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## Financial Support for Long-Term Elderly Care and Household Savings Behaviour

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### Introduction

The cost of long-term formal elderly care, offered to individuals aged 65 and above, is often covered entirely by each individual. Such costs pose significant financial uncertainties for the elderly, since it is typically very difficult for individuals to predict the types and the duration of care in the future.

How to financially support the elderly and their families during the period of their long-term elderly care needs is a policy question that is often debated in many developed countries. Policymakers have the difficult task of striking a balance between ensuring the comfort of the elderly by providing a sufficient amount of affordable care and limiting government expenditure. Moreover, the extent of the problem is likely to increase in the next decades due to the ageing population and the low fertility rates faced by many countries.

When designing a policy aimed at financially supporting the elderly with their care costs, it is imperative that one takes account of behavioural changes among the elderly and their families. One potential concern related to the introduction of a more generous system of formal elderly care is that households may reduce the amount of savings over their life cycle, since they anticipate that they will rely more heavily on public funds. Moreover, since the aggregate private savings might play a relevant role in the determination of capital accumulation and, thereby, in future economic growth (Solow, 1959; Romer, 1986; Lucas, 1988), it is of crucial importance to understand whether and to what extent the introduction of a more generous system of long-term elderly care could have had unintended consequences on household savings over the life cycle.

Our article intends to present one of the first studies from outside the U.S. on the impact of financial support towards long-term elderly care on U.K. household savings behaviour. We exploit a 2002 Scottish reform, which started offering a part of elderly care free of charge. Before this reform, Scotland and the rest of the U.K. shared the same public system for long-term elderly care. Since this policy was introduced only in Scotland, U.K. households outside of Scotland can be used as a control group to disentangle the impact of such a Scottish reform on the savings behaviour of Scottish households from any other changes in savings induced by time effects common to all U.K. regions.

### Historical background

Individuals who have difficulties with daily activities receive personal care. Examples of personal care are bathing, toileting, assistance with preparing and eating food, and dressing. Personal care may be informally provided to the elderly by their family members. Paid personal care is also available from social workers administered by local authorities or privately hired caretakers. Paid personal care is referred to as 'formal' care.

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Prior to 2002, the cost of formal personal care in the U.K. was paid almost entirely by individuals. Such costs exposed each individual in need of long-term care to significant financial burden. The Scottish Executive set up the Care Development Group in January 2001, which was aimed at pursuing options on how to implement state-funded personal care and to evaluate the estimated cost of introducing such a policy. After several revisions, the bill passed and received Royal Assent on 12 March 2002 to become the Community Care and Health (Scotland) Act 2002 (CCHA), which in turn, was implemented on 1 July 2002. In contrast to Scotland, England, Wales and Northern Ireland to this day have not followed the Commission's recommendation to make formal personal care free and continue to charge individuals for this type of care.

Table 1 highlights individuals' financial gains due to the reform by care setting and the region of residence. For each group, we calculate the maximum possible amount of weekly allowances given to individuals. Table 1 indicates that the amount of financial gain experienced by Scottish individuals receiving personal care at home stands out from the rest of the U.K. In contrast, the modifications of the allowances for care received in residential care homes are only marginally heterogeneous across regions. However, the majority of individuals in the U.K. receive care at home: in 2010–2011 only 1 per cent of care recipients in England received care in residential care homes (English Longitudinal Study of Ageing). Assuming that the U.K. individuals form expectations on their future care setting based on the current trend, the Scottish policy is likely to be relevant to the majority of the population. Based on the amount reported in Table 1, computing the difference between the variation in the allowances of care received at home in Scotland and the one in the rest of the U.K. yields GBP 145 per week. This difference amounts to GBP 7,540 per year.

**Table 1: Maximum amounts of weekly allowances changed before and after the reforms**

Care received in care homes	Before the reforms (2000 rate) £ per week	After the reforms (2003 rate) £ per week
England	53.55	200.00
Wales	53.55	176.86
Northern Ireland	53.55	157.20
Scotland	53.55	210.00
Care received at home	Before the reforms (2000 rate) £ per week	After the reforms (2003 rate) £ per week
England	53.55	57.20
Wales	53.55	57.20
Northern Ireland	53.55	57.20
Scotland	53.55	202.20

Notes: This table illustrates how the maximum amounts of weekly allowances changed before and after the reforms, depending on where the elderly reside and where they receive care. The pre-reform amounts are calculated using the 2000 rates, whereas the 2003 rates are employed for the calculations of the post-reform amounts. Since the formal personal care allowance in Scotland for those receiving care at home is not fixed, we use the average amount provided to the elderly, i.e. £80 (National Statistics, 2012). These calculations also incorporated the other allowances such as the Attendance Allowance and the nursing care allowances to illustrate the overall changes that individuals experienced over time.

## Econometric specifications, data, and estimation results

### *Econometric specifications and data*

This study employs the 1999–2007 repeated cross-sectional dataset of the U.K. Family Resources Survey (FRS). In order to investigate the impact of the Scottish policy on household savings, we employ a difference-in-differences estimator, which evaluates the changes in the differences in households' savings between Scotland and the rest of

the U.K. before and after the 2002 policy introduction.

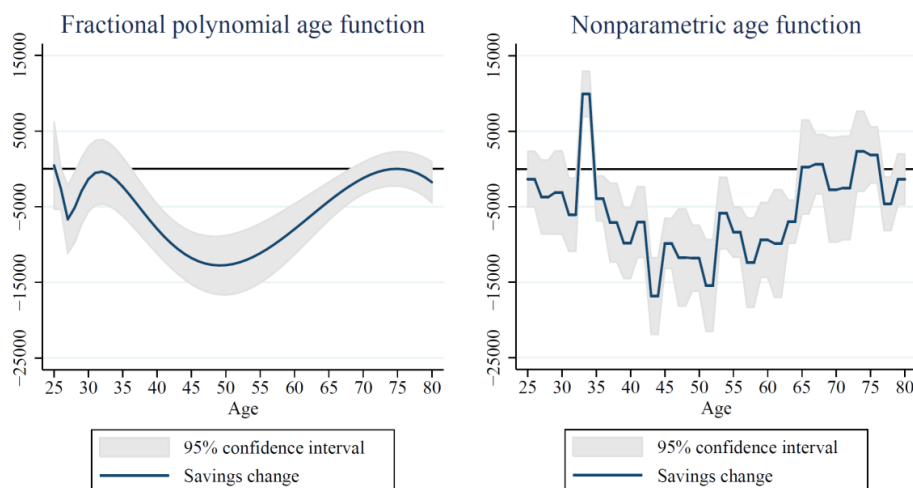
The dependent variable in our model is household savings, defined as the sum at household level of bank deposits, bonds/gilts and housing values, minus any remaining mortgages and debts. Dependent variables include head of household information such as age, gender, race and marital status, as well as educational attainment. We also include the spouses' educational attainment and age of children. Regional characteristics such as unemployment rate, per capita gross value added and per capita gross disposable income are also included. In addition, we control for regional and time fixed effects.

## Results

Figure 1 displays the heterogeneous effects of the 2002 policy reform by the age of the head of household. Estimating by OLS, we impose fractional polynomial specification of the age functions with powers  $\{-2, -1, -0.5, 0, 1, 2, 3\}$ , as well as piecewise constant functions by grouping age in intervals of two years. Both the fractional polynomial and the piecewise constant specifications of the age functions return very similar results. On the one hand, the fractional polynomial approach has the advantage of smoothing peaks that might be due to random outlier observations, at a cost of relying more on a parametric structure. On the other hand, the piecewise constant approach is less parametric and, in this application, it is preferred according to the LOOCV statistic.

We find that the policy effect indeed varies across the age of the head of household. When the head of household is aged 25–35, and therefore the household members have a long time horizon until the possible need of personal care, the effect of the reform is negative but close to zero. In their mid-30s, households start reacting by reducing their savings. The age profile of the reform effect peaks between 45 and 55 years. With the fractional polynomial specification, the peak is reached at age 49 with a decrease in household wealth of GBP 12,764. In the piecewise constant specification, we instead observe two important peaks: the first one at age 43–44, with a decrease in household savings of GBP 16,827; the second one at age 51–52, with a negative effect of GBP 15,441. Finally, the reform effect becomes nil when the age of the head of household approaches 65–70.

**Figure 1: The effects of the reform on household savings by the age of the head of household**



## Conclusions

This article studies the impact of the Scottish Community Care and Health Act 2002 on the level of household savings. The Scottish policy legislated that formal personal care be offered to the elderly free of charge. In contrast, the rest of U.K. has continued to charge the elderly for services. If households save to prepare for future elderly care

expenditure, such a reduction in the care price may have led the households to respond by reducing their level of savings. This article, therefore, studies an unintended consequence of the policy's introduction and evaluate if and to what extent it crowded out private savings.

By using the households in England and Wales as a control group, we investigate how Scottish household savings responded to the policy introduction of free personal care for the elderly by using a difference-in-differences estimator. We also study how the effect differs across age by using semi-parametric techniques.

We find that the Scottish policy reform reduced the average household savings by about GBP 7,200. This figure is very close to the simulated expected lifetime cost of local authority-provided personal care reported by Comas-Herrera and Wittenberg (2010). In their paper, they estimate the cost to be GBP 8,800. In addition, we find that the policy effect varies across the age of the head of household. The estimated negative effect is particularly strong among households aged between 40 and 60. The largest effect is observed for those households with the heads aged 49, with a negative effect on savings of GBP 12,764. Our findings are in line with the existing literature for the U.S., which also suggests the importance of medical expenditure uncertainties on household savings behaviour (Gruber and Yelowitz, 1999; Maynard and Qiu, 2009). However, our findings differ from those presented by Guariglia and Rossi (2004), who instead found that British individuals do not make use of precautionary savings against the risk of facing unexpected private health-care expenditures. This may be due to the fact that U.K. individuals have access to universal health care coverage through the NHS. Hence, the health insurance coverage that Guariglia and Rossi (2004) investigated had limited impacts on individuals' behaviour. In contrast, our policy offered a substantial long-term care cost reduction under the environment where this type of cost was almost exclusively paid by patients. In order to ensure that our estimates uncover causal relationships, we conduct several identification tests as well as sensitivity analyses. Our findings from various tests and the sensitivity analyses strongly indicate the robustness of our conclusions from the estimates of the benchmark model.

Given the sizeable effect on savings, especially for middle-aged households, one may wonder if households overestimate the benefits introduced by the free personal care reform due to a misunderstanding of the policy, as pointed out by Bell and Bowes (2006). If so, the resulting reduction in precautionary savings might lead to a situation in which there is less than full insurance against long-term care for the elderly. In such a case, one might wonder whether universal elderly care insurance introduced in countries such as Japan or Germany may be a more effective way to address the large and volatile risks of long-term care for the elderly. These questions are left to be investigated in future studies.

## References

- Bell, D., Bowes, A. (2006) *Financial Care Models in Scotland and the UK*. York, U.K.: Joseph Rowntree Foundation.
- Comas-Herrera, A. and Wittenberg, R. (2010) 'Expected lifetime costs of social care for people aged 65 and over in England', in L. Curtis (ed.) *Unit Costs of Health and Social Care, Canterbury: Personal Social Services Research Unit*, pp. 41–46 from <http://www.pssru.ac.uk/archive/pdf/uc/uc2010/uc2010.pdf>
- Gruber, J. and Yelowitz, A. (1999) 'Public health insurance and private savings', *Journal of Political Economy* 107(6): 1249–1274.
- Guariglia, A. and Rossi, M. (2004) 'Private medical insurance and saving: Evidence from the British Household Panel Survey.' *Journal of Health Economics* 23(4): 761 – 783 [contains contributions from the Grossman Symposium].
- Lucas, R. E Jr (1988) 'On the mechanics of economic development', *Journal of Monetary Economics* 22(1): 3–42.
- Maynard, A. and Qiu, J. (2009) 'Public insurance and private savings: Who is affected and by how much?', *Journal of Applied Econometrics* 24(2): 282–308.
- National Statistics (2012) *Free Personal and Nursing Care, Scotland, 2010–11*, Edinburgh: The Scottish Government, from <http://www.gov.scot/Publications/2012/08/4156/downloads#res399508>
- Romer, P.M. (1986) 'Increasing returns and long-run growth', *Journal of Political Economy* 94(5): 1002–1037.
- Solow, R. (1959) 'A contribution to the theory of economic growth', *Quarterly Journal of Economics* 70(1): 65–94.