***	0.046
	(0.01)	(0.02)	(0.02)	(0.02)
Home care coverage index (2000)	-0.045***	-0.028**	-0.048 **	-0.033*
	(0.01)	(0.01)	(0.02)	(0.01)
Home care coverage index (2002)	-0.078***	-0.046***	-0.082**	-0.050***
	(0.02)	(0.00)	(0.03)	(0.01)
Proportion of daughters	-	-	0.015**	0.019***
(% household members)			(0.007)	(0.006)
N (*)	6,672	6,672	6,641	6,641
F (p-value)	18.02	55.43	27.13	81.24
	(p = 0.0000)	(p = 0.0000)	(p = 0.0000)	(p = 0.0000)
F-test of excluded instruments	7.79 (p = 0.0004)		6.57(p = 0.0002)	
Endogeneity				
Durbin (score) chi2	31.5691 (p = 0.0000)		62.453 (p = 0.0000)	
Wu-Hausman	15.8073 (p = 0.0000)		35.8025 (p = 0.0000)	
Underidentification				
Kleibergen-Paap rk LM statistic	6.09 (p = 0.0136)		15.210 (p=0.0000)	
Weak identification				
Kleibergen-Paap rk Wald F statistic	7.930		8.912	
Cragg-Donald	10.662		13.005	
Stock and Yogo test critical values(**)	10% maximal IV size: 7.03		10% maximal IV size: 8.43	
	15% maximal IV size: 4.58		15% maximal IV size: 6.18	
	20% maximal IV size: 3.95		20% maximal IV size: 5.40	
	25% maximal IV size: 3.63		15% maximal IV size: 4.45	
Overidentification				
Hansen's J-statistic	$Chi^2(2)=0.874$ (p=0.6459)		$Chi^2(3)=0.675$ (p=0.8791)	

Note: This table compares the first-stage regressions for SAAD and POST*SAAD using four or five instruments. All regressions include as instruments support to the socialist party and its interaction with the post-reform period and the coverage index for home care in 2000 and 2002. Additionally, the right column includes as the percentage of daugthers with repect to household size.(*): standard error of the estimated coefficients are not directly comparable because sample size is slightly smaller in the estimation with 5 instruments. The reason is that some respondents refuse to answer the question "number of children". (**): As there are two or three endogenous variables, the comparison of Stock-Yogo critical values is done with respect to Kleibergen-Paap rk statistic. Wild clusters at the regional level and bootstrap with 1,000 replications (Cameron et al., 2008).IV4: Support socialist party, support socialist party*post-reform dummy, home care coverage index in 2000 and 2002. IV5 =IV4+ proportion of daughters in the household.

Table B2. Estimates of the effects using the proportion of daughters

	Informal care		Outflow transfers		Inflow transfers	
	IV-4 instruments	IV-5 instruments	IV-4 instruments	IV-5 instruments	IV-4 instruments	IV-5 instruments
Receives SAAD	-0.024**	-0.026***	0.043***	0.057***	0.032***	0.034**
	(0.012)	(0.013)	(0.015)	(0.017)	(0.013)	(0.014)
Interaction Year=2007 or 2011	0.317***	0.325**	0.293***	0.308***	-0.103***	-0.117***
	(0.037)	(0.050)	(0.036)	(0.044)	(0.016)	(0.023)
Year=2006	0.044***	0.071*	-0.0011	-0.002	-0.018	-0.013
	(0.013)	(0.020)	(0.018)	(0.021)	(0.015)	(0.017)
Year=2007	0.008	0.011	0.053***	0.076***	-0.023***	-0.023**
	(0.017)	(0.014)	(0.017)	(0.022)	(0.005)	(0.06)
Year=2011	-0.073***	-0.097***	-0.127***	-0.134**	0.015**	0.020**
	(0.015)	(0.024)	(0.037)	(0.045)	(0.005)	(0.06)
Real income (million € 2011)	-0.022***	-0.025***	0.100**	0.090**	-0.043**	-0.049**
	(0.005)	(0.007)	(0.035)	(0.040)	(0.017)	(0.020)
Real wealth (million € 2011)	-0.0010***	-0.0013***	0.023**	0.020*	-0.011***	0.013***
	(0.003)	(0.004)	(0.011)	(0.012)	(0.003)	(0.004)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes
Katz Index	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment rate	Yes	Yes	Yes	Yes	Yes	Yes
Regional GDP	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.079***	-0.067***	0.151***	0.114*	0.041***	0.031**
	(0.02)	(0.02)	(0.03)	(0.06)	(0.01)	(0.01)
N	6,672	6,641	6,672	6,641	6,672	6,641
R^2	0.297	0.225	0.120	0.117	0.131	0.126
F-statistic	122.80	139.67	55.23	62.24	44.65	46.85
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table comopares the estimated coefficients from the IV estimation with four or five instruments. Estimations with four instruments are the same as those reported on Table 4.