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Publication date:
1995

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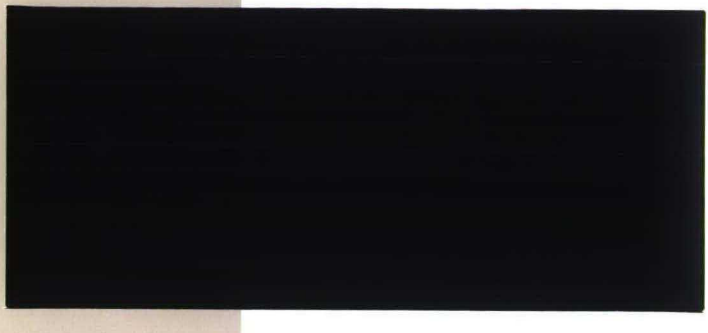
Discussion paper



Tilburg University

Center
for
Economic Research

No. 9593

SAVING AND WEALTH HOLDINGS OF THE ELDERLY

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September 1995

ISSN 0924-7815

Saving and Wealth Holdings of the Elderly

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Abstract

Using panel data for The Netherlands, we find that wealth holdings of the elderly are very unevenly distributed. Furthermore, the inequality increases with age, which indicates different rates of accumulation (or decumulation) across wealth levels. This divergence in behavior depending on wealth holdings points to a strong bequest motive. The presence of a bequest motive is confirmed by subjective information obtained from a new and unique panel, the VSB-panel, that we exploit. For most elderly the level of assets is so low that it probably mainly serves to satisfy a precautionary motive. Subjective information in the VSB-panel shows that precautionary motives are indeed quite strong among the elderly. For the vast majority of the elderly social security and pensions are absolutely essential to maintain a decent standard of living.

July 10 1995

Keywords: savings, elderly, precautionary motives, bequests, life cycle hypothesis
JEL classification: D12, D31, D91

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Comments from Martin Browning, Gary Engelhardt, and Tullio Jappelli are gratefully acknowledged. Any errors are our responsibility.

1. Introduction

There is considerable interest in the savings behavior and wealth holdings of the elderly, for obvious reasons. First of all, the increasing percentage of elderly in developed economies makes their wealth position of particular interest from a policy perspective. If the elderly have not saved enough (either through asset accumulation or pensions) to sustain themselves in old age, this may have dramatic consequences for society as a whole. A second reason to be interested in the savings behavior of the elderly is that it provides a prima facie test of the life cycle hypothesis.

In this paper we use Dutch data to shed light on these issues. Our findings are the following: Wealth is very unevenly distributed among elderly households and decumulation of wealth does not take place until a very old age. These two facts are interrelated. For most households asset holdings are so small that they could only finance consumption for a few months. Hence, these assets probably serve more as a buffer for adverse shocks than as a source of consumption. Consumption is mainly financed through social security and pension income. For the group of households with considerable asset holdings we find that the house is a very important component. Here we also find little evidence for decumulation. These observations suggest an important bequest motive for the wealthier households.

The importance of a bequest motive is further investigated on the basis of subjective data from a new and unique data set we are using. It appears that particularly among the rich, people report bequest motives as a reason to save money, even at advanced age. Also, we find that particularly among the elderly precautionary motives play a role; this motive gains importance if wealth holdings are lower.

The organization of this paper is as follows. In section 2 we provide some institutional background about the Netherlands needed to understand the empirical analysis. There we also provide a description of the data used in this study. In section 3 we look at the wealth accumulation of households in more detail. Although we use panel data throughout, we use the data in three different ways. First we only consider a cross section to illustrate the level and distribution of wealth holdings. Next we construct synthetic cohorts to disentangle age and cohort effects. Finally we exploit the panel nature of the data, to eliminate possible biases due to differential attrition of different wealth groups. In section 4 we consider savings on the basis of the VSB-panel. The variable used is self

reported savings. Here we find that next to the "usual" variables, also psychological variables like patience and a self reported bequest motive affect the level of savings. Section 5 concludes.

2. Some Background Information

2.1 Institutional details

The Netherlands is a country with a high saving rate. For instance, during the eighties household savings have amounted to approximately 14 percent of disposable income. Most of this saving (approximately 11 percent of disposable income) is in the form of so-called "contractual saving", i.e. pension funds, life insurances, etc. Other or "free" saving amounts to approximately 3 percent of disposable income. Everyone in the Netherlands is covered by a general old age pension (AOW) starting at the age of 65. For the most part, the level of benefits is independent of other income but does depend on household composition. For a couple the level of benefits is equal to the minimum wage (approximately Dfl. (Dutch Guilders) 18,000 per annum after tax), while a single-person household receives 70 percent of the minimum wage. In addition, the vast majority of employees (80 percent) is covered by an occupational pension scheme. In general, if the employer offers a pension scheme, participation in such a scheme is compulsory. In *Pensioenkaart van Nederland* (1987) (Pension Map of the Netherlands or PN (1987)) it is estimated that 99.4 percent of the pension schemes is of the defined benefit type, whereas the remaining 0.6 percent is of the defined contribution type. More than 72 percent of the pension benefits are defined on the basis of final pay. While the pension schemes are funded, the social security system is pay-as-you-go. Combining the effects of the general old age pension and the private (employer provided) pension brings the following before tax replacement rates: approximately 19 percent receive at least 80 percent of final pay, 20 percent receive between 70 and 79 percent of final pay, 27 percent receive between 60 and 69 percent and 34 percent receive less than 60 percent.[1] Note, however, that the after tax replacement rate tends to be higher than the before tax one. For example, Keesen (1990) shows that if the before tax replacement rate is 70 percent, the after tax replacement rate

[1] See PN (1987)

become as high as 90 percent. This phenomenon can be explained by the progressivity of the tax system and the fact that retired persons do not pay social security premia.

In addition to the general old age pension and the occupational pension schemes, two other institutions need to be considered: the disability scheme and the various early retirement schemes. Approximately 800,000 workers in the Netherlands receive disability benefits. Some studies have indicated that for many people the disability scheme is effectively a combination of unemployment insurance and early retirement.

2.2 Description of the data sets

In this paper, we examine saving and wealth by using micro data from two Dutch data sets: the Socio-Economic Panel (SEP) and the VSB-panel[2]. The SEP is a survey administered by the Central Bureau of Statistics (CBS) for a panel of approximately 5,000 households. The SEP is representative of the Dutch population, excluding those living in special institutions such as nursing homes. The first survey was conducted in April 1984. The same households were interviewed in October 1984 and then twice a year (in April and October) until 1989. Since 1990 the survey has been conducted once a year in May. In the October interview, information is collected on socio-economic characteristics, income, and labor market participation. The April interviews contain information about socio-economic characteristics as in the October interview, but rather than gathering data about income, from 1987 onwards the April questionnaire includes questions on a wide range of assets and liabilities. For the purpose of this paper, we examine data from 1987 to 1991.

The VSB-panel has been devised by researchers at the CentER for Economic Research at Tilburg University and has been supported by the VSB foundation. The sample consists of a panel of approximately 3,000 households and is divided into two parts. One part, which is composed of approximately 2,000 households is representative of the Dutch population, whereas the second part of 1,000 households oversampled the rich households[3]. The questionnaire is divided into five main parts and information is collected on the following: "Health and income", "Accommodation and Mortgages", "Household and work", "Assets" and "Economic Psychology". In this paper, we use the information

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[2] For a detailed description of the SEP, see Alessie, Lusardi, and Aldershof (1994).

[3] Only households with income greater than 105,000 guilders are considered in this part.

contained in the Economic Psychology part.

3. Wealth Holdings of the Elderly

3.1 Wealth holdings from cross-sections

We restrict our attention to households whose head is at least 50 year old.[4] Given the importance and coverage of the social security system, it is important to consider first not only liquid and total net worth[5], but also social security and pension wealth.[6] Social security and pension wealth are the actuarially discounted sums of current and future social security and pension income that households receive after age 65. In table 1 we present the distribution of all these wealth measures for different age groups in 1989. The first thing to note is that there is substantial heterogeneity in the holdings of liquid and total net worth in these age groups. Standard deviations are big and the mean of both liquid and total net worth is well above the median, indicating that the distribution is skewed to the right. Mean financial wealth is higher for the old elderly (above 70) than the younger households, while the median is lower. This indicates that wealth inequality is greater among old households than younger ones. Similar results apply for total net worth, since we can see that the mean decreases at a lower rate than the median. Since the mean and median of the distributions give such different information we will present them both in most of the analyses that follow.

TABLE 1 ABOUT HERE

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[4] From 1990 on, the SEP does not collect information on the assets and liabilities of the self-employed. In order to have comparable figures across years, we have also excluded the self-employed from our samples.

[5] We will use the terms liquid net worth and financial net worth interchangeably, as referring to total assets minus debt, excluding housing. (Total) Net worth is defined as the sum of financial net worth and net equity.

[6] Pension and social security wealth are not directly observed in the SEP. However, information is collected on labor market history, marital status, family composition and other important factors that allow us to impute these measures from the SEP. See Alessie, Kapteyn and Klijn (1994) for a detailed description of the calculation of pension and social security wealth and the assumptions needed to perform those calculations. Note, however, that in order to perform these calculations, we need to exclude the households for which the information necessary to calculate pension and social security wealth is not available. Therefore, the sample we used to construct table 1 is restricted to a relatively smaller number of observations than in other samples, i.e., 1162 observations.

Without presenting a table we mention that there is also a group of households below the median that approach retirement with negative or little wealth, as little as Dfl. 1,000. This group is disproportionately represented, in particular in the age group 50 to 64, by singles, in particular single women, and by households with low education. We found that less than 1 percent of the households with a head who is at least 65 years old has negative net worth. This percentage is much higher for the younger age groups.

The importance of housing in the composition of wealth is apparent by comparing median liquid and total net worth. Housing is a very important wealth component for the households with a head younger than 65. For this age group median net worth is much higher than median financial wealth, in particular for the age group 50-54. However, this difference is much reduced after age 70, housing does not play a major role in the portfolio of non-wealthy elderly households. While the importance of housing should not be understated, homeownership, particularly among the elderly is much lower in the Netherlands than in the US. Sheiner and Weil (1992) report, for example, that the homeownership rates of the households older than 64 is approximately 74 percent in the US, while in our sample the homeownership rate for the same group of households is only 29 percent.

Both financial wealth and total wealth are substantially lower than social security and pension wealth. In particular, social security wealth represents a critical part of the wealth holdings of the elderly. Although median pension wealth is much smaller than median social security wealth, it is still a bigger component in the portfolio of median elderly households than private net worth. Not surprisingly, social security wealth is the most evenly distributed wealth measure. In this case, means and medians are similar and the median is actually above the mean (except for the age group 75-79). Note that every person older than 65 in the household receives a social security benefit (AOW). While there is a relatively flat rate for social security benefits, which depends mainly on family composition, the pension benefits depends on wages and on work history (see section 2). Consequently, pension wealth shows a more skewed distribution than social security wealth, even though the level of skewness is smaller than in case of net worth. In our sample approximately 25 percent of the households do not have pension wealth, but only social security wealth. These households are usually the ones with little or no work history and they are heavily concentrated among singles and are mostly women. Female labor par-

ticipation is very low in the Netherlands. Also, while married women may benefit from the longer work history of their husband, single women are more likely to rely on social security only.

3.2 Wealth profiles from cohorts

While table 1 shows that median net worth declines with age, we cannot infer from these figures whether the elderly are decumulating wealth, as predicted by a (simple) version of the life cycle model. The figures confound the age and cohort effects and it may be highly misleading to look at one cross sectional distribution only. It is possible that older cohorts are simply poorer than younger ones (for example because of lower wages and lower initial wealth) and we need to take this fact into account.

Given that we have five years of wealth data in the SEP (from 1987 to 1991), we can consider the wealth holdings of different year of birth cohorts. Even though this does not exploit completely the panel aspect of the data set, it allows us to account for cohort effects. In table 2a we consider mean and median liquid and total wealth holdings of households who are 50 or older in 1987 (therefore born before 1937) and we consider households of the same year of birth cohorts four years later in 1991. We restrict our attention to liquid and total net worth, since both social security and pension wealth are outside the choice set once the head (and the partner) are older than 65. Furthermore, these wealth measures are annuitized and therefore not bequeathable (apart from some special cases, where widows can continue receiving the pensions of their husband even after his death).

TABLE 2a ABOUT HERE

From table 2a, we see that median and mean (liquid) net worth of the group of households whose head was younger than 65 in 1987 has risen much faster between 1987 and 1991 than the cross-section wealth age profile (see table 1) would suggest. For the older cohorts there is not a particularly clear pattern, and the reported statistics to test whether medians change between 1987 and 1991 do not indicate significance. So we find neither evidence of accumulation nor of decumulation.

Note that it is still difficult to correctly interpret these findings. Many problems need to be addressed before we may attach any interpretation to the data. First, there may exist differential mortality across households. As some authors have mentioned, wealthy households tend to live longer and the group of households we observe, for example after age 70, may be disproportionately represented by these households.[7] In this case, we may be led to incorrectly reject the predictions of the life cycle model. Similarly, if rich elderly are less likely than poor elderly to live with their children or enter nursing homes (in this case they would drop out from the sample), older households may be heavily selected into the high wealth group.[8]

3.3 Wealth profiles from panel data

TABLE 2b ABOUT HERE

To address these problems, we exploit the panel feature of the data set and consider only the households which are in the data set both in 1987 and in 1991[9]. Table 2b shows that for the older age groups in 1991 mean and median liquid net worth and total net worth tend to be lower in the panel data set than when accounting for cohorts. In contrast to the argument in the preceding subsection, we see by comparing table 2a and table 2b, that rich households are more likely to drop out of the sample in the panel analysis than poorer households. This attrition can be explained by the fact that non-responses tend to be more likely among the richer households, who hold a more diversified portfolio and have to fill in many questions on their assets and liabilities.[10] The use of panel data is of critical importance for this analysis. Table 2b shows that mean liquid net worth increases

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[7] See Hurd (1989, 1990) and Attanasio and Hoynes (1995).

[8] See also Börsch-Supan (1992).

[9] If the head of a household changes during the five year period, it is still treated as belonging to the same cohort it belonged to in 1987. As a result of this convention, some of the changes observed may be the result of household composition changes.

[10] For an analysis of the data selection and the evaluation of non-response rates, see Alessie, Lusardi and Aldershof (1994) and Alessie and Zandvliet (1993). Even though the attrition may leave us with a selective sample, if the simple life cycle model holds, we should observe decumulation as the head of the household gets older.

rather than decreases as the households age. Median liquid net worth remains roughly constant for the older cohorts (except for the 70-74 and 80+ cohorts, where there is a tendency for the median to decrease). For the cohorts in the age group 70-74 and 75-79 in 1987, the absolute increase in mean total net worth is smaller than the increase in liquid net worth, which implies that mean housing equity decreases over time. Indeed, we do observe a decrease in home ownership, which goes from to 26.8 percent to 23.5 and from 30.9 to 23.8 for the two groups respectively. Venti and Wise (1989 and 1990) also show that in the US, the decrease in homeownership happens very late in the life cycle, but the decrease in homeownership appears to be much lower than in the Netherlands. Median net worth of the 70-74 cohort decreases by 18 percent during the 4 year period, while median liquid net worth only decreases by 4 percent. Also, contrary to table 2a in which the panel feature of the SEP dataset is not exploited, table 2b seems to indicate that the median household in the 70-74 cohort decumulated wealth mainly by reducing their home equity.

Finally we notice that the median of changes in financial or total wealth do not always show the same direction as the change in the median of the distributions of financial and total wealth. For instance, for the 70-74 cohort the median financial wealth is Dfl. 9500 in 1987 and Dfl. 9092 in 1991, yet the median change in financial wealth shows an *increase* of Dfl. 429.

To understand what happens to the wealth holdings of elderly households it is obviously important to pay attention to the evolution of their incomes. Our data show that mean and median pension income remain fairly constant over time, except after age 80 where median pension income decreases somewhat from Dfl. 17,964 to Dfl. 15,348. However, median income per equivalent adult[11] remains fairly constant for this group, which implies that the drop in pension income is mainly due to the fact that in some households one of the spouses died between 1987 and 1991.

3.4 Wealth profiles and family composition

So far, we have not accounted for family size in making our comparisons across time. There is some theoretical work which explains why saving is intimately related to family composition. Browning (1994), for example, emphasizes that the household is

[11] The CBS equivalence scale used is almost the same as the equivalence scale used in the AOW and most occupational pension schemes.

composed of individuals who may have different propensities to save. For instance, it is well known that on average men marry younger women and that the life expectancy of women is higher than of men. Women may have an incentive to save more. Since we classify the household by using the age of the head of the household, we may be disregarding this effect.

Without presenting any tables we briefly describe how wealth holdings of single and multi person households evolve over time. Both financial wealth and net worth is much lower for the single person household. Homeownership, in particular, is very low for the 65-74 cohort: it is 14 percent in 1987 and it goes to 11 percent in 1991. Mean housing equity decreases by Dfl. 7,770, going from Dfl. 24,350 to Dfl. 16,659 in 1991. Given the fact that housing prices increased considerably between 1987 and 1991, this change in housing equity is potentially explained by those single person households who sold the house. However, the elderly median single household is typically not a home owner, and consequently median financial wealth and median net worth are almost equal. Furthermore both income and the median wealth to income ratio are rather low for this group of households. The latter has a median equal to 0.30. For multi-person households the median financial wealth to income ratio is about twice as high. Even this is of course not terribly high, as it would imply roughly that for the median household liquid wealth could finance consumption for not much more than 8 months. Therefore, the fact that the median household does not decrease his/her small amount of wealth, cannot easily be interpreted as evidence against the life cycle model. It seems reasonable to assume that the remaining wealth serves as a buffer against future contingencies.

3.5 Wealth profiles and home ownership status

TABLES 3a AND 3b ABOUT HERE

Given the fact that in the Netherlands only a small fraction of the elderly households own a house, it is interesting to look separately at the wealth profiles of the majority of the Dutch elderly households, namely the renters. In the panel we condition on whether households were renters or home owners in 1987. The first thing that stands out

from table 3a is the low level of mean and median net worth of renters.[12] The median wealth to income ratio is well below one, given that median total income of households older than 65 is approximately Dfl. 20,000. By looking at the median change in net worth in table 3a, we note that up to the 70-74 cohort, at least 50 percent of the households do not dissave. On the other hand, the amount of savings is very small. For the oldest cohort, the median change in net worth is only slightly negative. As before, this amount of wealth would last a household only a relatively short period. It seems reasonable to assume that for most households the remaining wealth mainly serves as a buffer against adverse circumstances, in other words the money is held for precautionary reasons. We return to this issue in the next section.

In table 3b, we summarize the wealth age relationship of those elderly households who were home owner in 1987. For this group of households, the housing equity is the dominating asset in their portfolio. For example, in 1987 median financial wealth among the home owners in the 65-74 cohort was Dfl. 25,000, while median housing equity was about 5 times that amount, namely Dfl. 130,000. Although financial assets play a relative minor role in the portfolio of elderly home owners, they hold more liquid wealth than renters. Both mean net worth and mean financial wealth increased between 1987 and 1991 for all cohorts older than 50. However, median net worth and median housing equity among home owners in the 65-74 and 75 plus cohorts decreased in that period. Table 3b shows that a part of this decrease may be attributed to the fact that some elderly households who were owner in 1987, have sold the house. Using American data Sheiner and Weil (1992) also find that elderly home owners reduce their housing equity as they age and that the reduction in housing equity is related to two important events in life: widowhood and death. They find that the reduction in housing equity that occurs at the time of widowhood partly explains the age profile of housing wealth found in the data.

We have investigated for 3 different years of birth cohorts (55-65, 65-74 and 75 +) and for four groups (single or multi person household in 1987 and 1991) the ownership rates in 1987 and 1991, and the transition rates from owning to renting and vice versa. Not surprisingly, the elderly renters almost never buy a house in their old age. Only the

[12] Note that, even for renters, there remains a difference between financial wealth and net worth. The reason for this (small) difference is due to other real estate (and associated mortgages) that households can own (see also table 2).

transition from owning to renting is of importance to understand the decline in home ownership rate which took place between 1987 and 1991. We have tried to relate transitions from ownership to renting to changes in family composition (including death of a spouse) and to age. Although we seem to see a pattern where older cohorts may have a higher tendency to move to a rented dwelling, the small number of observations has made it impossible to say anything definitive about what the main factors are behind these transitions.

It is useful to sum up what we have observed so far. There is little indication of substantial decumulation. Means seem to grow a bit faster (or fall a bit less fast) than medians. This hints at an increase in inequality among the elderly with age. One explanation for this would be a bequest motive as modelled by Hurd (1989), where the extent of decumulation will be inversely related to net worth. Furthermore, for most households net worth is so low that it can hardly be used for income smoothing. Rather, the amount of wealth left would seem to be just enough for precautionary reasons. To investigate the two explanations (bequest motive and precautionary motive) given for the observed patterns of wealth holdings among the elderly, we now turn to a new source of evidence, the VSB-panel.

4. Savings

4.1 Household savings in the VSB-panel

As we mentioned previously, the VSB-panel is composed of two parts: a data set representative of the Dutch population, and a sub-sample where rich households are oversampled. We will use both samples in the analysis of the importance of bequest and precautionary motives. We have to say, however, that due to non-response rates for some questions and the process of editing and cleaning of the data, the final representative sample does not quite reflect the population of Dutch households. In particular, households with low incomes seem to be underrepresented.

We use the information about saving, which is embodied in the economic psychological part of the VSB questionnaire. In this part, households are asked to report whether they have saved in the past 12 months and we can therefore examine in this data whether the elderly dissave. Consistent with the previous figures from the SEP data, many

households 60 or older have indicated that they continue to have positive saving. The amount saved, which in the psychological part of the VSB data is observed in brackets rather than as a continuous variable, indicates that for the large majority of the elderly households (i.e. households with a head (respondent) 60 or older), who continue to have positive savings, the amount saved is either less than Dfl. 3,000 or between Dfl. 3,000 and Dfl. 10,000. Savings are not concentrated in the sub-sample of rich households. While a higher proportion of households in this group than in the representative sample have indicated that they saved in the past 12 months, in the latter sample as well more than 50 percent of the sample of the elderly households have indicated they saved. Apart from saving in the past, households are asked whether they plan to save in the future. This question allows us to examine whether savings tend to persist among the elderly. The evidence indicates that not only many elderly households reported to have saved in the past 12 months, but they also plan to continue saving in the future.

The questionnaire has quite a few questions about motives to save[13]. The two most important ones among the elderly are the motive to have some savings to cover unforeseen expenses as a consequence of illness or accidents (we will call this the precautionary motive) and a bequest motive. For most motives respondents could indicate on 7-point scale (from "very unimportant" to "very important") whether a particular motive was considered important. For the elderly (household head 60 or older) the mean score for the precautionary motive was equal to 5.09. In the light of the discussion regarding tables 3a and 3b, it is of interest to compare mean scores for this variable for renters and home owners. We find a mean score equal to 5.28 for renters and a mean score equal to 4.95 for home owners. The difference is significant at the 10 % level (t=1.85). This is consistent with the suggestion that a precautionary motive is particulary relevant for households with low wealth. As we have seen, wealth of renters is substantially lower than that of home owners.

Regarding bequests, two important facts emerge from the data. Approximately one third of the representative sample and half of the rich households sub-sample have indicated that they have thought about leaving a bequest. The percentages are higher among the elderly. While thinking about a bequest does not necessarily imply leaving one,

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[13] 13 motives are listed and they range from children's education, to buy a house or durables, to precautionary motives and additionally there is a lot of information about bequests.

this information at least indicates that bequests are present in the minds of Dutch households. The other relevant fact is that when asked about the amount of the bequests, a very large proportion of households, both in the representative and the sub-sample of the rich, have indicated large amounts for the bequests. For the households in the representative sample, who have indicated they have thought about leaving a bequest, the median amount is Dfl. 150,000 while the mean is Dfl. 223,551. In the sub-sample of rich households the values are Dfl. 350,000 and Dfl. 477,098 respectively. For the households whose head is 60 or older, a bigger proportion have indicated the bequest motive and the median and mean are Dfl. 190,000 and 267,807 for the representative sample and Dfl. 500,000 and Dfl. 528,538 for the rich households. The amount of the bequest is relevant per se, but can be better understood when considering the assets that households have indicated they would like to bequeath. Many households have indicated cash, but a big proportion, in particular in the sub-sample of the rich, have indicated the house among the assets to leave as a bequest. Among the elderly, there is a higher proportion of households who have indicated the house as a bequest than in the total sample.

Another useful feature of the bequest data is that, among the recipients of the bequests, the partner is indicated as often as the children. Among the elderly, the children are indicated more frequently among the recipients of the bequest. Also, a non-negligible share of households, in particular in the representative sample, have indicated charities and such institutions as recipients of their bequests.

4.2 Savings, housing and bequest

We present hereafter two sets of regressions, where we investigate whether the reported motives can explain the actual behavior of the elderly. In the first set of regressions, we examine which variables can explain savings. In the second set of regressions, we investigate more closely the bequest motive.

TABLE 4 ABOUT HERE

We perform an ordered probit regression where the dependent variable is represented by the amount of saving, reported in brackets, that the household has done in the

past 12 months. In table 4, we present results for the total sample and for the elderly only[14]. We find that savings decrease as the respondent[15] in the household gets older. The household saves more if the partner is present and save more when the main respondent is a male although this effect is not significant in the elderly subsample. It also saves more if the respondent holds a university degree. These results are consistent with the findings of other empirical studies on saving.[16] Furthermore, consistent with the predictions of the life cycle-permanent income model, savings move in anticipation of expected income changes. The survey reports information on the expected percentage change in income in the next five years. The regression coefficient corresponding to this variable is negative and is significantly different from zero for the total sample, indicating that some savings are done to smooth future expected income decreases. While many elderly have indicated that they expect their income to remain the same in the next 5 years, some elderly report that they expect their income to decrease in the future. This is reasonable, in particular if we consider the loss in annuity income which is associated with the potential death of one member in the family. The regression coefficient corresponding to the variable indicating the change in income in the next five years remains negative for the old households as well, although the significance is weak. We have also considered two other variables which are provided in the data set and can be of importance for savings. One is the planning horizon of the household and consistent with intuition, households with longer horizons save more. We have used this variable for the elderly too. In this case, the planning horizon can also indicate the remaining lifetime. We find that the elderly with longer horizons tend to save more in their old age. The other variable, called Patient in table 4, is a self-reported measure of attitude towards spending and saving which can proxy for the degree of patience and/or thriftiness. Consistent with intuition, thrifty households and thrifty elderly tend to save more. We find that savings are very sensitive to income. We find even in the raw data that a high proportion of rich elderly report to have saved in the past 12 months. The amounts saved are also higher than in the representative

[14] In our estimation procedure the elderly are defined to be those households whose head (respondent) is at least 60 year old.

[15] In most cases (2200 out of the 2300 households) the head of the household is the respondent, while in the remaining cases the respondent is the partner.

[16] See the review of the evidence in Browning and Lusardi (1995).

sample of the elderly households.

An interesting feature of these regressions is that the households who have thought about leaving a bequest save more. This is the case for the total sample and it holds also in the sample of the elderly.

TABLE 5 ABOUT HERE

Given these findings, we investigate in more detail the bequest motive for the elderly only. We use here both the information on whether or not the respondent has thought about leaving a bequest and the planned amount. In table 5, we present the empirical findings. We estimate a probit regression for the bequest variable, while we perform a tobit for the desired amount of the bequest. Two important variables emerge from table 5. First income is a strong determinant of the bequest motive. This result is very robust and was noticeable even in the raw data. The second is homeownership. The elderly who own a house are more likely to report a bequest motive. These findings are consistent with the simple statistics reported before. Many households have indicated the house among the assets to leave as a bequest and their expectations may conform to their actual behavior. Note also that bequests are positively related with age. This provides again some indication why the elderly do not dissave as they age. As for saving, we find that households who have longer planning horizons and are more patient or thrifty are also more likely to have a bequest motive. This result is consistent with extended life cycle models that take bequests into account.

The only outcome which seems to be counterintuitive is that the dummy for children has a negative coefficient in both the probit and the tobit. Since at the time of the analysis the wealth data were not available yet for analysis, we suspect that the children dummy may pick up a negative influence of the presence of children on wealth accumulation; the negative sign would then indicate a positive effect of wealth on a bequest motive, rather than a direct negative effect of the presence of children. We should also note that the effect of children becomes less negative for households with a higher income (cf. the interaction effects).

5. Concluding remarks

The picture emerging from our analysis can be summarized as follows. Wealth holdings among the elderly are very unevenly distributed. After the age of sixty-five the median household does not seem to accumulate or decumulate significant amounts of wealth anymore. Only at rather advanced ages do we see some decumulation. In itself this cannot be taken as strong evidence against the life cycle hypothesis. For most elderly, the wealth holdings are so low, that the remaining wealth can be seen as a buffer for adverse shocks. This is consistent with the finding in the VSB-panel that among various possible motives to save the elderly attach a great deal of significance to a precautionary motive. However, there is a second important motive, namely the bequest motive. The bequest motive is particularly predominant among the well-to-do elderly and appears to provide a significant explanation of savings of large portions of the elderly.

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Table 1 : Wealth Holdings of the Elderly

	# of obs	Liquid net worth		Net worth		Social security		Pension wealth		Total	
Age		mean	median	mean	median	mean	median	mean	median	mean	median
50-54	202	30364 (59199)	15772	100132 (141204)	56867	169689 (29919)	178876	122952 (129190)	88251	392775 (207770)	360958
55-59	163	32503 (55951)	16682	93579 (124402)	40233	191930 (38768)	208753	118650 (153793)	82298	404160 (223482)	359343
60-64	149	35791 (89108)	12658	95119 (150037)	28899	225730 (50939)	242149	119098 (168850)	52260	439948 (270354)	377043
65-69	245	31469 (50410)	14415	84102 (124028)	24729	228099 (51298)	246764	128634 (176765)	59550	440836 (275377)	354259
70-74	206	36950 (97408)	9812	90633 (173668)	15154	189172 (47468)	201126	81518 (154323)	28226	361323 (271842)	283228
75-79	121	41037 (113432)	9526	64462 (137844)	10460	142500 (42917)	124763	61157 (110988)	15380	268120 (219298)	207962
80+	76	50181 (165325)	7973	79620 (221824)	9605	100920 (37276)	85397	37481 (56343)	12801	218022 (254862)	140880

Source: Own calculations based on the SEP.
Standard deviations in parentheses.

Table 2a: Mean and Median (Financial) Wealth of Ederly Cohorts

	# of obs		Financial wealth				Home ownership rates		Net worth				Rank sum test equality median (p-values)	
Age in 1987	year		mean		median				mean		median		Fin. wealth	Net worth
	87	91	87	91	87	91	87	91	87	91	87	91		
50-54	279	256	19655 1986	35258 3740	11000 1578	18675 1868	46.9 2.99	51.9 3.12	72626 6440	111600 9111	30205 5274	64330 10851	0.0010	0.0004
55-59	283	295	24824 2912	39186 5044	11378 1427	17211 1922	40.6 2.92	42.0 2.87	78435 6807	108730 10038	27883 4989	38131 9923	0.0094	0.0794
60-64	285	276	33240 3338	50035 5314	15000 1498	20767 2488	40.3 2.91	36.6 2.90	94834 8360	111173 9641	33851 9155	37628 8614	0.0038	0.2799
65-69	266	256	35325 5335	40153 5618	11887 1283	12276 1407	27.8 2.75	26.5 2.76	79050 9042	94916 10523	16018 2728	18340 2908	0.6957	0.7703
70-74	211	198	25691 3700	32472 4120	9981 1248	9300 1216	29.8 3.15	27.3 3.17	71424 9200	79705 10335	14350 3289	14244 3117	0.9553	0.9453
75-79	160	101	43068 9005	38616 7369	13337 2128	11160 2897	24.2 3.39	23.7 4.23	84787 13879	75445 13293	16900 2347	17577 4157	0.8776	0.9142
80+	110	51	24581 4637	35389 8207	6500 1298	9300 3657	13.6 3.27	19.6 5.56	44535 9365	66582 17919	6500 1447	12374 4411	0.5201	0.3792

Source: Own calculations based on the SEP.
Whenever a cell contains two numbers, the second one is the standard error associated with the mean or median in the same cell.

Table 2b: Mean and Median (Financial) Wealth of the Same Elderly Cohorts (Panel Data)

		Financial wealth				Home Ownership Percentages		Net worth				Change fin. wealth		change net worth		Sign test equality median (p-values)	
Age in 1987	# of obs	mean		median				mean		median							
		1987	1991	1987	1991	1987	1991	1987	1991	1987	1991	mean	median	mean	median	fin. wealth	net worth
50-54	189	20798 2351	29395 2618	11900 1735	18748 2269	50.3 3.64	49.7 3.64	80474 8353	101857 9885	35900 6345	60898 11984	8597 2356	4397 1071	21383 3253	7515 1950	0.0000	0.0000
55-59	203	26248 3921	33322 5267	10600 1414	15810 2061	40.9 3.45	39.4 3.43	77513 8166	95917 11374	23500 4771	29272 6173	7073 2380	2120 773	18403 6044	3400 1467	0.0016	0.0000
60-64	191	35096 4205	40063 4217	16000 1945	17670 2611	36.6 3.49	33.0 3.40	87374 8888	91090 9074	28137 7970	28618 7616	4960 3238	1960 880	3707 4059	1144 999	0.0007	0.0738
65-69	184	31348 5096	40810 7996	11265 1477	11532 1562	26.6 3.26	23.9 3.14	69720 8783	79342 11490	16018 3864	17335 3129	9462 5014	238 525	9622 5700	258 553	0.3560	0.4130
70-74	153	23416 3160	30933 5027	9500 1298	9092 1304	26.8 3.58	23.5 3.43	67368 9511	67832 10034	12500 3245	10230 2294	7517 3936	429 441	464 5263	51 497	0.2090	0.5000
75-79	84	27950 6539	35738 7203	12300 2628	13181 3181	30.9 5.04	23.8 4.65	68329 12531	72601 13548	17750 5344	18348 3956	7786 3602	1440 898	4272 5044	426 1027	0.0188	0.2900
80+	36	31033 8076	30445 7751	11864 3348	5255 4529	22.2 6.93	16.6 6.20	68116 19831	59315 19221	12742 6682	10853 4635	-587 4480	-1349 1707	-3801 6026	-1362 1869	0.0326	0.0670

Source: Own calculations based on the SEP
Whenever a cell contains two numbers, the second one is the standard error associated with the mean or median in the same cell.

Table 3a: Mean and Median (Financial) Wealth of Renters (Panel Analysis)

		Financial wealth				Net worth				Δ fin wealth		Δ net worth		Sign test equality median (p-values)	
Age in 1987	# of obs	mean		median		mean		median		mean	median	mean	median		
		1987	1991	1987	1991	1987	1991	1987	1991					fin. wealth	net worth
50-54	94	11771 2005	19832 2968	6294 2171	9005 3035	12963 2214	23660 3682	6294 2399	10837 3125	8061 2299	2444 1152	10697 2718	2610 1418	0.0298	0.0095
55-59	120	17862 4779	24164 7378	5492 1523	7704 1661	18696 4837	31871 13229	5492 1523	7704 1661	6301 3249	774 695	13175 8990	794 671	0.0824	0.0548
60-64	121	22209 2896	24524 3407	11770 1956	11139 1970	22899 2987	25774 3701	11800 1816	11139 1970	2315 1933	467 667	2874 2172	442 706	0.2753	0.4672
65-69	135	19208 2716	21347 3453	8000 1421	9300 1615	20041 2821	22880 3625	8000 1421	9300 1615	2139 1723	112 556	2838 1951	91 544	0.8634	1.0000
70-74	112	15415 2237	17478 3599	6791 1293	6091 1354	19254 3964	19748 3991	6791 1293	6091 1354	2062 3009	200 440	494 4623	115 450	0.7770	0.9248
75+	86	16389 2755	15868 2448	7750 1719	6968 2027	16389 2755	16571 2491	7750 1719	7433 2204	-520 1524	-240 457	182 1646	-133 519	0.5990	0.7465

Source: Own calculations based on SEP.
Whenever a cell contains two numbers, the second one is the standard error associated with the mean or median in the same cell.

Table 3b: Mean and Median (Financial) Wealth of Owners in 1987 (Panel Analysis)

			Financial wealth				Net worth				Housing equity			
Age in 1987	# obs	1991 home ownership rate	mean		median		mean		median		mean		median	
		1991	1987	1991	1987	1991	1987	1991	1987	1991	1987	1991	1987	1991
50-54	95	95.8	29730 4045	38858 4091	19423 3568	26022 4510	147275 13320	179231 15731	124300 11688	147491 9279	117544 11216	140373 14574	95000 9125	115428 10970
55-64	153	90.8	47065 5726	55877 5673	24840 2557	31621 3502	179144 10972	195583 11293	140500 6589	158112 7786	132079 7610	139705 8334	117500 7141	120904 4905
65-74	90	85.6	55900 10108	82249 16240	25310 3149	20228 5949	203040 16363	218628 21774	162160 16727	152528 16001	147140 11198	136378 11159	130000 10293	125555 8054
75-	34	73.5	60458 15733	80392 16158	28195 9647	48788 19257	194187 26117	200257 28040	150366 23248	143533 26206	133728 16017	119865 18877	117500 16163	109279 18791

Table 3b: Mean and Median (Financial) Wealth of Owners in 1987 (Panel Analysis)

Age in 1987	# obs	Δ financial wealth		Δ Net worth		Δ Housing equity		Sign test equality median (p-values)
		mean	median	mean	median	mean	median	fin wealth	net worth
50-54	95	9127 4112	6384 2192	31956 5700	23954 6094	22808 6094	15477 4600	0.0000	0.0000
55-64	153	8812 4175	8498 1848	16348 6157	20282 5425	7625 5695	11764 3285	0.0000	0.0000
65-74	90	26349 11186	1299 1706	15588 13211	1180 9754	-10761 7628	-141 5519	0.3428	0.9161
75-	34	19933 8973	7825 7666	6070 13489	6880 17857	-13863 14125	-13053 10853	0.0243	1.0000

Source: Own calculations based on SEP.
Whenever a cell contains two numbers, the second one is the standard error associated with the mean or median in the same cell.

Table 4: Household Savings and Bequest

	Total sample		Elderly only	
Variables	Representative & rich hh	Representative sample	Representative & rich hh	Representative sample
Age	-0.009 (0.001)	-0.009 (0.001)	-0.015 (0.009)	-0.011 (0.010)
Male	0.127 (0.059)	0.126 (0.069)	0.082 (0.148)	0.060 (0.161)
Partner is present	0.291 (0.061)	0.351 (0.067)	0.435 (0.136)	0.522 (0.151)
University degree	0.112 (0.059)	0.186 (0.092)	0.243 (0.152)	0.288 (0.192)
Expectations of Y changes	-0.001 (0.0007)	-0.002 (0.0007)	-0.0053 (0.0038)	-0.009 (0.004)
Long horizon	0.213 (0.072)	0.160 (0.095)	0.435 (0.196)	0.327 (0.216)
Patient	0.402 (0.045)	0.375 (0.057)	0.265 (0.105)	0.164 (0.117)
Bequest	0.180 (0.048)	0.225 (0.062)	0.177 (0.110)	0.280 (0.118)
Rich hh sub-sample	0.603 (0.053)		0.568 (0.148)	
# obs	2278	1500	454	375
Log Likel.	-3330.76	-2028.63	-607.61	-467.84

Standard errors in parentheses.
Source: VSB panel.

Table 5: Bequest Motive

	Probit regressions		Tobit regressions	
	Representative & rich hh	Representative sample	Representative & rich hh	Representative sample
Constant	-1.336 (0.870)	-0.867 (0.908)	-1059864 (313188)	-894364.3 (324274.5)
Age	0.022 (0.012)	0.014 (0.013)	11268.2 (4263.2)	8581.6 (4422.6)
Male	-0.344 (0.186)	-0.285 (0.195)	-25962.0 (66349.0)	-38610.2 (69257.9)
Partner is pres	-0.191 (0.170)	-0.265 (0.182)	-74396.2 (60374.3)	-42629.2 (63804.0)
Univers degree	0.253 (0.202)	0.230 (0.245)	46980.3 (64993.5)	-16754.5 (81860.2)
Long horiz	0.442 (0.257)	0.369 (0.270)	313146.9 (82854.1)	262148.5 (87747.7)
Patient	0.248 (0.131)	0.318 (0.142)	73139.6 (47416.3)	110862.9 (51716.9)
Home Owner	0.610 (0.141)	0.635 (0.145)	375526.6 (55304.3)	381783.8 (55198.2)
Y>28,000 &<43,000	-0.274 (0.357)	-0.244 (0.360)	-43208.9 (130210.9)	-28850.4 (125215)
Y>=43,000 &<80,000	-0.070 (0.342)	-0.228 (0.358)	79122.3 (119752.8)	-12688.5 (123766.9)
Y >= 80,000	0.003 (0.411)	0.392 (0.513)	305580.3 (136691.1)	304602.8 (160098.8)
(independent) children yes/no (CHILD)	-0.906 (0.271)	-0.877 (0.274)	-281417.6 (107888.7)	-268869.2 (104383.3)
(Y>28,000 &<43,000)*CHILD	0.789 (0.415)	0.753 (0.417)	258051.9 (156911.4)	235057.6 (150324)
Y>=43,000*CHILD	0.832 (0.381)	0.955 (0.400)	264347.2 (137695.1)	351826.6 (141966.3)
Rich hh sub-sample	0.632 (0.232)		192873.6 (70364.2)	
# obs	454	375	454	375
Log Lik.	-262.57	-225.13	-3306.47	-2350.27

Standard errors in parentheses.
Source: VSB panel.

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