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## **(Lack of) Pension Knowledge**

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August 2013

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## **ABSTRACT**

### **(Lack of) Pension Knowledge**

Governments are increasingly concerned about the capacity of pensions systems to meet demands in the coming years. According to the OECD, one part of the policy response in many countries will be greater private provision on the part of individuals through occupational and other pension arrangements. If such a strategy is to work, it requires that individuals are well-informed about pensions. However, there are many reasons to believe that individuals may not be well-informed due to the complexity of pensions systems and degrees of myopia. In this paper, we assess levels of knowledge of pensions using a representative sample of older Irish people. Looking at people who are enrolled in pension schemes, we find that two thirds of these people do not know what amount will be paid out on retirement and/or whether the payments will be in the form of lump-sums, monthly payments or both. Women are more likely not to know, as are people with lower levels of education. While one policy conclusion might be to direct pensions-related information at certain groups, another approach might be to extend the mandatory elements in pension systems such as contribution rates.

JEL Classification: I38, J14

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# **(Lack of) Pension Knowledge**

## **1. Introduction**

A major policy concern for many governments in Europe (and beyond) is how to ensure that national pension systems are both adequate and financially sustainable. This concern has existed for a number of years with adequacy and sustainability being threatened by population ageing. However, the global economic crisis of recent years has heightened concerns due to factors such as fiscal crises which affected many countries.

In countries such as the US, the UK and Ireland governments have tended to look to the private sector as the route to boost pensions saving, typically through occupation-based pension plans. According to the OECD “voluntary private provision for old age will become increasingly important in a range of other countries as future public benefits have been cut back” (OECD 2012, p 24). In looking to the private system to play an enhanced role in pension provision, policy-makers in Ireland, the UK and elsewhere are looking to individuals to take a greater role in pension-related decisions, often through the schemes offered by employers. While participation in the state pension schemes is mandatory for employees through social insurance contributions, participation in occupational schemes outside of the public sector is often voluntary, as is participation in other forms of private pension saving arrangements. Given this increased role for private and hence voluntary arrangements, a question arises over whether people are well-equipped to make good decisions regarding their future pension needs.

According to simple economics models, rational and forward-looking individuals will make optimal decisions on inter-temporal allocation of resources if they have perfect knowledge of the pension system. In reality, knowledge is often imperfect because the information required for decision-making is extensive. In addition, the system is very complex, with various organisations contributing to the possible options available to people. There is substantial involvement by the State through the social welfare system, the pension regulatory system and the taxation system. Employers are also involved through their sponsorship of occupational pension schemes, as are personal pension providers. This complexity poses significant problems and difficulties for those planning for retirement. The knowledge and understanding of the system that individuals accumulate can depend on a number of factors including: the quantity/quality of information acquired at the workplace, from colleagues, trade unions, family members, and peers; personal analytical abilities and personal rate of time preferences (discount rates, myopia).

In this paper, we aim to explore the levels and patterns of knowledge of a private pensions system. We use the first wave of the Irish Longitudinal Study on Ageing (TILDA). This is a nationally representative study of people aged 50 and over (and their spouses or partners of any age) resident in Ireland. This dataset is particularly well suited for our analysis because it includes a module on retirement planning. Respondents are asked a battery of questions about

their pension arrangements, including questions on the form that future pension will be paid (lump-sum or weekly/monthly payments) and the likely amount (in euro terms or as a percentage of salary). When asked, participants are given the option of providing a response of “don’t know”.

We investigate the level of don’t know responses and also the characteristics of those who give “don’t know” responses when asked about the form in which their supplementary pension will be paid and/or how much these pension(s) will pay out on retirement. We find that around two thirds of individuals who are making supplementary contributions to their pensions are not able to estimate the form and/or amount of their pension benefits in retirement. The lack of knowledge is higher for those who are poorly educated, females, younger and living in rural areas. In terms of policy conclusions, the remarkably high level of “don’t knows” suggests that caution should be exercised by governments who plan on following the US, the UK and Ireland in relying more heavily on voluntary private pension arrangement.

The paper is structured as follows. In Section 2, we highlight the key features of Ireland’s pension system. In Section 3, we discuss the literature in this area. In Section 4, we describe the data. The model employed in the analysis is outlined in Section 5, with the results following in Sections 6 (descriptive) and 7 (regressions). We conclude in Section 8.

## **2. The Irish pension system**

By way of providing context for the analysis that follows, it is useful to provide some details on Ireland’s pension system.

It is helpful to think of the Irish pension system as being composed of three basic components or pillars. The *first pillar* is the state social welfare system which provides a range of payments such as the State Pension and the Widow(er)’s Pension. Entitlement to these payments is based either on contributions collected through the Pay-Related Social Insurance (PRSI) system or on a means test.

The *second pillar* is occupational pensions, i.e. pension schemes organised by employers as a service to their employees. These vary considerably in their organisation and benefits. For example, about one third of occupational scheme members are in a Defined Contribution (money purchase) scheme while two thirds are covered by a Defined Benefit (final salary) basis.<sup>1</sup> The quality of these schemes also varies in terms, for instance, of the size of the pension promised and the manner in which it is indexed. The pensions provided for workers in the public sector are distinctive in that in most cases they operate on a “pay as you go”, rather than a funded basis. They also tend to be more generous than the private sector schemes.

The *third pillar* covers personal pensions, i.e. pensions arranged by individuals on their own behalf through a pension provider. A new type of personal pension called a Personal Retirement Savings Account (PRSA) was introduced in 2002 to encourage more people to make individual provision for retirement. The provisions of the PRSA schemes are

standardised and their administrative charges are capped. If an employer does not provide the staff with an occupational pension, he/she is obliged to offer employees the option of a PRSA arranged through the firm.

### **3. Literature review**

The determinants of individuals' knowledge of their expected pension benefits and time/effort dedicated to planning for retirement have been investigated in a number of studies. For example, Lusardi (2003), Lusardi and Mitchell (2006) and Gustman and Steinmeier (2005) have used data from the Health and Retirement Study (HRS) in the US to investigate the extent to which individuals plan for their retirement.

The study by Gustman and Steinmeier (2005) is particularly interesting for our research question. The two authors investigated knowledge about future pension benefits by comparing respondent reports with benefits calculated from Social Security records and employer pension plan descriptions. They found that around half of respondents were unable to report their expected pension benefits. Also only half of those who reported a figure, reported a value that fell within 25% of the measure calculated from Social Security records and employer pension plan descriptions.

Gustman and Steinmeier (2005) also found that those who are least likely to know about their future pension benefits are poorly educated individuals, women and blacks. On the other hand, those who have spoken with friends about retirement, self-report to be in poor health and belong to the top deciles of the household lifetime earnings distribution are more likely to have better information about their future pensions. One might hypothesise that women have poorer knowledge because they rely more heavily on their spouses' knowledge and resources. Poorly educated individuals might have higher discount rates and find it more difficult and costly to gather information about future benefits. On the other hand, speaking with friends about retirement might help individuals to understand the options available to them more fully and reduce information costs.

Lusardi (2003) found that around 30% of households whose head was close to retirement had done little or no planning for retirement. She also found that planning is shaped by the experience of other individuals (in particular older siblings and parents) and that unexpected negative shocks, e.g. financial difficulties and health shocks at the end of life, provide incentives toward planning. Lusardi and Mitchell (2006) found that less than one fifth of older Americans reported that they had succeeded in developing a saving plan for retirement.

Another strand of the literature has investigated how financial numeracy impacts on planning for retirement. Empirical evidence has been collected in the United States, England, the Netherlands, Italy, Germany, Sweden, Japan, New Zealand, Russia and Europe and a whole (Banks and Oldfield, 2007; Christelis et al, 2010; Lusardi and Mitchell, 2011a and 2011b; Alessie et al, 2011; Fornero and Monticone, 2011; Bucher-Koenen and Lusardi, 2011; Almenberg, and Save-Soderbergh, 2011; Klapper and Panos 2011; Crossan et al, 2011; Sekita, 2011). In the surveys employed in these empirical papers, financial literacy is

measured by asking respondents to carry out elementary calculations related to concepts such as interest compounding, inflation and risk diversification.

The empirical literature on the relationship between financial literacy and retirement planning shows that the two concepts are closely and positively related. Women are less likely to answer the financial literacy questions correctly and more likely to state that they do not know the answer, compared to men. Also, higher educated individuals have a higher degree of financial literacy, although scoring relatively poorly in most countries. In general terms, the results of these studies suggest that there is a potentially important role for financial literacy in shaping retirement planning (Lusardi and Mitchell, 2011a, p.503).

#### **4. Data**

We use data from the first wave (2009/2011) of The Irish Longitudinal Study on Ageing (TILDA). This is a nationally representative study of people aged 50 and over (and their spouses or partners of any age) resident in Ireland. The study is closely harmonised with other leading international studies of ageing such as The English Longitudinal Study of Ageing (ELSA), the Survey of Health, Ageing and Retirement in Europe (SHARE) and the Health and Retirement Survey in the US. The TILDA sample was selected from the Irish Geodirectory, a comprehensive and up-to-date listing and mapping of all residential addresses in the Republic of Ireland. A clustered sample of addresses was chosen employing the RANSAM sampling procedure developed by the Economic and Social Research Institute (for more details on the RANSAM sampling procedure, see Whelan, 1979).

Data collection in TILDA is made of three components: (1) a computer-aided personal interview (CAPI) questionnaire; (2) a self-completion questionnaire (SCQ), designed to explore certain areas that were considered particularly sensitive for respondents to answer directly to an interviewer; (3) a comprehensive health assessment, conducted either in dedicated health assessment centres or, alternatively, in respondents' homes. Detailed information on all aspects of the respondents' lives was collected in the CAPI, including the economic dimension (pensions, employment, living standards), health aspects (physical, mental, service needs and usage) and the social domain (contact with friends and kin, formal and informal care, social participation).

The first wave of TILDA includes 8,504 respondents for the CAPI questionnaire (8,175 aged 50 and above and 329 younger partners of eligible individuals). The household response rate was 62%. Of the 8,504 CAPI participants, 7,191 completed and returned the self-completion questionnaire and 6,153 underwent the health assessment (85% in the health assessment in Dublin or Cork and 15% in their own home).

TILDA includes a module that deals with the arrangements people are making to provide for their retirement. Private and public sector employees are asked whether they are: i) members of an occupational pension scheme organised by their current employer; ii) members of a Personal Retirement Saving Account scheme organised through their employer; iii) not a



member of either type of scheme. They are also asked whether they currently pay into one or more private pension plans and whether they are entitled to any other pensions from previous employers.

Individuals who are self-employed, unemployed, in education and training, permanently sick or disabled or 'other' are first asked whether they currently pay into a Personal Retirement Savings Account (PRSA). They are then asked whether they currently pay into one or more private pension plans and whether they are entitled to any other pensions from previous employers.

Individuals seem to know whether they are currently paying into one or more occupational or private pensions or not. Fifty seven percent of employees are members of an occupational pension or PRSA organized through their current employer, 41.8% are not members of either type of scheme, 1.1% report that they do not know and 0.01% refuse to answer the question. Six per cent of those who are self-employed, home makers, unemployed, permanently sick or disabled, in education or training or "other" are currently paying into a PRSA, 93.5% are not paying into such a scheme, 0.3% do not know and 0.2% refuse to answer this question.

Respondents who report that they are contributing to at least one of these pensions are then asked a series of questions on the detailed provisions of the scheme. For example, individuals are asked about their current contributions to the scheme, the contributions made by their employers, the normal age of retirement and the earliest age the pension plan allows them to retire. If respondents are contributing to more than one pension, they are asked about each pension separately. Respondents are always given the option to refuse to answer the question or to say that they 'do not know'.

In the analysis below, we use the "don't know" responses as an indicator of a lack of knowledge regarding the parameters of pension schemes in which the respondents are enrolled. We focus on the questions regarding the form in which the pension will be paid (lump sum and/or regular payment) and how much the pension will pay out on retirement. When answering the question about the amount to be paid on retirement, respondents are allowed to provide either a euro amount or to express their expected payment as a percentage of salary.

In the case of some questions on pension-related matters, respondents are encouraged by the interviewer to check their pay slip in order to answer the questions concerning – this approach is taken, for example, when asking about the contributions they or their employers make. This is done in an attempt to collect reliable data on pensions' contributions. Given that we cannot distinguish between those who checked and did not check their payslip, we do not include the questions on contributions in our analysis.

Although the full TILDA sample includes over 8,500 people, we are only looking at people who have not yet retired and who are covered by some form of private pension. For this reason, the number of observation used here is just under 2,000.

## **5. The model**

Our interest is in exploring whether people are informed about the parameters of their pension schemes and how knowledge varies across different people with different characteristics. In order to pursue this, we create a dependent variable which is equal to one if the individual provides a “don’t know” response to a pension question and zero otherwise. We then run probit regressions to see if individual characteristics explain the distribution of “don’t knows”.

The specific questions that are used to create the dependent variable are as follows. Respondents are asked to answer the following questions in relation to the expected benefits of the occupational / personal pensions they are contributing to:

- *Question 1:* When you retire, how will funds from your pensions be paid?
  - As a pension only (go to *Question 2*)
  - As a lump-sum plus a pension (go to *Questions 2 and 3*)
  - Do not know
  - Refused

If respondents know how funds will be paid, they are then routed to one (or both) of the following questions:

- *Question 2:* When you retire, before any tax deductions, how much do you expect to receive each month from this pension?
  - Percentage of salary
  - Monthly amount
  - Do not know
  - Refused
- *Question 3:* How much do you expect to receive as a lump sum payment from this pension scheme when you retire?
  - Amount
  - Do not know
  - Refused

In our first probit model (*Model 1*), the dependent variable is equal to one if the respondent does not know the form and/or amount of her future pension benefits, zero otherwise. This occurs when the respondent answers “do not know” to any of the three questions reported above, zero otherwise. The share of individuals who refuse to answer Questions 1, 2, or 3 is negligible. We assign them to the base category assuming that they know the answer to the question(s) and refuse to report it to the interviewer. In our second probit model (*Model 2*), the dependent variable is restricted somewhat and is based on responses to Question 2 only. In Model 2, the dependent variable is equal to one if the respondent cannot estimate her future monthly pension benefits, zero otherwise.

If respondents have more than one pension and cannot estimate the form/amount of at least one of the pensions, they are assigned to the “do not know” category. This is based on the assumption that if they do not know the expected benefits of at least one of their pensions,

they are not able to fully estimate the resources they will have in retirement. However, as a robustness check, we also take into consideration only the ‘most important’ pension when respondents report to be covered by more than one pension. The results of this alternative specification are in line with those reported in the main model(s) and are presented in Appendix 1.

We first include individuals who are at work (employees and self-employed), in unemployment, looking after home or family, permanently sick and disabled, in education or training and ‘other’. We then restrict our sample to employees only.

Turning to the explanatory variables, in the models including all respondents who are covered by at least one occupational or private pension, we follow the international literature and control for:

- *Current demographic and socio-economic characteristics:*
  - single year of age
  - gender
  - marital status (married/cohabiting or not)
  - highest qualification attained (none/primary (reference category); intermediary; tertiary or higher)
  - current area of residence (lives in Dublin (reference category); lives in town/city other than Dublin; lives in a rural area)
  - labour market status (private sector employee (reference category), public sector employee, self-employed (farmer); self-employed (no-farmer); other (including those who are unemployed, permanently sick or disabled, looking after home or family, in education or training or other)
  - number of pensions the individual is covered by
  - number of children
  - number of years spent working over the lifetime
- *Socio-economic characteristics in childhood:*
  - Whether both respondent’s parents were working outside the home when the respondent was aged less than 14 (yes or no)
- *Health:*
  - self-reported health (excellent/very good (reference category), good, fair/poor;
  - health insurance (yes or no)
- *Cognitive ability:* this is measured through a word recall test in which ten common words are presented orally and the respondent is asked to remember them after a short delay.

If the results of the international literature are confirmed, we would expect poorer knowledge amongst women and poorly educated individuals. On the other hand, we would expect better knowledge amongst those who have spent a higher proportion of their lives at work and who are covered by a defined benefit scheme (often public sector employees), given that their occupational pension will be linked to their final salary. Also, we would expect older individuals to be less likely to fall into the do not know category. Older individuals are closer to retirement and hence closer to the point in which they will stop contributing and receive

the pension benefit instead. We include our (limited) measure of cognitive ability because of the findings in previous studies of links between cognition and general financial knowledge. We also include a measure of health status on the expectation that people in poorer health may pay closer attention to financial planning.

In the models focusing on *employees only* we also control for:

- Socioeconomic group: managers and professionals (reference category); non-manual; manual skilled; semi-skilled; unskilled; unknown or refused
- Type of pension the individual is covered by: defined benefit (reference category), defined contribution; other (which applies when the individual is covered by a pension with a previous employer or a private pension or when the individual is unsure)
- Part-time employment (yes versus no)
- Firm size (1-24 employees (reference category); 25-199; 200+)

Once again, if the results of the international literature are confirmed, we would expect full-time employees and employees covered by a defined benefit scheme and in higher socioeconomic groups to be better informed.

## 6. Descriptive statistics

Table 1 summarises the descriptive statistics. The first row of Table 1 shows that 67.7% of respondents (and 68.2% of employees) do not know either the form of payment or the amount (or both) of their future benefits. Also, 55.8% of respondents (and 56.3% of employees) do not know their future monthly pension benefits.

These figures are striking and one possible explanation which might suggest itself is the fact that the data was collected during the economic crisis when uncertainty was high. While there might be some truth in this, a closer look at the proportion of people in the “don’t know” category who are in defined benefit schemes is revealing. According to Table 1, 50% of those who are covered by DB do not know the amount they will receive, even as a percent of salary. Given the DB should be the least uncertain and most transparent scheme, it would seem that the lack of knowledge is not limited to those in DC or other schemes.

Looking more broadly at Table 1, we can see the characteristics of those who are more likely to have imperfect knowledge. For dichotomous variables, statistically significant differences are reported for each subgroup with respect to the category which is omitted in the econometric model, which is the reference category. For continuous variables, we report the mean value for those falling into the do not know category and, in square brackets, the mean value for those falling into the ‘know’ category. Statistically significant differences in means between the two groups are reported. The conventional notation is used so that: \*\*\* if the difference is significant at 1% level, \*\* at the 5% level and \* at the 10% level. Standard deviations are not reported in the table, but can be made available on request.

-- Table 1 around here --

In line with other studies (e.g. Banks and Oldfield, 2007 and Gustman and Steinmeier, 2005), we find that younger individuals (as in closer to 50 which is the cut-off age in TILDA), women and poorly educated individuals are less likely to know about future benefits. Just over 70% of women and 76% of those with primary or no education cannot estimate either the form or the amount (or both) of their future benefits, compared to 66% of men and 62.9% of those with tertiary or higher education. Also, ‘imperfect knowledge’ is highest amongst those living in a rural area and for farmers. Eighty three percent of farmers cannot estimate the form/amount (or both) of their future benefits. The share of those with imperfect knowledge is lower for those falling into ‘other labour market status’ than for employees or self-employed. This is probably due to the fact that those who have already withdrawn from the labour market or are unlikely to return - for example homemakers and permanently sick and disabled - are more informed about their future pension benefits.

When focusing on employees only, we observe a clear gradient for socioeconomic groups. Managers and professionals are at lowest risk of imperfect knowledge, unskilled workers at highest. Also, the degree of imperfect knowledge is significantly lower for those covered by a defined benefit pension. This is to be expected although as noted above, the level of “don’t know” responses among those covered by DB schemes is still surprisingly high.

## 7. Regression Results

Table 2 presents results from probit models exploring the relation between respondents’ imperfect knowledge of the form/amount of their future pension benefits and the set of independent variables listed above. The dependent variable in Columns 1 and 3 takes on a value of one if the individual answers ‘do not know’ to any of the three questions outlined in Section 5.1 (Model 1). The dependent variable in columns 2 and 4 takes on a value of one if the individual answers ‘do not know’ to question 2 (Model 2). Columns 1 and 2 focus on all respondents, Columns 3 and 4 on employees only. Marginal effects and p values are reported in the table.

-- Table 2 around here --

The results of Columns 1 and 2 show that the probability of having imperfect knowledge of future pension benefits is lower for individuals who are older, male, have a secondary or tertiary level of education, currently work in the public sector, in self-employment (other than farming) or in another category of labour market status (i.e. unemployed, looking after family, permanently sick or disabled, in education and training or other). Another predictor of lower rates of imperfect knowledge is having grown up in a family in which both parents were working. We assume that this variable captures something about the environment in dual income homes, when the TILDA respondents were young, where issues related to work may have been discussed more often. Those who are covered by private health insurance also show a lower probability of having imperfect information. Here, we assume that having private health insurance is an indicator of individuals who make careful decisions about their finances and their futures.

The results are generally in line with those of the international literature and with our initial assumptions. In particular, we observe a clear educational gradient with individuals with secondary (tertiary) education being 13.2% (16.6%) points less likely to have imperfect knowledge about the form/amount (or both) of their future pension benefits. At the same time, those living in a rural area and covered by a higher number of occupational / personal pensions are more likely to have imperfect knowledge of their future pension benefits.

Respondents who can recall a higher number of words in the word recall test do not seem to have better knowledge. This is somewhat surprising as we had expected a link between this measure of cognitive ability and knowledge of pension parameters. Our finding of no significant relationship suggests that the lack of knowledge is not the result of pensions being too complicated to understand but rather a failure to gather knowledge.

Columns 3 and 4 focus on employees only. Once again, employees who are older, male, with secondary or tertiary level of education and covered by a health private insurance are less likely to have imperfect knowledge of their future benefits. We observe a clear gradient in socioeconomic status: the probability of not being able to estimate the monthly amount of future pension benefits is 22.9% points higher for unskilled workers than for managers and professional workers. Also, individuals covered by a defined contribution pension are 15.8% points more likely to have imperfect knowledge of the monthly amount of their future pension benefits than those covered by a defined benefit pension.

## **8. Conclusions**

The lack of knowledge which has been uncovered above of the basic parameters of the pension plans in which people are enrolled is striking. Recalling that the analysis is based on people aged over 50 who are covered by some sort of plan, it seems reasonable to assert that pension-related knowledge should be higher in this group compared to others in the population. If this is the case, then levels of knowledge in the remainder of the population would be even lower. It is against this background that the Irish government, like others, will place a greater onus on individuals to make provision for their retirements.

As we have identified an information problem, the most straightforward policy proposal would be for the state to provide more information. The results above suggest how some groups might be targeted. There is evidence that women are less well-informed than men and that there are socio-economic gradients, whether we use education or occupation as the indicator of socio-economic status.

On the question of how best to provide information, a number of studies in the US have investigated whether financial education provided in the workplace can increase retirement saving and alter the investment allocation of assets in retirement accounts (Bayer et al, 1996; Clark and Schieber, 1998; Madrian and Shea, 2001; Bernheim and Garrett, 2003; Clark et al, 2006). The findings of these studies are quite encouraging, as they show that workers employed by firms that offer financial education programs have higher participation rates and contribution rates in defined contribution plans (Bayer et al, 1996; Clark and Schieber, 1998)

and greater diversification in their retirement plan portfolios (Madrian and Shea, 2001). Clark et al (2006) found that women are more responsive to financial education programs carried out in the workplace and are more likely to raise their desired retirement age, increase their target income replacement goal and alter their savings behaviour as a result of the financial education programme. Bayer et al (1996) show that the effect is typically stronger for non-highly compensated employees, that seminars are the most effective type of communication and that the effect is higher for those who attend the seminars more frequently.

While there may be scope to provide information and coaching, the question remains as to whether pensions are an area where too great a reliance on individual decision-making may lead to unfavourable outcomes – for individuals and for the state. In this context, policies which draw on a greater role for the private sector but which also include elements of compulsion may be preferable to purely voluntary private arrangements. Some countries have experimented with a mild form of compulsion, notably through auto-enrolment in occupational pensions with the option to opt-out. New Zealand has led the way in this regard and is being followed by the UK. The experience in New Zealand has been successful and if this is mirrored in the UK, it may point the way for balancing individual responsibility for pension provision with a strong signal from the state on the desirability of making such provision.

#### Endnotes:

(1): Defined benefit schemes provide the employee with a pension “promise” of a certain percentage of an employee’s final salary. Defined contribution schemes offer a pension determined by the level of contributions invested into a fund, its investment performance and the charges levied.

## References

- Alessie, R., Van Rooij, M. and Lusardi, A. (2011). Financial literacy and retirement preparation in the Netherlands. *Journal of Pension Economics & Finance* 10 (4): 527-545.
- Almenberg, J. and Save-Soderbergh, J. (2011). Financial literacy and retirement planning in Sweden. *Journal of Pension Economics & Finance* 10(4): 585-598
- Banks, J. and Oldfield, Z. (2007) Understanding pensions: cognitive functions, numerical ability and retirement saving. *Fiscal Studies*, 28(2): 143-170.
- Bayer, P., Bernheim, D. and Scholz, K. (1996). The effects of financial education in the workplace: evidence from a survey of employers. Unpublished paper, Stanford University.
- Bernheim, D. and Garrett, D.B. (2003). The effects of financial education in the workplace: evidence from a survey of households. *Journal of Public Economics*, 87: 1487-1519.
- Bucher-Koenen, T. and Lusardi, A. (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics & Finance* 10(4): 565-584.
- Christelis, D., Jappelli, T. and Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54: 18-38.
- Clark, R. and Schieber, S. (1998). Factors affecting participation rates and contribution levels in 401(k) plans. In Olivia Mitchell and Sylvester Schieber (eds), *Living with Defined Contribution Plans*. Philadelphia: University of Pennsylvania Press, pp. 69–97.
- Clark, R.L., d'Ambrosio, M.B., McDermed, A.A. and Sawant, K. (2006). Retirement Plans and Savings Decisions: The Role of Information and Education. *Journal of Pension Economics and Finance*, 5, 45-67.
- Crossan, D., Feslier, D. and Hurnard, R. (2011). Financial literacy and retirement planning in New Zealand. *Journal of Pension Economics & Finance* 10(4): 619-635.



Fornero, E. and Monticone, C. (2011). ). Financial literacy and pension plan participation in Italy. *Journal of Pension Economics & Finance* 10(4): 547-564.

Gustman, A.L. and Steinmeier, T. (2005). Imperfect Knowledge of Social Security and Pensions. *Industrial Relations*. Vol. 44, No. 2 (April, 2005): 373 -395.

Klapper, L. and Panos, G.A. (2011). Financial literacy and retirement planning: the Russian case. *Journal of Pension Economics & Finance* 10(4): 599-618.

Lusardi, A. (2003). Planning and Saving for Retirement. Working Paper Dartmouth College.

Lusardi, A. and Mitchell, O. (2006). Financial literacy and planning: implications for retirement wellbeing. Working Paper, Pension Research Council, The Wharton School.

Lusardi, A. and Mitchell, O. (2007). Baby Boomer Retirement Security: The Role of Planning, Financial Literacy, and Housing Wealth. *Journal of Monetary Economics*, vol. 54, pp. 205-224.

Lusardi, A. And Mitchell, O.S. (2011a). Financial literacy around the world: an overview. *Journal of Pension Economics and Finance* 10(4); 497 – 508.

Lusardi, A. And Mitchell, O.S. (2011b). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance* 10 (4): 509-525.

Madrian, B. and Shea, D. (2001) Preaching to the converted and converting those taught: financial education in the workplace. University of Chicago unpublished paper.

OECD (2012) *Pensions Outlook 2012*, Paris: OECD

Sekita, S. (2011). Financial literacy and retirement planning in Japan. *Journal of Pension Economics & Finance* 10(4): 637-656.

Whelan, B.J, 1979. RANSAM: A random sample design for Ireland. *Economic and Social Review* 10, 169-74.

Table 1: Descriptive statistics

	<i>All respondents</i>		<i>Employees only</i>		N (Model 1)
	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits	
	0.677	0.558	0.682	0.563	
<b><i>Dichotomous variables:</i></b>					
<i>Current socio-economic characteristics</i>					
Male	0.660**	0.532***	0.641***	0.509***	1,106
Female (ref. cat.)	0.704	0.602	0.732	0.634	887
Married or cohabiting	0.683	0.565	0.690	0.568	1,555
NOT married/cohabiting (ref. cat.)	0.652	0.530	0.651	0.545	438
None/primary education (ref. cat.)	0.760	0.654	0.833	0.721	240
Secondary education	0.681**	0.568*	0.692***	0.579**	838
Third/higher education	0.629***	0.501***	0.613***	0.492***	915
Rural area	0.728***	0.637***	0.735***	0.638***	891
Town/city other than Dublin	0.649	0.523	0.637	0.523	553
Dublin (ref. cat.)	0.619	0.465	0.654	0.499	549
Private sector employee (ref. cat.)	0.773	0.616	--	--	623
Public sector employee	0.593***	0.517***	--	--	721
Self-employed - farmer	0.832	0.771**	--	--	98
Self-employed - other	0.683***	0.542*	--	--	298
Other labour market status	0.570***	0.480***	--	--	253
<i>Socio-economic characteristics in childhood</i>					
Both parents working	0.660	0.523*	0.678	0.536	629
NOT both parents working (ref.cat.)	0.685	0.574	0.683	0.574	1,364
<i>Health</i>					
Private health insurance	0.665*	0.549	0.652***	0.537***	1,539
NO private health insur. (ref. cat.)	0.711	0.585	0.782	0.655	454
Excellent health (ref. cat.)	0.683	0.566	0.676	0.558	1,152
Good health	0.679	0.561	0.692	0.576	596
Fair/poor health	0.645	0.517	0.682	0.555	245
<b><i>Continuous variables:</i></b>					
Age	56.17*** [57.46]	56.18*** [57.25]	55.52*** [56.44]	55.50** [56.24]	--
Number of pensions	1.29*** [1.10]	1.32*** [1.16]	1.31*** [1.08]	1.34*** [1.15]	--
Number of children	2.58 [2.49]	2.60* [2.45]	2.49 [2.47]	2.49 [2.43]	--
Number of years at work	34.84 [35.37]	34.72** [35.63]	34.15*** [35.61]	34.1*** [35.9]	--
Words recalled	8.07 [8.04]	8.07 [8.05]	8.17 [8.21]	8.14 [8.22]	--
<b><i>Dichotomous variables employed for 'employees only'</i></b>					
Defined Benefit pension (ref. cat.)	--	--	0.608	0.506	820
Defined Contribution pension	--	--	0.832***	0.703***	308
Other pension	--	--	0.719***	0.583*	207
Professional/manag./tech.(ref. cat.)	--	--	0.611	0.493	619
Non manual	--	--	0.660***	0.534	280
Manual skilled	--	--	0.809***	0.687***	148
Semiskilled	--	--	0.765***	0.678***	169
Unskilled	--	--	0.817**	0.739**	39

Unknown / refused	--	--	0.656	0.512	80
Part-time employee	--	--	0.725	0.586	1,028
Full-time employee (ref. cat.)	--	--	0.670*	0.557	307
Firm size 1-24 (ref. cat.)	--	--	0.726	0.616	468
Firm size 25-199	--	--	0.711	0.573	362
Firm size 200+	--	--	0.622***	0.509***	505
Defined Benefit pension (ref. cat.)	--	--	0.608	0.506	820
Defined Contribution pension	--	--	0.832***	0.703***	308
Other pension	--	--	0.719***	0.583*	207
Professional/manag./tech.(ref. cat.)	--	--	0.611	0.493	619
Non manual	--	--	0.660***	0.534	280
Manual skilled	--	--	0.809***	0.687***	148
Semiskilled	--	--	0.765***	0.678***	169
Unskilled	--	--	0.817**	0.739**	39
Unknown / refused	--	--	0.656	0.512	80
N (knows + DKs)	1,933	1,742	1,335	1,188	--

For dichotomous variables, we report statistically significant differences for each subgroup with respect to the category which is omitted in the econometric model, i.e. the reference category. For continuous variables, we report statistically significant differences in means. Means for those falling into the 'know' category are reported in square brackets. \*\*\*p<0.01 \*\*p<0.05 \*p<0.10. Data is weighted.

Table 2: Marginal effects [p value] – Models 1 and 2

	<i>All respondents</i>		<i>Employees only</i>	
	Column 1	Column 2	Column 3	Column 4
	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits
<i>Current socio-economic characteristics</i>				
Age	-0.011***	-0.011***	-0.011***	-0.007*
	[0.000]	[0.000]	[0.001]	[0.098]
Male	-0.123***	-0.133***	-0.150***	-0.183***
	[0.000]	[0.000]	[0.000]	[0.000]
Married or cohabiting	0.027	0.027	0.056*	0.049
	[0.300]	[0.387]	[0.058]	[0.168]
Secondary educ.	-0.132***	-0.138***	-0.157***	-0.142**
	[0.000]	[0.001]	[0.002]	[0.011]
Third/higher educ.	-0.166***	-0.196***	-0.204***	-0.204***
	[0.000]	[0.000]	[0.000]	[0.000]
Rural area	0.091***	0.147***	0.061**	0.109***
	[0.001]	[0.000]	[0.047]	[0.002]
Town/city other than Dublin	0.036	0.059*	-0.010	0.023
	[0.193]	[0.073]	[0.757]	[0.538]
Number of pensions	0.195***	0.166***	0.264***	0.216***
	[0.000]	[0.000]	[0.000]	[0.000]
Number of children	0.006	0.011	-0.005	-0.004
	[0.334]	[0.166]	[0.565]	[0.696]
Number of years at work	0.000	-0.001	-0.004*	-0.008***
	[0.979]	[0.536]	[0.083]	[0.001]
Public sector employee	-0.192***	-0.115***	--	--
	[0.000]	[0.000]	--	--
Self-employed - farmer	0.067	0.145**	--	--
	[0.244]	[0.043]	--	--
Self-employed - other	-0.075**	-0.054	--	--
	[0.033]	[0.182]	--	--
Other labour market status	-0.170***	-0.108***	--	--
	[0.000]	[0.007]	--	--
Defined Contribution	--	--	0.191***	0.158***
	--	--	[0.000]	[0.000]
Other Pension	--	--	0.117***	0.080*
	--	--	[0.001]	[0.063]
Non manual	--	--	-0.012	-0.039
	--	--	[0.715]	[0.322]
Manual skilled	--	--	0.138***	0.144***
	--	--	[0.002]	[0.003]
Semiskilled	--	--	0.090**	0.128**
	--	--	[0.044]	[0.010]
Unskilled	--	--	0.170*	0.229**
	--	--	[0.066]	[0.017]
Unknown / refused	--	--	0.036	0.016
	--	--	[0.492]	[0.789]
Part-time employee	--	--	0.020	-0.027
	--	--	[0.547]	[0.472]
Firm size 25-199	--	--	0.018	-0.018
	--	--	[0.558]	[0.632]
Firm size 200+	--	--	-0.028	-0.051
	--	--	[0.334]	[0.126]
<i>Socio-economic characteristics in childhood</i>				

Both parents working	-0.052**	-0.070***	-0.023	-0.045
<i>Health</i>				
Private health insurance	-0.071***	-0.052*	-0.068**	-0.055
	[0.004]	[0.075]	[0.040]	[0.163]
Good health	-0.008	-0.010	-0.027	-0.020
	[0.721]	[0.688]	[0.322]	[0.515]
Fair/poor health	-0.022	-0.036	-0.020	-0.024
	[0.505]	[0.351]	[0.632]	[0.635]
<i>Cognitive ability</i>				
Words recalled	0.000	0.000	0.004	-0.001
N (knows + DKs)	1,993	1,742	1,335	1,188

Notes: p values in square brackets. \*\*\*p<0.01 \*\*p<0.05 \*p<0.10. Data is weighted

Reference categories are: female; not married or cohabiting; with primary or no education; lives in Dublin; private sector employee; covered by defined benefit pension; professional/managerial/technical; full-time employee; firm size 1-24; at least one parent not working; no private health insurance; in excellent health.

Appendix 1

Table A1: Marginal effects [p value] – Models 1 and 2, most important pension only

	<i>All respondents</i>		<i>Employees only</i>	
	Column 1	Column 2	Column 3	Column 4
	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits	Model 1: DK form/amount or both of pension benefits	Model 2: DK amount of pension benefits
<i>Current socio-economic characteristics</i>				
Age	-0.011*** [0.000]	-0.010*** [0.001]	-0.011*** [0.002]	-0.006 [0.170]
Male	-0.131*** [0.000]	-0.147*** [0.000]	-0.135*** [0.000]	-0.185*** [0.000]
Married or cohabiting	0.040 [0.155]	0.034 [0.286]	0.068** [0.035]	0.053 [0.148]
Secondary educ.	-0.139*** [0.000]	-0.147*** [0.001]	-0.171*** [0.001]	-0.179*** [0.001]
Third/higher educ.	-0.182*** [0.000]	-0.212*** [0.000]	-0.229*** [0.000]	-0.268*** [0.000]
Rural area	0.097*** [0.001]	0.163*** [0.000]	0.072** [0.025]	0.127*** [0.000]
Town/city other than Dublin	0.041 [0.158]	0.072** [0.037]	-0.007 [0.839]	0.038 [0.338]
Number of pensions	0.027 [0.196]	0.029 [0.234]	0.046* [0.087]	0.061** [0.038]
Number of children	0.001 [0.834]	0.006 [0.472]	-0.016* [0.091]	-0.013 [0.189]
Number of years at work	-0.001*** [0.002]	-0.001*** [0.004]	-0.005** [0.035]	-0.009*** [0.001]
Public sector employee	-0.225*** [0.000]	-0.135*** [0.000]	-- --	-- --
Self-employed - farmer	0.087 [0.139]	0.095 [0.181]	-- --	-- --
Self-employed - other	-0.045 [0.213]	-0.028 [0.499]	-- --	-- --
Other labour market status	-0.176*** [0.000]	-0.111*** [0.008]	-- --	-- --
Defined Contribution	--	--	0.234*** [0.000]	0.180*** [0.000]
Other Pension	--	--	0.136*** [0.001]	0.090** [0.046]
Non manual	--	--	-0.017 [0.651]	-0.064 [0.117]
Manual skilled	--	--	0.102** [0.030]	0.084* [0.086]
Semiskilled	--	--	0.109** [0.019]	0.107** [0.038]
Unskilled	--	--	0.202* [0.054]	0.144 [0.141]
Unknown / refused	--	--	0.017 [0.755]	0.022 [0.711]
Part-time employee	--	--	0.063* [0.057]	-0.003 [0.931]
Firm size 25-199	--	--	-0.009 [0.793]	-0.027 [0.475]
Firm size 200+	--	--	-0.042	-0.070**

	--	--	[0.170]	[0.044]
Number of pensions	0.027	0.029	0.046*	0.061**
	[0.196]	[0.234]	[0.087]	[0.038]
Number of children	0.001	0.006	-0.016*	-0.013
	[0.834]	[0.472]	[0.091]	[0.189]
Number of years at work	-0.001***	-0.001***	-0.005**	-0.009***
	[0.002]	[0.004]	[0.035]	[0.001]
<i>Socio-economic characteristics in childhood</i>				
Both parents working	-0.054**	-0.051*	-0.024	-0.028
	[0.020]	[0.051]	[0.406]	[0.405]
<i>Health</i>				
Private health insurance	-0.079***	-0.065**	-0.073**	-0.070*
	[0.003]	[0.029]	[0.043]	[0.079]
Good health	-0.013	-0.012	-0.035	-0.023
	[0.592]	[0.648]	[0.215]	[0.465]
Fair/poor health	-0.033	-0.023	-0.029	0.008
	[0.331]	[0.560]	[0.525]	[0.876]
<i>Cognitive ability</i>				
Words recalled	0.002	0.004	0.010	0.002
	[0.788]	[0.679]	[0.312]	[0.885]
N (knows + DKs)	1,993	1,742	1,335	1,188

Notes: p values in square brackets. \*\*\*p<0.01 \*\*p<0.05 \*p<0.10. Data is weighted

Reference categories are: female; not married or cohabiting; with primary or no education; lives in Dublin; private sector employee; covered by defined benefit pension; professional/managerial/technical; full-time employee; firm size 1-24; at least one parent not working; no private health insurance; in excellent health.