The psychology and economics of reverse mortgage attitudes: evidence from the Netherlands·

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PRELIMINARY DRAFT – PLEASE DO NOT QUOTE

Abstract

This paper presents the results from a survey on the attitudes toward reverse mortgages in the Netherlands. We find that there is substantial potential interest in reverse mortgages, especially for the purpose of being able to live more comfortably and not worry about money until death, or to be able to spend a large sum of money upon retirement on hobbies, home improvements or traveling. A similar study has been done for Italy, where results differ from those related to the Netherland. For Italian households a reverse mortgage is primarily seen as a last resort. We use two different frames for suggestions on the use of the loan – own consumption versus bequest - and find that the latter significantly raises interest in reverse mortgages of people with a bequest wish. We interpret this as evidence that people are unaware of the potential of reverse mortgages to optimize the timing of bequests. Demand is highest among those around retirement age, depends positively on the ratio of housing wealth over income and on the perceived riskiness of future pensions, and negatively on the expected replacement ratio. We find a counterintuitive result for bequest timing, as people

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are more interested if the age difference with the oldest child is larger. Self-assessed financial literacy does not play a role, and women are less interested.

1. Introduction

From the point of view of optimal consumption smoothing, evidence indicates that older households under-decumulate wealth (Romiti and Rossi, 2012). One reason is that they hold a large part of their wealth in illiquid assets, namely their home. From the point of view of portfolio risk management this large fraction of wealth in housing is not that much of a problem, as home ownership implies prepayment of future housing consumption (Merton, 2007). Moreover, from a behavioral economics perspective housing wealth (paying off mortgage loan) is a commitment mechanisme, precisely because it is illiquid hence cannot be consumed (Laibson, 1997). However, the residual value of the house, once future housing consumption has been taken out, could be "too high" especially when remaining life expectancy shrinks. From the perspective of optimal consumption smoothing and bequest timing, liquidating housing wealth may be welfare improving (see Romiti and Rossi 2013). Having too much of illiquid asset may be responsible for household fragility (Brunetti et al. 2012). The mere existence of the possibility of, at least partially, decumulating housing wealth through a reverse mortgage would facilitate consumption smoothing over the life cycle without requiring retirees to move to a smaller owned dwelling, or to a rented home. A reverse mortgage could also be used to cushion shocks in retirement income, and to optimally time bequests (Merton, 2007). Munnell (2012) argues that a reverse mortgage should be an integral part of life cycle planning, and Fornero, Rossi and Urzì (2012) even argue that homeowners should consider using part of their illiquid wealth for investing in their children's future.

There are also various practical reasons why it is relevant to study reverse mortgage demand in the Dutch context. These include changes in the risk and generosity of (mandatory) pension arrangements, demographic changes, and the housing market.

Before the financial crisis, pensions in the Netherlands were regarded as relatively safe and adequate to maintain the pre-retirement standards of living (Van Rooij et al., 2007). However, the recent past has seen major changes in the characteristics and the future of the Dutch employee pension plans. The financial crisis has revealed to the general public that second layer pensions do not guarantee indexation or even a nominal pension. It has also forced some pension funds to effectively cut indexation for both current retirees and for employees' pension claims. Some funds have even lowered nominal pension income (both those of retirees and claims to future pensions) as of April 2013. In order to prevent massive cuts of retirees' income, mandatory premiums paid by employees have increased considerably while the corresponding rights have fallen. The social security eligibility age

goes up, and pension risk is shifted even more to employees. With pensions becoming less generous and with pension risk increasingly shifted toward households, there is an increased need for households to make individual life cycle saving and investing decisions. Pension risk is the risk of not having enough income from the retirement date until death (Bodie, 2012), and the financial system should either prevent that risk of offer people the instruments to manage it.

With life expectancy increased, parents are now leaving bequests to their children at a moment in life at which, from an optimal life cycle planning point of view, their children should start decumulating wealth themselves. The average age of the oldest child at death of one parent is around 50, age at which the educational choices and family choices have mainly done. Wealth as bequest could arrive "too late" to be useful to be invested in oneself future. Reverse mortgages may help households to optimally save and invest both over their lifecycle and across economic states, and to optimally time bequests, without requiring households to become financial experts. In this respect, it is important that the financial industry adapts by creating useful products that help families manage life-cycle risk (Merton and Bodie, 2005; Bodie and Prast, 2011). A reverse mortgage may be one of those instruments.

Moreover, restrictions on forward mortgages in the Netherlands have become more strict. The result is that for younger generations it is extremely difficult to be able tlo buy a home. This is especially worrying as owning a home would be less costly for couples than renting, even renting in the social (=subsidized) sector. At the same time, in order to stimulate home ownership by younger generations, the government has introduced a temporary measure (started October 1 2013, ending December 31 2014) by which gifts up to 100.000 euro are exempt of taxation, provided that they are used for buying a home or paying off mortgage debt. Obviously, only relatives of parents with high liquid financial wealth are able to benefit from this tax relief.

This paper presents the results from a survey on the attitudes of homeowners aged 45 and over in the Netherlands toward reverse mortgages. The survey is designed using two different frames for suggestions on the utilization of the loan - a consumption smoothing and a bequest one, Results are analyzed using individual objective and subjective background characteristics as explanatory variables. In doing so, it assesses whether those who rationally should be more interested indeed are more interested. For example, interest should rationally be higher among those with low income relative to housing wealth and those with a low expected replacement rate.

Our main findings are the following. Only a small minority is familiar with the concept of a reverse mortgage. After having had an explanation of the loan, over a quarter is potentially interested in taking, once retired, a reverse mortgage loan. Forty percent is neutral, which may imply that the potential interest is even higher. The interest in taking a reverse mortgage loan increases with age until reaching a maximum around 67, and falls afterwards. We interpret this as reflecting the fact that people around retirement age have no other instruments to increase their income (work more, save more, retire later), and have not been prepared to shocks to and changes of the system, including an increase in the age for social security eligibility. Moreover, those recently retired are still at an age at which they may find using a lump sum especially attractive – they have time on their hands, and are still in shape. We find that interest in a reverse mortgage loan depends positively on a cohort based housing wealth over income ratio, which makes sense. The same applies for having more than one mortgage – many elderly have taken a second mortgage on their home as a way to liquidize housing wealth, and they might prefer a reverse mortgage loan instead. We also find that people who expect future pension cuts are more, and those who expect to have sufficient savings less interested. Self-employed are relatively more interested, which makes sense as we now that, not being part of a mandatory employee savings plan, they accumulate less pension wealth (Van Rooij *et al.*, 2007).

Self-assessed financial literacy does not play a role, and women are slightly less interested. We find a significant positive effect of the age difference between the parent and the oldest child. Although this is counterintuitive from the point of view of optimal bequest timing, not rational, we do not find it surprising. Most people – including economists and finance professionals – are unaware that a reverse mortgage may improve children's utility because it facilitates the timing and certainty of bequests (Merton, 2007).

There is substantial potential interest in a reverse mortgage as an instrument to be able to spend a lump sum upon retirement, or to live more comfortably and not worry about money until death. This constitutes a major difference with the results from a similar study among Italian homeowners (Fornero *et al.*, 2011). In Italy a reverse mortgage is seen as a last resort, hence homeowners have a much less favorable attitude toward this financial product. Italy also offers very few financial products to liquidize housing wealth, and the market for this type of loans is under-developed. This evidence suggests that aversion and little knowledge of the loan market itself could be responsible for the lack of interest in a specific loan such as the everse Mortgage. We also provide several explanations for the country differences in the remainder of the paper.

The paper is structured as follows. The next section provides background information on reverse mortgages. Section 3 describes our data and methodology. In section 4, we present our main findings while Section 5 provides the results of regression analysis of the data. In Section 6 we discuss our findings and draw policy implications. Section 7 summarizes and concludes.

2. Reverse mortgage essentials

A reverse mortgage (RM) is a financial instrument specifically designed for elderly homeowners allowing them to borrow against home equity. Like a forward mortgage it is a loan with the home as collateral, but other than a forward mortgage no payments are required as long as the borrower lives in the home. The loan amount should not exceed the expected housing value at death, discounted with the interest rate:

$$A_i = H(1+p)^{e_i} \times \frac{1}{(1+r)^{e_i}} \qquad (1)$$

where A is the lump sum at subscription, p is the predicted annual appreciation rate, e is the expected remaining lifetime, r the interest rate and H the current house value.

Essentially, a reverse mortgage loan "strips out" the value of the house that is not needed for housing consumption, as the owner is not going to live indefinitely.[1] (Merton, 2006). This can be represented schematically as follows (Merton, 2011):

House = Life Annuity Housing Services + Residual House Value (2)

Without a reverse mortgage, the homeowner merely benefits from the life annuity housing services, and the heirs receive the residual housing value at the time of death of the owner. With a reverse mortgage, the homeowner gets autonomy over what to do with the residual housing value. S/he may choose to improve his living standard and/or that of his heirs at any moment between now and his death. The value to the heirs is in that case the lump sum(s) they get while their parents are still alive, plus the value of the option to, at the time of death of the parents, sell the house and pay off the debt to the lender (which they will do as long as the house value exceeds the accumulated debt), or to leave the house to the lender (which

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[1] One reason why people may be averse to the concept of a reverse mortgage is that they find it difficult to imagine that they are not going to live indefinitely. See Kopczuk and Slemrod (2005).

they will do if the accumulated debt exceeds the value of the house). In other words, the risk of the house having a value below the sum of principal plus interest is for the lender, not the heirs. However, the zero net housing wealth (gross housing value at death minus loan to be repaid) is positive if the subscriber dies before the expected age. Figure 1 provides a schematic illustration of housing wealth of an individual over the life cycle.

Figure 1 Housing equity over the life cycle, with forward and reverse mortgage
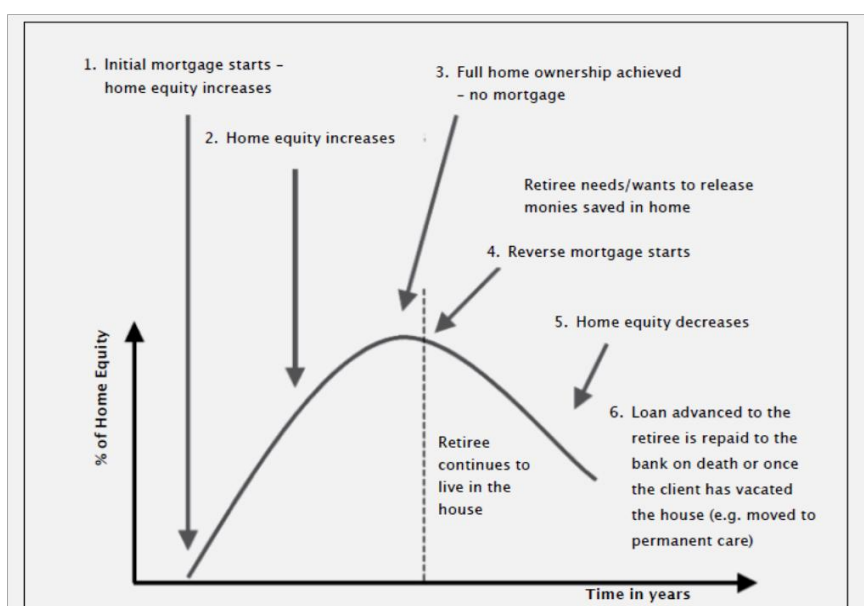
Source: Hendriks (2013)

Reverse mortgages can be paid out as a lump sum, through fixed monthly payments (term, tenure plan or life annuity), as a line of credit, or as a combination of term/tenure plan and line of credit (Rodda *et al.*, 2000). This implies that the loan may serve various purposes: enabling the homeowners to "splurge" once, to have a structurally higher living standard, to maintain a living standard in case pension income falls below expectations or the household

is faced with negative shocks, and to hand out money to the heirs before they die.

In the Netherlands, there is currently one type of reverse mortgage loan with a no negative equity guarantee: the ; Florius Verzilver Hypotheek introduced in 2008 by ABN Amro (www.florius.nl/consument/hypotheken/floriusverzilverhypotheek; Hendriks, 2013). The loan can be taken up as a lump sum or a fixed monthly or yearly amount. Five years after the contract has been signed, the lender has the right to have the value of the property estimated at the cost of the owner, and to lower the periodical amount based on the current market value. Expectations were high when the product was launched, but hardly sold, which may be due to bad timing ex post (financial crisis), the high and stable retirement income of those retired before 2008 as well as their liquid financial wealth. Note that the mere existence of the product may be welfare improving as it allows seniors to spend their liquid wealth even if they are risk averse. The relative ease with which forward mortgage loans were available up to then and the fact that paying off forward mortgage loans is heavily discouraged by the current fiscal regime (for mortgages that were taken out before 2013) may also have played a role, and according to ABN Amro the calvinistic attitude of older generations also played a role (Hendrikse, 2013). Other reverse mortgage type contracts do not provide a no-negative-equity guarantee, and owners can be expelled if the value of the loan relative to that of the home exceeds 70%.[2]

A reverse mortgage may be welfare improving and increase efficiency for a number of reasons. If reverse mortgages are regularly available at sufficiently attractive conditions, and hence are part of the set of financial planning instruments, households need to save less during working life, while still being able to maintain their living standard at retirement.[3] Taking account of the availability, in the future, of a reverse mortgage, would thus help homeowners, or those that plan to buy a home, to improve the efficiency of their financial planning over the life cycle.

For older households who during working life never planned to take a reverse mortgage loan, it may be a way to maintain their pre-retirement levels of consumption in case their pension income is lower than they expected, for example because of unexpected adverse events in their private life, general financial economic shocks, changes in social security or the health care system, longevity, or simply because they have failed to adequately plan for retirement.

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[2] For example, the RABO product requires the borrower to immediately pay off the loan as soon as the principal plus accumulated interest exceeds 75% of the liquidation value of the house.
[3] The forward mortgage loan on the house should be fully or largely paid off, though.

In all these cases, a reverse mortgage would help retired households to maintain their standard of living even if their replacement rate is inadequate.

Even if households have a replacement rate that is sufficient to maintain their living standard, they may benefit from the possibility of liquidizing (part of) their housing wealth in order to be able to spend a large sum of money on something they find to be welfare improving to themselves: home improvements, an expensive hobby (collecting art) or going on a trip around the world before they will be too old to do so.

Another reason why liquidating housing wealth may improve welfare has to do with the bequest motive. With remaining life expectancy at age 65 increasing and currently being over 21 years for women in the Netherlands[4], and with an average age difference of less than 30 years between the mother and the oldest child (see next section), it is obvious that parents leave their children a bequest at a time in life when they should themselves almost start decumulating wealth. Moreover, as Merton (2007) points out, "one does not need to be an expert to know that it is probably far from optimal bequest policy, from the point of view of the heirs' utility, to receive the value of the house as a legacy at some time in the future – perhaps next year, perhaps in 30 years". In fact, it is worse than owning a lottery ticket, because with a lottery the drawing day is known in advance.

A reverse mortgage loan is not the only way in which elderly homeowners can liquidate their housing wealth without having to sell the house and buy a less expensive one, or move to a rented home. Alternative financial instruments include selling the house while keeping the right to live in it until death (Hendriks, 2013).

Reverse mortgages have several advantages over the alternative solutions, both for the homeowner and the buyer of the mortgage. The homeowner cannot be evicted if the accumulated debt exceeds the value of his house. For the lender, the moral hazard risk with respect to maintenance is smaller than that of a forward sale, as the heirs have a stake because they have an option on the residual house value. Moreover, in case the reverse mortgage is taken as an annuity, mortality risk is different from that in case of annuitization of financial wealth. This applies both to the homeowner and the lender. If the homeowner dies sooner than expected, his heirs have the right to the residual housing value – whereas in case of annuitization of financial wealth, they receive nothing. There is a price to this advantage for the heirs: interest rates for this type of product is typically higher.

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[4] Source: CBS Statline (2011)

If the homeowner dies later than expected, the lender is compensated for the annuities paid out, as they are added to the amount he will receive after the homeowner dies (as long as there is sufficient residual housing value).

In the US, the reverse mortgage market has developed over the past decades. In Europe the market is non-existent or very thin, with the exception of the UK. This could be due to suboptimal supply and/or demand. Wicke (2008) estimates that potential demand in Germany is about 1 million households. Based on an expert survey, Lang (2008) concludes that the great obstacle to the acceptance of reverse mortgage products in Germany is a lack of understanding among the public as to their function and the wish to pass property along to heirs without encumbrances or debts. For Italy, Fornero *et al* (2011) find that the lack of interest for the product may be due to the fact that reverse mortgages are not perceived as a financial planning instrument, but rather as a last resort choice in case of emergency.

Indeed, after retirement, there is little people can do to increase their income. Resorting to extra labor supply is not an option at old age, and fewer strategies other than using wealth can be adopted. The level of wealth people have accumulated by retirement, through pension funds and privately, is the most important source to draw on. Annuitization of financial wealth can deliver a stream of cash flows until the person dies, but how much this generates depends on the interest rate and life expectancy at the time of annuitization. Again, retirees have no way to influence these.

Home equity release products, such as reverse mortgages or the sale of the bare ownership (home reversal programs in the UK, *viager* in France) can convert housing equity into cash, by releasing households' needs of liquidity. Drawing down housing assets, albeit only partially, might be the key to increase their liquidity in a stage of the life cycle where human capital is (close to) zero. In Europe, the median home value of homeowners aged 50 or more is around 180,000 euro. In the Netherlands, it is around 250.000 euro (Christelis *et al.*, 2013). When housing constitutes a substantial value, it could represent an easy channel through which to provide an additional income flow for retirees. A reverse mortgage would therefore enable retirees to cushion pension income shocks, something which is becoming increasingly important as pension risks are shifted to plan members even in mandatory arrangements such as the second layer in the Netherlands. However, surprisingly little attention has been devoted to these products and little effort has been put into the institutional settings ruling them.

Over the past decades, views on the potential demand for reverse mortgage loans have changed. Some examples to illustrate this are the following. Venti and Wise (1987) maintain

that most income poor elderly also have a relatively small amount of housing wealth, therefore a reverse mortgage would mean only a small percentage increase in income, even at low income levels. For this reason, they believe that the potential market is limited to very old, single persons. Evidently, they did see a reverse mortgage as last resort for the poor, and they ignored the potential benefit from a reverse mortgage for those with a bequest motive. Moreover, the paper does not reflect the current wealth of the US population.

Case and Schnare (1994) claim that all 'house-rich, cash-poor' elderly households should be more interested in such products, and, since many households fall in this category, the market for reverse mortgages should be very large. Mayer and Simons (1993) also claim that the potential market for reverse mortgages is quite large, as many elderly could use it to pay off pre-existing debts. Clearly these authors see a reverse mortgage more as a safety valve than as a financial and estate planning solution, in line with popular wisdom but not finance theory. Poterba *et al.* (2011), state that the decision to annuitize wealth is more relevant for households in the upper percentiles of the wealth distribution. They confirm that most households treat housing wealth as precautionary savings and hence decumulate only in case of exogenous shocks, such as the death of a spouse. As mentioned before, Merton (2006, 2007) stresses the welfare and efficiency potential of reverse mortgages for both homeowners and their children. Munnell et al. (2012) consider a reverse mortgage as a tool "as powerful as asset allocation in attaining retirement security." The fact that households who use reverse mortgages tend to be low-income, low-wealth and in poor-health (see Nakajima and Telyukova, 2011, for the USA) suggests that it is regarded as a last resort and that homeowners are unaware of the financial planning and welfare improvement potential of the instrument.

Many psychological factors, other than the perception of risk and uncertainty, are likely to affect the potential demand for reverse mortgages, both in terms of volumes and in terms of type (i.e. tenure, lump sum, line of credit or mixed). For instance, when eliciting respondents' interest in annuities, Beshears *et al.* (2013) find that adding the sentence 'Choosing a bigger lump sum gives you more control over your investments and more flexibility over the timing of your spending', significantly reduced the probability to annuitize one's wealth. They also find that people prefer partial annuitization to an all-or-nothing offer, which means that a more flexible product design could be more appreciated. Another interesting finding concerns the fears of counterparty risk when choosing to annuitize, i.e. respondents were scared that the institution supplying the annuity would not make the payments.

Limitations on the supply side can be explained by risk factors faced by the credit institutions, primarily related to the dynamics of interest rates and house prices, as well as by the potential adverse selection in case of extremely long lived mortgagors, and moral hazard in case of meager house maintenance by homeowners intending to default on their contract obligations. Research into annuity pricing shows that cohort risks are considerable and may provide an explanation of the low money's worth of annuities. In order to compensate for all such risks, lenders charge hefty insurance fees, which together with high commissions and compound interests make reverse mortgages rather costly. Davidoff and Welke (2005) investigate adverse selection by comparing the mobility rates between reverse mortgage borrowers and non-borrowers. Interestingly, they unearth advantageous selection, as the homeowners who take out the loan are also more likely to sell their home and therefore repay it earlier. Mitchell & Piggot (2003) highlight the potential for reverse mortgages not only to boost consumption among the elderly, but also to reduce public pension liability, and mitigate the demand for long term care facilities. In this case, the government would play a substantial role in improving the efficiency of capital markets and providing safeguards for both borrowers and lenders, in order to support the development of a market for reverse mortgages. Ong (2008) highlights the unfavourable tax regimes as one of the reasons behind the scarce development of reverse mortgage market in the UK. Another important issue is whether or not countries introducing home equity release products also provide a strict regulation in case of negative equity (the no-negative equity guarantee), and how this regulation is explained to the potential borrowers. For example, Reed (2009) documents concern among Australian borrowers regarding the possibility of being evicted in case of negative equity.

3. Data, methodology, summary statistics

Our data have been collected through an internet survey in December 2012 among the participants of the CentERpanel run by CentERdata at Tilburg University. CentERdata is a survey research institute that is specialized in data collection and internet surveys. The CentERpanel consists of about 2000 households representative of the Dutch-speaking population in the Netherlands. The questionnaires are answered at home using an internet connection. Data collected with internet surveys display higher validity and less social desirability response bias than those collected via telephone interviewing (Chiang and

Krosnick, 2003).[5] Panel members fill out short questionnaires via the internet on a weekly basis. Annually, they provide information on individual income, household wealth, health, employment, pensions, savings attitudes, and savings behavior for the DNB Household Survey (DHS), providing researchers with a rich set of background information on the respondents. The panel has been used in many studies of financial behavior and attitudes (see for instance Van Rooij *et al.*, 2007) and financial literacy and retirement planning in the Netherlands (see Alessie *et al.*, 2011), and the effects of pension information on behavior (Prast *et al*., 2012). For a complete description of the CentERpanel and the DHS, see Teppa and Vis (2012).

The main focus of the questionnaire devised for this paper was to assess whether homeowners aged 45 and over would be interested in a reverse mortgage loan at retirement. For the specific purpose of our paper we designed a new module, run in December 2012 (week 49), specifically designed to investigate the potential for reverse mortgages. The questionnaire was administered to a subset of respondents to the Center dataset. Selected households are homeowners aged 45 and over, totaling 1401 households, of which 1145 fully completed the questionnaire (response percentage 81.7%).

Table 1 shows some descriptive statistics of our sample.

Table 1. Descriptive statistics	
N of respondents	1,145
Women	479 (41,8%)
Men	666 (58,2%)
N of respondents with (grand)children	949 (82,9%)
Age	min=45, max=90, mean/median=62
Education	
Low	369 (32,2%)
Medium	300 (26,2%)
High	476 (41,6%)
Income (net household income, euro/month)	mean = 3,020, median = 2,834

Source: authors based on Centerdata

Fro Table 1 several things stand out. First, the huge difference between male and feale respondents, whereas the Centerpanel gender composition is fifty/fifty. Second, the fact that the majprity pf respondents (82,9%) has grand children. This clearly underscores the

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[5] CentERdata forms part of the CentER Group at Tilburg University. See also http://www.uvt.nl/centerdata/en. Households who do not have access to a pc are provided with a set-top-box for their television. In case of attrition of panel members, CentERdata selects new members to keep the panel representative for the Dutch population. High income members are somewhat overrepresented. We have verified that this does not affect the descriptive statistics qualitatively.

demographics in the Netherlands of homeowners 45 and over, with the babyboomer generation dominating.

To get a better idea of the sample's financial status by age, Figures 2 and 3 and Table 2 give information on income and net and gross housing wealth of the different age groups in the sample.

Figure 2. Average net household income (euro per month) by age
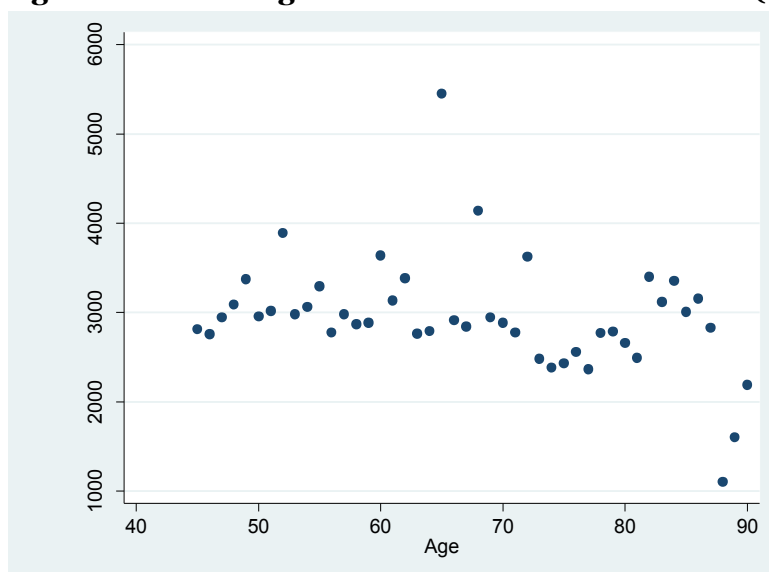
Source: authors, based on DHS data

Figure 3. Average net housing wealth by age

Source: authors, based on DHS data
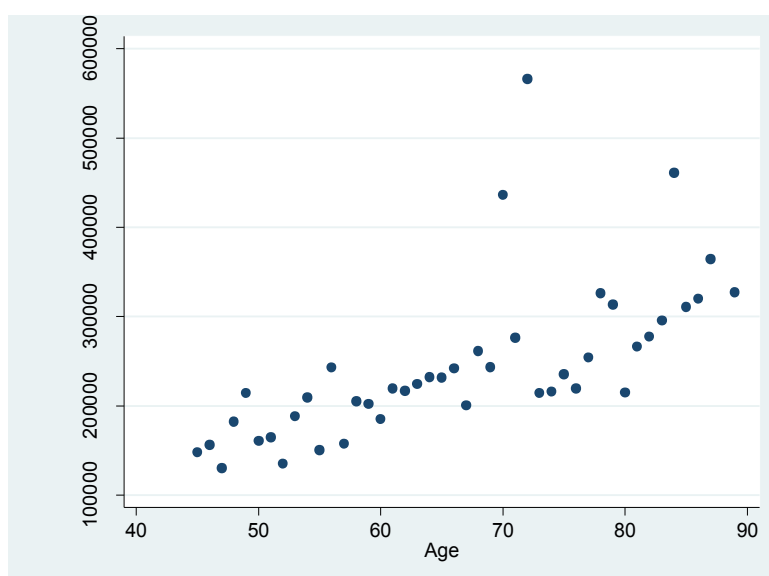
Table 2. Housing characteristics of sample, by age group

age group	Freq.	Housing Wealth		Book value (*WOZ*)		Mortgagefree
		mean	*median*	*mean*	*median*	*percentage*
45-54yrs	212	173,000	171,000	251,000	234,000	0.30
55-64yrs	291	206,000	192,000	282,000	250,000	0.34
65-74yrs	258	283,000	215,000	303,000	280,000	0.44
75-90yrs	114	279,000	250,000	333,000	295,000	0.50
Total	*875*	*230,000*	*200,000*	*287,000*	*255,000*	*0.38*

*Source: authors, based on DHS data*
NB: As these housing variables are originating from other DHS questionnaires and not everyone was able or willing to answer these questions, the total number of observations here is below 1145.

Table 2 clearly shows that both mean and median net housing wealth are higher for older cohorts. This is partly the result of paying off housing debt and of the rise in housing prices over the past 30 years. Second, Table 2 shows that among those 65 and over (hence, retirees) a large fraction of homeowners still has a (forward) mortgage. Likely explanations are a) the generous tax treatments of mortgage interest payments, b) the generous loan conditions (no repayment of principal needed) of mortgage loans offered until recently, and c) retirees avoiding payoff their mortgage loan in order to not accumulate more illiquid financial wealth.

As a reverse mortgage may serve as a bequest planning instrument, we have used the DHS data to calculate the age difference between each parent and the oldest child in the household. Out of the 1145 respondents in our sample 947 report to have children. On average, the age difference is 29 years, the minimum is 17 and the maximum 46. More detailed information is given in Figure 4, which differentiates between mothers and fathers. In general, the age difference between the mother and the child is more relevant, because women tend to live longer than men (in the Netherlands, the difference is 3,6 years for those born in 2011 [6]). The smaller the parent/child age difference, the older the heir will be when he receives a bequest.

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[6] Source: CBS Statline (2012)

Figure 4. Age difference between parent and oldest child, father and mother separately
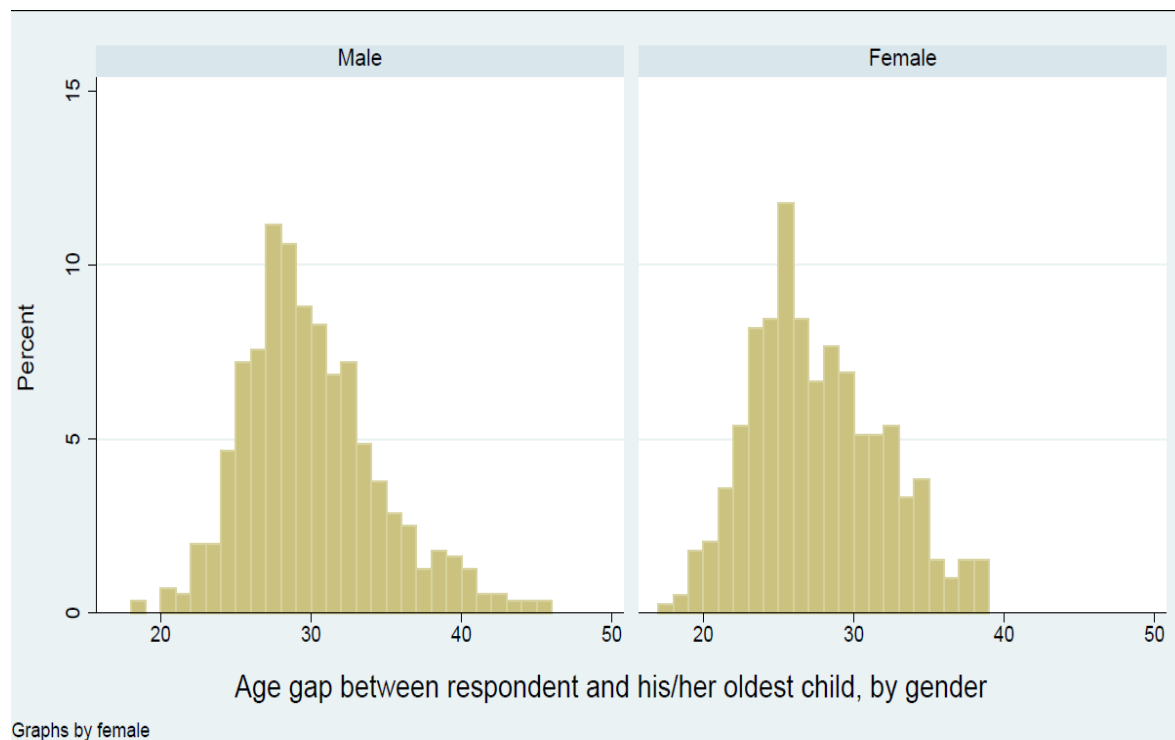
4. A first look at the results

In this section we present the aggregate results of our questionnaire.

We started the questionnaire with the following explanation of the concept of a reverse mortgage:

"Reverse mortgages are popular in a number of countries. A reverse mortgage is a loan that you may obtain from your bank if your current mortgage debt amounts to less than half of the value of your house. The target group consists of retirees. A reverse mortgage does not result in higher monthly living expenses, because the mortgage interest is added to the debt. Only when the house is sold because the owner moves to another dwelling or passes away, the bank recovers the loan plus interest. The loan can be taken out as a lump sum, or as a supplement to the monthly retirement income, or as a freely disposable credit line that one may use at will",

Because reverse mortgages are quite unknown in the Netherlands, it was necessary not only to explain to respondents the concept, but also to give examples of its potential use. We used two different sets of examples of how to use the reverse mortgage loan: half of the respondents were given bequest suggestions, while the others were given suggestions regarding their own financial wellbeing. We used these two different frames in order to be able to measure a bias in the attitude originating from the suggested use of the loan (exact description in the next paragraph).

We first asked whether the respondent had heard of such a type of product (9.1 percent said they had); our second question was the crucial one, asking respondents whether they would be interested in a reverse mortgage:

Most respondents, roughly 36%, claim to be indifferent, while a good 21% finds it quite appealing, and roughly 6% finds it very appealing. The remaining 37% of respondents finds it not (15 %) or not at all (roughly 22 %) appealing (see Figure 5).

Figure 5. Appeal of reverse mortgage to homeowners age 45 and over

■ Definitely appeals to me

■ Actually does appeal to me

■ Neutral

■ Doesn't really appeal to me

▩ Does not appeal to me at all

Source: authors' calculation based on survey data

If we rate the answers on a scale from 1 to 5, with 1 = not appealing at all and 5 = very appealing, a reverse mortgage loan is on average rated as 2.74 (see bottom row in Table 3), and those aged 55-64 are most interested. The latter may be explained by the fact that these homeowners will have much less generous and less secure pensions than they expected until recently, while they have not that many years left to change behavior in order to compensate for it. Moreover, they will have to work longer than they had anticipated (up to 67 for those aged 55-60, and even longer for those younger than 55) in order to qualify for the first layer pension and the full amount of the second layer. Some of them may want to have the

possibility to retire at the previously expected age of 65 and use a reverse mortgage facility to make up for a lower pension income.

Table 3 also shows the income and wealth characteristics of different age groups. As one expects, income tends to decline after retirement, reflecting i) a less than 100% replacement ratio, and ii) the fact that the eldest retirees have benefited less from the increase in economic growth and wages starting around 1970, and hence accumulated less pension capital than the younger cohorts. But Table 3 also shows that elderly retirees dispose of a large amount of financial wealth (current and saving accounts, stocks and bonds). At first sight, this seems to run counter to the life cycle theory of savings, which would predict much more decumulation to take place, particularly for those assets easy to liquidate (see Borella and Rossi, 2013 and Romiti and Rossi, 2013). The relatively high financial wealth of older groups can be partly explained by a natural form of selection that could be described as the 'survival of the richest': richer people live longer[7], and are probably also able to live longer independently on their own, because of a relatively better health condition and the possibility to hire personnel for services in and around the house. However, why don't the elderly decumulate their wealth? One of the reasons could be that financial wealth represents a small part of total wealth, compared to housing, which is, in turn, illiquid. As for financial wealth, even for households with balanced portfolios (and thus not too imbalanced in favor of housing), one reason for not depleting it may be due to a precautionary nature: they may know that statistically they are holding too much financial wealth given life expectancy, but at the same time they may not want to run the risk of being short of cash because they live longer than expected. However, this risk of living too long could be neutralized by buying an annuity. The thinness of the annuity markets contradicts again the life cycle prediction (Yaari, 1975; Davidoff et al. 2005). Given the importance of housing in total assets of the elderly, the mere existence of a reverse mortgage possibility would make this precautionary savings motive less important and perhaps lead to more decumulation of financial assets, and the housing value may be used in case of higher than expected longevity.

Another theoretical explanation for this finding would be that the extra financial wealth is partly due to retirees having moved to a less expensive home, with the purpose of increasing liquidity of their wealth. The data however do not support this, as both the average time people have been living in their current house and the mean and median book value of the house (WOZ) steadily increase with age. Note that, by definition, our sample does not include

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[7] Higher social classes tend to live longer and are thus overrepresented in the oldest cohorts. In the Netherlands the difference in life expectancy for men amounts to 7 years for the highest versus the lowest educational level (source: CBS Statline (2012)).

those retirees that have liquidated their housing wealth by selling their home and moving to a rented house.

When interpreting Table 3 it is also important to keep in mind that the average number of household members drops with age, first because the children move out, and next because at higher ages more people become widowed. Indeed, the percentage of single households rises from 10 percent among those between 45 and 55, to over 46 percent among those over 85 years of age. This helps explain a dropping average net household income.

Table 3. Interest in reverse mortgage by age group

age group	Freq.	Interest in RM	# HH members	Net HH income (month)		Total Financial Wealth	
		mean	mean	mean	median	mean	median
45-54yrs	307	2.83	3.3	3,104	3,000	23,314	6,315
55-64yrs	379	2.86	2.3	3,126	2,936	43,190	11,700
65-74yrs	321	2.58	1.9	2,931	2,700	50,944	15,856
75-90yrs	138	2.57	1.7	2,753	2,750	67,330	26,893
Total	*1145*	*2.74*	*2.4*	*3,020*	*2,834*	*43,101*	*12,472*

Source: authors, based on DHS data

Consumption smoothing vs bequest timing

As was pointed out in the previous section, a reverse mortgage may be welfare improving if homeowners derive utility for their children's wellbeing because it would enable them to optimally time bequests. With current demographics, parents leave a bequest when their children have reached an age at which they should start decumulating wealth – hence much too late. A reverse mortgage market would help parents with insufficient liquid savings but considerable housing wealth to help children to buy a home through the facilitation of a down payment -even though they reduce the savings rate by children (Mayer and Engelhardt, 1994).

In our sample the difference with the oldest child is 29.6 for the father and 27.1 for the mother (Figure 4). With an average life expectancy for women of around 86 for women in their sixties[8], it is clear that the first child of the women in our sample would receive an inheritance when approaching the age of 59. The optimal timing of a bequest is not a priori clear, though. When someone can count on a bequest, be it late in life, then s/he can choose to accumulate less during working age, thus already optimally timing the bequest. But large uncertainty about amount and moment of the bequest would still prevent a successful implementation of such a strategy. Yet, if a bequest would be particularly valuable for the

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[8] Source: CBS Statline (2012)

recipient at age 30, when the parents are in their sixties, then a reverse mortgage will probably not be the most efficient instrument for the capital transfer between generations.

In the introductory text to the questionnaire, examples were given of the possible use of the reverse mortgage loan. Randomly, half of the respondents were given a consumption smoothing frame:

Framing A:

Retirees can use a reverse mortgage for instance to supplement their pension so that they can live more comfortably and can afford (more) assistance in housekeeping, or for one-off luxury expenditures such as a trip around the world, a new car or trailer.

Whereas the other half was provided with 'utility-of-heirs" suggestions:

Framing B:

Retirees can use a reverse mortgage for instance as a means of gifting money to their children or grandchildren, so that they can go to college or university, can buy their own home, or can start up a business venture. It enables them to financially support their children or grandchildren just when they most need this support.

We find no framing effect on the attitude towards taking a mortgage in the whole population. On average, interest under both frames is almost identical. But a break-down of the data in over 65 and under 65 years of age shows a significant difference. Respondents under 65 are relatively more interested under the "selfish" frame, which suggests possibilities for the homeowner to use the loan for own consumption. On the other hand, respondents over 65 are relatively more interested under the "bequest" frame (see Figure 6). A simple, single-sided t-test would classify the effect under 65 at a significance of 0.065 and the effect over 65 at a significance of 0.044. The driving effect seems to be that older respondents have a stronger bequest wish.

It should be noted that the wish to use the loan for own consumption is not by definition selfish. Elderly people with children may want to be able to use their housing wealth to provide for their own care, so they can avoid to becoming a burden for their children precisely when the children are in the rush hour of life, combining work and care for

children. If they have more liquid assets at their disposal, they can buy help instead of claiming time from their children (Tang, 2013). In the Netherlands, relying on the care of relatives is becoming more important as the government-provided care is being reduced and elderly are increasingly expected to arrange care for themselves.

Figure 6. Interest in reverse mortgage by frame, retirees and non-retirees

Average interest in RM (1-5)
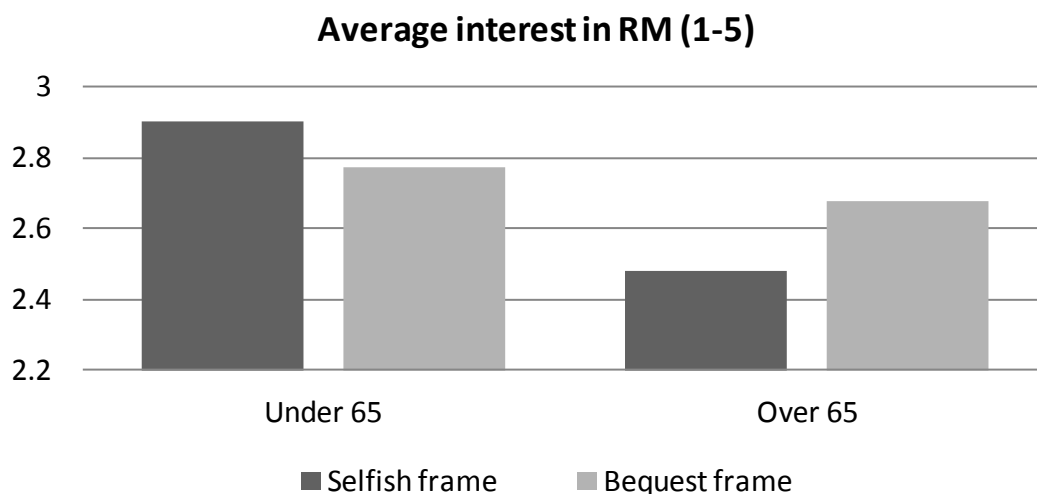
Source: authors based on survey data

For the whole population we find a significant framing effect (consumption vs heir utility) on what respondents say they would use the reverse mortgage loan for: in the consumption frame condition, respondents award a higher score to the cash on hand purpose of a reverse mortgage, while in the heir frame condition respondents gave a higher score to the bequest motive. These findings suggest that a) both types of use are appealing, and b) there is a lack of awareness among homeowners as to the possibilities for the use of reverse mortgage loans. It also suggests room for improvement in the understanding of the product and its use, especially among people who do not need the money to supplement their retirement income. We further analyze the framing effects in the next section.

Why interested?

In order to get some more feel for the background characteristics of those with a positive attitude toward a reverse mortgage loan, we have asked respondents to indicate to what degree some statements apply to them (see table 4). Those who have a (moderately) positive attitude toward a mortgage loan state as their most important reasons the desire to live

comfortably, to make a significant expenditure, or the possibility to have a last resort in case they could not make ends meet with their pension income (second layer) and old age pension benefit (first layer).

Table 4. For what purposes would you mainly use the money made available to you through a reverse mortgage?

You can distribute 100 points across the following options*	
You can also choose to assign 100 points to just one option, and zero points to all the others	
To live more comfortably and not worry about the money	29.6
To already gift part of my inheritance to my surviving relatives	15.1
To already donate part of my inheritance to charity	2.3
To make a significant expenditure	26.1
To buy a holiday home	2.7
As a last resort	21.9
Other	2.3

*respondents with a positive attitude toward a reverse mortgage loan, 27% of sample (n=309)
Source: authors' calculation based on survey data

We also asked respondents with a favorable attitude towards reverse mortgages which loan arrangement they would prefer. Over 40 percent chose the line of credit, as shown in figure 7.

Figure 7. What loan arrangement would you prefer?*
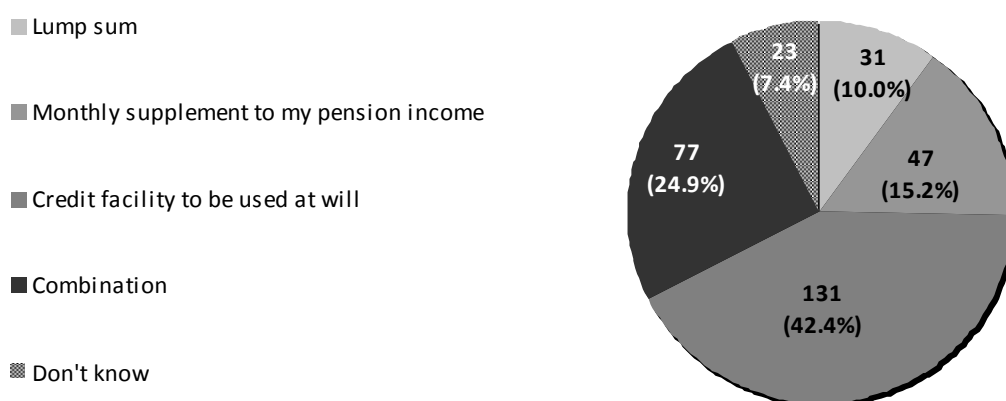
■ Lump sum

■ Monthly supplement to my pension income

■ Credit facility to be used at will

■ Combination

▒ Don't know

23 (7.4%) 31 (10.0%) 47 (15.2%) 77 (24.9%) 131 (42.4%)

respondents with a positive attitude toward a reverse mortgage loan, 27% of sample (n=309)
Source: authors' calculation based on survey data

Why not interested?

Respondents who claimed to find a reverse mortgage loan not or not at all appealing (37% of sample) were asked to rate the importance of a few reasons for it. The suggested reasons (see Appendix) had to do with feelings ("too dependent on the bank", "it doesn't feel good", "I would worry about being evicted from my home", "I want to have as little debt as possible"), income expectations ("I will have ample income by that time"), and the use of the home ("my children or grandchildren will take up residence in my house").

Strictly speaking, with the type of reverse mortgage we envisage, there is no risk of being evicted. Neither is there any dependence of the bank, because if the bank should e.g. refuse to pay out the contracted amount, or go bankrupt, the homeowner does not lose anything – other than the possibility of borrowing against the housing value. Moreover, the "I want to have as little debt as possible" does rationally not make sense, because as long as the housing value exceeds the accumulated debt, the borrower is a net creditor. However, it was our guess that these might be some of the worries of the not-interested homeowners, which indeed turned out to be the case. It might be that we have influenced our respondents by offering these suggested reasons, and perhaps we should have randomized in order to discover a potential biasing effect. However, this holds NOT for the lack of interest in a reverse mortgage, but merely for the reasons WHY they are not interested.

Be that as it may, the main stated reasons for not being interested are that respondents i) do not want to have debts, and ii) do not want to depend too much on banks. As for the former, this suggests that respondents do not regard the value in their home as an asset, and/or want to avoid the situation in which they live very long and the rise in housing prices is below the interest rate. The fear of debt could be interpreted in a behavioral economics sense. Once homeowners allow themselves to liquidize (and spend) some of their housing wealth, they may fear that they are unable to control spending, with the risk of running out of assets and leaving no bequest at all. Holding some of their wealth in an illiquid form may serve as a disciplining (self-control) device. This would be similar to the behavioral explanation of the dividend puzzle in finance, (Statman, 1999; Prast, 2000).

Having presented in this section the main aggregate findings and mean results, in the next section we take a closer look at the background variables explaining attitudes towards a reverse mortgage loan as well as the way such loans would be used

5. A closer look at the results

In this section we present the result of the regression analysis of respondents' attitudes toward the concept of a reverse mortgage. We start by describing how we construct the variables based on the questionnaire results.

Dependent variables

As the main dependent variable we use the interest in a reverse mortgage loan. The respondents' attitude was measured qualitatively, asking whether they are interested. We translate this into an ordinal scale represented by a discrete variable ranging from 1 for the respondents who find them least appealing to 5 for those who find them most appealing.

Explanatory variables

In analyzing the attitude of homeowners to reverse mortgage loans, we want to assess a) whether the explanatories that should rationally – given the benefits of reverse mortgage loans outlined in Section 2 - do indeed have a significant effect, with the expected sign, b) whether there are other differences according to background characteristics and if so, how to explain them.

As section 2 pointed out, a reverse mortgage loan may be welfare improving because i) it helps smooth consumption without having to move, absent shocks, ii) it helps cushion shocks, iii) may serve as last resort, and iv) may increase the utility of heirs through improved bequest timing and through alleviating the burden to heirs (time, effort) of caring for parents.

From an optimal financial planning perspective we would therefore, if we assume rationality, expect reverse mortgage interest to depend positively on net housing wealth, net housing wealth over (expected) pension income and over liquid financial wealth. When it comes to cushioning pension income shocks we would expect interest to depend positively on perceived pension income risk, and when it comes to lending of last resort we would expect it to depend positively on any perceived risks as well as adequacy of savings. As to heirs' utility, the smaller the difference between the age of the parents and that of their children, the larger the potential welfare improvement of better bequest timing, while the "alleviation" motive is more likely to play a role in case the age difference is larger – children in their thirties and forties have little time at hand to care for their parents because of the time and effort they need to devote to their own careers and care for their children. As the housing wealth/income ratio at retirement is the relevant ratio, building quintiles over the whole sample could be misleading. A household member aged 45 may within its age category have the highest

housing wealth/income ratio, but still end up in the lowest quintile of the whole sample because older households have more housing wealth and lower income. Therefore, we have first calculated individual HW/Income ratio's. Next, we have constructed quintiles within five year cohorts. Finally, we have added the lowest quintiles from all cohorts, etc., until we have 5 quintiles for the whole sample, which is the ratio we use. This ratio turns out to be significantly positive as explanatory in a regression analysis (see below).

Last resort

To the degree that reverse mortgages are seen as a last resort, we would expect that the attitude depends negatively on expected adequacy of retirement saving and financial wealth relative to income. From the point of view of integrated financial planning, we would expect that the interest in a reverse mortgage depends positively on expected pension cuts, net housing wealth, and net housing wealth over financial wealth and over income (both at retirement), and on life expectancy.

Bequest wishes and framing effects

The 0/1 variables are dummy variables. The reverse mortgage interest and the health status questions use a 5-point scale (with 5 standing for 'very interested', 'poor health' and 'health much worse than one year ago', respectively). The chance of leaving an inheritance of over half a million euro was asked in percentages (0-100%). The respondents were also asked to rate nine statements on a 10-point scale, with 1 meaning "does certainly not apply to me" and 10 meaning "certainly does apply to me". As some of the variables are originating from other DHS questionnaires there is a small loss of observations for those questions.

Section 2 identified various reasons why reverse mortgages may be welfare improving: as instrument in life cycle planning, as cushion against adverse shocks in e.g. retirement income or social security and health care arrangements, as "medicine" against under-saving and as a way to optimally plan and time bequests. Obviously, for the older respondents in our sample who did not anticipate the possible introduction of some sort of a reverse mortgage later in life, such a mortgage as part of a new life cycle saving and investing strategy is not possible. This applies for both those who are retired and for those who are close to retirement. For these households the other motives may all be relevant. Rationally, one would expect the interest in a reverse mortgage to depend on the expected replacement rate (-) and the ratio of housing wealth relative to income (+). As for financial wealth, the likely effect is not a priori clear. On the one hand, one might argue that more financial wealth reduces the need for liquidating housing wealth. On the other, a larger amount of financial wealth may reflect risk

aversion and precautionary motives, which may be alleviated by the mere existence of a reverse mortgage possibility. It should be kept in mind that lower incomes need a higher replacement rate than do higher incomes (Munnell et al., 2012), but among homeowners low incomes are underrepresented. In the Netherlands it is traditionally assumed that a gross replacement rate of 0.7 (first, second and third layer combined) - which would on average mean a net replacement rate between 0.8 and 0.9 - is sufficient to maintain the preretirement living standard, given mortgages being paid off and increased time available for home production. As to the household members' health, several factors should rationally play a role. On the one hand, good health allows retirees to invest in hobbies or their home or go on a trip around the world (+). It also implies longevity risk, for which a reverse mortgage may provide some insurance in case it is taken as an annuity. On the other hand, good health enables retirees to substitute household production for labor income (-), (Aguiar and Hurst, 2008) and may imply lower household expenditures on care and cure (-). However, household production is possible only during the "golden years" (65-75, Skinner, 2007) and perhaps it applies more to women than to men

For the purpose of the regression analysis we assume that the discrete values of the independent variable are based on an underlying continuous and latent variable y* and that this latent variable is a linear function of all the explanatory variables:

$y_i^* = \boldsymbol{\beta}'x + \varepsilon \quad for\ I = 1, 2, ..., N$

where β is a vector of parameters to be estimated, x is a vector of covariates, N is the number of respondents, and ε is the error term, which we assume to be normally distributed.

Let $\mu_1 < \mu_2 < \mu_3 < \mu_4$ be the unknown thresholds parameters or cut-off points. Then we observe $y_i = 1$ if $y_i^* \leq \mu_1$, $y_i = 2$ if $y_i^* \leq \mu_2$, etc.[9]

The vector of covariates x includes the following: a second order polynomial in age, the log of net household income, and several dummy variables to control for heterogeneity: gender, offspring, medium or high education, and a dummy for the self-employed. The potential income-wealth mismatch is represented by the HW/I quintiles described in the previous section (Q-ratio). As a proxy for expected financial wealth, we use the statement "I expect to have enough savings when I retire" rated on a scale from 1 to 10; for negative retirement

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[9] The threshold parameters are estimated together with the β values to help match the probabilities associated with each discrete outcome. The probabilities of y_i being classified as equal to 1,...5 are given by $Prob(y_i = 1) = Prob(\beta'x + \varepsilon \leq \mu_1)$, $Prob(y_i = 2) = Prob(\mu_1 < \beta'x + \varepsilon \leq \mu_2)$ etc. to be estimated as an ordered probit model by the maximum likelihood method (Greene 2003). We also calculate the marginal effects (at the mean value) to interpret the results more clearly

expectations we use the statement "I expect to need to deal with disappointing pension income". A framing effect is taken into account through an interaction between the wish to leave a bequest and the framing of the reverse mortgage question in terms of bequest. We also have an indicator for the probability to leave a large inheritance of 500.000 euro or more. Finally, we control for the presence of other mortgages. Many homeowners aged 60 and over in the Netherlands have taken a second mortgage on their home, which may be seen as a way to liquidize their housing wealth in a situation where acceptable supply of reverse mortgage loans is not available (CBS, 2013). We would therefore expect a positive relationship. As for the presence of a second home, it might go either way. On the one hand, selling the second home is a way to liquidize housing wealth and hence should have a negative impact on interest in reverse mortgage loans. On the other hand, if people would like to keep their second home, a reverse mortgage might enable them to do so. Table 4 shows the regression results.

Table 5. Interest in RM; Ordered probit regression results (2)

	Marginal Effects on Probabilities					
	coeff_all b/se	No b/se	Not_really b/se	Neutral b/se	Somewhat b/se	Very b/se
Interest In RM						
Age	0.109**	-0.030**	-0.011**	0.007**	0.024**	0.010**
	(0.05)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Age squared	-0.001**	0.000**	0.000**	-0.000*	-0.000**	-0.000**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Female	-0.249***	0.070***	0.025***	-0.018**	-0.055***	-0.022***
	(0.08)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
Age diff with oldest child	0.035***	-0.010***	-0.004***	0.002**	0.008***	0.003***
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Agediff*bequest wish	-0.003**	0.001**	0.000**	-0.000*	-0.001**	-0.000**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Offspring	-0.976***	0.195***	0.111***	0.045	-0.200***	-0.150**
	(0.31)	(0.04)	(0.03)	(0.04)	(0.05)	(0.07)
log(net income)	0.225*	-0.061*	-0.023*	0.014*	0.050*	0.021*
	(0.12)	(0.03)	(0.01)	(0.01)	(0.03)	(0.01)
Total wealth (in 100,000)	0.002	0.004	0.002	-0.001	-0.004	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Medium education	0.067	-0.018	-0.007	0.004	0.015	0.006
	(0.12)	(0.03)	(0.01)	(0.01)	(0.02)	(0.01)
Higher education	0.064	-0.017	-0.007	0.004	0.014	0.006
	(0.12)	(0.03)	(0.01)	(0.01)	(0.02)	(0.01)
Q-ratio	0.059*	-0.016*	-0.006*	0.004	0.013*	0.005*
	(0.03)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Sufficient savings	-0.053*	0.015*	0.006*	-0.003*	-0.012*	-0.005*
	(0.03)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Expects pension cuts	0.049**	-0.013***	-0.005***	0.003**	0.011***	0.005***
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Bigspend	0.069***	-0.019***	-0.007***	0.004***	0.015***	0.006***
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Grow old in current home	0.024	-0.007	-0.003	0.001	0.005	0.002
	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Move smaller	0.062***	-0.017***	-0.006***	0.004**	0.014***	0.006***
	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Move rented	0.015	-0.004	-0.002	0.001	0.003	0.001
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Trusts in banks	-0.009	0.003	0.001	-0.001	-0.002	-0.001
	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Sufficient income	-0.021	0.006	0.002	-0.001	-0.005	-0.002
	(0.03)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
self-employed	0.378*	-0.087**	-0.044*	0.000	0.085**	0.046
	(0.20)	(0.04)	(0.02)	(0.01)	(0.04)	(0.03)
self-assessed health	-0.012	0.003	0.001	-0.001	-0.003	-0.001
	(0.06)	(0.02)	(0.01)	(0.00)	(0.01)	(0.01)
self-assessed health change	-0.136**	0.037**	0.014**	-0.008*	-0.030**	-0.012**
	(0.06)	(0.02)	(0.01)	(0.00)	(0.01)	(0.01)
Lower Class	-0.350***	0.104***	0.031***	-0.035**	-0.074***	-0.026***
	(0.13)	(0.04)	(0.01)	(0.02)	(0.03)	(0.01)
Inheritance>500 K	-0.006***	0.002***	0.001***	-0.000**	-0.001***	-0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Bequest frame	-0.358*	0.097*	0.037*	-0.022*	-0.079*	-0.033*
	(0.19)	(0.05)	(0.02)	(0.01)	(0.04)	(0.02)
Bequest wish	0.050	-0.014	-0.005	0.003	0.011	0.005
	(0.04)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Bequest frame * beq wish	0.069**	-0.019**	-0.007**	0.004**	0.015**	0.006**
	(0.03)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
# of Mortgages	0.201***	-0.055***	-0.021***	0.012***	0.045***	0.018***
	(0.05)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)
Second home	-0.390**	0.121*	0.031***	-0.045	-0.080**	-0.026***
	(0.20)	(0.06)	(0.01)	(0.03)	(0.03)	(0.01)
N	796	796	796	796	796	796
P	0.000	0.000	0.000	0.000	0.000	0.000

Significance *** p<0.01, ** p<0.05, * p<0.1. Standard errors reported in parentheses are robust to heteroskedasticity;

Objective background variables

Table 5 shows that the interest in reverse mortgage loans depends significantly on the following *objective* background variables: age and age squared – such that interest peaks at age 69 – gender (female -), offspring (-), the age difference with the oldest child (+), net household income (+), Q-ratio (+), self-employed (+), the number of mortgages (+), the possession of a second home (-), and social class (lower classes are less interested). Women are less interested into the RM product, the probability of being somewhat interested or very interested in RM being lower than that of men by 5 and 2 percentage points, respectively.

Most explanatory variables have the predicted sign. This is not the case with gender, with women being significantly less interested, even though they may benefit most – there is a huge gender gap in the Netherlands when it comes to pensions (OECD, June 2013). Possible explanations are that women tend to be less confident when it comes to financial decision-making, and that women may be more biased into thinking that the bequest should not be consumed or handed out before death. It may also be in line with a wish for self-control and a fear that once you start dipping into capital, you may consume all.

The variable with the highest impact is having offspring, with a negative sign, suggesting that a reverse mortgage is seen by households with offspring as detrimental to bequest accumulation. Having offspring reduces the probability of being somewhat interested or very interested by 35 percentage points. This variable is by far what matters most in the reverse mortgage attitude. Bequest motives plays a big role, but why households think it is better to leave bequest at an uncertain moment rather than controlling the timing of bequest by subscribing to a reverse mortgage is, from a point of view of optimal financial planning, a puzzle (Merton, 2007). Counterintuitive is also the positive significance of the age difference with the oldest child, as from the point of view of bequest timing one would expect a minus sign– the smaller the age difference, the older the child when the bequest comes his way. This may imply that bequest timing is not the main reason for being interested. Finally, the self-employed dummy is positively significant. As self-employed tend to save less for old age (they reveal significantly less optimism about their income and savings levels at retirement then the other respondents in our sample) and be homeowners more often, reverse mortgages could certainly be a helpful tool for them. The relatively low interest in reverse mortgages by people from lower socioeconomic classes might be the result of less interest in seemingly complex financial instruments in general. Trust in banks does not seem to be the reason, as lower classes show to have a stronger trust in banks than higher classes in our sample.

As in the US, in the Netherlands the combination of rising home prices, falling interest rates and ample refinancing opportunities made it possible – up to 2008 - and attractive for

households to take a second (forward) mortgage on their home (Khandani *et al.*, 2009). Our regression shows that having a second mortgage increases the probability of being interested in a reverse mortgage. possible explanation is that households have taken a second mortgage as a way of liquidating housing wealth. For that purpose, a reverse mortgage would be superior as it does not involve payments. An alternative explanation is that those with a second mortgage are more keen or and/or have more knowledge of using a mortgage loan as planning instrument.

Subjective background characteristics

The table also reveals significant *subjective* background variables. These include the expectation to have sufficient savings (-), the expectation that there will be future pension cuts (+), self-assessed worsening of health (-), the expectation to leave a large bequest (-), the plan to move to a smaller home (+), and the plan for a big expenditure upon retirement (+). It is worth noting that the role of information about pension income magnitude does play a role. Indeed, expecting pension cuts increases the probability of being interested in the product significantly. The bequest frame has a significant negative effect, but in combination with a bequest wish there is a significantly positive interaction effect, such that the total effect of the bequest frame is positive for those who have a relatively strong bequest wish.

6. Discussion and policy implications

More than a quarter of Dutch homeowners aged 45 and over are interested or moderately interested in the possibility of a reverse mortgage loan, while 35% is neutral. Given that 91 percent had never heard of the concept before, the interest is considerable. On the other hand, intentions do not always translate into action. The interest is bigger among those that are not retired yet. This is relevant, because the possibility of a reverse mortgage upon retirement might make them change behavior in the sense of paying off their forward mortgage more quickly. The reverse mortgage would be primarily used for own spending, that is consumption smoothing of homeowners, not for optimal bequest timing.

A similar study for Italy finds that reverse mortgages are not perceived as a financial planning instrument, but as last resort in case of emergency (Fornero et al. 2011); furthermore, the majority of Italian households reply that they are not interested in the product even though they do not really know its features. The Dutch case is more promising,

since over a third is neutral towards the concept of a reverse mortgage, which leaves less than 40 percent who find the product not appealing.

Challenges to retirement planning are similar in these two countries, with pensions becoming less generous and more risky, and with the retirement age increasing. However, housing wealth and homeownership differ, as well as the culture regarding housing. In the Netherlands, (forward) mortgages are high because of the generous fiscal treatment, while in Italy homeowners tend to have little or no housing debt. In the Netherlands, only a small fraction of homes remains in the family, while in Italy more families live in homes (and on land) that they inherited from their parents. In the Netherlands, children tend to move to their own home (rented or bought) at a much younger age than children do in Italy, where many continue to live with their parents for a long time.

What conditions should be met for reverse mortgages to become a standard instrument in life cycle planning?

Practical implications of our findings are that with pension risk shifted to employees and with pensions becoming less generous, supply of competitively priced reverse mortgage loans would improve welfare through more possibilities to optimally smooth consumption. The mere existence of this instrument would reduce the need to hold precautionary savings and hence improve consumption smoothing. Currently, there are no tax barriers to using the product for handing out bequests "with the warm hand" – rather, the opposite is true. Rules and regulations concerning reverse mortgages should be in place to prevent misselling and people entering into a contract which may force them to be evicted by the lender.

The analysis presented in this paper suggests that a latent demand could be "kissed awake" by overcoming emotional barriers and by eliminating the general lack of understanding of the fact that liquidating housing wealth may not interfere with heirs utility. As far as supply is concerned, it should be stressed that the longevity risk to the supplier is much smaller than with a life annuity arrangement, as the collateral – the real estate value – may increase in value (at a rate that may be even higher than the interest rate). Whereas longevity is in all cases good for the buyer and bad for the supplier, with a reverse mortgage loan this does not need to be the case. The other way around, whereas people buying a life annuity have "misguessed" if they die earlier than expected (with adverse consequence for the heirs), with a reverse mortgage the equity value of the home is for the heirs. This is paid for, implicitly, through a higher interest rate.

For a reverse mortgage market to develop, the loans should be fairly priced. Caplin (2000) argues that reverse mortgages are very expensive because the typical reverse mortgage borrower is very old, very poor and likely to suffer from health problems, and thus may be unable to take good care of the property. However, as we have argued in this paper, reverse mortgages should be regarded as a general financial planning tool. Mitchell & Piggot (2003) suggest that the government plays a substantial role in improving the efficiency of capital markets and providing safeguards for both borrowers and lenders, in order to support the development of a market for reverse mortgages. Ong (2008) highlights the unfavorable tax treatment as one of the reasons behind the scarce development of reverse mortgage market in the UK. When discussing the potential for reverse mortgages to increase pension income in Chile, Alonso et al. (2013) suggest a proactive role of the government to provide the regulatory infrastructure. This may require strict conditions to be met, as it is unlikely that providing financial counseling will do the trick when it comes to protecting borrowers. There is scope for explaining the concept and potential use to homeowners – notably the protection against longevity risk. Reed (2009) investigates whether the features of the product are correctly understood by a sample of elderly Australian homeowners. He draws on two different surveys: the first conducted by SEQUAL (Senior Australians Equity Release Association of Lenders) in 2008, interviewing 1,000 homeowners, and the second conducted by ASIC (Australian Securities & Investments Commission) in 2007 interviewing 29 homeowners who had already taken out the loan. The SEQUAL survey showed that, even though more than 70% of the respondents were aware of reverse mortgages, only 40% understood their basic features, specifically that no repayments were due and the house would not be sold. As for the ASIC survey, it revealed that many lenders had not explained the working of compound interest rates, or shown a projection of how much the loan would effectively cost over time. On the other hand, these characteristics are similar to the ones applying to any annuitization contract, and those are common everywhere.

7. Summary and conclusions

This paper has argued that reverse mortgages serve various purposes. They could become an integral part of life cycle planning, cushion adverse pension shocks in an environment in which pension risks are increasingly shifted to individuals, help people who discover too late that they have saved too little for retirement, or who are confronted with policy changes that affect retirement, provide retirees with the possibility of "splurging" at a moment in life when they are still healthy, enable people to continue living in the home that they feel attached too

and/or cover health care costs, and finally it could lead to welfare improvement through flexibility in the timing of bequests in an aging society.

Given these potential benefits, it may seem surprising that the market has hardly developed in the Netherlands. On second thought, this may be explained by a number of factors. Until recently pensions were assumed to be safe, and current pensioners have gone into retirement with very generous arrangements – some cohorts were even allowed to retire at the age of 57 without having to sacrifice income and pension benefits. Moreover, for the currently retired homeowners, the fiscal treatment of mortgage interest has always been and still is generous in the Netherlands, and in the past homeowners could easily get a second, interest-only mortgage on their home, benefiting from the increase in housing prices over a period of two decades. This may explain why less than ten percent of homeowners has heard about the concept of reverse mortgages.

Be that as it may, over a quarter of homeowners aged 45 and over has potential interest in a reverse mortgage loan once retired, and a minority of 40 percent is not or not at all interested. The interest is higher among people who fear pension cuts, underscoring the potential of reverse mortgage loans to cushion shocks in retirement income. Optimizing consumption seems to be the main goal, implying that people do not understand the benefits for bequest timing, and/or do not have a strong bequest motive.

This is not without policy implications. Almost all employees in the Netherlands are in a mandatory collective retirement scheme, without a say on the premium and the degree of risk taken with their pension wealth, whereas they have become the ultimate risk bearers. At the same time, they are quite risk averse when it comes to pensions. With a mandatory retirement age in the Netherlands, people cannot postpone retirement. They therefore have few instruments to cope with a pension income that does not enable them to maintain their living standard after retirement. The mere possibility to liquidate housing wealth would therefore improve welfare of retirees by enabling them to cushion pension shocks. Given demographics, it would also increase the possibilities for optimal bequest timing. Our study indicates that there is a latent demand for reverse mortgage loan, and that there is a lack of knowledge about the possibilities.

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Appendix

Summary Statistics (1)

Variable	Obs	Mean	Std. Dev.	Min	Max
interest in RM	1145	2.738	1.183	1	5
age	1145	62.007	9.998	45	90
female	1145	0.418	0.494	0	1
offspring	1145	0.829	0.377	0	1
age difference w/oldest child	947	28.542	4.665	17	46
net HH income (euro/month)	1110	3,020	1,344	567	13729
total financial wealth (1,000 euro)	994	43.10	91.65	-54	1454
inheritance >500,000 euro	1002	7.435	19.044	0	100
lower social class	1141	0.160	0.367	0	1
lower education	1145	0.322	0.468	0	1
medium education	1145	0.262	0.440	0	1
high education	1145	0.416	0.493	0	1
self-employed	1145	0.059	0.235	0	1
self-assessed health status	910	2.173	0.722	1	5
self-assessed health status (change)	910	3.041	0.600	1	5
# mortgages	961	0.852	0.870	0	5
second residence	979	0.048	0.214	0	1
bequest wish	1145	5.968	2.684	1	10
sufficient savings	1145	6.005	2.266	1	10
expects pension cuts	1145	6.466	2.238	1	10
big spending wishes	1145	4.539	2.750	1	10
grow old in current home	1145	7.544	2.580	1	10
move to a smaller home	1145	3.661	2.639	1	10
move to a rented home	1145	3.314	2.526	1	10
trusts banks	1145	4.485	2.094	1	10
sufficient income	1145	6.369	2.094	1	10

Source: authors, based on DHS data. Total sample interviewed. Age difference with the oldest child is given for those with children only. Age difference with oldest child is given for those with children only.

Summary statistics (2)

	Mean	**Std.**	**Min**	**Max**
Interest in reverse mortgage (5-pts)	2.740	1.189	1	5
Age	62.712	9.867	45	89
Age squared	4,030	1,260	2,025	7,921
Female (d)	0.372	0.484	0	1
Age diff with oldest child	23.447	11.794	0	46
Offspring (d)	0.820	0.384	0	1
Log(net household income)	7.925	0.399	6	9
Total wealth (in € 1000)	46.783	96.158	-40	1,454
Medium education (d)	0.269	0.444	0	1
Higher education (d)	0.412	0.493	0	1
Q-ratio	3.014	1.385	1	5
Sufficient savings (10-pts)	6.144	2.260	1	10
Expects pension cuts (10-pts)	6.446	2.242	1	10
Big spending wishes (10-pts)	4.427	2.704	1	10
Grow old in current home (10-pts)	7.606	2.556	1	10
Move to a smaller home (10-pts)	3.649	2.674	1	10
Move to a rented home (10-pts)	3.348	2.517	1	10
Trusts banks (10-pts)	4.563	2.110	1	10
Sufficient income (10-pts)	6.471	2.085	1	10
self-employed (d)	0.048	0.213	0	1
self-assessed health (5-pts)	2.176	0.718	1	5
self-assessed health worsened (5-pts)	3.038	0.615	1	5
Lower Class (d)	0.163	0.370	0	1
Chance of inheritance>€500,000	0.074	0.189	0	1
Bequest frame (d)	0.500	0.500	0	1
Bequest wish (10-pts)	5.961	2.701	1	10
Bequest frame * beq wish	2.996	3.576	0	10
Number of Mortgages	0.864	0.857	0	5
Second residence	0.054	0.226	0	1

Source: authors, based on DHS data. Total sample used for regression. Observations: 796

Reverse Mortgage

Questionnaire administered to the CentERpanel

date   December 2012
author(s)   Corrie Vis
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Table of contents

1 Project description

Title: Reverse Mortgage
Datafile: C_ Reverse Mortgage_3p
Investigator: Henriëtte Prast
Project description: This questionnaire is about reverse mortgages.
Sample: members of the CentERpanel that own a house and are 45 years or older.
Overview of the response:

Selected number of household members:	1401	(100.0%)
Nonresponse:	256	(18.3%)
Response:	1145	(81.7%)

Date of data collection: week 49 2012

Titel: Reverse Mortgage
Databestand: C_ Reverse Mortgage_3p
Onderzoeker: Henriëtte Prast
Projectbeschrijving: Deze vragenlijst gaat over omkeerhypotheken.
Steekproef: leden van het CentERpanel van 45 jaar en ouder met een eigen huis.
Responsoverzicht:

Selectie aantal huishoudleden:	1401	(100.0%)
Non-respons:	256	(18.3%)
Respons:	1145	(81.7%)

Datum van dataverzameling: week 49 2012

2 Introduction

In week 49 of 2012, the CentERpanel was presented a questionnaire about reverse mortgages.

The participating households are identified by the variable nohhold, which can be used to create a link with other measurements. Individuals within the participating households are identified by the variable nomem. The codebook provides insight into the data as supplied in the included files.

The questionnaire was presented to 1401 panel members aged 45 and older that own a house, of which 1145 fully completed the questionnaire (response percentage 81.7%).

3   Codebook

This codebook contains the questionnaire as it was fielded in the CentERpanel.

- The variable names are printed in **bold** and correspond to the names in the dataset.
- The questionnaire routing is printed in *italics* for each variable concerned.
- *open*: answer box; no limit to the length of the answer
- *string*: answer box that accommodates a maximum amount of characters (255 is standard)
- With numerical variables, wherever the range within which the respondent could choose an answer was not visible to the respondent, this is printed in italics in the codebook. Wherever no limits applied to the range within which to choose an answer, this is indicated in the codebook as '*integer*'.
- The so-called 'fills' (variable text) are indicated between straight brackets [].
- Variables between curly brackets are not part of the database, but the associated questions or texts were part of the questionnaire.

nohhold
Number of household encrypted.

nomem
Number within the houshold.

weeknr
Week in which questionnaire was completed.

age
preloaded variable

partner
preloaded variable

arandom
1 intro1
2 intro2

brandom
1 increments of 10% at v6
2 increments of 15% at v6

crandom
1 50% surplus value in v6
2 100% surplus value in v6

{intro}
This questionnaire is about reverse mortgages, but first we wish to ask you a few questions about children.

v10
How many children do you have? If you don't have any children, then enter 0.
integer

if v10>0
v10a
How old is your [*if v10>1:* eldest/ *if v10*=1:] child now?
integer

if v10>1
v10b
How old is your youngest child now?
integer

v11
How many grandchildren do you have? If you don't have any grandchildren, then enter 0.
integer

if v11>0
v11a
How old is your [*if v11>1:* eldest/*if v11=1:*] grandchild now?
integer

if v11>1
v11b
How old is your youngesst grandchild now?
integer

if arandom=1
{intro1}
Reverse mortgages are popular in a number of countries. A reverse mortgage is a loan that you may obtain from your bank if your current mortgage debt amounts to less than half of the value of your house. The target group consists of retirees. A reverse mortgage does not result in higher monthly living expenses, because the mortgage interest is added to the debt. Only when the house is sold because the owner moves to another dwelling or passes away, the bank recovers the loan plus interest. The loan can be taken out as a lump sum, or as a supplement to the monthly retirement income, or as a freely disposable credit line that one may use at will.

Retirees can use a reverse mortgage for instance to supplement their pension so that they can live more comfortably and can afford (more) assistance in housekeeping, or for one-off luxury expenditures such as a trip around the world, a new car or trailer.

if arandom=2

{intro2}

Reverse mortgages are popular in a number of countries. A reverse mortgage is a loan that you may obtain from your bank if your current mortgage debt amounts to less than half of the value of your house. The target group consists of retirees. A reverse mortgage does not result in higher monthly living expenses, because the mortgage interest is added to the debt. Only when the house is sold because the owner moves to another dwelling or passes away, the bank recovers the loan plus interest. The loan can be taken out as a lump sum, or as a supplement to the monthly retirement income, or as a freely disposable credit line that one may use at will.

Retirees can use a reverse mortgage for instance as a means of gifting money to their children or grandchildren, so that they can go to college or university, can buy their own home, or can start up a business venture. It enables them to financially support their children or grandchildren just when they most need this support.

v1

Have you ever heard of reverse mortgages? It is not (yet) a familiar product in the Netherlands.

1 yes
2 no

v2

To what extent does the idea of a reverse mortgage appeal to you?

1 does not appeal to me at all
2 doesn't really appeal to me
3 neutral
4 actually does appeal to me
5 definitely appeals to me

if v2=1 or v2=2 and v10>0 and v11>0

v2a

You have indicated that the idea of a reverse mortgage [*if v2=1:* doesn't at all/*if v2=2:* doesn't really] appeal to you. What are your considerations in this regard? You can choose a score from 1 through 10.

1 = certainly not
10 = certainly yes

v2at1 I would feel too dependent on the bank
v2at2 It doesn't feel good
v2at3 I will have ample income by that time
v2at4 My children or grandchildren will take up residence in my house
v2at5 I would worry about being evicted from my home
v2at6 I want to have as little debt as possible

1 certainly not
2 2
3 3
4 4
5 5
6 6
7 7

8 8
9 9
10 certainly yes

if v2=1 or v2=2 and v10=0 and v11=0
v2b
You have indicated that the idea of a reverse mortgage [*if v2=1:* doesn't at all/*if v2=2:* doesn't really] appeal to you. What are your considerations here? You can choose a score from 1 through 10.

1 = certainly not
10 = certainly yes
v2bt1 I would feel too dependent on the bank
v2bt2 It doesn't feel good
v2bt3 I will have ample income by that time
v2bt4 My children or grandchildren will take up residence in my house
v2bt5 I would worry about being evicted from my home
v2bt6 I want to have as little debt as possible
1 certainly not
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 certainly yes

if age<65
v3
To what extent do the following statements apply to you? You can choose a score from 1 through 10.

1 = certainly not
10 = certainly yes
v3t1 I would like to leave an inheritance
v3t2 I trust banks and insurers
v3t3 I expect to have sufficient income when I retire
v3t4 I expect to have enough savings when I retire
v3t5 I expect to have to cope with disappointing pension income
v3t6 I would like to retire early
v3t7 I would like to start my own business venture after retirement
v3t8 I would like to make a significant expenditure after retirement, such as making a trip around the world or buying a new car or trailer
1 certainly not
2 2
3 3
4 4
5 5

6 6
7 7
8 8
9 9
10 certainly yes

if age>=65
v3a
To what extent do the following statements apply to you? You can choose a score from 1 through 10.

1 = certainly not
10 = certainly yes
v3at1 I would like to leave an inheritance
v3at2 I trust banks and insurers
v3at3 I have enough pension income
v3at4 I have enough savings
v3at5 I expect to need to deal with disappointing pension income
v3at6 I would like to still start an own business venture
v3at7 I would like to make a significant expenditure, such as making a trip around the world or buying a new car or trailer
1 certainly not
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 certainly yes

v4

For what purposes would you mainly use the money made available to you through the reverse mortgage?

You can distribute 100 points across the following options.

Note: If you do not wish to assign any points to a certain purpose, then you need to enter a 0 (zero), otherwise you cannot proceed.

You can also choose to assign 100 points to just one option, and zero points to all the others.
v4t1 To live more comfortably and not worry about the money
v4t2 To already gift part of my inheritance to my surviving relatives
v4t3 To already donate part of my inheritance to charity
v4t4 To make a significant expenditure (on hobby, fixing up/furnishing the home, on travelling while I am still fit enough)
v4t5 To buy a holiday home
v4t6 As a last resort when I really cannot make ends meet with my pension income and old age pension benefit (AOW)
v4t7 Other, specifically…
v4t8 *string*
v4t9 total *0..100*

v5

Suppose you were to consider taking out a reverse mortgage. What arrangement would you prefer, then?

1 a lump sum

2 a monthly supplement to my pension income and pension benefit (AOW)

3 a credit facility to be used at will

4 a combination

5 I don't know

if brandom=1 and crandom=1

v6

Suppose you were to consider taking out a reverse mortgage. What mortgage sum do you have in mind, then?

Assume, for this question, that the value of your house is now twice as high as your mortgage debt. This means that your surplus value amounts to 50%.

1 maximum 10 percent of the surplus value

2 between 10 and 20 percent of the surplus value

3 between 20 and 30 percent of the surplus value

4 between 30 and 40 percent of the surplus value

if brandom=1 and crandom=2

v61

Suppose you were to consider taking out a reverse mortgage. What mortgage sum do you have in mind, then?

Assume, for this question, that you do not have a mortgage debt (any more). This means that your surplus value amounts to 100%.

1 maximum 10 percent of the surplus value

2 between 10 and 20 percent of the surplus value

3 between 20 and 30 percent of the surplus value

4 between 30 and 40 percent of the surplus value

if brandom=2 and crandom=1

v6a

Suppose you were to consider taking out a reverse mortgage. What mortgage sum do you have in mind, then?

Assume, for this question, that the value of your house is now twice as high as your mortgage debt. This means that your surplus value amounts to 50%.

1 maximum 15 percent of the surplus value

2 between 15 and 30 percent of the surplus value

3 between 30 and 45 percent of the surplus value

4 between 45 and 60 percent of the surplus value

if brandom=2 and crandom=2

v6a1

Suppose you were to consider taking out a reverse mortgage. What mortgage sum do you have in mind, then?

Assume, for this question, that you do not have a mortgage debt (any more). This means that your surplus value amounts to 100%.

1 maximum 15 percent of the surplus value

2 between 15 and 30 percent of the surplus value

3 between 30 and 45 percent of the surplus value

4 between 45 and 60 percent of the surplus value

if age<65
v7
To what extent do you agree with the following statements? You can choose a score from 1 through 10.

1 = disagree entirely
10 = agree entirely
v7t1 I would like to grow old in the house I now live in
v7t2 I would like to move to a smaller self-owned home after retirement
v7t3 I would like to move to a rented dwelling after retirement
v7t4 I am satisfied with my current dwelling
1 disagree entirely
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 agree entirely

if age>=65
v7a
To what extent do the following statements apply to you? You can choose a score from 1 through 10.

1 = certainly not
10 = certainly yes
v7at1 I want to grow old in the house I now live in
v7at2 I would like to move to a smaller self-owned dwelling
v7at3 I would like to move to a rented dwelling
v7at4 I am satisfied with my current dwelling
1 certainly not
2 2
3 3
4 4
5 5
6 6
7 7
8 8
9 9
10 certainly yes

if age<65
v8
When you retire, do you expect to have a surplus value on your own house of at least 50 percent (for instance after paying off your mortgage and/or long-term property price increases)?

1 yes
2 no

1 yes
2 no

The answers to the following questions were preloaded from a previously fielded questionnaire. Only if respondents had not previously answered the questions, questions EKANS0 through EKANS4a were posed.

if age >15 and age<55
EKANS0
What chance do you think there is that you will live to the age of **65 years** or older?

Please indicate the chance on a scale of 0 to 10, where 0 means 'no chance at all' and 10 means 'absolutely certainly'.

no chance at all 0 1 2 3 4 5 6 7 8 9 10 absolutely certainly

if age>15 and age<65
EKANS1a
What chance do you think there is that you will live to the age of **75 years** or older?

Please indicate the chance on a scale of 0 to 10, where 0 means 'no chance at all' and 10 means 'absolutely certainly'.

no chance at all 0 1 2 3 4 5 6 7 8 9 10 absolutely certainly

if age>15 and age<70
EKANS2a
What chance do you think there is that you will live to the age of **80 years** or older?

Please indicate the chance on a scale of 0 to 10, where 0 means 'no chance at all' and 10 means 'absolutely certainly'.

no chance at all 0 1 2 3 4 5 6 7 8 9 10 absolutely certainly

if age >69 and age<80
EKANS4a
What chance do you think there is that you will live to the age of **90 years** or older?

Please indicate the chance on a scale of 0 to 10, where 0 means 'no chance at all' and 10 means 'absolutely certainly'.

no chance at all 0 1 2 3 4 5 6 7 8 9 10 absolutely certainly

if partner=1
v9
Who do you expect will live longer, you or your partner?
1 me
2 my partner
{this question could be omitted without reporting this}

eva2t1 to eva2t5
Note: Please complete the questionnaire fully until you are returned to the initial screen. Only then will the system register the questionnaire as **fully** completed.
Finally. What did you think of this questionnaire?

1 = certainly not
5 = certainly yes

eva2t1 Was it difficult to answer the questions?
eva2t2 Were the questions sufficiently clear?
eva2t3 Did the questionnaire get you thinking about things?
eva2t4 Was it an interesting subject?
eva2t5 Did you enjoy answering the questions?
1 Certainly not
2
3
4
5 Certainly yes

opm
Do you have any comments about this questionnaire?
1 yes
2 no

if (opm=1)
evaopm
You can enter your comment here.
string

datumb
Starting date questionnaire

tijdb
Starting time questionnaire

datume
End date questionnaire

tijde
End time questionnaire

computed variable
duur
Duration in seconds

4 Background variables for the CentERpanel

geslacht   Sex
1	Male
2	Female

gebjaar   Year of birth
1900..present

leeftijd   Age of the household member

lftdcat   Age in CBS categories
1	14 years and younger
2	15 - 24 years
3	25 - 34 years
4	35 - 44 years
5	45 - 54 years
6	55 - 64 years
7	65 years and older

oplcat   Education in CBS categories
1	primary school
2	VMBO (intermediate secondary education, US: junior high school)
3	HAVO/VWO (higher secondary education/preparatory university education, US: senior high school)
4	MBO (intermediate vocational education, US: junior college)
5	HBO (higher vocational education, US: college)
6	WO (university)

belbezig   Main occupation
1	Paid employment
2	Works or assists in family business
3	Autonomous professional, freelancer, or self-employed
4	Job seeker following job loss
5	First-time job seeker
6	Attends school or is studying
7	Takes care of the housekeeping
8	Is pensioner ([voluntary] early retirement, old age pension scheme)
9	Has (partial) work disability
10	Performs unpaid work while retaining unemployment benefit
11	Performs voluntary work
12	Does something else

	13	Is too young to have an occupation

positie   Position within the household

1	Household head*
2	Wedded partner
3	Unwedded partner
4	Parent (in law)
5	Child living at home
6	Housemate
7	Family member or boarder

The household head is the person whose name appears on the rent contract or purchase deed of the house. If the contract or deed carries more than one name, the household head is the person with the highest income.

partner   The household head lives together with a partner (wedded or unwedded)

0	No
1	Yes

aantalhh   Number of household members

1	One person
2	Two persons
3	Three persons
4	Four persons
5	Five persons
6	Six persons
7	Seven persons
8	Eight persons
9	Nine persons or more

aantalki   Number of living-at-home children in the household

0	None
1	One child
2	Two children
3	Three children
4	Four children
5	Five children
6	Six children
7	Seven children
8	Eight children
9	Nine children or more

woonvorm   Domestic situation in household

1	Single
2	(Un)married co-habitation, without child(ren)
3	(Un)married co-habitation, with child(ren)
4	Single, with child(ren)
5	Other

brutoink   Personal gross monthly income* in euros

	-13	I really don't know
	-14	I prefer not to say
	-15	Unknown (missing)

nettoink   Personal net monthly income* in euros

	-13	I really don't know
	-14	I prefer not to say
	-15	Unknown (missing)

* Since some people would rather not make their income information available to CentERdata, a 0 (zero) can mean two different things: (1) that there really is no income at all; or (2) that a panel member has entered a 0 (zero) because he/she doesn't know what the income is or because he/she doesn't want to make that information available to us.

In the second case, panel members ought to indicate that they do not know what the income is (-13) or that they prefer not to say what the income is (-14). Unfortunately, not all panel members do so, with some entering a 0 (zero) while they actually do have an income. It is impossible to determine who these panel members are, however. Some panel members do not supply any answer to the questions about income; these have the score -15.

brutohh   Gross monthly income of the household* in euros
nettohh   Net monthly income of the household* in euros

*All monthly incomes of the x-number of household members added together, where the incomes of those who scored a -13, -14 or -15 have been set as 0.

prov   Province

	20	Groningen
	21	Friesland
	22	Drenthe
	23	Overijssel
	24	Flevoland
	25	Gelderland
	26	Utrecht
	27	Noord-Holland
	28	Zuid-Holland
	29	Zeeland
	30	Noord-Brabant
	31	Limburg

regio   Region of residence

	1	The three major cities*

	2	Remainder of western urban region
	3	North
	4	East
	5	South

Amsterdam, Rotterdam and The Hague (including adjacent localities).

sted Urban character* of place of residence

1	Extremely urban
2	Very urban
3	Moderately urban
4	Slightly urban
5	Not urban

Urban character	*Surrounding address density per km^2*
extremely	*2500 or more*
very	*1500 to 2500*
moderately	*1000 to 1500*
slightly	*500 to 1000*
not	*less than 500*

ses Social economic class

1	high
5	low
9	unknown

religie Religious affiliation or creed

1	None
2	(Roman) Catholic
3	Protestant Church in the Netherlands
4	Evangelical
5	Humanist
6	Muslim
7	Other
9	Unknown

inkomen Net monthly household income in categories

1	EUR 1150 or less
2	EUR 1151 through EUR 1800
3	EUR 1801 through EUR 2600
4	More than EUR 2600
9	Unknown (missing)*

The net monthly income of at least 1 household member is unknown.

bedrtak Industry sector*

1	Agriculture or mining

2	Manufacturing industry
3	Energy or water extraction
4	Construction
5	Commerce
6	Catering
7	Transport
8	Financial institutions
9	Business services
10	Public administration (state, province or municipal)
11	Education
12	Health and welfare
13	Culture, sports and recreation
14	Idealistic and special interest organizations
15	Something else
-13	Not applicable (belbezig>3)
-14	Unknown (missing)

Only available for panel members with belbezig smaller or equal to 3.