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EXPLAINING WHY, RIGHT OR WRONG, (ITALIAN) HOUSEHOLDS DO NOT LIKE REVERSE MORTGAGES

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Abstract

According to economic theory, elderly homeowners should be much more eager than they actually are to adopt financial instruments allowing them to borrow against home equity. This paper investigates the determinants of interest for the Italian elderly in one such instrument, the reverse mortgage. We draw from a unique dataset, UniCredit's 2007 survey on household savings, and use a discrete choice model (ordered probit) to perform our empirical analysis. Out of 1,200 respondents, roughly 60% claimed to have no interest in the product, while the remaining 40% expressed various degrees of appeal, from quite low to very high. Three main findings emerge from our analysis: first, homeowners who are prepared to sell their home are more likely to be interested in the product. Second, respondents perceive reverse mortgages as personal debt, even though the burden of repaying the loan lies with their heirs, and debt aversion predicts low interest. Third, homeowners who are more concerned about their standard of living in retirement are more likely to be interested in the product. We find, however, no conclusive evidence supporting our *a priori* notion that greater financial literacy is a predictor of higher interest in RMs.

1. Introduction

As Western societies are experiencing unprecedented population ageing, the availability of financial instruments designed to meet the needs of the elderly has become crucial. Among such instruments, reverse mortgages (RMs) stand out, since they allow better consumption smoothing in old age. At the same time, by

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encouraging the direct participation of the elderly in financing their retirement needs, RMs could ease the burden of ageing on public budgets.

According to Modigliani and Bruemberg's (1954) lifecycle hypothesis, individuals smooth their lifetime consumption by borrowing when 'young', saving when 'middle aged', and dissaving when 'old'. Empirically, however, the rate of wealth decumulation appears slower than the model predicts (Venti and Wise 1987; Ando et al.1993; Chiuri and Jappelli 2007; Angelini and Laferrère 2010), with precautionary savings motivated by expected health and care expenditures (Carroll et al. 1992) and bequest motives explaining discrepancies between facts and theory.

The portfolio composition of the elderly, which generally favours illiquid assets such as housing (Mitchell and Piggott 2003), can be a further disincentive to asset depletion. Housing equity can be liquidated by selling one's home and renting, or moving to a smaller dwelling (downsizing), however, since liquidating housing assets involves psychological as well as financial transaction costs (Leviton 2002), the elderly may prefer to settle for lower consumption levels. RMs are innovative in that they allow elderly homeowners to consume (part of) their housing equity without having to disrupt housing arrangements and without any obligation of repayment until the borrower dies, moves out, or sells the house (Eschtruth and Tran 2001). They differ from home reversion programs (such as the sale of bare ownership) in that the property rights over the house remain with the borrower. Despite their welfare-improving potential, RMs have met with only very limited acceptance (Caplin 2001).

Because of its swift population ageing and high homeownership rates (78% among the elderly), Italy is an interesting case for studying households' attitudes toward RMs. Drawing on a unique dataset, the 2007 UniCredit Survey (UCS), in which over 1,200 respondents indicated their interest in taking out such a loan (with 40% expressing various degrees of appeal), we investigate the underlying factors determining interest in the product with the use of a discrete choice model, ordered probit. We find that risk/uncertainty-related elements are significantly correlated with interest in the product, while the bequest motive does not appear statistically significant. Homeowners who are less attached to their home and convey no qualms in liquidating it are also more likely to be interested in RMs. Negative expectations about one’s standard of living after retirement is a significant predictor of interest. Conversely, we find no evidence supporting our *a priori* assumption that greater financial literacy is correlated with higher interest in RMs.

The remainder of the paper is organized as follows: Section 1 describes the main features of RMs. Section 2 reviews the relevant literature. Section 3 calculates the net worth of RMs and provides clues on their potential market size. Section 4 introduces the data sources and explains how the main indicators are constructed. Section 5 describes the econometric model and presents the estimated results. Section 6 concludes the paper.

2. RMs: An overview

RMs allow elderly homeowners (or couples) to borrow against their housing equity: the borrower can choose between the loan being paid out as a lump sum, through fixed monthly payments (tenure plan or life annuity), or as a line of credit the borrower can access any time. The amount of the loan depends positively on the age of the borrower and the value of the property and negatively on the interest rate. The outstanding balance of the loan grows over time, as the interest is capitalised, but no payment is due until the individual (or spouse) dies, moves out, or sells the house. When either of these events occurs, the loan must be repaid in full – in one solution within the subsequent 10 to 12 months – and with any available source of funds, including proceeds from the sale of the house. Contrary to widespread belief, the lender does not receive the house as repayment (Eschtruth and Tran 2001).

Despite these attractive features, RMs have not (yet?) gained the favour of elderly homeowners. Introduced by US Congress in 1987 explicitly to facilitate the financing of consumption in old age (Rodda et al. 2000), Home Equity Conversion Mortgages (HECMs) are still rather uncommon, even in the US, since not even 1% of potential beneficiaries have entered an equity release scheme (Caplin 2001). The trend, however, seems to have changed in recent years (at least up to the 2008 financial crisis), the market size of HECMs more than decupling: Shan’s (2009) report to the US Federal Reserve Board of Governors shows that the number of RM loans escalated from less than 10,000 in 2001 to over 100,000 in 2007 and mentions rising home values, lower interest rates, and increasing awareness of the product as plausible explanatory factors (we do not have evidence following the bursting of the housing bubble).

The European Union (EU) RM market is not only very thin, but also unevenly developed across countries with regards to volume of production, lending methods, and diversity of products.[1] Most equity release schemes in the EU share common criteria, such as minimum age requirements and minimum property value (which must be free from other debt), and involve a series of protections for borrowers, as well as the obligation to carry out repairs and maintenance. Borrowers are protected from declining home prices, since the value of the loan cannot exceed the value of the house (no negative equity guarantee). Conversely, if the house is sold for more than the loan is worth, the excess equity belongs to the heirs.

As many as 13 EU countries have at least one institution supplying some form of equity release product[2], with Ireland, Spain, and the UK totalling the highest numbers of providers. The estimated number of equity release contracts sold in 2007 in the UK was 33,000, versus 3,600 in Spain, 2,500 in Sweden, 300 in Italy, 200 in France, and 100 in Germany[3] (data for Ireland were not available). The UK has a long history of home reversion plans, dating as far back as 1965[4]; however, according to a report from the Council of Mortgage Lenders (CML), despite a recent upward trend, the market has remained substantially underdeveloped and stagnant (Williams, 2008). The CML report suggests that negative reputation of earlier generation equity release products and perceived excessive costs as the mains reasons for the market's underdevelopment. Indeed, as the housing price appreciation of the 1980s failed to match the accrued interest on mortgages, borrowers found themselves owing more than their property was worth, raising the need for a no negative equity guarantee.

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[1] According to the Study on Equity Release Schemes in the EU, commissioned by the EU and carried out by the Institut für Finanzdienstleistungen (IFF) in 2007 (available at http://ec.europa.eu/internal_market/finservices-retail/docs/credit/equity_release_part1_en.pdf), approximately 45,000 lifetime/reverse mortgages contracts were signed in the EU in 2007, for an estimated value of €3.3 billion, less than 0.1% of the overall mortgage market.

[2] Austria, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Poland, Romania, Spain, Sweden, and the UK.

[3] Data from the Study on Equity Release Schemes, 2007, and responses from providers and regulators, with IFF calculations.

[4] The first reversion income scheme was introduced by Home Reversions in 1965; the first home income plan based on a mortgage and annuity was issued in 1972. Cash reversion plans were introduced in 1978 by JG Inskip & Co. (Joseph Rountree Foundation 2003).

In Italy, the product was formally introduced in 2005 under the name (prestito vitalizio ipotecario), available to homeowners over 65 whose housing equity exceeds €70,000. So far, only a few credit institutions offer home equity conversion products: Deutsche Bank's *PatrimonioCasa*[5] and Euvis's *Prestito Vitalizio* are available only as a lump sum, while Banca Monte dei Paschi di Siena offers *PrestiSenior*[6] to those over 70 as either a lump sum or an annuity for a maximum of 20 years.

According to Case and Schnare (1994), interest in RMs should be strong among the 'house-rich, cash-poor' (pp. 301) elderly homeowners, who can express a significant demand. Mayer and Simons (1993) note the high potentiality of RMs, as many elderly could use them to pay off pre-existing debts. Conversely, Venti and Wise (1987) see a limited scope for RMs, claiming that low-income elderly generally have little housing equity available. Ong's (2008) analysis of the Australian market identifies single women aged 80 and over as the segment of the population that can benefit the most from RMs, and estimates that RMs have the capacity to lift out of poverty 95% of income-poor elderly Australians. Caplin (2001) suggests that, even with the most pessimistic assessments, the RM market should be much larger than it is, and highlights transactions costs, moral hazard, and uncertainty about future needs and preferences as the main economic forces that hinder its development.

To explain why the market is so thin, other researchers focus on the high costs of RMs. For example, the possibility of moral hazard in the case of meagre home maintenance by homeowners intending to default on their contract obligations[7] (Caplin 2000) and the adverse selection of longer-lived mortgagors[8] (Davidoff and Welke 2005) can translate into high insurance fees and make the product rather expensive.

Gibler and Rabianski (1993) mention debt aversion among the elderly as a barrier to the uptake of RMs. The authors report that older consumers generally dislike buying on credit and would rather live on less income than take out a loan. Caplin

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[5] Deutsche Bank (2010), informational pamphlet for the *prestito vitalizio ipotecario PatrimonioCasa* contract.

[6] Montepaschi, informational pamphlet for the *prestito vitalizio ipotecario PrestiSenior*, April 2011.

[7] Caplin (2000) emphasises moral hazard in home maintenance and argues that, since typical RM borrowers are very old, very poor, and likely to suffer from health problems, they are also more likely to let their properties deteriorate, and thus the legal provisions protecting the lender may not be enforced. The author advocates a rationalisation of the regulatory system as a means of fostering financial innovation in general and promoting RMs in particular.

[8] Davidoff and Welke (2005) investigate adverse selection by comparing the mobility rates between RM borrowers and non-borrowers. Interestingly, the authors reveal *advantageous selection*, since homeowners who take out RMs are also more likely to sell their homes and therefore repay their loans earlier.

(2000) also suggests that households may prefer a lower level of consumption in a debt-free house to a higher level in a debt-ridden one, relating the presence of debt with an increase in uncertainty. Finally, Shan (2009) indicates that an increased tendency to take on debt over the past few years can explain part of the substantial growth of the US RM market.

Another possible explanation for the limited interest in RMs may be financial illiteracy.[9] Gibler and Rabiansky (1993) differentiate between financially sophisticated homeowners, who may see RMs as part of an investment portfolio decision, and financially unsophisticated ones, who are less likely to be interested in a product that is both unknown and complex. Leviton (2002), for example, explains how, because of poor financial education, many elderly homeowners overestimated the net worth of their RMs. Reed (2009) finds that, among Australian homeowners who claimed to be aware of RMs, only 40% understood the basic features, specifically, that no repayments were due and that the house would not be sold. Duca and Kumar (2010) also report a positive correlation between households with mortgage equity withdrawals and lack of financial literacy. Finally, Fornero and Monticone (2011) relate financial literacy with effective retirement planning and report that most Italian householders lack knowledge of basic financial concepts.

3. Estimating the monetary value of RMs

Our analysis cannot directly estimate the impact of RM fees on (potential) RM demand, since we do not have the relevant data; we can, however, appraise the monetary value of RMs, even if rather crudely, as a percentage increase in income for a given demographic and housing equity level, and see whether it has a substantial (positive) effect on the probability of being interested.

We adopt the sinking fund formula used in Ong (2008), which estimates the potential income increase obtained through an RM. The formula is based on the Evaluation Report of FHA's[10] Home Equity Conversion Mortgage Insurance

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[9] Lusardi and Mitchell (2006) define financial literacy as a set of tools enabling one to better allocate financial resources; it is often associated with numerical skills, such as the ability to calculate rates of return on investments and the interest rate on debt, or understanding economic concepts such as the trade-off between risk and return, the benefits of diversification, and the benefits and risks associated with specific financial decisions.

[10] Federal housing association.

Demonstration by Rodda et al. (2000) and shows the monthly payments generated by an RM for a given housing equity level, interest rate, and life expectancy.

Payments to borrowers are calculated according to the principal limit factor,[11] the age (or life expectancy) of the (youngest, in a couple) borrower, the mortgage interest rate, and the adjusted property value. As for our calculations (reported in Table 1), the principal limit factor in Italy ranges from roughly 20% of the housing equity for 65-years-olds to roughly 50% for those over 90[12]; the borrower's life expectancy (in months) is set at 100 minus the current age, multiplied by 12 (Rodda et al. 2000); the interest rate is set at 6.8% per annum (0.57% per month), an average of the Deutsche Bank (7.3%),[13] Monte dei Paschi di Siena (7.9%), and the Housing and Urban Development's HECM (5.5%) RM rates; the average housing equity is calculated from our sample homeowners.

The monthly payment to the borrower under the tenure plan can be computed as an annuity, using the formula

$$A_i = L_i^0 \frac{r(1+r)^{e_i}}{(1+r)^{e_i+1}-(1+r)}$$

where

A_i = monthly payment to (household) borrower *i*

L_i^0 = net principal limit to borrower *i* equal to $L_i^0 = B_i H_i - C_i$, where B_i is the unique loan advance, depending on the borrower's age and interest rate, H_i is the housing equity, and C_i includes all initial costs and fees (which, for simplicity, we set equal to zero)

r = monthly interest rate (approximated)

e_i = life expectancy (in months), calculated as 100 minus current age

Table 1 describes the results of our calculations for the UCS sample. The first column reports estimates of the average housing equity by housing quintile, age, household income units, and geographical area. The second column shows the maximum loan advance, calculated as housing equity[14] multiplied by the percentage available to the average age group for each subcategory. The third column reports the annuity, calculated by applying the sinking fund formula (times 12, since the formula refers to a monthly sum). The fourth column shows the estimated average income for the categories reported above and the last column calculates the RM as a percentage of income. The results are qualitatively similar to those reported by Ong (2008), since those over 75 and single females with lower incomes and above-average housing equity are the recipients with the highest gains. The values thus obtained can be used as regressors to find out whether a larger annuity over income ratio predicts a higher level of interest in the product.

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[11] The principal limit is computed so that the expected mortgage insurance losses over the life of the loan are no greater than the expected premium collected. The higher the expected interest rates, the lower the principal limit factor: Higher expected interest rates mean higher future loan balances, which would result in larger insurance losses unless the amount of principal advanced were reduced.

[12] The values reported are for single male householders; the corresponding percentages for single females are 15.3% for 65-year-olds to 46% for those over 90. The maximum loan amount for couples is lower (14–45%).

[13] From the Deutsche Bank's informative leaflet for Italian reverse mortgage borrowers.

4. Empirical analysis

4.1. Data

Our analysis draws from a unique source of data, the UCS, carried out in 2007. The survey targets the bank’s clients aged 21–75 with at least €10,000 in deposits. The sample is stratified according to geographical area, city size, and financial wealth. Additional data were extracted from the Bank of Italy’s 2006 Survey of Household Income and Wealth (SHIW) to compare the characteristics of UCS respondents with those of a representative sample of the entire Italian population.

As well as collecting detailed demographic and financial data for a sample of 1,686 individuals, the survey directly elicits respondents’ interest in RMs. The level of interest in RMs is expressed by householders who own their home. A brief description of the product was given by the interviewer, who then asked respondents to assign a value between 1 and 5 according to their level of interest: 1.1% claimed to be ‘very interested’, 6.2% ‘quite interested’, 12.9% ‘somewhat interested’, 20.4% ‘barely interested’, and 59.4 ‘not interested’ (see Figure 1).

The UCS oversamples the wealthy (see Table 3): the average household income in the UCS is €71,325 (median €48,393), roughly 2.2 times the average SHIW household income of €31,893 (median €26,217). Households are categorised according to their wealth bracket, defined by the amount of money kept in UniCredit deposits, ranging from €10,000 to €5 million. While the average financial wealth in the SHIW amounts to €25,246 (median €6,674), with 18% households reporting no financial wealth at all, the average wealth bracket in the UCS is €100,000 to €150,000. The rate of homeownership is also substantially higher: approximately 90% of the UCS households own their home, versus 71% in the SHIW, and the rates of homeownership among the elderly are even higher, 93% in the UCS versus 78% in the SHIW. As for housing equity, Table 4 shows how the average house value in the UCS is 1.8 times that in the SHIW,[15] with a mean value of €387,367. Finally, educational attainment is higher in the UCS: the percentage of respondents who have at least an upper secondary certification is more than double that for the SHIW[16] (see Table 2)

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[14] Average values are reported.

The trade-off between risk and return on investments reveals a majority of moderately risk-averse respondent [17]. Another set of risk-related questions investigates the respondents' risk attitude in a context of gain or loss[18]. Both elderly male and female householders are more risk averse than their younger counterpart in a gain scenario, while women under 65 years of age are the most risk loving, particularly in a loss scenario. Uncertainty about the future is ascertained by asking respondents how worried they felt about their standard of living after retirement, with nearly 40% answering 'quite worried' or 'very worried'.

Over 85% of respondents consider not having future debts an important reason for saving, and over 70.5% are averse to debt. When asked how they would finance a hypothetical expenditure of €20,000, more than 60% replied they would draw from their savings, 20% would sell their financial assets, and about 16% would take out a bank loan. One question was specifically asked to assess respondents' willingness to sell their home as a means of increasing future income: the idea that the elderly do not wish to downsize appears to be confirmed by the high proportion answering 'certainly not' (53.1%) or 'probably not' (27.0%).

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[15] The data regarding housing equity are somewhat misleading, since a few hundred respondents provided inaccurate numbers (writing 1, 999 or over a hundred millions); these values were obtained after ad hoc but sensible corrections.

[16] However, Banca d'Italia's official 2008 Report on Household Wealth specifies that the sample is affected by selection bias, as in the lower participation of wealthier households and under-reporting of income and wealth.

[17] Only 1.8% would rather have high returns and high risks; 27.6% prefer good returns and sufficient safety; 52% prefer sufficient returns and good safety, and 18.6% prefer low returns but no risks.

[18] Kahneman and Tversky (1991) define framing as the way in which a choice or an option can be affected by the way it is presented to a decision maker, specifically whether it is presented as a gain or as a loss; individuals are generally found to be more risk averse if the question is framed as a gain, and more risk loving if framed as a loss.

The respondents' financial literacy was gauged by four questions about inflation, interest rates, and portfolio diversification, plus a self-assessment of how well they understood specific financial instruments. Less than 13% of the respondents answered at least three questions correctly, with elderly female householders exhibiting overall worse performance (see Figure 2 and the questions in the Appendix).

4.2. Econometric specifications

Only homeowners who answered the RM-related question are included in the regression, which in some cases can reduce the scope for our estimates.[19] However, approximately 45% are at least 60 years old and, since we are assessing potential demand given the expression of interest and not the actual uptake of RMs, the response given by younger householders is equally valid. The reason we are using the UCS rather than the more representative SHIW is that, to our knowledge, it is the only survey in Italy that includes a specific question on RMs. Bearing in mind such limitations, we can further our analysis and investigate the determinant of interest in RMs.

The respondent's interest in RMs is measured on an ordinal scale, and the levels of interest are represented by a discrete variable that can take one of the following five values:

$y_i = 1$ if the respondent is not interested
$y_i = 2$ if the respondent is barely interested
$y_i = 3$ if the respondent is somewhat interested
$y_i = 4$ if the respondent is quite interested
$y_i = 5$ if the respondent is very interested

We assume that the discrete values are based on an underlying continuous and latent variable y^* and that this latent variable is a linear function of all the explanatory variables:

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

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[19] For example, the total number of respondents aged over 75 is 21, and only 11 of them answered the RM question.

where $\boldsymbol{x}$ 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 $\mu_1 < \mu_2 < \mu_3 < \mu_4 < \mu_5$ be the unknown thresholds parameters or cutoff points. Then we observe

$y_i = 1$ if $y_i^* \leq \mu_1$

$y_i = 2$ if $\mu_1 < y_i^* \leq \mu_2$

$y_i = 3$ if $\mu_2 < y_i^* \leq \mu_3$

$y_i = 4$ if $\mu_3 < y_i^* \leq \mu_4$

$y_i = 5$ if $y_i^* > \mu_4$

The threshold parameters are estimated together with the $\boldsymbol{\beta}$ values to help match the probabilities associated with each discrete outcome.

The probabilities of y_i being classified as not interested, barely interested, somewhat interested, quite interested, and very interested, respectively, are given by

$\text{Prob}(y_i = 1) = \text{Prob}(\boldsymbol{\beta}'\boldsymbol{x} + \varepsilon \leq \mu_1)$

$\text{Prob}(y_i = 2) = \text{Prob}(\mu_1 < \boldsymbol{\beta}'\boldsymbol{x} + \varepsilon \leq \mu_2)$

$\text{Prob}(y_i = 3) = \text{Prob}(\mu_2 < \boldsymbol{\beta}'\boldsymbol{x} + \varepsilon \leq \mu_3)$

$\text{Prob}(y_i = 4) = \text{Prob}(\mu_3 < \boldsymbol{\beta}'\boldsymbol{x} + \varepsilon \leq \mu_4)$

$\text{Prob}(y_i = 5) = \text{Prob}(\boldsymbol{\beta}'\boldsymbol{x} + \varepsilon > \mu_4)$

Both the cutoff points and $\boldsymbol{\beta}$ coefficients can be estimated as an ordered probit model by the maximum likelihood method (Greene 2003; Train 2003). Estimating the $\boldsymbol{\beta}$ values is not enough, since they do not reflect marginal changes in probability; therefore we calculate the marginal effects (at the mean value) to interpret results more clearly.

The vector of covariates $\boldsymbol{x}$ includes the following: householder age, age squared, age cubed, the log of the household income, the log of housing wealth, the ratio of the RM annuity to income, a financial literacy index, a risk aversion index, and several dichotomous variables to control for heterogeneity (single/divorced, widower, female, retired, resident in the north/south, saving to leave a bequest, higher education, children, negative retirement expectations, debt aversion, and willingness to sell the house).

4.3. Estimation results

A rich set of sociodemographic factors, personal characteristics, and preferences has been used to capture respondents' attitudes in the ordered probit regression. A first-order probit was carried out using only demographic and socioeconomic variables as controls (not reported). Age, gender, and higher or middle education are not significant, while having no education at all is negatively correlated with interest in RMs. Being single or divorced is significantly correlated with a higher level of interest. Household income is not significant, while the log of housing equity displays a significant negative correlation with interest in RMs. The variable representing the percentage increase in household income yielded by an RM annuity has a large positive coefficient but is not statistically significant.[20] Residence in the northern part of the country is also positively correlated. The bequest motive does not emerge from our regression, since neither the binary variable representing households with children nor that indicating bequest as an important reason for saving (not reported) is statistically significant.

When adding more controls to the ordered probit, we see that personal attitudes are more significantly correlated with a given level of interest in the product (see Table 5); in particular, higher risk aversion and negative expectations about the future predict higher interest.

The effect of risk aversion is estimated by means of the set of questions found in the Appendix, through an index taking on values from 0.1 to 1 (low to high risk aversion).[21] A higher level of risk aversion is positively correlated to interest in RMs, lowering the probability that $y=1$ (respondent is not interested) by 10.9%. The perception of risks specifically related to housing investment is captured by a binary variable awarding one point to homeowners who perceive housing investment as quite risky or very risky, and zero otherwise. As the binary variable for housing perceived as a risky investment takes the value of one, the probability that $y=1$ decreases by 15.2%. Uncertainty about future economic well-being is gauged by a binary variable awarding the score of one to respondents who claimed to be very worried or quite worried about their economic welfare in old age after retirement, and zero otherwise. Since the binary variable takes the value of one, the probability that $y=1$ decreases by 9.1% (at the 1% significance level).

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[20] Note that a value of zero was awarded to all respondents who were not yet 65.

[21] A score of one was assigned to every positive answer to the question on risk in a gain scenario. All the answers were then summed and divided by 10 to obtain a risk loving index ranging from 0.1 to one; this was then reversed to obtain an index of risk aversion.

We find evidence contrasting the suggestion that the desire to move from one’s current home is a deterrent to entering the RM market (Kutty 1999; Caplin 2001): on the contrary, the strongest predictor of interest in RM is willingness to sell one’s house, indicated by a binary variable equal to one if the respondent claimed to be ‘certainly’ or ‘quite probably’ willing to liquidate his or her house (as a means of increasing income), or equal to zero if the respondent was ‘certainly not’ or ‘probably not’ interested in liquidating his or her home. Since the binary variable takes the value of one, it raises the probability that $y=5$ (‘very interested’ in RMs) by 2.1%, and that of $y=1$ by 27.4%.

Among the predictors of lower interest, reluctance to borrow (debt aversion) is particularly significant. Debt aversion, captured by a binary variable taking on the value of one for respondents who claim not to want to take on any debt, and zero otherwise, raises the probability that $y=1$ by 14.9% (at the 1% significance level). As financial literacy increases, so does the probability of not being interested in the product; however, the results are not very robust, and the correlation becomes insignificant after a few robustness checks are performed. The effect of selected significant regressors is summarised in Figure 3.

Further checks are carried out, splitting the sample into those who are willing and unwilling to sell their house (not reported, but available on request). Among respondents who are more attached to their homes – and therefore not willing to sell, being a pensioner and having negative post-retirement expectations are significant predictors of interest in the product. Note that the sample size is extremely reduced, since the percentage of householders willing to sell their house is not very high.

5. Conclusions

Understanding the prospective role of RMs is important for both micro and macroeconomic reasons: it can increase income security in old age and allow better consumption smoothing, as well as alleviate the burden of an ageing population on public budgets. This paper contributes to the task by focusing on the Italian potential market.

Since approximately 70% of the Italian population are homeowners, with housing wealth representing over 80% [22] of its assets, the availability of home equity release instruments is an important determinant of the timing and dimension of wealth depletion with old age. We estimate householder characteristics most significantly correlated with a given level of interest: demographics, except for being a resident in the north of Italy, do not have a significant effect. Household income is not significant. Housing equity is negatively correlated with interest in the product. Debt aversion lowers the probability of being interested in the product, while being more risk averse and having negative expectations about post-retirement welfare are predictors of higher interest.

Three main findings emerge from our analysis: first, homeowners who are prepared to sell their home are more likely to be interested in the product, considered as an alternative to downsizing. Second, respondents perceive RMs as debt (even though the burden of repaying the loan lies with their heirs), and debt aversion predicts low interest. Third, homeowners who are more concerned about their well-being after retirement are also more likely to be interested in RMs, which is consistent with both the cuts and greater uncertainty that Italian households had have to endure subsequent to recent pension reforms. Our results seem to downplay bequests, since the relation between having children and interest in RMs is not statistically significant. We find no conclusive evidence to support our *a priori* that high financial literacy is a strong predictor of interest in RMs.

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[22] Median values.

References

Ando, A., Guiso, L., Terlizzese, D. (1993). ‘Dissaving by the Elderly, Transfer Motives and Liquidity Constraints’. NBER Working Paper Series 4569.

Angelini, V., Laferrère A. (2010). ‘Residential Mobility of the European Elderly’. CESifo Working Paper No. 3280.

Appleton, N. (2003) ‘Ready, steady… but not quite go. Older home owners and equity release: a review.’ Joseph Rowntree Foundation.

Bank of Italy (2010) ‘I bilanci delle famiglie Italiane’. Supplemento al bollettino statistico – indagini campionarie.

Caplin, A. (2000). ‘Inertia in the U.S. Housing Finance Market: Cases and Causes’. Paper prepared for the joint AEA/AREUEA session, New Orleans, New York University.

Caplin, A. (2001). ‘The Reverse Mortgage Market: Problems and Prospects’. In Innovations in Housing Finance for the Elderly, Pension Research Council. Olivia Mitchell, ed. Pension Research Council.

Carroll, C., Hall, R., Zeldes, S. (1992): ‘The Buffer Stock Theory of Saving: Some Macroeconomic Evidence’. Brookings Papers on Economic Activity, Vol. 1992, No. 2, 61–156.

Case, B., Schnare, A. (1994). ‘Preliminary Evaluation of the HECM Reverse Mortgage Program’. Journal of American Real Estate and Urban Economics Association, Vol. 22, No. 2, pp. 301–346.

Chiuri, M., Jappelli, T. (2007). ‘Do the Elderly Reduce Housing Equity? An International Comparison’. Centre for Studies in Economics and Finance.

Davidoff, T., Welke, G. (2005). ‘Selection and Moral Hazard in the Reverse Mortgage Market’. Mimeo, University of California, Berkeley.

Duca, J., Kumar, A. (2010). ‘Financial Literacy and Mortgage Equity Withdrawals’. Research Department, Federal Reserve Bank of Dallas, Dallas, TX.

Eschtruth, A., Tran, L. (2001). ‘A Primer on Reverse Mortgage’. Center for Retirement Research, Boston College.

Fornero, E., Monticone, C. (2010). ‘Financial Literacy and Pension Plan Participation in Italy’. Preliminary draft, presented at Financial Literacy around the World (FLat world), Collegio Carlo Alberto, 20-21 Dec 2010. Torino.

Greene, William H. (1993). ‘Econometric Analysis’. Fourth edition. Prentice Hall, Upper Saddle Rive (NJ).

Gibler, K., Rabianski, J. (1993). ‘Elderly Interest in Home Equity Conversion’. Housing Policy Debate, Vol. 4, No. 4, Fannie Mae.

Guiso, L., Jappelli, T. (2009). ‘Financial Literacy and Portfolio Diversification’. Centre for Studies in Economics and Finance, Working Paper No. 212.

Kahneman, D., Tversky, A., (1991). “Loss Aversion in Riskless choice: a Reference-Dependent Model”, Quarterly Journal of Economics. Vol. 106, pp 1039 – 1061.

Kutty, N. (1999) ‘Demographic Profiles of Elderly Homeowners in Poverty Who Can Gain from Reverse Mortgages’, April, mimeo.

Leviton, R. (2002). ‘Reverse Mortgage Decision-Making’. Journal of Aging and Social Policy, Vol. 13, No. 4, 1–16.

Lusardi, A., Mitchell, O. (2006). ‘Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth’. Journal of Monetary Economics, Volume 54, Issue 1, January 2007, Pages 205-224.

Mayer J., Simons K. (1993). ‘Reverse Mortgages and the Liquidity of Housing Wealth’. Working Paper No. 93-5, Federal Reserve Bank of Boston.

Mitchell, O., Piggott, J. (2003). “Final Report: Unlocking Housing Equity in Japan”, Economic and Social Research Institute, Cabinet Office, Government of Japan.

Modigliani, F., Brumberg, R. (1954) ‘Utility analysis and the consumption function: an interpretation of cross-section data’ in Kenneth K. Kurihara, ed., Post-Keynesian Economics, New Brunswick, NJ. Rutgers University Press. Pp 388–436.

Ong, R. (2008).’Unlocking Housing Equity through Reverse Mortgages: The Case of Elderly Homeowners in Australia’. International Journal of Housing Policy, Vol. 8, No. 1, 61–79.

Reed, R. (2009). ‘The Increasing Use of Reverse Mortgages by Older Households’. Working paper, Deakin University.

Reifner, U., Clerc-Renaud, S., Pérez-Carrillo, E., Tiffe, A., Knobloch, M (2009). ‘Study on Equity Release Schemes in the EU’. Institut für Finanzdienstleistungen e.V.

Rodda, D. T., Herbert, C., Lam, K. (2000). ‘Evaluation Report of FHA’s Home Equity Conversion Mortgage Insurance Demonstration’. Final Report, Department of Housing and Urban Development, Washington, DC.

Shan, H. (2009). ‘Reversing the Trend: The Recent Expansion of the Reverse Mortgage Market’. Finance and Economics Discussion Series 2009-42, Federal Reserve Board, Washington, DC.

Train, K. (2003). ‘Discrete Choice Method with Simulation’. Cambridge University Press, Cambridge.

Venti, S., Wise, D. (1987). ‘Aging Moving and Housing Wealth’. NBER Working Paper 2324.

Williams, P. (2008). ‘Please release me! A review of the equity release market in the UK, its potential and consumer expectations’. Council of Mortgage Lenders Research.

Appendix. Survey questions used to construct the control variables

Risk aversion

Gain – Imagine you are in a room from which you can exit through two doors: If you choose the correct one, you win €10,000; if you choose the wrong one, you win nothing. Of course, you don't know where the prize is. You can also choose a back door and withdraw a fixed amount. Answer: Yes/no.

- If I offered €100, would you give up choosing between the two doors and settle for the back door? (Continue to the next question if no.) And if I offered €500? And if I offered €1,500? […] And if I offered €9,000?

Loss – Imagine now a more difficult situation. You can still exit the room through two doors, however if you choose the correct one, you win nothing, but if you choose the wrong one, you lose €10,000. You may also choose a third door and lose a fixed amount.

- Would you pay €9,000 to exit through the backdoor? (Continue to the next if she says No)

Debt aversion

What is your opinion about borrowing? (select one answer)

I have no qualms/impediments to using loans should I need to (10.5%); I am willing to resort only to limited borrowing, since I would rather not encumber my future with excessive burdens (18.9%); I would rather not have debts (70.6%).

Financial literacy: The respondent is awarded one point for answering correctly.

Inflation.

Suppose a bank account yields a 2% interest per annum (after expenses and taxes). If actual inflation is 2% per year (assuming you did not access your account) after two years, the amount deposited can buy you (select one answer):

More than it can buy today; less than it can buy today; the same as it can buy today (correct); and cannot answer/cannot understand.

Interest rates

Imagine having a 'tip' and knowing for certain that in six months interest rates will rise. Do you think it is appropriate to purchase fixed rate bonds *today*?

Yes; no (correct); I do not know.

Diversification 1

In relation to investments, people often talk about diversification. In your opinion, to have proper diversification of one's investments means (select one response):

To have in one's investment portfolio bonds and shares; to not invest for too long in the same financial product; to invest in the greatest possible number of financial products; to invest simultaneously in multiple financial products to limit exposure to the risks associated with individual products (correct); to not invest in high-risk instruments; I do not know/cannot understand.

Diversification 2

Look at this card. In your opinion, which one of these portfolios is better diversified? (select one answer)

70% Special Treasury Bonds (BPT), 15% euro area equity fund, 15% in two to three activities of Italian companies; 70% BPT, 30% euro area equity fund (correct); 70% BPT, 30% in two to three activities of Italian companies; 70% BPT), 30% in shares of a company that I know well; I do not know/cannot read.

Post-retirement expectations – select one answer

How worried are you about your economic well-being in old age/after you retire?
Not worried; barely worried; quite worried; very worried.

Table 1: Estimating the monetary value of RMs

	Average housing equity	Maximum loan advance	RM annuity	Average household income	Percentage gain in income from RM
All	376,989	94,247	7,661	71,325	11%
Housing equity quintile					
I quintile	141,792	35,448	2,881	54,211	5%
II quintile	222,309	55,577	4,517	63,128	7%
III quintile	310,992	77,748	6,320	77,568	8%
IV quintile	445,139	111,285	9,046	77,622	12%
V quintile	905,217	226,304	18,395	77,409	24%
Age Category					
65–69 years	416,875	93,797	7,624	80,413	9%
70–74 years	429,384	139,550	11,343	61,434	18%
75–80 years	339,500	127,313	10,348	42,738	24%
80 years or over	433,333	173,333	14,089	44,180	32%
Household Income Unit					
Couple	387,358	96,840	8,306	76,223	11%
Single male	342,116	85,529	7,336	66,633	11%
Single female	358,432	89,608	7,686	52,116	15%
Geographical Area					
North	356,826	89,206	7,652	66,482	12%
Centre	421,820	105,455	9,045	76,674	12%
South	381,476	95,369	8,180	76,181	11%

Source: UCS

Table 2: Summary statistics by demographic and socioeducational status

	UCS	SHIW
Average age of household head	56.0	57.6
Percentage of female household head	22.0%	37.0%
Percentage of elderly household head	29.6%	36.3%
Area of residence		
North	51.3%	44.6%
Centre	24.3%	20.16%
South	24.4%	35.3%
Education(a)		
No education	0.5%	5.3%
Primary education (5 years)	8.9%	26.5%
Lower secondary education (8 years)	20.4%	28.2%
Middle education / professional schools (11 years)	3.9%	6.7%
Upper secondary education (13 years)	40.8%	24.2%
Higher education (degree or more)	24.4%	8.9%
Occupation		
Pensioner – retired from work	32.3%	36.1%
Pensioner – not retired from work (disability benefits, etc.)	2.6%	9.3%
Employee	30.8%	34.9%
Self-employed	29.4%	10.2%
Unemployed	4.0%	9.1%(b)
Avg. household size	2.6	2.5
Percentage of homeowners	90.3%	71.2%
# of observations	*1,686*	*7,768*

Source: UCS and SHIW

(a) *Unfinished years of education are added to the level attained immediately before.*

(b) *Includes housewives and the voluntarily unemployed.*

Table 3: Summary statistics by income level and distribution

Percentile	**UniCredit**		**SHIW**	
In €	**Household net disposable income**	**Individual net disposable income**	**Household net disposable income**	**Individual net disposable income**
5th	17,934	9,500	9,078	3,767
10th	22,000	13,883	11,968	5,562
25th	31,733	20,000	17,169	10,000
50th	**48,393**	**31,000**	**26,217**	**15,349**
75th	76,655	55,000	39,766	22,487
90th	129,600	100,000	55,823	32,000
95th	195,827	150,239	69,275	41,294
Mean	**71,325**	**50,717**	**31,893**	**18,450**
Standard deviation	**86,024**	**67,847**	**27,276**	**18,578**
# of observations	*1,686*	*1,686*	*7,768*	*13,428*

Source: UCS and SHIW

Table 4: Summary statistics by housing wealth level and distribution

Percentile	**UniCredit**		**SHIW**	
In €	**Household housing wealth**	**Housing wealth per square metre**	**Household housing wealth**	**Housing wealth per square metre**
5th	120,000	1,166.7	50,000	666.7
10th	150,000	1,400.0	70,000	892.9
25th	200,000	1,875.0	110,000	1,307.7
50th	**300,000**	**2,500.0**	**180,000**	**1,875.0**
75th	465,000	3,582.0	250,000	2,560.0
90th	700,000	5,000.0	400,000	3,529.4
95th	975,000	6,383.0	500,000	4,285.7
Mean	**387,367**	**2,988.5**	**215,418**	**2,095.9**
Standard deviation	**337,694**	**1,721.9**	**176,288**	**1,196.1**
# of observations	*1,686*	*1,686*	*7,768*	*13,428*

Source: UCS and SHIW

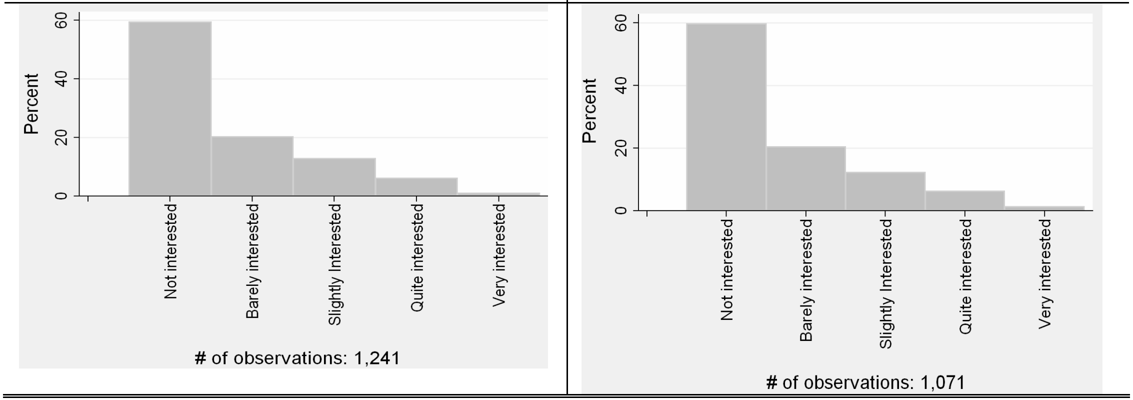
Table 5: Ordered probit regression, controlling for demographics and attitudes

Variable	Coefficient[a]	Marginal effects on probabilities				
		y = 1 (no)	y = 2 (barely)	y = 3 (somewhat)	y = 4 (quite)	y = 5 (very)
Age of householder	-0.052	0.020	-0.007	-0.008	-0.005	-0.001
	(0.12)	(0.05)	(0.02)	(0.02)	(0.01)	(0.00)
Age of householder, 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)
Age of householder, cubed	-0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Single or divorced (dummy)	0.149	-0.058	0.018	0.023	0.015	0.003
	(0.11)	(0.04)	(0.01)	(0.02)	(0.01)	(0.00)
Widower (d)	0.033	-0.013	0.004	0.005	0.003	0.001
	(0.16)	(0.06)	(0.02)	(0.02)	(0.02)	(0.00)
Female (d)	0.057	-0.022	0.007	0.009	0.005	0.001
	(0.10)	(0.04)	(0.01)	(0.02)	(0.01)	(0.00)
Higher education (d)	0.093	-0.036	0.012	0.014	0.008	0.001
	(0.08)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Households with children (d)	0.139	-0.053	0.017	0.021	0.013	0.002
	(0.09)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Householder pensioner (d)	0.068	-0.026	0.008	0.010	0.006	0.001
	(0.11)	(0.04)	(0.01)	(0.02)	(0.01)	(0.00)
(log)Property value	-0.125	0.048*	-0.016*	-0.019*	-0.012*	-0.002
	(0.07)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Log of household income	0.017	-0.006	0.002	0.003	0.002	0.000
	(0.06)	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)
RM annuity/income	0.423	-0.163	0.053	0.064	0.039	0.007
	(0.46)	(0.18)	(0.06)	(0.07)	(0.04)	(0.01)
Resident in the North (d)	0.164*	-0.063*	0.020*	0.025*	0.015*	0.003
	(0.09)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Resident in the South (d)	-0.007	0.003	-0.001	-0.001	-0.001	-0.000
	(0.10)	(0.04)	(0.01)	(0.02)	(0.01)	(0.00)
Financial literacy (0 to 4)	-0.067*	0.026*	-0.008*	-0.010*	-0.006*	-0.001
	(0.04)	(0.02)	(0.01)	(0.01)	(0.00)	(0.00)
Risk aversion (index 0.1 to 1)	0.278**	-0.107**	0.035**	0.042**	0.026**	0.005*
	(0.13)	(0.05)	(0.02)	(0.02)	(0.01)	(0.00)
Real estate perceived risk (d)	0.390***	-0.154***	0.038***	0.061***	0.045***	0.010*
	(0.12)	(0.05)	(0.01)	(0.02)	(0.02)	(0.00)
Willingness to sell the house (d)	0.702***	-0.274***	0.059***	0.108***	0.086***	0.021***
	(0.09)	(0.03)	(0.01)	(0.02)	(0.02)	(0.01)
Debt aversion (d)	-0.390***	0.152***	-0.043***	-0.060***	-0.041***	-0.008***
	(0.08)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Negative retirement exp. (d)	0.221***	-0.086***	0.027***	0.034***	0.021***	0.004**
	(0.08)	(0.03)	(0.01)	(0.01)	(0.01)	(0.00)
Number of observations	1,071					
Log likelihood	-1,113.474					
Pseudo R^2	0.062					

*The superscripts ***, **, and * indicate the 1%, 5%, and 10% levels of statistical significance, respectively.*

[a] *Standard errors in parentheses.*

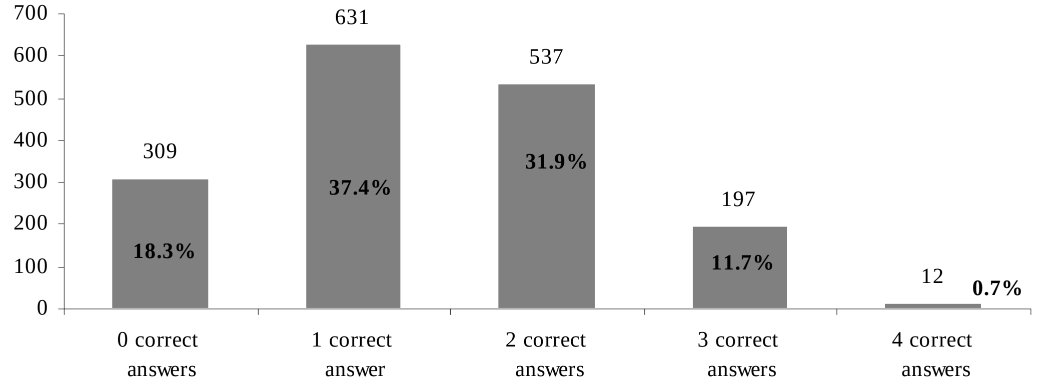
Figure 1: Interest in RMs



Any respondent (incl. household heads) | Only household heads

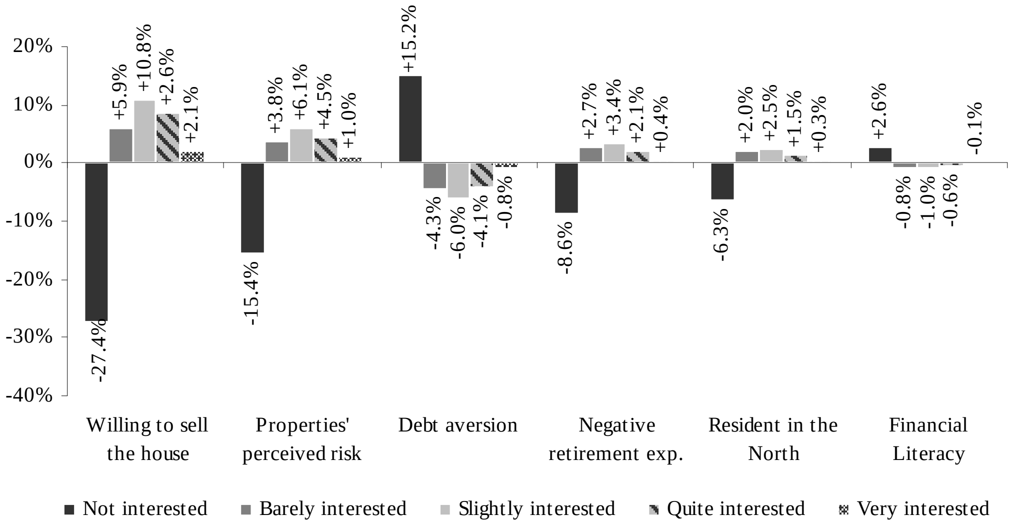
Source: UCS

Figure 2: Distribution of financial literacy



Source: UCS

Figure 3: Effect of main regressors on interest in RMs



Source: UCS.

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N° 33/04	Elsa Fornero Carolina Fugazza Giacomo Ponzetto	A Comparative Analysis of the Costs of Italian Individual Pension Plans
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N° 31/03	Giacomo Ponzetto	Risk Aversion and the Utility of Annuities
N° 30/03	Bas Arts Elena Vigna	A Switch Criterion for Defined Contribution Pension Schemes
N° 29/02	Marco Taboga	The Realized Equity Premium has been Higher than Expected: Further Evidence
N° 28/02	Luca Spataro	New Tools in Micromodeling Retirement Decisions: Overview and Applications to the Italian Case
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N° 25/02	Edmund Cannon Ian Tonks	The Behaviour of UK Annuity Prices from 1972 to the Present
N° 24/02	Laura Ballotta Steven Haberman	Valuation of Guaranteed Annuity Conversion Options
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N° 22/02	Chris Soares Mark Warshawsky	Annuity Risk: Volatility and Inflation Exposure in Payments from Immediate Life Annuities

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N° 20/02	Mauro Mastrogiacomo	Dual Retirement in Italy and Expectations
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N° 13/01	Michela Scatigna	Institutional Investors, Corporate Governance and Pension Funds
N° 12/01	Roberta Romano	Less is More: Making Shareholder Activism a Valuable Mechanism of Corporate Governance
N° 11/01	Mara Faccio and Ameziane Lasfer	Institutional Shareholders and Corporate Governance: The Case of UK Pension Funds
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N° 9/01	Hans Blommestein	Ageing, Pension Reform, and Financial Market Implications in the OECD Area
N° 8/01	Margherita Borella	Social Security Systems and the Distribution of Income: an Application to the Italian Case
N° 7/01	Margherita Borella	The Error Structure of Earnings: an Analysis on Italian Longitudinal Data
N° 6/01	Flavia Coda Moscarola	The Effects of Immigration Inflows on the Sustainability of the Italian Welfare State
N° 5/01	Vincenzo Andrietti	Occupational Pensions and Interfirm Job Mobility in the European Union. Evidence from the ECHP Survey
N° 4/01	Peter Diamond	Towards an Optimal Social Security Design

N° 3/00	Emanuele Baldacci Luca Inglese	Le caratteristiche socio economiche dei pensionati in Italia. Analisi della distribuzione dei redditi da pensione (only available in the Italian version)
N° 2/00	Pier Marco Ferraresi Elsa Fornero	Social Security Transition in Italy: Costs, Distorsions and (some) Possible Correction
N° 1/00	Guido Menzio	Opting Out of Social Security over the Life Cycle