Old-Age Saving in a Welfare State

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We contribute to the literature on saving in retirement by studying the saving behavior of retirees in Iceland, a country where health care and nursing homes ares free of charge. This removes some of the precautionary motive for saving, leaving the bequest motive and other inter-generational transfers, which are the focus of our study. It is shown that saving remains positive in retirement and depends on having children, their income, and their saving. The saving rate drops upon the death of a spouse indicating a transfer of wealth to children.

1 Introduction

We study the saving behavior of retirees in Iceland, a country where health care and nursing homes are free of charge, funded by taxation. Moreover, the larger part of pension savings is annuitized. Hence, the reasons for precautionary savings are weaker than in many other countries, providing an interesting "quasi-controlled" approach to analyze the saving behavior of retired households.

Empirical evidence from other countries has shown that retirees not only decumulate their assets very slowly but even continue saving, see e.g. De Nardi et al. (2021). Several possible explanations have been proposed for this puzzle. First, people may save in anticipation of out-of-pocket medical care or nursing home expenditures. Second, there is uncertainty about the length of life. Third, there is the bequest motive. De Nardi et al. (2016) survey the literature and conclude that the savings data alone cannot disentangle precautionary saving motives from bequest motives.

Our study is related to Hurd (1987)who did not find any credible evidence for a bequest motive when comparing the wealth accumulation of childless elderly couples and couples with children using U.S. data and in Hurd (1989) found that most bequests are accidental. Kopczuk and Lupton (2007) found that both elderly households with and without children behave as if they have a bequest motive. According to De Nardi et al. (2021) the more affluent save to leave bequests while others save to meet the cost of future medical care. Laitner and Ohlsson (2001) found evidence for some altruistic bequest motives using data from Sweden and the U.S.

2 Data and method

Our data includes the tax returns of all taxpayers 67 years and older in Iceland from 2000 to 2019, their education and the same information for their adult children.[1,2] We assume that consumption and saving of jointly taxed couples is equal between the two partners and calculate these using the method of Eika et al. (2020),

$$C_{i,t} = \underbrace{(E_{i,t} - \tau_{i,t} + \underbrace{\sum_k r_{k,t} A_{i,k,t-1}}_{})}_{\text{Disposable income}} - (\underbrace{\sum_k \Delta W_{i,k,t}}_{\text{Change in net wealth}} - \underbrace{\sum_k \Delta p_{k,t} A_{i,k,t-1}}_{\text{Unrealized capital gains}}) \tag{1}$$

where i indexes households, $E_{i,t}$ is annual earnings, such as salary and benefits, and τ_{it} denotes taxes. Capital income is $\sum_k r_{k,t} A_{i,k,t-1}$ (k indexes asset types), A_{ikt-1} denotes assets at the end of the last year, $r_{k,t}$ is the return, and p_t is the price of assets. Net wealth is $NW_{it} = \sum_k W_{i,k,t}$. The term $\sum_k \Delta p_{kt} A_{ikt-1}$ measures non-realized capital gains, which is deducted from the change in wealth since it is illiquid and not available for consumption.

Savings is defined as the change in wealth not caused by capital gains:

$$S_{i,t} = \sum_k \Delta W_{i,k,t} - \sum_k \Delta p_{k,t} A_{i,k,t-1} \tag{2}$$

By rearranging equation (1) and using the definition of savings in equation (2), we get the savings equation

$$S_{i,t} = DI_{i,t} - C_{i,t} \tag{3}$$

where disposable income is $DI_{it} = E_{it} - \tau_{it} + \sum_k r_{kt} A_{ikt-1}$. Using our data we calculate consumption as

$$C_{i,t} = DI_{i,t} - (\Delta NW_{i,t} - \Delta HP_{i,t} + Ind_{i,t}) + IR_{i,t} \tag{4}$$

where ΔHP_{it} is the change in house prices and the variable Ind measures changes in indexed mortgages due to inflation.[3] The variable IR_{it} is imputed rent, which is a measure of the consumption of housing, and an allowance for the use of cars. In the tax returns, cars are depreciated by 10 percent per annum and we include this term to the equation so that our consumption measure on the left-hand side of equation (4) includes the consumption of both the services of housing and cars.[4]

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[1]In Iceland, workers start collecting pillar-one (means-tested) state pension at age 67 and the mandatory retirement age is 70.

[2]The tax data is collected by Iceland Revenue and Customs and Statistics Iceland encrypts the data.

[3]Changes in house prices are the only source of capital gain because the value of stocks is set equal to the purchasing price in the tax returns.

[4]To control for severe outliers, we exclude negative values for consumption, which can be caused by unobserved factors affecting net wealth, such as gifts or bequests, or unrealized capital gains and negative values for disposable income. Moreover, individuals with the 5 percent highest consumption are excluded from the sample and the saving ratio is restricted to take values between minus three and one.

3 Empirical results

Our main variable of interest is the saving rate, the ratio of saving to disposable income. Figure 1 shows average and median saving for all age groups in 2016 and 2019. In 2019 saving increases in age from the mid-20s until the mid-60s while in 2016 saving plateaus around the age of 50 and then falls after the mid-60s. Thus saving increases in age while individuals are working but drops significantly when they exit the labor market. However, and most important for our purposes, median saving remains positive in retirement.
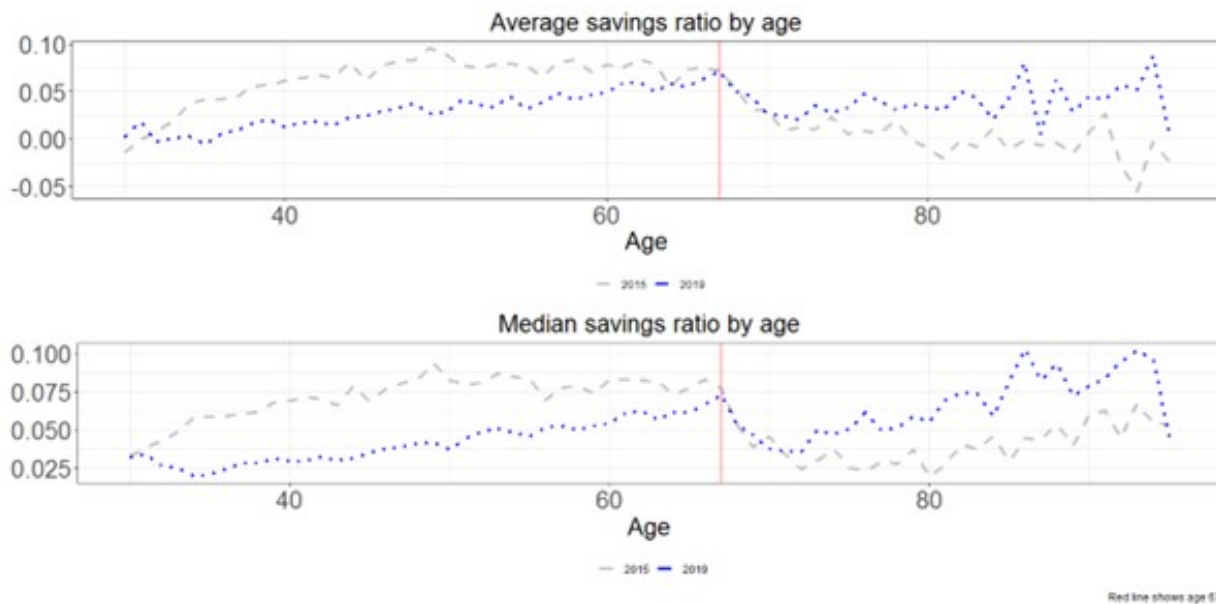

Figure 1: Saving over the lifecycle

Note that median saving is increasing in age when the pensioners get older.

We next use a fixed effect model and an event study to better understand what drives the saving behavior of the elderly.

3.1 Individual fixed effects model

Our sample consists of individuals 67-year-old and older and the model controls for both characteristics of the elderly and their children. The objective is to see whether children affect their parent's saving rates, implying an intention to transfer wealth to the children. Table 1 shows the mean value of the variables.

The results are shown in Table 2 and Figure 2.

	Mean (2019)	Children	Mean (2019)
Age	76	Age	35
Equivalized income*	6,489,593 ISK**	Equivalized income	5,181,030 ISK**
Marital status*** (binary)	57%****	Saving rate (decimals)	0.026
Number of children	1.5	Shock to equivalized income (binary)	8.7%
Children younger than 30	0.042	Parent-to-child income ratio	0.76

* Disposable income is adjusted for family size. The income of a partner has a weight of 0.5 and each child under age of 18 a weight of 0.3. ** Using exchange rates on 1 July 2019, the mean income of parents is 52,000 and that of the children 41,000 dollars. *** Jointly taxed take the value one, others zero. **** Percentage of population in which the binary variable takes the value one.

Table 1: Independent variables in the regression equation

Dependent variable	Saving rate (2019)
Jointly taxed	0.1843*** (0.0053)
Child younger than 30	0.2318*** (0.0686)
Children's average saving rate	-0.0070* (0.0037)
Parent-to-child income ratio	-4.87e-8*** ($2.04e8$)
Having a child * log of children's average disposable income	0.0111*** (0.0037)
Having a child younger than 30 * log of children's average disposable income	-0.0147*** (0.0045)
Drop in average disposable income (more than 20%	-0.0102*** (0.0028)
Fixed effects:	
Individual	Yes
VCOV: Clustered	By individual
Observations	313.086
R^2	0.31
Within R^2	0.04

Note: Significance codes (p-value): 0.001 '***' 0.01 '**' 0.05 '*'

Table 2: Results from the estimation of the fixed-effect regression

The saving rate is higher for jointly taxed parents. Having children also matter. A child younger than age 30 increases the parents' saving rate; parents save less when adult children save more; and the saving of parents is decreasing in the disposable income of their below 30 year old children. Finally, when children experience a large drop in income, the parents save less, implying that the family provides a safety net for grown-up children.

(a) Age and saving

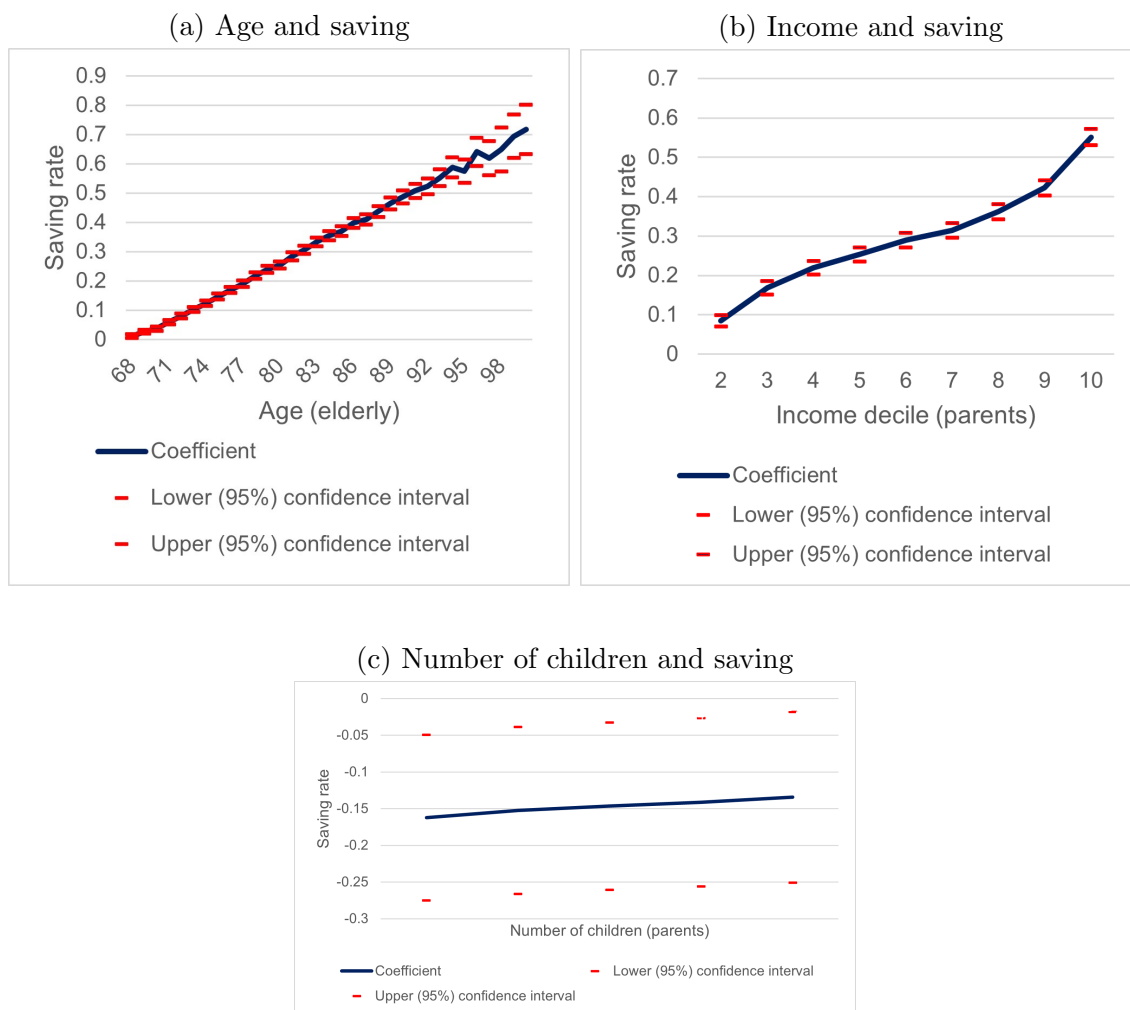(b) Income and saving

(c) Number of children and saving

Figure 2: Effect of age, income and the number of children

Figure 2 shows that saving is increasing in parents' income, age and the number of children. A plausible explanation for the age effect is that health is better at a younger age during retirement and consumption, such as travel, more enjoyable. The saving rate is also mildly increasing in the number of children.

These results support the hypothesis that the saving behavior of the elderly is affected by children, their income and their saving. We next turn to exploring the effects of major lifetime events on saving in retirement.

3.2 Events

This section explores the effect of retiring and losing a spouse on saving rates. The first (top left) figure only accounts for the shock, the second (top right) also uses individual fixed effects, the third (bottom left) uses time fixed effect and the fourth (bottom right) uses both

individual and time fixed effects. The figures show the five years preceding and following the shock, which happens at time zero.

3.2.1 Turning 67

The official retirement age is 67 in Iceland and in Figure 3 it is the age at which saving falls when individuals go into retirement. At age 67 people begin collecting their pillar-one pension. Looking at the figure when both individual and time fixed effects are included, the difference between the soon to be 67 and the individuals 67 years of age is not statistically different from zero. The saving rate drops following the 67th birthday and declines for the next four years. It then starts to recover five years after the shock.
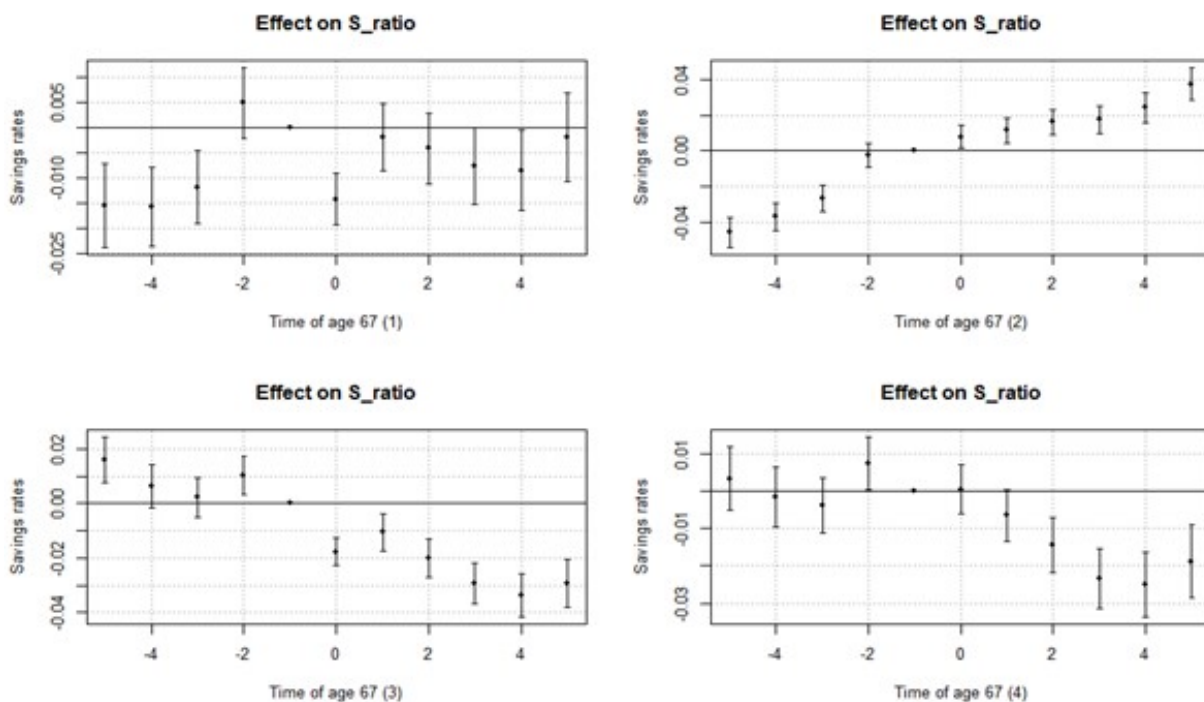

Figure 3: Turning 67 leads to a reduction in saving rates

3.2.2 Losing a spouse

Losing a spouse can have financial implications for the surviving spouse. She or he no longer enjoys the economies of scale involved in co-habitating and the surviving spouse may transfer wealth to the children. All four regressions show that in the year of the death of a spouse the saving rate drops, and it takes a few years to recover to the previous saving rate. The drop and the subsequent recovery indicates the transfer of wealth to children, consistent with the finding of De Nardi et al. (2021).
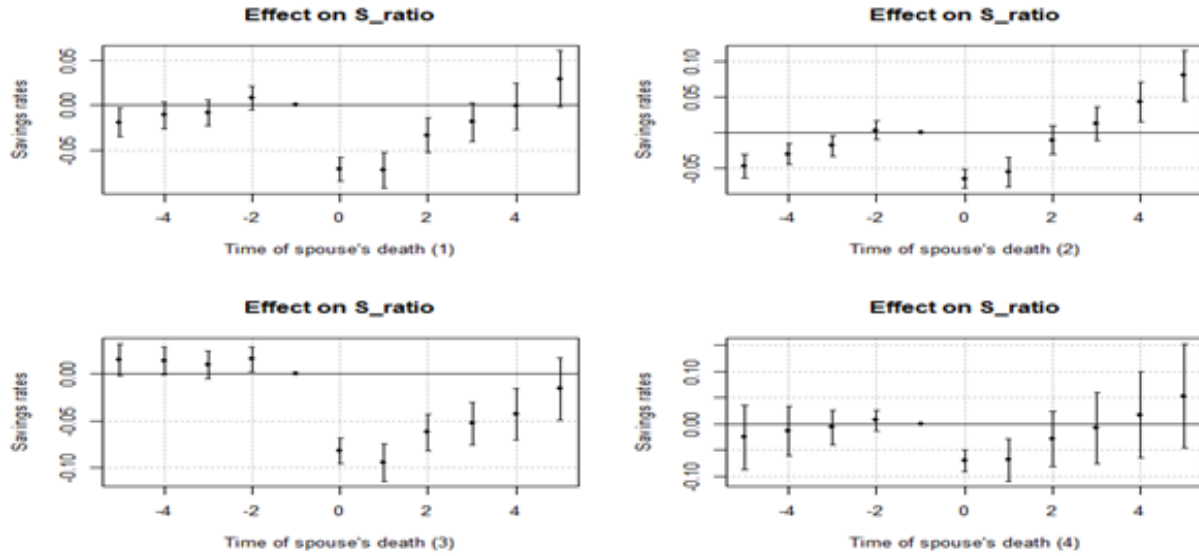
Figure 4: Losing a spouse results in temporary drop in saving rate

4 Conclusion

We have found that saving rates remain on average positive in retirement in Iceland in spite of free health care and nursing homes and that they are increasing in age. Moreover, our findings suggest that elderly parents may save in order to transfer wealth to their adult children. Thus, elderly parents save more than the childless and their savings are decreasing in the savings and age of their children. There is also evidence of inter vivo transfers when grown-up children need financial assistance. An event study shows that losing a spouse results in a temporary drop in savings rates, which can be explained by children receiving a transfer.

References

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