Are Retirement Decisions Vulnerable to Framing E ects? Empirical Evidence from NL and the US

Federica Teppa
De Nederlandsche Bank (DNB) and Netspar
Maarten van Rooij
De Nederlandsche Bank (DNB) and Netspar

September 14, 2012

Abstract

This study investigates whether individual choices in the pension domain are vulnerable to the way alternatives are communicated to respondents. The analysis is based on a set of hypothetical questions posed in the DNB Household Survey as well as in the RAND American Life Panel on pension premium contributions and pension savings investment pro les. The design of the questions presented to the respondent in several alternative ways allows to test for the potential role of framing e ects, as well as order and choice set e ects. We nd that framing has a signi cant and robust impact on individuals decisions. The e ect is particularly strong for the alternative labeled as \standard" option. In contrast, the answer categories order does not seem to be always signi cantly relevant. We also nd that hypothetical preferences are consistent with the individual risk pro le and actual portfolio allocations. The ndings suggest that the presence of framing e ects is strongly correlated with the complexity of decisions to be made and highlight the importance of communication with respect to retirement decisions.

Jel{Classi cation: C5; C9; D12; G11

Keywords: Framing effects; Individual decision making; Retirement behavior and pensions

Acknowlegments: We thank CentERdata at Tilburg University for supplying the data of the DNB Household Survey, and RAND for supplying the data of the American Life Panel. The paper has benefited from useful comments at the Netspar Pension Day (Utrecht, November 2011), Household Finance and Consumption Network (Frankfurt,

November 2011), Netspar International Worskhop (Amsterdam, January 2012), Swiss Society of Economics and Statistics annual meeting (April, 2012), and at DNB seminars. The views expressed in this paper are those of the authors and do not necessarily reflect those of the institutions they belong to. Any remaining errors are our own responsibility.

1 Introduction

The rapidly ageing trend experienced by the population in all developed countries in the recent years and in the years to come has put public finances into severe distress. OECD figures show that in 2010 the largest proportion of retirement income (some 60 percent) is provided by the state, mostly by means of pay-as-you-go systems where benefits are paid out of current taxes. The need for cutting the costs of public pension provisions has been at the basis of a number of pension reforms taking place recently. Governments are no longer going to act as the main provider of old-age income, but more and more limiting their goal to ensuring a minimum level of adequate income to the elderly. The consequence of the reforms is a shift of risks to the individuals who are becoming increasingly responsible for their retirement income.

Behavioral aspects of the individual decision making process are being studied extensively since the seminal work by Tversky and Kahneman (1981) exploiting the increasing availability of both administrative records and survey data on real and hypothetical choices in several countries. The combination of several disciplines, ranging from economics (Butler and Teppa, 2007; Agnew et al., 2008; Brown *et al.*, 2008) to psychology (Kahneman and Miller, 1986; Gonzales et al., 2005), from neurology (Rogers *et al.*, 1999; De Martino *et al.*, 2006) to sociology, has highlighted how the final outcomes of any decision making process are very often contingent upon how alternatives are displayed to the agents. The significant role of this framing effect represents probably the most striking violation of rationality in standard economic theory.

In a very recent study Brown *et al.* (2011) set up an experiment in the RAND American Life Panel (ALP) where participants were confronted with alternative information formats about how benefits would be adjusted if they were to claim retirement benefits early versus later. The authors find that individual intentions with regard to Social Security claiming ages are sensitive to how the early versus late claiming decision is framed.

This paper provides additional evidence on whether individual choices in the pension domain are vulnerable to the way alternatives are communicated to the respondents. The empirical analysis is based on data collected from the households participating in the so-called DNB Household Survey (DHS) for the Netherlands and from the RAND American Life Panel (ALP) for the US. A set of hypothetical questions were posed in 2006 in the DNB Household Survey on pension premium contributions and pension savings investment profiles. A restricted version of the experiment was also fielded in the RAND American Life Panel that year. The design

of the questions presented to the respondent in several alternative ways allows to test for the potential role of framing e ects, as well as order and choice set e ects. In addition it is also possible to test whether US people are less sensitive to the above mentioned e ects than Dutch respondents given that the formers face real retirement decisions more often than the latters.

We nd that framing has a signi cant impact on individuals decisions, whereas the order of choice options does not seem to be very relevant. The presence of framing e ects is correlated with the degree of complexity of the decisions to be made. In presence of complex decisions the respondents seem to adopt simple rules of thumb, like choosing the option presented as the standard option. The ndings highlight the importance of communication with respect to retirement decisions.

The paper is organized as follows: Section 2 describes data and results from the DNB Household Survey and Section 3 describes data and results from the RAND American Life panel. Section 4 concludes the paper.

2 The DNB Household Survey

The DHS is an annual panel survey of more than 2,000 households in the Netherlands that started in 1993. The panel is run at Tilburg University by CentERdata. Panel members are aged 16 years and older. In case of attrition, CentERdata recruits new participants to maintain the panel size and to keep the panel representative on a number of relevant background characteristics such as age, gender, income, education, and region of residence. The DHS dataset contains detailed information on employment status, pension arrangements, accommodation, wealth, as well as health status, and psychological concepts. The richness of the dataset provides the opportunity to combine both economic and psychological aspects of nancial behavior. For a complete description of the CentERpanel and the DHS see Teppa and Vis (2012).

In this paper we use tailor-made questionnaires that can be combined with the information of the 2006 DHS wave.

2.1 Method

In order to analyze the e ect of the standard option, labels and the number of options o ered to the respondents we develop a number of hypothetical questions on pension premium contributions and on pension savings investment pro les. Four questionnaires were elded in four consecutive weekends in 2006. In particular Questionnaire 1 was elded in the weekend of June 2-6, 2006; Questionnaire 2 was

elded in the weekend of June 30-July 3, 2006; Questionnaire 3 was elded in the weekend of June 16-20, 2006; Questionnaire 4 was elded in the weekend of July 14-18, 2006. The motivation to spread these questions over four di erent interviews consists of the fact that we wanted to minimize the probability that the respondents remember the previous questions and try to answer in a consistent way. For the same reason, we randomize which speci c question is given to which speci c sub-sample and the order of some of the questions. Finally, we also randomize the position of the answer categories within each question. The full questionnaires are reported in Appendix 1. All questions include a \I do not want to say it" and a \I do not know" option. In addition, in all questions the order of the answer categories presented to the respondents has been randomized, in order to avoid that individuals choose the standard option simply because it is shown in the rst place.

Table 1 reports the number of panel members aged 16 ages and older selected, the number of respondents who completed and returned the questionnaire, and the response rate for each of the four questionnaires. The response rate ranges between 66.5 percent (Questionnaire 1) and 75.7 percent (Questionnaire 4).

Table 1 about here

Questionnaire 1 and Questionnaire 2 (see Appendix 1) are the rst sources for investigating the role of labels and in particular the role of what is communicated to the respondents as the \standard" option in the case of pension premium contributions and of pension savings asset allocation. Each of these two questionnaires consist of two parts, the former made of questions related to pension premium contributions, the latter made of questions related to pension savings asset allocation.

In the rst part of Questionnaire 1 respondents are randomly assigned to four groups A, B, C and D. Each group gets two speci c versions of a hypothetical question on pension premium contributions. In particular, the respondents in group A get question Q11 at the beginning of the questionnaire and question Q12 at the end of the questionnaire. Symmetrically, the respondents in group B are confronted with question Q12 at the beginning of the questionnaire and question Q11 at the end of the questionnaire. The respondents in group C get question Q13 at the beginning of the questionnaire and question Q14 at the end of the questionnaire. Symmetrically, the respondents in group D are confronted with question Q14 at the beginning of the questionnaire and question Q13 at the end of the questionnaire.

The routing of the questions is such that respondents confronted with the \Low numbers" version (namely group A and group B) are never asked questions belonging to the \High numbers" version (given to group C and group D), and viceversa. This

means that at the end of questionnaire 1 the respondents in group A and B have answered the same questions (namely Q11 and Q12, \Low numbers" version) while the respondents in group C and D have answered the same questions (namely Q13 and Q14, \High numbers" version).

Table 2 top panel reports the answer distribution for each version.

Table 2 top panel about here

There are 805 individuals in the \Low numbers" version and 843 individuals in the \High numbers" version. The first aspect to notice is that in all four versions a non negligible fraction of individuals report that they do not know what option to choose. The \I do not know" answer ranges from 13.54 to almost 20 percent of valid answers. This seems to signal the degree of difficulty required by this type of decisions.

The other important aspect to stress is that the standard option (irrespective of how large the choice set is, of the numbers behind this wording, and by design irrespective of the order presented to the respondents) is by far the option that attracts the relative majority of answers (ranging from 44.01 to 58.39 percent). The second highest fraction of preferences is for the high pension premium contributions in all four versions (between 22.1 and 28.5 percent). The low pension premium contributions option is chosen by some 5 percent of the respondents.

Overall, the findings suggest that individuals are rather conservative in their preferences as they seem to be very well aware of the uncertainty involved in the functioning mechanism of a defined contribution pension scheme.

In the second part of Questionnaire 1 respondents are again randomly assigned to four groups E, F, G and H. Each group gets two specific versions of a hypothetical question on pension savings investment profiles. In particular, the respondents in group E get question Q15 at the beginning of the questionnaire and question Q16 at the end of the questionnaire. Symmetrically, the respondents in group F are confronted with question Q16 at the beginning of the questionnaire and question Q15 at the end of the questionnaire. The respondents in group G get question Q17 at the beginning of the questionnaire and question Q18 at the end of the questionnaire. Symmetrically, the respondents in group H are confronted with question Q18 at the beginning of the questionnaire and question Q17 at the end of the questionnaire. As before, the routing of the questions is such that respondents confronted with the \Low numbers" version (namely group E and group F) are never asked questions belonging to the \High numbers" version (given to group G and group H), and viceversa. This means that at the end of Questionnaire 1 the respondents in group

E and group F have answered the same questions (namely Q15 and Q16, \Low numbers" version) while the respondents in group G and group H have answered the same questions (namely Q17 and Q18, \High numbers" version).

Table 2 bottom panel reports the answer distribution for each version.

Table 2 bottom panel about here

Similarly to the pension premium contributions, some 20 percent of the respondents report that they do not know what pension savings investment pro le to choose. The decision seems to require a minimum level of nancial literacy that individuals recognize they do not have. However, di erently than for the previous exercise the safe option is attracting the largest fraction of preferences in all four versions. The percentages range between 34.5 and 46.7. The standard option is the second most preferred choice, whereas the risky option attracts only a tiny portion of the preferences distribution (some 5 percent).

Questionnaire 2 consists of exactly the same questions as Questionnaire 1, but this time the numerical format only is presented to the respondents and the qualitative de nition that had always accompanied the numbers in questionnaire 1 is now deleted. For example, question Q21 is exactly the same as question Q11 (see Appendix 1). However in question Q21 the 12% contribution rate is no longer de ned as the standard option, the 10% contribution rate is no longer de ned as the low option, and the 14% contribution rate is no longer de ned as the high option. As a consequence, in questionnaire 2 the emphasis is fully on the numbers rather than on the labels.

As for Questionnaire 1, four versions are identi ed for the pension premium contributions as well as for the pension savings investment pro les, reported in Table 3. However the respondents are not necessarily given the same version they had in Questionnaire 1. The routing design of this set of questions is such that group A and B respondents keep being assigned to the \Low numbers" version but not necessarily to the same choice set as they had before. As an example, an individual who was previously confronted with the \Restricted choice set" version may well be now confronted with the \Large choice set" version. Similarly, group C and D respondents keep being assigned to the \High numbers" version but not necessarily to the same choice set as they had before. As an example, an individual who was previously confronted with the \Restricted choice set" version may well be now confronted with the \Large choice set" version. This question design explains why for each of the four versions the total number of respondents in Table 3 does not coincide with the corresponding one in Table 2 above. Moreover, the di erence of

the total number of respondents between the two questionnaires is also due to the di erent response rates (see Table 1).

Table 3 about here

If we look at the top panel of Table 3, the fraction of respondents declaring they do not know what pension premium contribution to choose is somewhat higher in this numerical version to that found in the version with labels (between 15.62 and 23.03 percent vs. between 13.54 and 19.93 percent, respectively). At the same time, the option that was previously labeled as \standard" contribution rate is still the most preferred one, but for a lower percentage of the respondents (between 26.16 and 40.47 vs. between 44.01 and 58.39, respectively). Moreover, the second most chosen option is now that involving lower contribution rates, whereas in the previous version the second most preferred choice was that labeled as \high" contribution rate.

The same patterns of results are found for the pension savings investment pro les (bottom panel of Table 3). Again we nd a signi cantly higher fraction of \Do not know " answers, a somewhat lower preference for the previously labeled \standard" asset allocation, as well as a higher preference for the riskier investment pro le than in the labels only version of the questions.

These ndings suggest that there seem to be a potentially relevant role for labels in individual choices as far as pensions related decisions are concerned.

Questionnaire 3 and Questionnaire 4 are elded with the idea of testing the role of the standard option in a slightly more sophisticated way. The two questionnaire are precisely the same in terms of content, but elded one month apart from one another. Similarly as for Questionnaire 1 and Questionnaire 2, the topics covered relate to pension premium contributions and to pension savings asset allocation. In these questionnaires the pension premium contributions (and the pension savings investment pro les) are kept constant throughout the questions, but the labels attached to them varies across questions. As an example, the 14% pension contribution is labeled as \Standard option" in question Q31, but as \Low option" in question Q32 and as \Very low option" in question Q33. It is then possible to assess the role of labels, and of the standard option in particular, more deeply.

As for the former topic, in Questionnaire 3 the respondents are randomly split into three groups I, J and K. The respondents in sub-sample I answer question Q31, those in sub-sample J are confronted with question Q32, the respondents in group K are given question Q33 (see Appendix 1). In Questionnaire 4 each member of group I is randomly o ered either Q42 or Q43, those of group J are randomly o ered either Q41 or Q43, the respondents of group K are randomly o ered either Q41 or Q42.

As a consequence of this question design, each individual answers two out of the three questions at di erent points in time. The purpose of elding the same two questionnaires a month far apart is to avoid the respondents to answer the second question consistently with the rst one simply because they can remember what they have just answered.

The structure of the pension savings investment pro les section is exactly the same as before. In Questionnaire 3 the respondents are randomly split into three groups L, M and N. The respondents in sub-sample L answer question Q34, those in sub-sample M are confronted with question Q35, the respondents in group N are given question Q36 (see Appendix 1). In Questionnaire 4 each member of group L is randomly o ered either Q45 or Q46, those of group M are randomly o ered either Q44 or Q46, the respondents of group N are randomly o ered either Q44 or Q45. Again, as a consequence of this question design, each individual answers two out of the three questions at di erent points in time for this second topic as well.

Table 4 shows a very strong role for the standard option in the pension premium contributions, but much less so in the pension savings asset allocation decisions. Irrespective of what numbers stands behind it (be it 14, 16 or 18 percent) the standard option attracts between 54 and 73 percent of preferences as far as the contributions are concerned. A di erent pattern emerges for the investment pro les, for which respondents seems to have much more consistent preferences tilted towards the most conservative allocation (e.g. 15% stocks-85% bonds), no matter how it is labeled.

Table 4 about here

2.2 Results

Questionnaire 1 and Questionnaire 2 described in the previous subsection jointly allow to formally test for the presence of order e ects (e.g. the fact that the choice of a series of options depends on the order in which the options are addressed), as well as of choice set e ects and framing e ects in both the \Low numbers" and the \High numbers" versions. Table 5 presents the p-values for a number of tests and the corresponding number of observations.

Table 5 about here

We rst test the presence of order e ects and we nd that in the pension premium contributions section the question order matters for two out of four cases only, namely the large choice set version with low numbers at the 5 percent signi cance level and the restricted choice set version with high numbers at the 10 percent

signi cance level. In the pension savings investment pro les the question order a ects answers signi cantly in almost all cases: the large choice set version, both with high numbers (at the 1 percent level) and with low numbers (at the 10 percent level), as well as the restricted choice set version with low numbers (at the 10 percent level).

We then investigate whether individual choices depend on how many alternatives are given (choice set e ect) and on how the choices are presented to the respondents (framing e ects). Table 4 shows that both these e ects have a strongly signi cant impact (at the 1 percent level) on the respondents' decision making process in all versions of the questions.

Since both Table 2 and Table 3 show that a non negligible fraction of respondents claim that they do not know what answer to give or they do not want to say it, we perform the same set of tests as above by keeping valid observations only, thus excluding the \do not know" and \do not want to say it" answers. This way we test whether the di erence in the \do not know" answers is responsible for the signi cant results we nd. From Table 5 we see that not much changes as far as the choice set e ect as well as the framing e ect is concerned. Some di erences are found for the order e ect instead. In the pension premium contributions section there seems to be strengthening of the e ect: the signi cance level gets higher when it was already high. For example, the p-value for the 3 choices with labels with high numbers gets 0.020 from previous 0.098; similarly the p-value for the 5 choices with labels with low numbers gets 0.008 from previous 0.030. In the pension savings allocation section a much bigger drop in the number of observations occurs thus denoting a higher fraction of non valid answers. Moreover, the order e ect vanishes out in the low number version of the questions.

The role of the standard option

In order to better understand the role of the standard option we construct a dummy variable for each of the pension premium contributions choices and for each of the the pension savings investment pro les choices reported in Table 4. We then perform probit analysis by explicitly controlling for whether each of those choices were labeled as the \standard" option when presented to the respondents. We also include a measure for self-assessed nancial literacy and several background socio-economic variables, like gender, education level, age, gross household income and total nancial assets. The probit estimates are reported in Table 6a for pension premium contributions and in Table 6b for pension savings investment pro les. In all regressions we also control for the degree of impatience and for the importance of saving motives, but not report the corresponding estimates to save space.

Table 6a and Table 6b about here

The standard label has a strongly signi cant e ect for the two extreme cases in both pension premium contributions and in pension savings investment pro les. The estimated probit coe cients are positive in all cases, implying that being labeled as standard increases the probability of being chosen. The marginal e ects are particularly strong for the lowest pension premium contribution rate (31 percent) and for the riskiest asset allocation (16 percent), and much more limited in magnitude for the highest pension premium contribution rate (8 percent) and the safest asset allocation (7 percent). The middle option is hardly a ected by being labeled as standard and the estimated coe cient is negative in both domains. The probability of the 16 percent contribution rate being chosen decreases by 7 percent if labeled as standard, whereas the probability of the 30-70 percent asset allocation being chosen decreases by 5 percent.

Self-assessed nancial literacy (captured by a dummy variable being 1 if respondents report to be either knowledgeable or very knowledgeable, 0 if either not knowledgeable or more or less knowledgeable) plays a signi cant role as far as the pension savings asset allocation is concerned, much less so for pension premium contributions. Higher nancial literacy increases the probability of choosing the riskiest investment pro le and decreases the probability of choosing the most defensive investment pro les signi cantly.

There is a clear gender e ect for the pension savings investment pro les. Being a female decreases by 5 percent the probability of choosing the riskiest asset allocation and by 6 percent the probability of choosing the middle option, whereas increases by 10 percent the probability of choosing the safest asset allocation. There is hardly any gender e ect on pension premium contributions. Similar ndings apply to the level of education: having a low education increases the probability of preferring the safest asset allocation (with a marginal e ect of 12 percent and a signi cance level of 5 percent), and decreases the probability of choosing the riskiest pension savings investment pro le (with a marginal e ect of 6 percent and a signi cance level of 5 percent). No signi cant role of education is found for pension premium contributions instead (not reported to save space).

Age has a signi cant e ect on preferences over pension premium contributions only. Individuals in working age signi cantly prefer the lowest contribution rate more often than retired respondents. Financial variables do not play a very signi cant e ect on retirement decisions. However we nd that total nancial assets increases the preference for the riskiest asset allocation (statistically signi cant at 5-percent level) and for the highest pension premium contribution (statistically signi cant at 10-percent level).

The role of risk attitude

The gender e ect we nd for the pension savings investment allocation clearly reveals a potential role for risk aversion. For robustness, we perform the same probit regressions as before but controlling for risk aversion explicitly. We use a number of variables derived from statements eliciting information about risk attitudes. Respondents have to claim to what extent they agree/disagree with each of the statements on a 1 to 7 scale, where 1 means \I totally disagree" and 7 means \I totally agree". The statements read as follows:

- Saving1: I think it is more important to have safe investments and guaranteed returns, than to take a risk to have a chance to get the highest possible returns
- Saving2: I would never consider investments in shares because I find this too risky
- Saving3: If I think an investment will be profitable, I am prepared to borrow money to make this investment
- Saving4: I want to be certain that my investments are safe
- Saving5: I get more and more convinced that I should take greater financial risks to improve my financial position
- Saving6: I am prepared to take the risk to lose money, when there is also a chance to gain money

For each of the statements we build a dummy variable taking value 1 if respondents agree, that is if they answered 5 or more. Table 7 reports the results for the standard label and these six statements about risk attitude only, even if the regressions also include the same controls as for Table 6b.

Table 7 about here

The standard labels keep being signi cant for the two extreme cases as in Table 6b and the marginal e ects are very robust.

The six risk attitude variables are jointly signi cant at the 1-percent level for all three asset allocations. Among the six risk attitude statements, Saving2 turns out to be by far the most important one. This nding is not surprising as Saving2 explicitly refers to shares. It is always signi cant at the 1-percent level and the estimated coe cient takes the expected sign. The respondents who agree with the statement \I would never consider investments in shares because I nd this too risky" are the most risk averse and they are consistently the least likely to choose the two riskiest asset allocations and the most likely to prefer the safest asset allocation. The marginal e ects are rather high, ranging between 8 and 16 percent.

The other most important risk attitude statement is Saving6. For the individuals who agree with the statement \I am prepared to take the risk to lose money, when there is also a chance to gain money" the probability of choosing the safest investment pro le decreases by 12 percent at the 5-percent signi cance level, and the probability of preferring the middle asset allocation increases by 9 percent but only at the 10-percent signi cance level. There is however no signi cant e ect on the choice of the riskiest investment pro le.

The probability of choosing the riskiest asset allocation depends signi cantly (at the 5-percent level) on Saving1 as well as on Saving5. The respondents who agree with \I think it is more important to have safe investments and guaranteed returns, than to take a risk to have a chance to get the highest possible returns" and with \I get more and more convinced that I should take greater nancial risks to improve my nancial position" have on average 7 percent lower and 9 percent higher chances to prefer the riskiest investment pro le.

Overall these ndings suggest that it is important to control for risk attitude explicitly and that nevertheless the role of the standard option is very robust.

Pension savings investment pro les and actual portfolio choice

The empirical evidence shows that individual choices in the pension domain depend heavily on how the alternatives are presented to individuals. However a more critical discussion of these results is deemed to be necessary.

The rst element to take into account is that the study is based on hypothetical choices. The extent to which empirical evidence from hypothetical situations can be extended and generalized to real choices is still under debate in the literature. Whether respondents devote enough care in answering survey questions is a legitimate question that should be seriously undertaken. Ideally the validation of survey answers should occur by means of administrative data, and actually the gap between real and hypothetical decisions is still not fully lled, mainly as a consequence of the di culty in linking survey data to administrative records, wherever they are available. A driver of the potential deviations of intentions from actual behaviour can be the set of information individual decisions rely upon.

In this study we cannot link survey data with administrative records, but we can address the issue of hypothetical versus real choices by comparing the pension savings investment pro les preferred by a respondent with the asset allocation in the actual portfolio of the household she belongs to. The data for NL allows for this comparison by exploiting the detailed information in the DHS on household assets and liabilities. We rst group assets by their degree of risk and thus build several categories by following Kapteyn and Teppa (2011). We de ne non-risky assets the

sum of checking accounts, savings accounts, deposits, and insurances. We then consider growth and mutual funds, options and stocks; bonds and money lent out; real estate; business equity; mortgages; financial debts. Finally we aggregate these categories to obtain total wealth as the sum of total assets, and financial wealth as total assets minus total liabilities.

Table 8 reports the results of probit regressions for each of the pension savings investment profile and both household total wealth and financial wealth, separately. In addition we control for the role of the standard option as in the previous paragraphs. The table clearly indicates that there is a significant relationship between the hypothetical preference and the actual level of household wealth, both total and financial. Higher level of wealth are associated with the preference of higher risk pension savings investment profiles, and symmetrically are negatively correlated with the preference of safest pension savings investment profiles.

Table 8 about here

We then perform the same analysis by type of assets and liabilities. Table 9 shows that the only category that is significantly correlated with pension savings investment profiles is options, mutual funds and stocks, which turns out to be the riskiest fraction of a household portfolio. The estimated coefficients signal again that hypothetical choices are very consistent with actual portfolio holdings.

Note that in both tables the role of the standard option is strong and robust.

Table 9 about here

3 The RAND American Life Panel

The ALP is maintained by the RAND Corporation and consists of approximately 5,000 respondents aged 18 and older who are regularly interviewed over the Internet. In the ALP, as in the DHS, preferences over a wide array of topics can be elicited by randomly assigning respondents to different hypothetical scenarios. In the Netherlands, a typical employee has no control over the level of her pension contributions and of her investment profile of the accumulated savings (Van Rooij, Kool, and Prast, 2007). To verify whether the important role of labels is the result of a lack of experience with pension decisions in the Netherlands, we investigate whether our conclusions extend to a situation in which the respondents have greater experience with pension decisions. For this purpose, we have fielded a number of questions in the American Life Panel, as US employees have to decide upon the level of premium contributions and the way these contributions are invested.

3.1 Method

A restricted version of the questionnaires fielded in the DHS was inserted in the ALP. In the US only one questionnaire was used (reported in Appendix 2) focusing on the role of labels and numbers for pension premium contributions only (questions R11 and R12 with labels, questions R21 and R22 with numbers), as well as on the role of the standard option for pension savings investment profiles only (questions R31-R33). The wording of the questions mimic that of the DHS as much as possible, at the same time taking into account of institutional differences between the pension systems in the two countries.

The findings for the role of labels and numbers in pension premium contributions are reported in Table 10. The fraction of respondents declaring they do not know what to prefer is significantly lower than the one found in the Dutch data. The percentages range from 5.93 to 7.60 in the US and they are about half as large as the corresponding percentages in NL. Compared to the Dutch results, US respondents have rather stable preferences irrespective of whether the alternatives are presented with labels rather than with numbers only. In the restricted choice set version the majority of individuals prefers the highest pension premium contribution (54.18 percent in the labels format, 51.90 in the numbers format). When the choice set is larger the relative majority of preferences is for the 9 % contribution (33.20 percent) in the labels format, whereas it is for the 7 % contribution (28.06 percent) in the numbers format.

Table 10 about here

Both the lower number of "Do not know" answers and the clean preference for a certain level of pension contribution irrespective of the label used suggest that the experience with pension decisions in the US have helped them in developing well defined preferences towards pension contributions. However, this is not the case for investment decisions. Table 11 reports the evidence for the role of the standard option in the pension savings investment profiles area. US respondents tend to choose the option labeled as "standard" no matter what asset allocation stands behind it. This finding is in line with that found in the Dutch data.

Table 11 about here

3.2 Results

In Table 12 we present the test results for the presence of order and framing effects. There are no order effects, neither when 3 choices are presented nor when

5 alternatives are given to respondents. In contrast, we find a strongly significant role for framing effects. Whether individuals are confronted with labels rather than with numbers only significantly affect their ultimate decisions. Note that the differences are not very large in magnitude, but they are statistically significant. These findings confirm the results from the Netherlands. The greater familiarity of US respondents with choosing for their retirement savings does not seem to prevent them from violating rationality.

Table 12 about here

As for Dutch data, we also investigate the role of the standard option in the pension savings investment decisions in the US. Table 13 shows that also here the standard label plays a strongly significant role, at least in two out of three cases. When labeled as standard the probability of the safest asset allocation being chosen increases by 9 percent, whereas the probability of the middle asset allocation decreases by 10 percent. There is no significant effect on the riskiest investment profile.

Females are significantly (at the 1-percent level) less likely to prefer the riskiest asset allocation (marginal effect of 19 percent) and more likely to choose the safest one (marginal effect of 15 percent). Education and age are other important determinants of individual preferences, in that the low educated and the youngest respondents choose the safest investment profile more likely and the riskiest one less likely. Household income is another significant driver of individual choices. The low income respondents prefer the riskiest asset allocation less and the safest asset allocation more.

Table 13 about here

4 Conclusions

This study investigates whether individual choices in the pension domain are vulnerable to the way alternatives are communicated to the respondents. The analysis is based on a set of hypothetical questions posed in the Netherlands (via the DNB Household Survey) and in the US (via the RAND American Life Panel) on pension premium contributions and pension savings investment profiles. The design of the questions presented to the respondent in several alternative ways allows to test for the potential role of framing effects, as well as order and choice set effects.

We find that framing has a significant impact on individuals decisions in both countries. There is evidence of somewhat more stable preferences in the US, even if

a strong role of the standard option is found there as well. Overall we nd a positive correlation between the dependence of the individual decision process to framing and the complexity level involved in the decision process itself. The ndings are in line with most of the literature on context e ects and highlight the importance of communication with respect to retirement decisions.

We also nd evidence of consistency between hypothetical choices on pension savings investment pro les and actual asset allocation in household portfolios.

References

[1] Agnew, J., Anderson, L., Gerlach, J. and Szykman, L. (2008), \Who chooses annuities? An experimental investigation of gender, framing and defaults " , *American Economic Review*, 98(2), 418-422.

[2] Brown, J., Kling, J., Mullainathan, S. and Wrobel, M. (2008), \Why dont people insure late-life consumption? A framing explanation of the under-annuitization puzzle" , *American Economic Review* 98(2), 304309.

[3] Brown, J., Kapteyn, A. and Mitchell, O. (2011), \Framing e ects and expected Social Security claiming cehavior" , RAND WP 854.

[4] Bütler, M. and Teppa, F. (2007), \The choice between an annuity and a lump sum: Results from Swiss pension funds" , *Journal of Public Economics* 91, 1944-1966.

[5] De Martino, B., Kumaran, D., Seymour, B and Dolan, R. (2006), \Frames, biases, and rational decision-making in the human brain " , *Science*, 13(5787), 684-687.

[6] Gonzales, C., Dana, J., Koshino, H. and Just, M. (2005), \The framing e ect and risky decisions: Examining cognitive functions with fMRI" , *Journal of Economic Psychology*, 26, 1-20.

[7] Kahneman, D. and Miller, D. (1986), \Comparing reality to its alternatives" , *Psychological Review*, 153(93), 136153.

[8] Kapteyn, A. and Teppa, F. (2011), \Subjective measures of risk aversion, xed costs, and portfolio choice" , *Journal of Economic Psychology*, 32, 564-580.

[9] van Rooij, M., Kool, C. and Prast, H. (2007), \Risk-return preferences in the pension domain: are people able to choose?" , *Journal of Public Economics*, 91, 701-722.

[10] Rogers, R., Owen, A., Middleton, H., Williams, E., Pickard, J. and Sahakian, B. (1999), \Choosing between small, likely rewards and large, unlikely rewards activates inferior and orbital prefrontal cortex" , *The Journal of Neuroscience*, 20(19), 90299038.

[11] Teppa, F. and Vis, C. (2012), \The CentERpanel and the DNB Houshold Survey: Methodological Aspects" , *DNB Occasional Study*, 10(4).

Table 1: DNB Household Survey response rates by questionnaire

Questionnaire	Contacted	Completed	Response rate (%)	When fielded
Questionnaire 1	2,476	1,648	66.5	June 2-6, 2006
Questionnaire 2	2,485	1,722	69.2	June 30-July 3, 2006
Questionnaire 3	2,528	1,915	75.7	June 16-20, 2006
Questionnaire 4	2,284	1,590	70.7	July 14-18, 2006

Source: DHS, 2006

- The second column reports the number of panel members aged 16 years and older selected and contacted;
- The third column reports the number of selected panel members who returned the completed questionnaire;
- The response rate is simply the ratio between column three and column two.

Table 2: Pension premium contributions and Pension savings investment profiles - labels

Pension premium contributions						
	Low numbers version			*High numbers version*		
Restricted choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
Standard	470	58.39	58.39	457	54.21	54.21
High	178	22.11	80.50	194	23.01	77.22
Low	42	5.22	85.71	43	5.10	82.33
I do not want to say it	6	0.75	86.46	6	0.71	83.04
I do not know	109	13.54	100	143	16.96	100
TOTAL	805	100		843	100	
Large choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
Standard	366	45.47	45.47	371	44.01	44.01
Very high	23	2.86	48.32	21	2.49	46.50
High	229	28.45	76.77	205	24.32	70.82
Low	43	5.34	82.11	55	6.52	77.34
Very low	17	2.11	84.22	16	1.90	79.24
I do not want to say it	5	0.62	84.84	7	0.83	80.07
I do not know	122	15.16	100	168	19.93	100
TOTAL	805	100		843	100	
Pension savings investment profiles						
	Low numbers version			*High numbers version*		
Restricted choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
Standard	289	35.50	35.50	250	29.98	29.98
Risky	47	5.77	41.28	31	3.72	33.69
Safe	307	37.71	78.99	389	46.64	80.34
I do not want to say it	8	0.98	79.98	7	0.84	81.18
I do not know	163	20.02	100	157	18.82	100
TOTAL	814	100		834	100	
Large choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
Standard	231	28.38	28.38	216	25.90	25.90
Very Risky	6	0.74	29.12	3	0.36	26.26
Risky	46	5.65	34.77	36	4.32	30.58
Safe	283	34.77	69.53	288	34.53	65.11
Very Safe	72	8.85	78.38	119	14.27	79.38
I do not want to say it	9	1.11	79.48	6	0.72	80.10
I do not know	167	20.52	100	166	19.90	100
TOTAL	814	100		834	100	

Source: DHS, 2006.

Table 3: Pension premium contributions and investment profiles - numbers

Pension premium contributions						
	Low numbers version			*High numbers version*		
Restricted choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
10 % (low) or 18 % (high)	127	29.60	29.60	115	27.06	27.06
12 % or 20 %	163	38.00	67.60	172	40.47	67.53
14 % or 22 %	67	15.62	83.22	34	8.00	75.53
I do not want to say it	5	1.17	84.38	6	1.41	76.94
I do not know	67	15.62	100	98	23.06	100
TOTAL	429	100		425	100	
Large choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
8 % (low) or 16 % (high)	76	16.85	16.85	87	20.86	20.86
10 % or 18 %	91	20.18	37.03	67	16.07	36.93
12 % or 20 %	118	26.16	63.19	128	30.70	67.63
14 % or 22 %	28	6.21	70.29	20	4.80	72.42
16 % or 24 %	17	2.11	76.50	16	1.90	79.24
I do not want to say it	4	0.68	77.38	7	1.68	76.98
I do not know	102	22.62	100	96	23.02	100
TOTAL	451	100		417	100	
Pension savings investment profiles						
	Low numbers version			*High numbers version*		
Restricted choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
15-85% (low) or 45-55% (high)	105	22.93	22.93	220	51.04	51.04
30-70% or 70-30%	128	27.95	50.87	60	13.92	64.97
45-55% or 85-15%	73	15.94	66.81	18	4.18	69.14
I do not want to say it	7	1.53	68.34	6	1.39	70.53
I do not know	145	31.66	100	127	29.47	100
TOTAL	458	100		431	100	
Large choice set	Freq.	Percent	Cumulative	Freq.	Percent	Cumulative
0-100% (low) or 40-60% (high)	29	7.06	7.06	137	32.46	32.46
15-85% or 55-45%	54	13.14	20.19	82	19.43	51.90
30-70% or 70-30%	106	25.79	45.99	52	12.32	64.22
45-55% or 85-15%	55	13.38	59.37	17	4.03	68.25
60-40% or 100-0%	32	7.79	67.15	10	2.37	70.62
I do not want to say it	7	1.70	68.86	4	0.95	71.56
I do not know	128	31.14	100	120	28.44	100
TOTAL	411	100		422	100	

Notes: For investment pro les, the percentages represent the combination stocks-bonds.

Table 4: Role of the standard option

Pension premium contributions			
	Freq.	**Percent**	**Cumulative**
Standard (14 %)	629	54.22	54.22
High (16 %)	304	26.21	80.43
Very high (18 %)	79	6.81	87.24
I do not want to say it	3	0.26	87.50
I do not know	145	12.50	100
TOTAL	1,160	100	
Low (14 %)	66	5.77	5.77
Standard (16 %)	691	60.40	66.17
High (18 %)	253	22.12	88.29
I do not want to say it	15	1.31	89.60
I do not know	119	10.40	100
TOTAL	1,144	100	
Standard (18 %)	875	73.16	73.16
Low (16 %)	126	10.54	83.70
Very low (14 %)	52	4.35	88.04
I do not want to say it	9	0.75	88.80
I do not know	134	11.20	100
TOTAL	1,196	100	
Pension savings investment pro les			
	Freq.	**Percent**	**Cumulative**
Standard (45% stocks-55% bonds)	313	26.71	26.71
Safe (30% stocks-70% bonds)	449	38.31	65.02
Very safe (15% stocks-85% bonds)	249	21.25	86.26
I do not want to say it	5	0.43	86.69
I do not know	156	13.31	100
TOTAL	1,172	100	
Safe (15% stocks-85% bonds)	422	35.79	35.79
Standard (30% stocks-70% bonds)	520	44.11	79.90
Risky (45% stocks-55% bonds)	58	4.92	84.82
I do not want to say it	9	0.76	85.58
I do not know	170	14.42	100
TOTAL	1,179	100	
Standard (15% stocks-85% bonds)	812	70.73	70.73
Risky (30% stocks-70% bonds)	143	12.46	83.19
Very risky (45% stocks-55% bonds)	23	2.00	85.19
I do not want to say it	13	1.13	86.32
I do not know	157	13.68	100
TOTAL	1,148	100	

Source: DHS, 2006.

Table 5: Order, choice set and framing effects

Pension premium contributions				
	Low numbers version		*High numbers version*	
Full dataset	p-value	N.Obs.	p-value	N.Obs.
Order e ect - 3 choices with labels	0.543	805	0.098	843
Order e ect - 5 choices with labels	0.030	805	0.423	843
Choice set e ect - 3 choices vs 5 choices with labels	0.000	805	0.000	843
Framing e ect - labels vs numbers (3 choices)	0.000	289	0.000	311
Framing e ect - labels vs numbers (5 choices)	0.000	327	0.000	295
Excluding DKs				
Order e ect - 3 choices with labels	0.781	690	0.020	694
Order e ect - 5 choices with labels	0.008	678	0.250	668
Choice set e ect - 3 choices vs 5 choices with labels	0.000	655	0.000	640
Framing e ect - labels vs numbers (3 choices)	0.000	229	0.000	215
Framing e ect - labels vs numbers (5 choices)	0.000	235	0.000	196
Pension savings investment profiles				
	Low numbers version		*High numbers version*	
Full dataset	p-value	N.Obs.	p-value	N.Obs.
Order e ect - 3 choices with labels	0.061	814	0.736	834
Order e ect - 5 choices with labels	0.095	814	0.009	834
Choice set e ect - 3 choices vs 5 choices with labels	0.000	814	0.000	834
Framing e ect - labels vs numbers (3 choices)	0.000	313	0.000	305
Framing e ect - labels vs numbers (5 choices)	0.000	294	0.000	310
Excluding DKs				
Order e ect - 3 choices with labels	0.619	308	0.137	321
Order e ect - 5 choices with labels	0.165	304	0.025	319
Choice set e ect - 3 choices vs 5 choices with labels	0.000	617	0.000	645
Framing e ect - labels vs numbers (3 choices)	0.000	192	0.020	193
Framing e ect - labels vs numbers (5 choices)	0.000	186	0.000	200

Source: DHS, 2006.

Table 6a: Role of standard option - Pension premium contributions - probit estimates

Variable	14 percent Coe cient [Marg.e .] (Std. Err.)	16 percent Coe cient [Marg.e .] (Std. Err.)	18 percent Coe cient [Marg.e .] (Std. Err.)
Labeled standard	1.027 ***	-0.177 *	0.208 **
	[0.311]	[-0.069]	[0.082]
	(0.125)	(0.099)	(0.098)
SAS nancial literacy	0.114	0.025	-0.184 **
	[0.043]	[0.010]	[-0.073]
	(0.091)	(0.088)	(0.088)
Female	-0.153 *	0.082	-0.066
	[-0.056]	[0.032]	[-0.026]
	(0.080)	(0.077)	(0.076)
Age less than 40 years	0.346 **	-0.020	-0.334 **
	[0.132]	[-0.008]	[-0.132]
	(0.127)	(0.121)	(0.121)
Age between 40 and 64 years	0.224 **	-0.170 *	-0.196 *
	[0.083]	[-0.067]	[-0.077]
	(0.107)	(0.102)	(0.102)
Gross household income (in logs)	0.010	-0.183 **	0.006
	[0.003]	[-0.072]	[0.002]
	(0.088)	(0.086)	(0.085)
Total n. assets (in logs)	-0.010	-0.016	0.045 *
	[-0.003]	[-0.006]	[0.018]
	(0.028)	(0.027)	(0.027)
Constant	-0.978	1.422 **	-0.428
	(0.721)	(0.705)	(0.701)
Log-likelihood	-749.708	-816.210	-817.545
Pseudo R^2	0.066	0.028	0.024
N.Obs.	1215	1215	1215

The dependent variable is the pension premium contribution choice
The regressions also control for degree of impatience, having a partner, education level, home ownership, savings motives
*** denotes signi cant at 1-percent level
** denotes signi cant at 5-percent level
* denotes signi cant at 10-percent level

Table 6b: Role of standard option - Pension savings investment pro les - probit estimates

Variable	**45-55 percent** Coefficient [Marg.eff.] (Std. Err.)	**30-70 percent** Coefficient [Marg.eff.] (Std. Err.)	**15-85 percent** Coefficient [Marg.eff.] (Std. Err.)
Labeled standard	0.712 ***	-0.115	0.182 **
	[0.158]	[-0.046]	[0.069]
	(0.112)	(0.081)	(0.084)
SAS financial literacy	0.339 ***	-0.187 **	-0.163 *
	[0.094]	[-0.074]	[-0.061]
	(0.102)	(0.090)	(0.091)
Female	-0.209 **	-0.159 **	0.262 ***
	[-0.053]	[-0.063]	[0.096]
	(0.094)	(0.078)	(0.081)
Low education	-0.241 **	-0.193 **	0.319 **
	[-0.059]	[-0.077]	[0.116]
	(0.119)	(0.098)	(0.102)
Mid education	-0.063	-0.068	0.007
	[-0.016]	[-0.027]	[0.002]
	(0.107)	(0.092)	(0.094)
Age less than 40 years	0.263 *	0.020	-0.204
	[0.072]	[0.008]	[-0.007]
	(0.147)	(0.122)	(0.127)
Age between 40 and 64 years	0.191	0.024	-0.170
	[0.049]	[0.009]	[-0.063]
	(0.124)	(0.009)	(0.108)
Gross hh income (in logs)	0.032	0.063	-0.141
	[0.008]	[0.025]	[-0.052]
	(0.104)	(0.087)	(0.090)
Total fin. assets (in logs)	0.082 **	-0.038	0.012
	[0.021]	[-0.015]	[0.004]
	(0.033)	(0.028)	(0.028)
Constant	-2.118 **	0.205	1.087
	(0.842)	(0.704)	(0.734)
Log-likelihood	-538.100	-801.155	-736.706
Pseudo R^2	0.092	0.023	0.051
N.Obs.	1184	1184	1184

The dependent variable is the pension savings investment profile choice
The first figure represents the percentage invested in stocks; the second figure represents the percentage invested in bonds
The regressions also control for degree of impatience, having a partner, education level, home ownership, savings motives
*** denotes significant at 1-percent level
** denotes significant at 5-percent level
* denotes significant at 10-percent level

Table 7: Role of risk attitudes - Pension savings investment profiles - probit estimates

Variable	45-55 percent Coe cient [Marg.e .] (Std. Err.)	30-70 percent Coe cient [Marg.e .] (Std. Err.)	15-85 percent Coe cient [Marg.e .] (Std. Err.)
Labeled standard	0.720 ***	-0.125	0.218 **
	[0.155]	[-0.050]	[0.082]
	(0.120)	(0.085)	(0.089)
Saving1	-0.253 **	0.069	0.083
	[-0.067]	[0.027]	[0.031]
	(0.117)	(0.101)	(0.104)
Saving2	-0.346 ***	-0.284 ***	0.440 ***
	[-0.086]	[-0.113]	[0.162]
	(0.102)	(0.084)	(0.087)
Saving3	-0.130	0.259 **	0.082
	[-0.031]	[0.102]	[0.030]
	(0.151)	(0.132)	(0.135)
Saving4	0.056	-0.007	0.004
	[0.013]	[-0.003]	[0.001]
	(0.124)	(0.105)	(0.109)
Saving5	0.309 **	0.065	-0.163
	[0.085]	[0.025]	[-0.061]
	(0.121)	(0.110)	(0.113)
Saving6	0.187	0.225 *	-0.319 **
	[0.050]	[0.089]	[-0.122]
	(0.141)	(0.131)	(0.132)
Joint signi cance test	0.000	0.000	0.000
Log-likelihood	-494.184	-744.214	-673.521
Pseudo R^2	0.127	0.043	0.086
N.Obs.	1122	1122	1122

The dependent variable is the pension savings investment pro le choice
The rst gure represents the percentage invested in stocks; the second gure represents the percentage invested in bonds
The regressions also control for degree of impatience, having a partner, education level, home ownership, savings motives
*** denotes signi cant at 1-percent level
** denotes signi cant at 5-percent level
* denotes signi cant at 10-percent level

Table 8: Pension savings investment profiles and household wealth - probit estimates

Variable	45-55 percent Coe cient [Marg.e .] (Std. Err.)	30-70 percent Coe cient [Marg.e .] (Std. Err.)	15-85 percent Coe cient [Marg.e .] (Std. Err.)
Labeled standard	0.611 ***	-0.063	0.220 ***
	[0.143]	[-0.025]	[0.085]
	(0.085)	(0.064)	(0.089)
Total hh wealth	0.040 **	0.008	-0.032 *
	[0.010]	[0.003]	[-0.012]
	(0.013)	(0.012)	(0.012)
Constant	-0.430 ***	0.008	0.219 ***
	(0.083)	(0.061)	(0.061)
Log-likelihood	-814.520	-1200.407	-1147.166
Pseudo R^2	0.037	0.001	0.001
N.Obs.	1733	1733	1733
Labeled standard	0.610 ***	-0.062	0.219 ***
	[0.143]	[-0.024]	[0.084]
	(0.085)	(0.085)	(0.065)
Financial hh wealth	0.121 ***	-0.005	-0.066 **
	[0.031]	[-0.002]	[-0.025]
	(0.031)	(0.101)	(0.029)
Constant	-1.391 ***	0.069	0.172 **
	(0.077)	(0.101)	(0.055)
Log-likelihood	-811.476	-1200.614	-1148.061
Pseudo R^2	0.041	0.001	0.006
N.Obs.	1733	1733	1733
The dependent variable is the pension savings investment pro le choice The rst gure represents the percentage invested in stocks; the second gure represents the percentage invested in bonds *** denotes signi cant at 1-percent level ** denotes signi cant at 5-percent level * denotes signi cant at 10-percent level			

Table 9: Pension savings investment profiles and portfolio choice - probit estimates

Variable	45-55 percent Coe cient [Marg.e .] (Std. Err.)	30-70 percent Coe cient [Marg.e .] (Std. Err.)	15-85 percent Coe cient [Marg.e .] (Std. Err.)
Labeled standard	0.599 ***	-0.069	0.237 ***
	[0.140]	[-0.027]	[0.091]
	(0.086)	(0.065)	(0.066)
No risky assets	0.027	0.012	-0.025
	[0.007]	[0.005]	[-0.009]
	(0.063)	(0.054)	(0.054)
Bonds and money lent out	0.052	-0.175	0.146
	[0.013]	[-0.070]	[0.056]
	(0.114)	(0.115)	(0.112)
Options, mutual funds and stocks	0.299 ***	0.022	-0.262 ***
	[0.078]	[0.008]	[-0.100]
	(0.074)	(0.066)	(0.080)
Real estate	-0.007	0.001	-0.008
	[-0.002]	[0.001]	[-0.003]
	(0.022)	(0.019)	(0.019)
Business equity	0.144	0.133	0.076
	[0.037]	[0.053]	[0.029]
	(0.179)	(0.156)	(0.167)
Mortgages	-0.063	-0.059	0.078 *
	[-0.016]	[-0.023]	[0.029]
	(0.047)	(0.041)	(0.248)
Financial debt	-0.322	0.115	0.072
	[-0.084]	[0.046]	[0.027]
	(0.256)	(0.248)	(0.248)
Log-likelihood	-805.364	-1197.307	-1139.747
Pseudo R^2	0.048	0.003	0.013
N.Obs.	1733	1733	1733

The dependent variable is the pension savings investment pro le choice
The rst gure represents the percentage invested in stocks; the second gure represents the percentage invested in bonds
*** denotes signi cant at 1-percent level
** denotes signi cant at 5-percent level
* denotes signi cant at 10-percent level

Table 10: Pension premium contributions - US data

With labels			
Restricted choice set	Freq.	Percent	Cumulative
Low contribution	39	7.41	7.41
Standard contribution	162	30.80	38.21
High contribution	285	54.18	92.40
I do not want to say it	3	0.57	92.97
I do not know	37	7.03	100
TOTAL	526	100	
Large choice set	Freq.	Percent	Cumulative
Very low contribution	17	3.36	3.36
Low contribution	33	6.52	9.88
Standard contribution	138	27.27	37.15
High contribution	168	33.20	70.36
Very high contribution	114	22.53	92.89
I do not want to say it	6	1.19	94.07
I do not know	30	5.93	100
TOTAL	506	100	
With numbers			
Restricted choice set	Freq.	Percent	Cumulative
5 % contribution	48	9.13	9.13
7 % contribution	154	29.28	38.40
9 % contribution	273	51.90	90.30
I do not want to say it	11	2.09	92.40
I do not know	40	7.60	100
TOTAL	526	100	
Large choice set	Freq.	Percent	Cumulative
3 % contribution	29	5.73	5.73
5 % contribution	35	6.92	12.65
7 % contribution	142	28.06	40.71
9 % contribution	125	24.70	65.42
11 % contribution	130	25.69	91.11
I do not want to say it	11	2.17	93.28
I do not know	34	6.72	100
TOTAL	506	100	

Source: Rand ALP, 2006

Table 11: Pension savings investment profiles - US data

Pension savings investment profiles			
	Freq.	Percent	Cumulative
Standard (45% stocks-55% bonds)	159	45.43	45.43
Safe (30% stocks-70% bonds)	103	29.43	74.86
Very safe (15% stocks-85% bonds)	50	14.29	89.14
I do not want to say it	6	1.71	90.86
I do not know	32	9.14	100
TOTAL	350	100	
Safe (15% stocks-85% bonds)	74	21.33	21.33
Standard (30% stocks-70% bonds)	137	39.48	60.81
Risky (45% stocks-55% bonds)	96	27.67	88.48
I do not want to say it	5	1.44	89.92
I do not know	35	10.08	100
TOTAL	347	100	
Standard (15% stocks-85% bonds)	158	47.16	47.16
Risky (30% stocks-70% bonds)	84	25.07	72.24
Very risky (45% stocks-55% bonds)	52	15.52	87.76
I do not want to say it	7	2.09	89.85
I do not know	34	10.15	100
TOTAL	335	100	

Source: Rand ALP, 2006

Table 12: Order and framing effects - US data

Full dataset	p-value	N.Obs.
Order e ect - 3 choices with labels	0.437	526
Order e ect - 5 choices with labels	0.929	506
Framing e ect - labels vs numbers (3 choices)	0.000	526
Framing e ect - labels vs numbers (5 choices)	0.000	506
W/o DKs		
Order e ect - 3 choices with labels	0.158	486
Order e ect - 5 choices with labels	0.814	470
Framing e ect - labels vs numbers (3 choices)	0.000	468
Framing e ect - labels vs numbers (5 choices)	0.000	454

Source: Rand ALP, 2006

Table 13: Role of standard option - Pension savings investment pro les - US data

Variable	**45-55 percent** Coefficient [Marg.eff.] (Std. Err.)	**30-70 percent** Coefficient [Marg.eff.] (Std. Err.)	**15-85 percent** Coefficient [Marg.eff.] (Std. Err.)
Labeled standard	0.044	-0.293 ***	0.299 ***
	[0.015]	[-0.108]	[0.102]
	(0.091)	(0.088)	(0.093)
Female	-0.531 ***	0.107	0.433 ***
	[-0.190]	[0.039]	[0.146]
	(0.091)	(0.088)	(0.094)
Low education	-0.468 **	0.093	0.347 **
	[-0.152]	[0.035]	[0.125]
	(0.168)	(0.154)	(0.160)
Mid education	-0.165	0.056	0.132
	[-0.059]	[0.020]	[0.044]
	(0.108)	(0.108)	(0.116)
Age less than 40 years	0.506 **	0.213	-0.711 ***
	[0.191]	[0.081]	[-0.206]
	(0.170)	(0.161)	(0.167)
Age between 40 and 64 years	0.321 **	0.230 *	-0.513 ***
	[0.111]	[0.084]	[-0.182]
	(0.141)	(0.131)	(0.129)
Gross hh income (Quartile 1)	-0.489 **	0.051	0.370 **
	[-0.157]	[0.019]	[0.134]
	(0.177)	(0.159)	(0.163)
Gross hh income (Quartile 2)	-0.366 **	-0.028	0.402 **
	[-0.123]	[-0.010]	[0.145]
	(0.140)	(0.132)	(0.135)
Gross hh income (Quartile 3)	-0.171	0.113	0.095
	[-0.060]	[0.042]	[0.033]
	(0.118)	(0.116)	(0.124)
Constant	-0.412 *	-0.423 **	-0.627 **
	(0.222)	(0.212)	(0.219)
Joint sign. test education	0.020	0.810	0.094
Joint sign. test age	0.011	0.213	0.000
Joint sign. test hh income	0.012	0.708	0.013
Log-likelihood	-509.719	-557.660	-494.234
Pseudo R^2	0.088	0.020	0.077
N.Obs.	873	873	873

The dependent variable is the pension savings investment profile choice
The first figure represents the percentage invested in stocks; the second figure represents the percentage invested in bonds
The regressions also control for having a partner and home ownership
*** denotes significant at 1-percent level
** denotes significant at 5-percent level
* denotes significant at 10-percent level

Source: Rand ALP, 2006

APPENDIX 1 - DHS questionnaire

Questionnaire 1

Pension premium contributions

Q11. \Restricted choice set" and \Low numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 12% of your gross wage. However, you can also opt for a high contribution rate (14%) or a low contribution rate (10%). Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *I do not want to say it*
– *I do not know*

Q12. \Large choice set" and \Low numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 12% of your gross wage. However, you can also opt for a very high contribution rate (16%) or a high contribution rate (14%) or a low contribution rate (10%) or a very low contribution rate (8%). Which plan would you choose?

– *Standard contribution rate*
– *Very high contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *Very low contribution rate*
– *I do not want to say it*
– *I do not know*

Q13. \Restricted choice set" and \High numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay

is 20% of your gross wage. However, you can also opt for a high contribution rate (22%) or a low contribution rate (18%). Which plan would you choose?
– *Standard contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *I do not want to say it*
– *I do not know*

Q14. "Large choice set" and "High numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 20% of your gross wage. However, you can also opt for a very high contribution rate (24%) or a high contribution rate (22%) or a low contribution rate (18%) or a very low contribution rate (16%). Which plan would you choose?
– *Standard contribution rate*
– *Very high contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *Very low contribution rate*
– *I do not want to say it*
– *I do not know*

Pension savings investment profiles

Q15. "Restricted choice set" and "Low numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (30% stocks-70% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a risky profile (45% stocks-55% bonds) or a safe profile (15% stocks-85% bonds). Which portfolio allocation would you choose?
– *Standard investment profile*
– *Risky investment profile*
– *Safe investment profile*

– *I do not want to say it*
– *I do not know*

Q16. "Large choice set" and "Low numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (30% stocks-70% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a very risky profile (60% stocks-40% bonds) or risky profile (45% stocks-55% bonds) or a safe profile (15% stocks-85% bonds) or a very safe profile (0% stocks-100% bonds). Which portfolio allocation would you choose?
– *Standard investment profile*
– *Very risky investment profile*
– *Risky investment profile*
– *Safe investment profile*
– *Very safe investment profile*
– *I do not want to say it*
– *I do not know*

Q17. "Restricted choice set" and "High numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (70% stocks-30% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a risky profile (85% stocks-15% bonds) or a safe profile (55% stocks-45% bonds). Which portfolio allocation would you choose?
– *Standard investment profile*
– *Risky investment profile*
– *Safe investment profile*
– *I do not want to say it*
– *I do not know*

Q18. "Large choice set" and "High numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (70% stocks-30% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a very risky profile (100% stocks-0% bonds) or risky profile (85% stocks-15% bonds) or a safe profile (55% stocks-45% bonds) or a very safe profile (40% stocks-60% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Very risky investment profile*
– *Risky investment profile*
– *Safe investment profile*
– *Very safe investment profile*
– *I do not want to say it*
– *I do not know*

Questionnaire 2

Pension premium contributions

Q21. "Restricted choice set" and "Low numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. Which plan would you choose?

– *10% contribution rate*
– *12% contribution rate*
– *14% contribution rate*
– *I do not want to say it*
– *I do not know*

Q22. "Large choice set" and "Low numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower,

but your final pension income will be higher. Which plan would you choose?
– *8% contribution rate*
– *10% contribution rate*
– *12% contribution rate*
– *14% contribution rate*
– *16% contribution rate*
– *I do not want to say it*
– *I do not know*

Q23. "Restricted choice set" and "High numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher.
– *18% contribution rate*
– *20% contribution rate*
– *22% contribution rate*
– *I do not want to say it*
– *I do not know*

Q24. "Large choice set" and "High numbers":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. Which plan would you choose?
– *16% contribution rate*
– *18% contribution rate*
– *20% contribution rate*
– *22% contribution rate*
– *24% contribution rate*
– *I do not want to say it*
– *I do not know*

Pension savings investment profiles

Q25. "Restricted choice set" and "Low numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should

tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. Which portfolio allocation would you choose?
– 15% stocks-85% bonds investment profile
– 30% stocks-70% bonds investment profile
– 45% stocks-55% bonds investment profile
– I do not want to say it
– I do not know

Q26. "Large choice set" and "Low numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. Which portfolio allocation would you choose?
– 0% stocks-100% bonds investment profile
– 15% stocks-85% bonds investment profile
– 30% stocks-70% bonds investment profile
– 45% stocks-55% bonds investment profile
– 60% stocks-40% bonds investment profile
– I do not want to say it
– I do not know

Q27. "Restricted choice set" and "High numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. Which portfolio allocation would you choose?
– 55% stocks-45% bonds investment profile
– 70% stocks-30% bonds investment profile
– 85% stocks-15% bonds investment profile
– I do not want to say it
– I do not know

Q28. \Large choice set" and \High numbers":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (). However, you can ask your employer to change the portfolio allocation so that you can have a very risky profile () or risky profile () or a safe profile () or a very safe profile (). Which portfolio allocation would you choose?

– *40% stocks-60% bonds investment profile*
– *55% stocks-45% bonds investment profile*
– *70% stocks-30% bonds investment profile*
– *85% stocks-15% bonds investment profile*
– *100% stocks-0% bonds investment profile*
– *I do not want to say it*
– *I do not know*

Questionnaire 3

Pension premium contributions

Q31. "Restricted choice set" and "Skewed right":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 14% of your gross wage. However, you can also opt for a high contribution rate (16%) or a very high contribution rate (18%). Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Very high contribution rate*
– *I do not want to say it*
– *I do not know*

Q32. "Restricted choice set" and "Centered":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 16% of your gross wage. However, you can also opt for a low contribution rate (14%) or a high contribution rate (18%). Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *I do not want to say it*
– *I do not know*

Q33. "Restricted choice set" and "Skewed left":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 18% of your gross wage. However, you can also opt for a low contribution rate (16%) or a very low contribution rate (14%). Which plan would you choose?

– *Standard contribution rate*
– *Low contribution rate*
– *Very low contribution rate*
– *I do not want to say it*
– *I do not know*

Pension savings investment pro les

Q34. \Restricted choice set" and \Skewed left":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (45% stocks-55% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a safe profile (30% stocks-70% bonds) or a very safe profile (15% stocks-85% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Safe investment profile*
– *Very safe investment profile*
– *I do not want to say it*
– *I do not know*

Q35. \Restricted choice set" and \Centered":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (30% stocks-70% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a safe profile (15% stocks-85% bonds) or a risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Safe investment profile*
– *Risky investment profile*
– *I do not want to say it*
– *I do not know*

Q36. \Restricted choice set" and \Skewed right":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final

pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (15% stocks-85% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a risky profile (30% stocks-70% bonds) or a very risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Risky investment profile*
– *Very risky investment profile*
– *I do not want to say it*
– *I do not know*

Questionnaire 4

Pension premium contributions

Q41. "Restricted choice set" and "Skewed right":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 14% of your gross wage. However, you can also opt for a high contribution rate (16%) or a very high contribution rate (18%). Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Very high contribution rate*
– *I do not want to say it*
– *I do not know*

Q42. "Restricted choice set" and "Centered":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 16% of your gross wage. However, you can also opt for a low contribution rate (14%) or a high contribution rate (18%). Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Low contribution rate*

– *I do not want to say it*
– *I do not know*

Q43. "Restricted choice set" and "Skewed left":

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. If you pay a higher contribution rate your net wage will be lower, but your final pension income will be higher. The standard contribution rate that you pay is 18% of your gross wage. However, you can also opt for a low contribution rate (16%) or a very low contribution rate (14%). Which plan would you choose?
– *Standard contribution rate*
– *Low contribution rate*
– *Very low contribution rate*
– *I do not want to say it*
– *I do not know*

Pension savings investment profiles

Q44. "Restricted choice set" and "Skewed left":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (45% stocks-55% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a safe profile (30% stocks-70% bonds) or a very safe profile (15% stocks-85% bonds). Which portfolio allocation would you choose?
– *Standard investment profile*
– *Safe investment profile*
– *Very safe investment profile*
– *I do not want to say it*
– *I do not know*

Q45. "Restricted choice set" and "Centered":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should

tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (30% stocks-70% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a safe profile (15% stocks-85% bonds) or a risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Safe investment profile*
– *Risky investment profile*
– *I do not want to say it*
– *I do not know*

Q46. \Restricted choice set" and \Skewed right":

Suppose you have a job and the pension system is reformed so that everyone in responsible for his own retirement savings (through his company's pension fund) and everyone should tell how his pension fund contributions must be invested in equities and bonds. The final pension depends on this decision and the returns on financial markets. Now imagine that your pension will allow you to tell how your pension contributions must be allocated into equities and bonds. You can opt for a standard allocation (15% stocks-85% bonds). However, you can ask your employer to change the portfolio allocation so that you can have a risky profile (30% stocks-70% bonds) or a very risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Risky investment profile*
– *Very risky investment profile*
– *I do not want to say it*
– *I do not know*

APPENDIX 2 - ALP questionnaire

R11. "Restricted choice set"

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. The standard contribution rate that you pay is 7% of your gross wage. However, you can also opt for a high contribution rate (9%) or a low contribution rate (5%). The employer does not offer any other retirement plans and there is no matching. He does pay 3% of your gross wage on top of your own contribution, regardless of the choice you make. Which plan would you choose?

– *Standard contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *I do not want to say it*
– *I do not know*

R12. "Large choice set"

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. The standard contribution rate that you pay is 7% of your gross wage. However, you can also opt for a very high contribution rate (11%), a high contribution rate (9%), a low contribution rate (5%) or a very low contribution rate (3%). The employer does not offer any other retirement plans and there is no matching. He does pay 3% of your gross wage on top of your own contribution, regardless of the choice you make. Which plan would you choose?

– *Standard contribution rate*
– *Very high contribution rate*
– *High contribution rate*
– *Low contribution rate*
– *Very low contribution rate*
– *I do not want to say it*
– *I do not know*

R21. "Restricted choice set"

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. The standard contribution rate that you pay is 7% of your gross wage. However, you can also opt for a high contribution rate (9%) or a low contribution rate (5%). The employer does not offer any other retirement plans and there is no matching. He does pay 3% of your gross wage on top of your own contribution, regardless of the choice you make. Which plan would you choose?

– *5% contribution rate*
– *7% contribution rate*
– *9% contribution rate*
– *I do not want to say it*
– *I do not know*

R22. "Large choice set"

Imagine you have a job with a defined contribution pension plan and you have to decide how much to contribute. The standard contribution rate that you pay is 7% of your gross wage. However, you can also opt for a very high contribution rate (11%), a high contribution rate (9%), a low contribution rate (5%) or a very low contribution rate (3%). The employer does not offer any other retirement plans and there is no matching. He does pay 3% of your gross wage on top of your own contribution, regardless of the choice you make. Which plan would you choose?
– *3% contribution rate*
– *5% contribution rate*
– *7% contribution rate*
– *9% contribution rate*
– *11% contribution rate*
– *I do not want to say it*
– *I do not know*

R31. "Restricted choice set" and "Skewed left":

Imagine you have a job and you decide to participate into a defined contribution pension plan. You can opt for a standard allocation (45% stocks-55% bonds). However, you can ask the employer to change the portfolio allocation so that you can have a safe profile (30% stocks-70% bonds) or a very safe profile (15% stocks-85% bonds). Which portfolio allocation would you choose?
– *Standard investment profile*
– *Safe investment profile*
– *Very safe investment profile*
– *I do not want to say it*
– *I do not know*

R32. "Restricted choice set" and "Centered":

Imagine you have a job and you decide to participate into a defined contribution pension plan. You can opt for a standard allocation (30% stocks-70% bonds). However, you can

ask the employer to change the portfolio allocation so that you can have a safe profile (15% stocks-85% bonds) or a risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Safe investment profile*
– *Risky investment profile*
– *I do not want to say it*
– *I do not know*

R33. "Restricted choice set" and "Skewed right":

Imagine you have a job and you decide to participate into a defined contribution pension plan. You can opt for a standard allocation (15% stocks-85% bonds). However, you can ask the employer to change the portfolio allocation so that you can have a risky profile (30% stocks-70% bonds) or a very risky profile (45% stocks-55% bonds). Which portfolio allocation would you choose?

– *Standard investment profile*
– *Risky investment profile*
– *Very risky investment profile*
– *I do not want to say it*
– *I do not know*