

Is Information Overrated?

Evidence from the Pension Domain

Henriette Prast

(Tilburg University & Netspar)

Federica Teppa

(De Nederlandsche Bank & Netspar)

Anouk Smits

(Tilburg University)

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Abstract

This paper presents empirical evidence from the Netherlands indicating that the current policy based on information is unlikely to help people make the pension choices required in a system in which employees are the ultimate bearers of asset market risk. This holds even if information is made easier to understand, disseminated by the relevant media, and provided made to measure. The paper offers a behavioral explanation of the findings and concludes that policy makers, financial supervisors, and the pension industry should adopt alternative instruments for helping employees make good choices. These strategies may be useful in the context of recent proposals for a structural change of the pension system, including the increase in the eligibility age for the first layer pension (AOW).

JEL-Classification: D1; D84; I3; H3

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PRELIMINARY DRAFT NOT TO BE QUOTED

1. Introduction

In the industrialized world, risk and responsibility in employee retirement plans have been increasingly shifted from employers towards workers. Although the system in the Netherlands continues to be characterized by collective pension plans that are mandatory between employers and employees, it has gradually moved from a DB-type system to collective DC, with employees being (collectively) exposed to stock market risk. In fact, in recent years some pension funds have had to cut down on indexation and have announced nominal cuts on pension income and claims as of 2013. Moreover, the mandatory arrangements have become less generous than was the case until ten to fifteen years ago, with retirement income no longer depending on end-wage, but on career average. Also, from 2015, the “partner allowance”, that is the supplement on the first layer pension for residents aged 65 and older with a partner below age 65 will be abolished, implying that households will forgo up to tens of thousands of euros of pension wealth. And, finally, Dutch parliament decided in February 2012 on a gradual increase of the eligibility age for the first layer pension and the retirement age with two years from the current 65 to 67. The increase will start in 2013 and end in 2023. After 2023, the retirement age will be linked to general life expectancy.

These changes have triggered a debate on how to make sure that employees will adapt to the new situation, in which their first and second layer pension income is lower and riskier than they have been used to. As in other countries, financial literacy in the Netherlands is low (Van Rooij, Kool and Prast, 2007) and despite campaigns, financial knowledge has not increased between 2005 and 2010 (Alessie, Van Rooij and Lusardi, 2011). Moreover, employees’ expectations about the level of their pension income are high compared to what retirement plans may realistically provide (Alessie, Van Rooij and Lusardi, 2011; AFM, 2010). Note that as before some pension funds in the Netherlands – including the large ABP civil servants fund – announced pension cuts as of 2013 because of their consistently low coverage ratio.

In the US, where employees have no mandatory system, retirement savings fall short of the level necessary to maintain the standard of living. Munnell, Webb, and Golub-Sass (2007) find that even before the financial crisis, 43% of households fell at least 10% short of reaching target replacement rates. Skinner (2007) finds that even after correcting for the substitution of household production for income, a fall in living standard is likely for a large group (Skinner, 2007). Studies that find that a majority saves enough, still conclude that at

least one out of three households is inadequately prepared for retirement (Hurd and Rohwedder, 2011). However Aguiar and Hurst (2012) conclude that part of the fall in expenditure after retirement can be explained by work-related spending that is no longer necessary and that there is no huge fall in food consumption living if the data used are not of spending, but of actual food intake.

The policy response worldwide has been to focus on making people aware of their pension rights and risks through communication, information, financial education, and transparency. As Rinaldi and Giacomel (2008) state in a Working Paper of the International Organisation of Pension Supervisors (IOPS):

“Providing information – also known as disclosure – is usually seen as the main policy priority for achieving this, along with ensuring that financial education is sufficient to make the information useful. These goals are receiving increasing attention from policymakers, regulators and supervisors worldwide. Appropriate disclosure requirements are noted in the OECD’s *Core Principles of Private Pension Regulation*¹, whilst the organisation recently published a set of *Good Practices for Financial Education Relating to Pensions*.”

The Netherlands is no exception. The implicit assumption is that people who are well informed will make choices that are in line with their own preferences, although another – opportunistic - motive may be to avoid being blamed in the future by retirees who discover that their pension income is lower than they had expected (“told you so”).¹ However, the assumption that information will lead to action is challenged by behavioral evidence.² Retirement saving and investing decisions are influenced by behavioral biases; moreover, optimal life cycle saving and investing decisions are much too complex for laymen to carry out, even after financial education (Merton, 2006).

Some argue that the problem of the ineffectiveness of information can be solved by making information and communication more comprehensible. In fact, the natural response by policy makers and the pension industry in the Netherlands is that information campaigns should use other media, and/or should use a language that can be understood by their target groups, or should be more “made-to-measure”. Others doubt whether this will do the trick. They refer to behavioral economics research showing that people make serious cognitive “mistakes” that are systematic and predictable even if information is readily available to and understandable by financial

¹ See for example Steenvoorden (2011), who states that “if plan participants discover that their expectation is not met by reality, this may lead ...even to legal steps” (translation by the authors).

² Not only in the domain of retirement saving, but also in that of health-related behavior. See Kooreman and Prast (2010) and Prast (2011).

consumers. Empirical evidence on the effect of information on behavior in various fields of (intertemporal) decision making is mixed, but most studies fail to find a convincing effect. When it comes to food information, Van Kleef and Dagevos (2012) conclude that “little empirical and consistent evidence exists to support nutrition labels designed to improve eating habits.” Peters et al (2012) find that threatening communication about the effects of smoking is ineffective or even counterproductive. For financial education, Willis (2008, 2011) comes to a similar conclusion: it may even be counterproductive.

The fundamental question is whether information, even if it is well understood by the target group, will lead to a behavior change contributing to adequate retirement preparation.

The purpose of this paper is to contribute to the empirical literature on the effect of pension information and (planned) pension action. We do not pay attention to financial education and literacy, as we merely focus on the effect of very simple and made-to-measure information on future pension income and cuts in pension, for which financial literacy (understanding concepts like interest and inflation) is not needed. We present and interpret the results of a survey among Dutch employees and retirees. We asked respondents a very simple question: *“would you change your behavior if you were informed that your real pension income will be 25% lower than you had expected thus far?”* Information about a fall in real pension income of 25% can hardly be misunderstood even by those who have difficulties understanding the concept of risk, financial assets, interest rates, discounting and inflation – even though some might argue that framing effects may occur and that providing a numerical example might lead to different results. We find that only a minority of employees would change its behavior. Our results indicate that information by itself does not do much when it comes to saving for retirement or, for that matter, intertemporal choice with immediate gratification in general. The implication is that if policymakers, supervisors and the pension industry have the ambition to influence pension savings behavior, they are unlikely to reach this goal by a policy relying on information, awareness, communication and transparency. The paper also makes suggestions for behaviorally inspired strategies that may effectively help people make sensible pension choices.

The paper is organized as follows. In the next section, we briefly describe the Dutch pension system, the challenges facing it, the plans for a new scheme, and current policies aiming to help employees adequately plan for retirement. Section 3 summarizes behavioral findings about the effect of information, education and communication on intentions and behavior. Section 4 introduces the data and methodology of our empirical

work. Section 5 presents the results. In Section 6 we discuss the policy implications of the findings and make suggestions for behaviorally inspired solutions to help employees in the Netherlands make adequate pension choices. Section 7 summarizes and concludes.

2. Occupational pensions in the Netherlands

The typical employee in the Netherlands has a mandatory (between employer and employees) occupational career-average pension. This comes on top of social security which is unrelated to labour history, but related to having lived in the Netherlands. During the active working period accrued pension rights are in many cases indexed to negotiated wage increases (without backloading accruals for career steps) and pension benefits are often indexed to consumer price inflation. However, full indexation of pension claims to cost-of-living increases is not guaranteed, and even nominal “guarantees” are conditional on the coverage ratio of the pension fund meeting the prudential supervisor’s³ minimum requirement. (Van Rooij, Kool and Prast, 2007).

Having never experienced less than full indexation, let alone cuts of nominal pension and pension rights, the general public in the Netherlands was unpleasantly surprised when the financial crisis revealed what pension experts had been warning against (to no avail) for many years: that the aging of the population and the rise in life expectancy have made it impossible to guarantee pensions in a DB type system through employer and employee contributions. The wage bill is simply too small in relation to the pension claims to make up for adverse asset market performance and/or a low interest rate.

Still, support for the current mandatory system has not been eroded by the recent cuts in indexation and the announcement, during 2011 and the beginning of 2012, that some funds, including larger ones, such as the ABP, will be forced to reduce real pension rights as of April 2013. In 2003 the majority of employees in the Netherlands (77%) was in favor of the system of compulsory retirement saving (Van Rooij, Kool and Prast, 2007). At the time, 12% was against the mandatory saving scheme, and the remainder was indifferent or did not know. The financial crisis has not changed this picture: by the end of 2010, 72% was in favor, 11 % against the current system with mandatory saving (DNB, 2011). The two main reasons why employees support the system have not changed between 2003 and 2010: the time and effort that would be involved with individual retirement planning, and the fear that they would

³ Prudential supervision is in the Netherlands entrusted to the central bank.

otherwise not save (enough) for retirement. Moreover, the typical Dutch employee feels he would not be able to manage a pension portfolio. He considers himself financially unsophisticated and is reluctant to take control of managing his retirement fund, even when offered the possibility to increase expertise at no private cost (Van Rooij, Kool and Prast, 2007).

Faced with the unsustainability of the current system, employer and employee organizations have in June 2011 come up with a proposal for a change in the system which would a) increase the retirement age as of 2020, b) have pension contributions fixed, hence pension rights explicitly linked to the coverage ratio.⁴ At the same time, pension funds will be free to choose the riskiness of their portfolio and do not need – as is the case today – to cut on indexation as soon as the coverage ratio falls below 130%.

This paper will not discuss the implications of this agreement on the risk taking by pension funds, the discount rate to be used⁵, and the risk sharing effects between generations. Suffice it to say that in the new system, employees and retirees will be exposed to more risk than they are now, that future generations have lower projected pensions than current retirees, and that the importance of individual action to optimize life cycle planning will increase. We would like to note, however, an internal inconsistency. On the one hand, the system continues to be mandatory, because it is believed that it is less costly and otherwise employees would not make adequate pension choices. On the other hand, policy makers stress the importance of informing employees so that they can take measures to ensure themselves from an adequate pension income. But even if individual employees would take action to search for additional pension solutions, which most of them would not, it would be costly for them in terms of time, effort and money. We will turn to this later.

⁴ This agreement was a response to reports of two expert committees with recommendations for reform. The Frijns committee recommended to replace the current focus on the nominal funding ratio by a framework in real terms (Frijns, Nijssen and Scholtens, 2010). The Goudswaard committee concluded that either the target pension benefit level should be lowered, or workers should accept a higher risk of not reaching it. At any rate, it should be made clear to participants what risks they are bearing (Goudswaard Committee, 2010).

⁵ It has been decided in September 2012 that the Ultimate Forward Rate is to be used by pension funds for discounting future liabilities. As this higher long term rate (than the market rate) results in lower calculated liabilities and a higher calculated coverage ratio, less pension funds having to apply nominal cuts as of 2013, implying that more of the burden is shifted to future generations. The effect is especially pronounced for plans with a high proportion of young participants. See Kocken (2012). The responsible ministry has characterized the measure as a political one, aimed at protecting purchasing power of the current retirees so as to stimulate macroeconomic performance.

3. Financial education and information: policy, ideology, and evidence

Over the past years, the government, the supervisors and the pension industry in the Netherlands have made it clear that they feel responsible for informing and educating citizens about financial decisions in general and pension issues in particular. Examples are the establishment of the Centiq platform on financial education and the, since 2008, mandatory Uniform Pension Overview which is to be sent once a year to plan participants. In 2011, the Pension Register was launched. Employees can get access to information about their various second pillar pension rights accrued with different employers and funds through a website (www.mijnpensioenoverzicht.nl). In the future, the Pension Register will also include third pillar savings. Faced with the fact that the information-based policies have not made people more financially literate, a new initiative was launched in February 2012: “money window”, a physical place where people can go to get information and advice about their Uniform Pension Overview and other personal finance questions.⁶

In policy debates about the current pension system and proposed changes, there is one major recurrent theme: the pension plan should be communicable to the participants, and there should be transparency about the level and risk of pension income (Gorter & Rijsbergen, 2011). The Ministry of Social Affairs and Employment, responsible for the first and second layer pensions in the Netherlands, states that the rules and regulations regarding information in the Pension Law aim at enabling stakeholders to make an adequate financial planning (Heuts and Klaver, 2011). In the evaluation of the effectiveness of these rules and regulations, no attention has been paid to the question whether employee behavior has been affected. Instead, the evaluation assesses merely whether relevant parties have lived up to the regulation (it has) and whether the target group understands the information (it does not).⁷ In its position paper on pensions, the Dutch Financial Market Authority (AFM) points out that in order to enable consumers to make an integrated financial planning, simple, broadly accessible and affordable communication is required (AFM, 2011, p. 2).

The AFM (2010) concludes that consumers’ expectations about their future pension benefits are not in line with reality. According to their research, 59% of Dutch consumers expect to

⁶ In its motivation for the website the initiator Wijzeringeldzaken, a platform sponsored by the government and the financial industry, states that many people have difficulties finding their way through all the information on Internet, and that, moreover, that information is not made-to-measure. (www.wijzeringeldzaken.nl/2011/start-geldloket.aspx).

⁷ Kamerbrief evaluatie informatiebepalingen pensioenwetgeving, sent by the Minister to the parliament, 29 November 2011.

get a pension of 70% or more of their gross end wage. Communication is seen as a means to enable participants to make informed decisions about their financial situation. Expectations are high: thus, the AFM concludes that although informing each participant in writing about whether or not his pension is adequate may be costly, it will bring large benefits to society (AFM, 2010).⁸ The financial supervisor gives two main reasons why it is important to reduce the gap between expectation and reality. One has to do with optimal life cycle saving and investment decisions: employees should be well informed so that they will optimally save for retirement. Another reason is more modest – or, for that matter, opportunistic - and has to do with the reputation of and trust in pension funds and supervisors, and the system as a whole. If people should discover upon retirement that their pension income is lower than expected, they may lose trust in the system (Van Steenvoorden, 2011). If information and communication are merely aimed at serving the latter goal, it is sufficient to provide adequate information, and whether people act upon it is irrelevant. If the purpose of information and communication is a change in behaviour, actual behaviour is the key measure of success.

Key findings in behavioral economics are that people's behavior (revealed preferences) is often not in line with their intentions (normative preferences), that they are sensitive to the way choices are presented to them, and that their cognitive abilities are limited. This is notably the case when it comes to intertemporal decisions with immediate gratification, including saving for retirement, and health related behaviour (Beshears et al, 2008; Kooreman and Prast, 2010; Prast, 2011).

Do well informed people act upon their intentions? Based on numerous studies into actual decision making by individuals, Beshears, Choi, Laibson and Madrian (2010) identify five circumstances that make it likely that revealed preferences – tastes that rationalize observed actions – do not correspond to normative preferences – what people would like to choose/should choose, given their preferences even if people are well informed: 1) there is intertemporal choice with an immediate gratification option; 2) choice is complex; 3) there is a passive choice (“silent consent”) option; 4) there is limited experience/It is little opportunity to learn from mistakes, and 5) third parties take advantage of psychological biases of their clients. These circumstances apply “par excellence” to the domain of saving and investing for retirement, and also for the choice between a lump sum or an annuity upon retirement (Bütler and Teppa, 2007).⁹ If lack of

⁸ Literally (in Dutch): “individueel schriftelijk informeren van alle consumenten of hun pensioensituatie afdoende lijkt te zijn of juist zorgelijk is. ... brengt kosten met zich mee maar heeft aanzienlijke maatschappelijke baten” (AFM 2010, p. 21).

⁹ Perhaps, when it comes to occupational pensions, with the exception of 5), as pension funds are not-for-profit.

information is not the main reason why people make choices that harm their own welfare (and/or that of society as a whole), providing more information is unlikely to be the key to success. Where information is useful in improving knowledge in this area, as a rule it merely influences intention without affecting behavior. Choi et al. (2005) report the results of a seminar where employees were informed about the company pension plan and were afterwards asked whether they were planning to enroll into the plan. Hundred percent of attendees said yes, but a mere 14% actually did enroll.

Mandell and Klein (2009) conclude that there is no difference in financial behavior between young adults who received financial education in school and those who did not. Bernheim, Garrett and Maki (2001) found positive effects of financial education during high school on long-term savings, but these findings have been contradicted by Cole & Shastry (2008). And there is more bad news: information may even be counterproductive. Bell, Gorin & Hogarth (2009) find that after financial education, soldiers engage in *worse* budgeting. Bankruptcy debtors required to take personal finance course have worse financial outcomes (Braucher, 2001). Students who play stock market game as part of their financial schooling have increased financial knowledge but decreased thriftiness (Mandell, 2008). People who have become victims of investment fraud and predatory mortgages were *more* financially literate than non-victims (Moore, 2003).¹⁰ Willis (2008, 2011) gives an overview of findings regarding the effect of financial education on behavior, and concludes that the assumption that education will lead to better financial behavior is based on ideology, not evidence. Still, there may be some positive impact of financial education on saving behaviour. In the context of retirement seminars offered in the workplace by US firms Bernheim and Garrett (2003), Lusardi (2004) and Clark and D'Ambrosio (2008) have documented positive effects: participants surveyed just after a seminar report an intention to change saving behaviour. Overall, however, the evidence is mixed, as only a minority seems to follow up on this intention. Several studies have not been able to show significant, lasting effects (Duflo and Saez, 2003, 2004). In addition, as attendance at retirement seminars is voluntary, it is possible that the effects result from a selection bias: seminar participants may be more motivated a priori to increase pension savings (Alessie, Van Rooij and Lusardi, 2011). Rinaldi and Giacomel (2008) find that there is expert agreement that the provision of information is not sufficient to enable members to take care of their future needs in retirement.

¹⁰ Similar evidence abounds in the field of health related behavior (Prast, 2011).

4. Data, methodology and questionnaire

Our data have been collected through an internet survey in the summer of 2011 among participants of the CentERpanel run by CentERdata at Tilburg University. CentERdata is a survey research institute that is specialized in data collection and internet surveys. The CentERpanel consists of about 2000 households representative of the Dutch-speaking population in the Netherlands. The questionnaires are answered at home using an internet connection. Data collected with internet surveys display higher validity and less social desirability response bias than those collected via telephone interviewing (Chiang and Krosnick, 2003).¹¹ The panel has been used in earlier studies of pension behavior and attitude among Dutch employees (see for instance Van Rooij, Kool and Prast, 2007) and of financial literacy and retirement planning in the Netherlands (see Alessie, Van Rooij and Lusardi, 2011).

Panel members fill out short questionnaires via the internet on a weekly basis. Annually, panel members provide information on individual income, household wealth, health, employment, pensions, savings attitudes, and savings behavior for the DNB Household Survey (DHS), providing researchers with a rich set of background information on the respondents. The availability of a computer or internet connection is not a prerequisite of the selection procedure, which is done by a combination of recruiting randomly selected households over the phone and by house visits. After having agreed to participate, panel members receive explanation on survey administration, which is conducted via the internet. If necessary, either a computer with internet access or alternative equipment such as a set-top box for communication through the television is provided to respondents. Participants do not receive financial incentives to fill out questionnaires. For a complete description of the CentERpanel and the DHS see Teppa and Vis (2012).

The main focus of the questionnaire devised for this paper is to assess whether employees and others belonging to the workforce in the Netherlands, if informed that their future retirement income will fall way below their expectations thus far, would take action in order to smooth consumption over their life cycle. The financial crisis has had a major impact on the debate about the current characteristics and the future of the Dutch employee pension

¹¹ CentERdata forms part of the CentER Group at Tilburg University. See also <http://www.uvt.nl/centerdata/en>. Households who do not have access to a pc are provided with a set-top-box for their television. In case of attrition of panel members, CentERdata selects new members to keep the panel representative for the Dutch population. High income members are somewhat overrepresented. We have verified that this does not affect the descriptive statistics qualitatively. If the first questionnaire was not completed the first time, we offered the questionnaire for a second and if necessary a third time to the group of non-respondents to improve the response rate (actually the survey weekends fell within the summer vacation period).

plan. Not only has it revealed to the general public that the second layer does not guarantee indexation or a nominal wage, let alone a real wage, it has also forced some pension funds to effectively cut indexation for both current retirees and for employees pension claims, and some funds have announced that they will have to lower nominal pension income (both those of retirees and claims to future pensions) as of April 2013. Until before the financial crisis, the risk of underfunding was assumed to be very low, and the plans in the Netherlands were regarded as relatively safe as far as both nominal and real rights were concerned (Van Rooij, Kool and Prast, 2007).

Employees and others belonging to the workforce were asked the following question:

Would you change your lifestyle if you were informed that your future real pension was going to be 25 percent lower than you expected thus far?

Those who answered YES were then asked what they would change. Those who answered NO and those who answered “It would be wise to change my lifestyle, but I probably wouldn’t” were asked for the reason why.

Retirees were asked a slightly different question:

Say your pension income would be 25 percent lower than you have today. You go back in time to a day long before retirement. Would you adjust your life (style) of those days, in order to have a higher pension income today?

Those who answered YES were then asked what they would have changed. Those who answered NO and those who answered DON’T KNOW were also asked about their reasons.¹²

The questions were asked in Dutch (see Appendix for the English translation). The questionnaire was completely filled out during the summer of 2011 by a total of 1585 respondents. This corresponds to a response rate of about 70 percent. Table 1 presents the summary statistics for the main background characteristics of the respondents. Gender is captured by a female indicator taking value 1 for females, 0 for males. Females represent 46 percent of the sample. The individual age ranges between 16 and 89 and the average age is 56

¹² We also asked respondents to indicate their preference between having a pension of 100 with downside risk up to a fall to 50, or a certain pension of 75. This question relates to the two proposals for pension innovation done by the Goudswaard committee. In this paper we do not analyze the answers to that question

years. The majority of the respondents have a high education level (44 percent), while the mid and the low education level are represented by 29 and 27 percent, respectively. Household size ranges between single households (21 percent) and households with more than 5 members (5 percent). Half of the sample is made up by 2-person households. About 75 percent of respondents have a partner. The majority of respondents are in the workforce (41 percent), and the retired represent the second largest occupational group (30 percent).

Table 1 about here

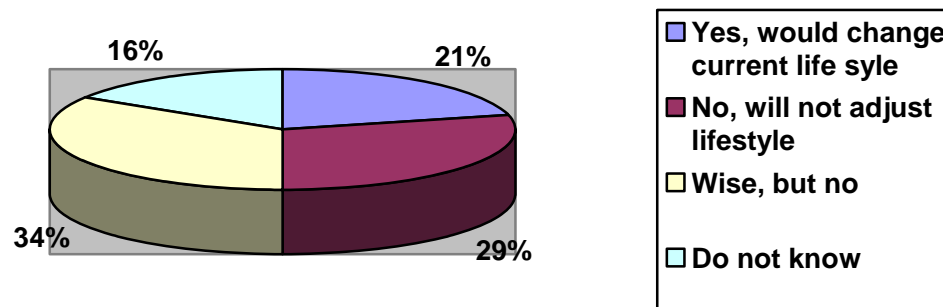
5. Empirical findings

In this section, we present and analyze our results. First, we summarize the aggregate findings, and next we relate the results to objective (age, income, gender, education,...) and subjective background variables.

5.1. Aggregate results

Table 2 summarizes the results about attitude towards hypothetical pension benefit cuts of the 1,105 respondents in our sample belonging to the workforce. If informed that their future pension income will be 25 percent lower (in real terms) than they expected up to then, 21 percent of Dutch employees answer that they would adjust their current life style in order to have a higher pension income. This percentage should be interpreted as an upper bound of actual behaviour change, given the behavioral evidence that intention does not necessarily lead to action (Choi et al, 2005). Moreover, “postponing retirement” has been included in this category, even though it does not imply taking action now. One third of respondents answer that it would be wise to adjust the current life style, but they probably would not do so. About 29 percent says they would not adjust their lifestyle, and the remaining 15 percent report they do not know (see also Figure 1).

Figure 1: Would you adjust your lifestyle if informed that your pension will be 25 percent lower than you expected thus far?



As shown above, 21 percent of those in the workforce say they would adapt their life style after an announced fall in future retirement income of 25 percent. They are then asked to report what they would do. Multiple answers are allowed and this explains why the percentages reported in Table 2 second panel do not sum up to 100. The great majority of individuals would save more (72 percent). The second largest group would retire later (40 percent). As noted above, this could actually be interpreted as postponing action; some respondents mention this as the only action they would take. If we should move those respondents to the category “No, will not adjust current life style”, the percentage of “Yes, I would adjust current lifestyle” falls from 21 to 19 percent, and the category “No, will not adjust current life style” increases from 29 to 31 percent. About 17 percent would choose to pay off their mortgage quicker (this is a way of saving that can be implemented by homeowners only).¹³ About 15 percent report they would work more hours per week.

Those who report they would not change their behaviour at all in response to a pension benefit cut they are asked the main reason why (Table 2 third panel). The main reason turns out to be that they would settle for less (28 percent), followed by the fact that they are not currently interested in pension issues (21 percent) and that they cannot make any adjustment (20 percent).

¹³ Provided that they have a mortgage and that their mortgage contract is not coupled to an insurance that pay of the mortgage loan on the retirement date

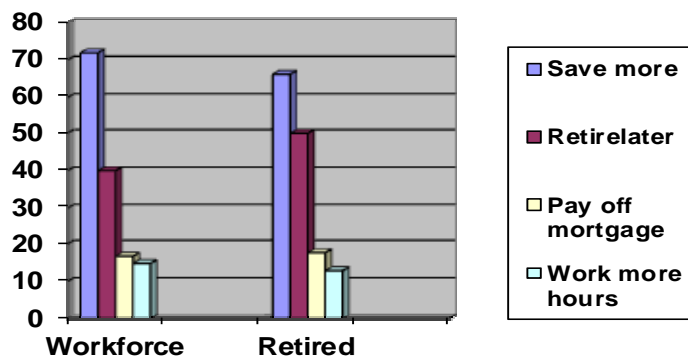
Similarly, those who state that it would be wise to change behaviour now, but that they would probably not do so report procrastination as the main reason (32 percent), followed by inability to change (25 percent) and lack of interest in pension issues (22 percent).

It is interesting to note that not being interested currently in pensions is the main reason also for respondents who report they do not know what to do (35 percent). Other reasons are “not knowing what to do” (19 percent) or “not knowing the consequences” (16 percent).

Table 2 about here

The results for retired respondents are reported in Table 3. The percentage of retirees who report that, going back in time, they would adapt their lifestyle when working in order to generate a higher income is more than 2,5 as large as that among the workforce. Some 32 percent would not make any change, and the remaining 19 percent say they would not know.

The most preferred action by retirees is higher savings (66 percent), followed by postponing retirement (50 percent). When comparing these answers to those given by respondents in the workforce we note that the fraction of respondents who say that they would opt for a higher retirement age is higher for retirees than for those in the work force (40 percent). This suggests that that looking back, a higher retirement age is considered by retirees – those who are experienced when it comes to being retired - the best way to increase pension income. This is especially remarkable given the current debate in the Netherlands, where labor unions and some political parties have protested against, and are still objecting to, the proposals for a higher retirement age. Obviously, being retired seems less attractive to those who are still working, than to those who are retired. It might be attributable, however, to the fact that many of the current retired – the babyboomers - have stopped working at an early age, thanks to generous arrangements by the government and agreements between employer organizations and trade unions. We will turn to that in our regression analysis (see the next subsection).

Figure 2. What would you change? Workforce and retired

Finally, the most important reason for retirees not knowing what to do is not being aware of the consequences that a change in the past would have implied (41 percent).

Table 3 about here

Overall, the evidence so far suggests that if people are informed that their future pension will be much lower than they expected thus far, only a small minority intends to take action; the main actions current workers would take is save more and retire at a later age. Among those who believe they should take action, but think they would not, only a small minority states as reason that they would not know what to do, whereas the majority state that they would procrastinate or not interested. Half of retirees would retroactively take action if confronted with a pension income that is 25 percent lower than what they are currently getting; their main action is to save more and retire at a later age.

5.2. Some basic regressions

In order to get a better understanding of the reasons behind and determinants of the answers chosen by the respondents, we now perform some analysis by merging the questionnaire we devised with the DNB Household Survey (DHS), a longitudinal study that collects a large amount of information at both individual and household level. The DHS consists of six questionnaires: work and pensions, housing and mortgages, income and health, assets and debts, subjective economic concepts and psychological economic

concepts.¹⁴ Respondents are asked e.g. what they consider high or low income levels. Health questions pertain not only to objective elements such as length, weight, alcohol intake and smoking, but also respondents' perception of their health, life expectancy, their saving inclination and saving behavior, their perception of their personal financial situation when compared to other people's financial situation, risk perception and risk aversion, expectation for the future when compared to current situation, and financial planning.

We first analyze the willingness to change behavior in response to hypothetical pension benefit cuts by working respondents. We construct a dummy variable taking value 1 if individuals in the workforce report that they would not take any action or that it would be wise to take some action but they probably would not.¹⁵ It takes value 0 otherwise. We then perform simple probit analysis for several specifications. Table 4 reports the estimation results (estimated coefficient, marginal effects and standard error) for five regressions. Specification (I) controls for a number of background characteristics, like gender, age in quadratic form in order to capture a potentially non-monotonic relationship, household size, the presence of a partner and household income (in logs). In specification (II) we add a dummy variable for having a working spouse, in order to control for intra household financial support. Specification (III) includes the probability of being still working at age 65 and the expected retirement age, as potentially relevant determinants of the decision not to take any action to compensate for future pensions reductions. In regression (IV) the expected net replacement rate is included along with a variable capturing how much attention respondents devote to pension issues, or in other words how much they care now about their future pension. In particular we consider answers to the following question:

Which of the below mentioned statements applies to you most?

1 I do not worry about my pension arrangements, I will see by then

2 It is important to know that my pension is taken care of, without knowing the details

3 I keep well informed about any developments regarding my pension

Finally specification (V) includes self-assessed financial literacy.¹⁶

¹⁴ See

http://www.centerdata.nl/en/TopMenu/Projecten/DNB_household_study/index.html

¹⁵ We investigated whether there are systematic differences in background characteristics between the two groups of respondents and found no statistically significant differences. For this reason we decided to define our dependent variable as described in the text, in order to maximize the number of observations.

¹⁶ We also experimented the use of actual financial literacy in our regressions, but the merging process with the CentERpanel module containing that information severely reduced the number of observations.

The number of observations decreases substantially moving from specification (I) to any other specification mainly as a consequence of the merging process with the several modules of the DHS. Nevertheless some interesting findings emerge from Table 4.

Gender is never a relevant determinant of the preference not to adjust life style. Females are more willing to take some action than males but the difference in attitude is far from being statistically significant. In contrast, age is a very important explanatory variable. The high significance levels of the quadratic form (1-percent level in specifications (I) and (II) and 5-percent level in specification (III)) suggest that the age functions are concave and reach a maximum at age 47 in specification (I), age 46 in specification (II), and age 48 in specification (III). This implies that the young and the old are more prone to adapt their life style in response to a reduction in pension benefits, while the most rigid behaviour is found for middle-aged individuals. If we interpret age as proxy for distance to retirement the finding that individuals in their late Forties are not very responsive to pension benefit cuts is rather concerning for policy makers.

Household size is significant in regressions where extra control variables are included (at the 1-percent level in specification (III) and at the 5-percent level in specifications (IV) and (V)). The estimated negative coefficients suggest that the higher the number of household members, the higher the probability of being willing to take some action to adjust current life style. The presence of a partner is statistically significant at the 5-percent level in specification (I) and increases the probability of not taking any action by some 10 percent. However, when controlling for whether the spouse works the role of the partner disappears and the working condition of the spouse does not play any significant role.

In order to control for the household financial situation we included several measures of both individual and household income as well as several measures of household total, financial and net wealth. Wealth might play a role both in interest for and planning of retirement. Those with high wealth may rationally decide not to devote time and energy to pension issues, as they will be able to dissave in case of adverse pension shocks. However, we found that (both total and financial) wealth is never significant, and therefore we excluded from all regressions. Anyway, this finding could imply that “rational inattention” does not explain a passive attitude towards pension. Household gross income is a significant determinant at the 1-percent level in specifications (III) and (IV), and at the 5-percent level in specification (V). The negative sign implies that higher income induces higher willingness to adjust life style. On the one hand this is intuitive, as higher incomes have more possibilities to cut down on consumption and put aside money for pension planning

purposes. However, lower incomes need a higher replacement ratio, hence it is worrying that they are less inclined to take action.

The expected retirement age is never significant, but the probability of being still at work at age 65 and the expected net replacement rate are both statistically significant determinants (at 5 and 10-percent level) of individual behaviour. The estimated coefficients of both controls are positive, suggesting that the higher the probability of being still at work at age 65 and the expected net replacement rate, the higher the probability of not taking any action. These findings are in line with our expectations.

The variable capturing how much respondents are currently interested in, or care about, pension issues (see question above) is only marginally significant (at the 10-percent level) and the negative sign is consistent with the idea that the higher the degree of involvement in pension issues the lower the probability of not taking any action. Finally, financial literacy does not play a significant role in this decision.

Table 4 about here

As a robustness check, we construct a variable to be used to perform a consistency test. The variable is derived from the following question available in the DHS whose content is very similar to the one used for our dependent variable:

Will you adjust your conduct if the pensions are cut down, for example through an adjustment on the indexation, postponement of the retirement age or a different pension system?

1 yes, I will put more money aside for my pension

2 no, I will see what I'll do when it happens

3 no, I think I can make ends meet fairly easily with the pension I will have

We find that respondents report a consistent behaviour, as the correlation is significant slightly above the 5-percent level.

We then perform the same kind of analysis for retired respondents. Table 5 reports the corresponding results. We now model the dependent variable in a slightly different way than previously. For specifications (I) and (II) the dummy variable takes value 1 if the retiree reports she would have adjusted her life style in the past, 0 otherwise. In specification (III)

the dependent variable is 1 if the most preferred action the respondent reports to being willing to have done is to retire later. In all specifications we perform probit analysis.

Differently than for working respondents, the analysis for retired individuals displays much more limited action. This is partly due to the very limited number of observations, and to the fact that this subgroup of the population is relatively more homogeneous than the rest of the distribution. Gender, age, age at retirement, household income and having a retired spouse are always insignificant. Only education plays a significant role (at the 5-percent level), namely the highest educated are more likely to have changed their behaviour in the past in response to a cut in their pensions.

When studying the probability of having chosen to retire later than they did, gender becomes significant at the 5-percent level. Females are less likely to have chosen to postpone their retirement. This might be due, however, to the fact that labor market participation among women in the age group of retired was much lower than it is nowadays. The role of education remains robust to this specification, while actual age at retirement is not significantly affecting the probability of working longer. The latter result is interesting, because it indicates that the difference between retired and workforce in their attitude toward retiring at a later age – with retired being more favourable to it – is NOT to be attributed to the fact that among current retirees some groups have been able to retire at the age of 57 without losing their pension rights. Hence it seems that those who know what it is like to be retired, would object less to a higher retirement age than those who are still working.

Table 5 about here

The last exercise we conduct focuses on respondents in the workforce who report it would be wise to change life style to the announcement of a pension benefit reduction, but that they would probably not do so. We now analyze the main reasons at the basis of that reported behaviour as functions of several characteristics. The empirical findings from probit regressions are summarized in Table 6. Each column represents results for each reason, namely “Do not know what to do” in specification (I), “Cannot adjust anything” in specification (II), “Not interested in pensions now” in specification (III), “Postpone to later” in specification (IV).

Males are more likely to report that they would probably not change their behaviour because they are not currently interested in pension issues. The marginal effect is in the order of 10 percent and the significance level is 5-percent. Age is a relevant determinant in all regressions and enters with both a positive (specifications (I) and (II)) and negative sign

(specifications (III) and (IV)). This implies that older respondents are more likely to report they would not know what to do and that they cannot adjust anything, and less likely to report they are not interested in pensions now and less likely to postpone this decision.

Education level is statistically significant in two out of four regressions. In particular, the low educated individuals are more likely to report they are not interested in pension issues at the moment as the main reason not to take action. The presence of a partner is significant at the 5-percent level for not knowing what to do and for not having interest in pensions. However the estimated coefficient is positive in the former case (the presence of a partner increases the probability of not knowing what to do by 7 percent) and negative in the latter case (having a partner decreases the probability of not being interested in pension issues by 19 percent).

As expected, household income plays a very significant role in almost all specifications. Higher income decreases the probability of reporting that they cannot adjust anything (at 1-percent significant level), but increases the probability of reporting no interest in pension issues and postponing the decision to a later point in time (both at the 5-percent level). The latter might indicate “rational inattention” (see e.g. Sims, 2003).

We also included some indicator of household wealth, namely financial assets and net wealth in specifications (II) and (III) respectively, but they are significant only at the 1-percent level. Finally we control for degree of impatience in the regression for procrastination as main reason. We include two dummies derived from the following two questions available in the DHS. We construct variable “impatience 1” being 1 if respondents report a value less than 4 to the following question, 0 otherwise:

Some people spend all their income immediately. Others save some money in order to have something to fall back on. Please indicate what you do with money that is left over after having paid for food, rent, and other necessities -- on a scale from 1 to 7, where 1 means “I like to spend all my money immediately” and 7 means “I want to save as much as possible” .

The variable “impatience 2” takes value 1 if respondents choose either answer 1 or 2 to the following question, 0 otherwise:

People use different time-horizons when they decide about what part of the income to spend, and what part to save. Which of the time-horizons mentioned below is in your household MOST important with regard to planning expenditures and savings?

- 1 the next couple of months*
- 2 the next year*
- 3 the next couple of years*
- 4 the next 5 to 10 years*
- 5 more than 10 years from now*

Both these impatience dummies are significant determinants of procrastination but the estimated negative coefficients are puzzling and counterintuitive. One explanation may be that respondents have interpreted this question as asking whether they consider planning in the near future or at a later date. In that case, the dummy sign would be conforming intuition.

Table 6 about here

6. Discussion and policy implication

The purpose of our empirical research was to assess the effect of very simple pension information - an announced sharp drop in pension income - on behavior. Our findings indicate that information does lead to *intended* behavior change for only one out of five respondents. With intention hardly leading to behavior change in the pension domain (Choi et al, 2005), this result is worrying as far as the effect of information on action is concerned. The remainder, 80% of the workforce, would not intend to act upon this information. Moreover, only a small minority indicates that insufficient knowledge is the main reason why they would not take action. Instead, those who believe they should take action give a tendency to procrastination as well as an aversion to think about retirement as explanations for inactivity. These findings are in line with previous research into the poor effect of information when it comes to retirement planning. The message to policy makers, supervisors and the pension industry is clear: if the current policies based on information have the purpose of behavior change, and not merely of “disclaiming”, they are ineffective.

One potential reason for this might be the complexity of the decisions to be made, possibly triggered by financial innovation processes (Merton, 2006). Teppa and van Rooij (2012) show a significant positive correlation between the presence of framing effects and the complexity of retirement decisions in the Netherlands and in the U.S. Rinaldi and Giacomel (2008) report that DC plan members in several countries think

that saving for retirement decisions are very demanding,

“even if the best efforts are made to inform them adequately, and to offer them opportunities to acquire the requisite financial literacy and planning skills.”

Our findings are even more disturbing in the sense that lower incomes, who are precisely the ones that need a higher replacement ratio, are even less likely to change behavior than higher incomes. Unless these incomes expect to die at an early age, this inattention is irrational. This finding lead to the interesting question about whether low-income workers really would not be able to, or rather, whether saving more would, from a consumption-smoothing and optimal life cycle planning, be suboptimal to them. For low-income households in the US, working more hours or saving more during their working years is simply not realistic (Lusardi 2010; Caner and Wolff 2004), and it has been argued that low income workers who are defaulted into a high retirement savings rate in the U.S. may in fact be saving too much, given the value of a dollar to their current household. Beshears et al. (2010) show that defaults are more influential for low-income employees than for high-income employees because low-income individuals generally face higher barriers to active decision-making.

If higher pension savings induced lower incomes to have to resort to high credit, such as payday loans common in the U.S., they would be worse off. The income distribution in the Netherlands is much more equal, however, both in terms of wage incomes, and in terms of accessibility to state support and various subsidized arrangement including health care and schooling. Be that as it may: what would be the policy implication if people who say they would not save more for retirement cannot, in fact, afford to save more? On the one hand, it would imply that these employees hardly benefit from communication, information and transparency, because they cannot change their behavior. The only effect would then be that they are made aware that they should prepare for postponing their retirement date. However, this would require that enforced retirement should be abolished, so that employees have the right to work longer. On the other, it would imply that inducing these groups to save more for retirement through default choices would be suboptimal. From this perspective, a case can be made in favor of mandatory active choice instead of information and instead of defaults. On the other hand, according to a study by Bronchetti et al (2011), the effect of an opt-out savings default for a tax refund on low-income workers is much lower than that on white collar workers. One possible implication is that low income households have targeted plans on what to spend their refund on.

In a recent study Lusardi et al. (2011) investigate financial fragility by examining the ability of U.S. households to come up with \$2,000 in 30 days. They find that about 25 percent of the

households surveyed report that they are certain they could not come up with that amount of money, and an additional 19 percent of all respondents would cope at least in part by selling or pawning possessions or taking payday loans. Almost half of all U.S. households surveyed report that they either certainly or probably could not come up with the funds to deal with an ordinary financial shock of this size.

Kotlikoff and Burns (2008) acknowledge that many people in the U.S. are very under-prepared for retirement, but they also stress that some other people are over-saving for retirement. In the Netherlands saving too much for old age consumption is not perceived as an issue by policy makers, who on the contrary are increasingly concerned that future Dutch retirees will not be adequately prepared for their retirement.

If information does not do the trick of helping people make choices in line with their own retirement goals, what would? First of all, it is important to point out that people cannot be made rational by informing and educating them. As Redelmeier and Shafir (1995) put it: “Thinking harder will not eliminate a cognitive bias any more than staring harder will make a visual illusion disappear”. Moreover, making people rational is not something we should strive at. To quote Merton and Bodie (2005): “By eliminating a person’s optimism and overconfidence in general, we may do more harm than good”. Moreover, even if people take individual action after having been informed that their savings are inadequate, there are other behavioral biases and inconsistencies than the ones enlisted by Beshears *et al.* (2010) that are relevant for the domain of retirement. Inconsistent risk preferences (notably, myopic loss aversion) may lead to a portfolio that is not risky enough given long run risk preferences, while the “gospel of stocks” – the conventional “wisdom” that stocks are safe in the long run – may lead to too much risk taking. Money illusion may distort perceptions in the pension domain and make people sensitive to the framing of “guarantees” (Bodie and Prast, 2011). And, finally, optimal financial planning is not something even the well informed laymen could carry out by himself. Merton (2006) argues that new technology and deregulation have

“left households with the responsibility for making important and technically complex micro financial decisions involving risks that they had not had to make in the past, are not trained to make in the present, and are unlikely to execute efficiently in the future, even with attempts at education”.

The good news is that there are policy instruments that can help employees save adequately for retirement. Defaults, mandated choice, commitment mechanisms, and salient “information” are instruments that can be used without eliminating freedom of choice. Defaults use the fact that people often choose not to make an active choice. Bodie

and Prast (2011) discuss possible arrangements for the Netherlands that take account of the effect of defaults while making optimal use of available technology. In their view, individuals saving for retirement should not have to go out individually for solutions. Instead, employer and pension fund should co-operate to offer meaningful solutions (see also Bodie, Prast and Snippe, 2008). Additional efficiency gains may be realized through the collective purchase and/or insurance of annuities. If these contracts are offered to groups of employees as defaults, they can be designed to take account of needs and circumstances shared by all members of the group.¹⁷

An alternative to the default may be to eliminate the passive choice of not saving more than the mandatory amount. Periodically, the employer or fund may require participants to state whether they do or do not want to increase their pension contribution. Mandated choice has been shown to be effective in the domain of organ donation; recently, the UK government has introduced it as part of the procedure of applying for a driver license (http://www.direct.gov.uk/en/N11/Newsroom/DG_198724). Moreover, commercial firms use mandated choice to make more profit. For instance, Dutch airline company KLM requires Internet customers to make an active choice about whether or not to buy insurance before allowing them to go to the page where they can pay for their ticket (www.klm.nl).

Another way of making additional savings the path of least resistance is by offering commitment contracts, either as a default or mandatory choice: “if we don’t hear from you, we will add your bonus, vacation money, thirteenth month, future wage increase” to your pension account”, or “please answer whether you want or do not want to add your bonus, vacation money, thirteenth month, future wage increase” to your pension savings account.”

Finally, salience may be used to make people aware of the importance of saving for their old day. Hershfield et al (2011) report that after having been confronted in a “mirror” with a picture of themselves at the age of 70 are prepared to save significantly more for retirement. This finding may be used e.g. in personalized pension information channels, like the UPO (picture on the envelope) or pension register. Further research is needed to see whether this could effectively be used in the Netherlands.

¹⁷ Goda and Flaherty Manchester (2010) study the effect of an age based default rule for the choice between remaining in a DB plan or switching (irrevocably) to a DC plan within the same firm, using data from a large employer that transitioned from a defined benefit (DB) plan to a defined contribution (DC) plan and offered existing employees a choice of plans.

7. Conclusions

Over the last decade there has been a shift of pension risks in the Netherlands towards participants in collective employer plans. Pensions do not only become riskier, they will also be lower than expected by employees. Policymakers, supervisors and the pension industry are worried about the “expectation gap” in pensions. They have launched many policies based on information, communication, and transparency, with the official aim of reducing the gap in order to help people prepare adequately for retirement. Thus far these policies have not been successful, but policy maker, supervisors and the pension industry hope to improve effectiveness by making information easier to understand, by lowering the threshold for finding information, and recently also by making information more made-to-measure.

This paper concludes on the basis of a questionnaire among participants in the DNB Household Survey that information is a necessary, but not at all sufficient, condition to make people making appropriate choices. The majority of people, even when informed about a considerable drop in their expected pension income, report that they will not take any action. The results also show that many people believe that they *should* save more in case of a projected drop in pensions, but are aware of their tendency to procrastinate and feel unable to make the decisions that are in line with their own long term goals.

We find some major differences between retirees and workforce in their attitude to behaviour change. Current retirees would, going back in time, be more willing to change behaviour after information about a sharp pension drop. Moreover, they would be more inclined to retire at a higher age than people that are still working, suggesting that being retired does provide less utility than expected by those that are still working. This finding is relevant for the policy debate on the increase of the retirement age in the Netherlands.

Precisely those who need a higher replacement ratio – the lower incomes – are less inclined to take action after being informed about a higher risk and lower level of future pensions. This is a result that should worry policy makers who feel responsible for helping people make appropriate financial decisions.

The empirical evidence is fully consistent with Rinaldi and Giacomel (2008) and suggests that unless current policies merely aim at protecting policymakers, supervisors and the pension industry from criticism and legal measures, they can be considered rather ineffective. Helping people make adequate pension savings choices requires making use of a behaviourally inspired choice architecture and the use of salience instead of factual information.

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Table 1: Summary statistics

Variable	N.Obs.	Mean	Std.Dev.	Min.	Max.
Female indicator	1585	0.458	0.498	0	1
Age (in years)	1585	55.736	15.262	16	89
Low education	1574	0.268	0.443	0	1
Mid education	1574	0.290	0.454	0	1
High education	1574	0.440	0.496	0	1
Household size	1585	2.323	1.121	1	7
Presence of partner	1585	0.756	0.429	0	1
Gross hh income (in logs)	1526	8.182	0.585	0.693	12.322

Table 2: Attitude towards pension benefit cuts - unretired respondents

	Frequency	Percent	Cumulative
Yes	235	21.27	21.27
No	313	28.33	49.59
Wise to do, but probably would not	371	33.57	83.17
Don't know	186	16.83	100
TOTAL	1,105	100	
<i>If YES: What would you do? (Multiple answers)</i>			
Retire later	93	39.57	
Work more hours	36	15.32	
Saving more	169	71.91	
Repay my mortgage quicker	40	17.02	
Other reasons	19	8.08	
TOTAL	235		
<i>If NO: Why not? (Main reason)</i>			
Settle for less	88	28.12	28.12
Not interested in pension now	67	21.41	49.52
Do not want to adjust current life(style)	46	14.70	64.22
Can not adjust anything	63	20.13	84.35
Other reasons	49	15.65	100
TOTAL	313	100	
<i>If WISE BUT DO NOT DO: Why not? (Main reason)</i>			
Do not know what I can do	34	9.16	9.16
Can not adjust anything	92	24.80	33.96
Not interested in pension now	82	22.10	56.06
Postpone to later	118	31.81	87.87
Other reasons	45	12.13	100
TOTAL	371	100	
<i>If DO NOT KNOW: Why not? (Main reason)</i>			
Not interested in pension now	65	34.95	34.95
Do not know what the consequences are	30	16.13	51.08
Do not know what I can do	36	19.35	70.43
Other reasons	55	29.56	100
TOTAL	186	100	

Table 3: Attitude towards pension benefit cuts - retired respondents

	Frequency	Percent	Cumulative
Yes	235	49.16	49.16
No	152	31.80	80.96
Don't know	91	19.04	100
TOTAL	478	100	
<i>If YES: What would you do? (Multiple answers)</i>			
Retire later	117	49.79	
Work more hours	31	13.19	
Saving more	155	65.96	
Repay my mortgage quicker	42	17.87	
Other reasons	5	2.13	
TOTAL	235		
<i>If NO: Why not? (Main reason)</i>			
Settle for less	75	49.34	49.34
I needed money in the past	44	28.95	78.29
Was not interested in pension	22	14.47	93.42
Other reasons	11	7.23	100
TOTAL	152	100	
<i>If DO NOT KNOW: Why not? (Main reason)</i>			
Was not interested in pension	14	15.38	15.38
Did not know what the consequences were	37	40.66	56.04
Did not know what I can do	17	18.68	74.73
Other reasons	23	25.27	100
TOTAL	91	100	

Table 4: Willingness to change life style - unretired respondents (probit estimates)

Variable	(I) Coefficient [Marg.eff.] (Std. Err.)	(II) Coefficient [Marg.eff.] (Std. Err.)	(III) Coefficient [Marg.eff.] (Std. Err.)	(IV) Coefficient [Marg.eff.] (Std. Err.)	(V) Coefficient [Marg.eff.] (Std. Err.)
Female	-0.006 [-0.002] (0.080)	-0.217 [-0.080] (0.150)	-0.103 [-0.034] (0.238)		
Age	0.107 *** [0.040] (0.016)	0.128 *** [0.047] (0.027)	0.249 ** [0.083] (0.092)	0.025 * [0.008] (0.015)	0.023 [0.007] (0.016)
Age squared	-0.001 *** [-0.001] (0.000)	-0.001 *** [-0.001] (0.000)	-0.002 ** [-0.001] (0.001)		
Household size	0.008 [0.003] (0.044)	-0.106 [-0.039] (0.076)	-0.324 *** [-0.108] (0.001)	-0.308 ** [-0.103] (0.134)	-0.327 ** [-0.106] (0.140)
Having a partner	0.279 ** [0.107] (0.121)	-0.458 [-0.151] (0.674)			
HH gross income (in logs)	-0.057 [-0.021] (0.073)	-0.152 [-0.056] (0.170)	-0.964 *** [-0.321] (0.026)	-1.133 *** [-0.378] (0.378)	-1.000 ** [-0.326] (0.409)
Spouse works		0.216 [0.080] (0.166)	0.337 [0.114] (0.256)	0.548 * [0.188] (0.311)	0.372 [0.124] (0.326)
Pr(working at 65)			0.007 * [0.002] (0.004)	0.010 ** [0.003] (0.005)	0.009 * [0.003] (0.005)
Expected ret. age			-0.047 [-0.015] (0.037)	-0.048 [-0.016] (0.048)	-0.033 [-0.010] (0.054)
Expected repl. rate				0.012 * [0.004] (0.007)	0.017 ** [0.005] (0.008)
Interest towards pensions				-0.339 * [-0.113] (0.206)	-0.292 * [-0.095] (0.223)
Financial literacy					0.285 * [0.096] (0.172)
Constant	-1.744 ** (0.691)	-2.224 (1.629)	6.436 (3.943)	11.833 (4.483)	9.714 (4.987)
Log-likelihood	-675.788	-207.801	-85.149	-59.794	-53.733
Pseudo R ²	0.075	0.054	0.132	0.149	0.151
N.Obs.	1,057	344	161	114	104
The dependent variable is the probability for a working individual not to be willing to change lifestyle *** denotes significant at 1-percent level; ** denotes significant at 5-percent level * denotes significant at 10-percent level					

Table 5: Willingness to change life style - retired respondents (probit estimates)

Variable	(I)	(II)	(III)
	Coefficient [Marg.eff.] (Std. Err.)	Coefficient [Marg.eff.] (Std. Err.)	Coefficient [Marg.eff.] (Std. Err.)
Female	-0.004 [-0.002] (0.254)	-0.043 [-0.017] (0.323)	-0.453 ** [-0.178] (0.230)
Age	-0.032 * [-0.012] (0.020)	-0.039 [-0.015] (0.025)	
Low education	-0.272 [-0.106] (0.251)	0.028 [0.011] (0.312)	-0.441 * [-0.174] (0.227)
Mid education	-0.688 ** [-0.248] (0.309)	-0.711 ** [-0.260] (0.355)	-0.533 ** [-0.208] (0.264)
HH gross income (in logs)	-0.451 [-0.176] (0.287)	-0.278 [-0.109] (0.353)	
Spouse retired	-0.024 [-0.009] (0.241)	0.104 [0.041] (0.273)	
Age at retirement		0.002 [0.001] (0.028)	-0.005 [-0.002] (0.008)
Constant	6.057 ** (2.966)	4.819 (1.629)	0.734 (0.571)
Log-likelihood	-101.673	-72.651	-113.984
Pseudo R ²	0.046	0.056	0.048
N.Obs.	156	112	173
<p>The dependent variable is the probability for a retired individual to be willing to change lifestyle for (I) and (II); it is the probability to work longer for (III)</p> <p>*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level</p>			

Table 6: Reasons not to change lifestyle - unretired respondents (probit estimates)

Variable	(I)	(II)	(III)	(IV)
	Coefficient [Marg.eff.] (Std. Err.)	Coefficient [Marg.eff.] (Std. Err.)	Coefficient [Marg.eff.] (Std. Err.)	Coefficient [Marg.eff.] (Std. Err.)
Female	0.112 [0.015] (0.197)	0.163 [0.050] (0.177)	-0.448 ** [-0.105] (0.191)	-0.175 [-0.060] (0.166)
Age	0.016 * [0.002] (0.008)	0.015 * [0.004] (0.008)	-0.025 *** [-0.008] (0.008)	-0.013 * [-0.004] (0.007)
Low education	0.198 [0.030] (0.287)	-0.359 [-0.101] (0.256)	0.796 ** [0.243] (0.279)	-0.172 [-0.057] (0.246)
Mid education	0.412 * [0.064] (0.232)	-0.308 [-0.091] (0.209)	0.297 [0.082] (0.219)	-0.234 [-0.079] (0.193)
Having a partner	0.622 ** [0.071] (0.295)	0.368 [0.106] (0.233)	-0.588 ** [-0.193] (0.247)	-0.346 [-0.124] (0.224)
HH gross income (in logs)	-0.261 [-0.037] (0.216)	-0.620 *** [-0.191] (0.206)	0.482 ** [0.118] (0.202)	0.415 ** [0.143] (0.200)
Financial assets (in ,000 euro)		-0.003 * [-0.001] (0.001)		
Net wealth (in ,000 euro)			-0.001 * [-0.000] (0.0007)	
Impatience 1				-0.516 ** [-0.159] (0.239)
Impatience 2				-0.353 * [-0.118] (0.183)
Constant	-0.792 (1.794)	3.617 (1.692)	-3.058 (1.672)	-2.600 (1.637)
Log-likelihood	-100.774	-140.318	-119.697	-157.573
Pseudo R ²	0.064	0.071	0.110	0.069
N.Obs.	357	262	262	273
<p>The dependent variable is the probability for a working individual of reporting a certain reason that it would be wise to change lifestyle but probably would not</p> <p>(I): Do not know what to do; (II): Cannot adjust anything; (III): Not interest in pension now; (IV): Postpone to later</p> <p>*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level</p>				

Appendix

QUESTIONNAIRE RETIREMENT NOT PRIMARY OCCUPATION

INTRODUCTION

When you retire, you will live from pension income. The pension income consists of the first pillar state pension (AOW) plus the amount of money you have save via your employer or by yourself.

QUESTION 1

How certain do you want to be about the level of your pension income?

- The level of my pension income should be fixed.
This guarantee costs money. The pension income is therefore substantially lower than expected up until now. Of every 100 Euros that you expect to receive, you will receive 75. So, you will get a quarter less.
- The level of my pension income can be unknown.
Of every 100 Euros you expected to receive, you could receive 100, but possibly less as well, for example 50 Euros.
- I am indifferent.
- I do not know.

QUESTION 2

Say your pension income is a quarter lower than you expected up until now. Would you adjust your current life(style), in order to have a higher pension income?

- Yes (**invited to answer question 3A**)
- No (**invited to answer question 3B**)
- It is wise to adjust [my life(style)], but I will probably not (**invited to answer question 3C**)
- I do not know (**invited to answer question 3D**)

QUESTION 3A

What would you adjust? Multiple answers possible.

- Extend working life
- Work more hours
- Make extra savings
- Pay down mortgage sooner
- Get more children
- Different, namely...

QUESTION 3B

You state you would not adjust your current life(style). What is your most prominent motivation not to so?

- I settle for less
- I am not involved with my pension in this moment
- I do not want to adjust my current life(style)
- I cannot adjust anything
- I bank on support from my children or loved ones
- I bank on support from the government
- Different, namely...

QUESTION 3C

You believe it is wise to adjust your current life(style), but state you will probably not do so. What is your most prominent motivation for this?

- I do not know what I can do
- I cannot adjust anything in this moment
- I do not want to go into my pension situation in this moment
- I postpone the adjustment
- Different, namely...

QUESTION 3D

You state you do not know whether you would adjust your current life(style). What is your most prominent motivation for this?

- I do not want to go into my pension situation in this moment
- I do not know what the consequences are
- I do not know what I can do
- I do not understand the question
- Different, namely...

QUESTIONNAIRE RETIREESINTRODUCTION RETIREES

Since you are retired, you receive a pension income. For example, you receive government benefits, the AOW. Many retirees have other merits as well. Prior to retirement, you saved for these. For example, via your employer or by putting money aside yourself.

QUESTION 4

Say, you would go back in time to a day far before retirement. How certain do you want to be about the level of your pension income? Imagine what will be the consequences for your life before and after retirement.

- The level of my pension income should be fixed.
This guarantee costs money. The pension income is therefore substantially lower than expected up until now. Of every 100 Euros that you expected to receive, you will receive 75. So, you will get a quarter less.
- The level of my pension income can be unknown.
Of every 100 Euros you expected to receive, you could receive 100, but possibly less as well, for example 50 Euros.
- I am indifferent.
- I do not know.

QUESTION 5

Say your pension income is a quarter lower than you have today. You go back in time to a day far before retirement. Would you adjust your life(style) of those days, in order to have a higher pension income today? Imagine what will be the consequences for your life before and after retirement.¹⁸

- Yes (**invited to answer question 6A**)
- No (**invited to answer question 6B**)
- I do not know (**invited to answer question 6C**)

¹⁸ Note that the answer possibility "It is wise to adjust [my life(style)], but I will probably not" is eliminated for retirees. It would not make sense to answer this to the question asked to retirees. In order not to confuse retirees, this answer possibility is left out.

QUESTION 6A

What would you adjust? Multiple answers possible.

- Extend working life
- Work more hours
- Make extra savings
- Pay down mortgage sooner
- Get more children
- Different, namely...

QUESTION 6B

You state you would not adjust your life(style) prior to retirement with retroactive effect.. What is your most prominent motivation not to so?

- I settle for less
- I needed the money then
- I bank on support from my children or loved ones
- I bank on support from the government
- I am not involved with my pension
- Different, namely...

QUESTION 6C

You state you do not know whether you would adjust your life(style) prior to retirement with retroactive effect. What is your most prominent motivation for this?

- I do not want to go into my pension situation in this moment
- I do not know what the consequences are
- I do not know what I can do
- I do not understand the question
- Different, namely...