Abstract
This paper executes a cost and benefit analysis of the current mandatory information disclosure of the 2007 implemented Dutch pension act, referred to as the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb). I present empirical evidence on the lack of pension awareness, financial literacy and saving intentions in the Netherlands from previous studies and measure the administrative burden of the mandatory information provision for the pension sector, financial supervisors and policymakers by means of a questionnaire. In addition, I discuss behavioural factors to explain why policy based on merely information provision will be inadequate to help people make pension related choices.

Acknowledgements: I would like to offer my special thanks to prof. dr. H.M. (Henriëtte) Prast for her comments on earlier versions of this paper and the participating organizations for their assistance with the collection of my data.
## Contents

1 Introduction .......................................................................................................................... 2

2 The Pension system in the Netherlands ................................................................................. 4
  2.1 An Overview of the Dutch Pension System .................................................................... 4
  2.2 The Past, Present and the Future of Dutch Occupational Pensions ............................. 5

3 Pension Information and Communication ........................................................................... 6
  3.1 Why Pension Communication? ....................................................................................... 6
  3.2 Mandatory Pension Information ..................................................................................... 7
    3.2.1 Start Letter .................................................................................................................. 7
    3.2.2 Uniform Pension Overview (UPO) .............................................................................. 8
    3.2.3 Indexation .................................................................................................................. 10
    3.2.4 Stop Letter ............................................................................................................... 11
    3.2.5 Other Mandatory Information Provisions ............................................................... 11
    3.2.6 Summary .................................................................................................................. 12
  3.3 Pension Register ............................................................................................................. 12

4 Pension Information & Communication: Analysis of Benefits ............................................. 13
  4.1 Lack of Pension Awareness .............................................................................................. 13
  4.2 Lack of Financial Knowledge .......................................................................................... 16
  4.3 Saving Intentions in the Netherlands .............................................................................. 17
  4.4 Saving Behaviour in the Netherlands ............................................................................. 19

5 Pension Information & Communication: Analysis of Costs .................................................. 21
  5.1 Data, Methodology and Questionnaire ............................................................................ 21
  5.2 Results ............................................................................................................................. 24
    5.2.1 Aggregate Results ....................................................................................................... 24
    5.2.2 Results of the Specific Instruments .......................................................................... 26

6 Financial Education & Behavioural Factors ......................................................................... 31
  6.1 Effect of Financial Education on Saving Behaviour ....................................................... 31
  6.2 Behavioural Biases in Decision Making ......................................................................... 32
  6.3 Implications of Behavioural Factors on Pension Communication ................................... 39

7 Concluding Remarks ......................................................................................................... 41

8 References: ....................................................................................................................... 42

9 Appendix ............................................................................................................................ 46
  9.1 Appendix I ....................................................................................................................... 46
  9.2 Appendix II ..................................................................................................................... 50
1 Introduction

The Netherlands is confronted with serious challenges in the pension domain. The population is aging, people are living longer, investment returns are poor and the interest rate is on a low level. As a result, pension funds are struggling to remain solvent. In the Netherlands, and many other developed countries, the pension system is shifting from a defined benefit system to a defined contribution system. Which in essence means that pensions are no longer guaranteed and the responsibility and investment risk are to a great extend shifted toward the employees (Bodie and Prast, 2011). It is crucial that employees are aware of the pension reforms and understand that pension rights and -payments are dependent on investment returns.

It is clear that by linking the pensions to investment returns, pension funds get a hold on their solvency, but it creates a new challenge for the pension members. Because for decades pension participants were told that their pension was certain and therefore, employees paid minimal attention to retirement issues. That time is long gone. Now they are expected to make the appropriate choices for their own retirement. The question is whether Dutch household have the skills and knowledge to process financial information in order to form realistic expectations regarding their pension and save sufficiently for retirement on their own. The answer to that question is a clear no. The average Dutch worker seems risk averse with respect to pensions, finds him-self financially incompetent, is unable to bring his investment choices in line with his preferences and needs no additional autonomy in the pension domain (Van Rooij, Kool and Prast, 2007). It will be a challenge to turn this around.

Unfortunately, the pension providers have not been able to get their members more activity involved in their retirement planning. These developments have given the government the incentive to come up with a new policy which emphasizes on transparency and accurate information with regard to pensions between pension providers and pension plan members. For that reason the Dutch legislature implemented two new Pension laws in 2007, referred to as the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb) to improve pension transparency and financial literacy among participants. The pension laws contain several informative tools that pension providers are obligated to uphold. The main mandatory informative tools are the start letter, the uniform pension overview, the stop letter and information regarding the provision of indexation. The informative tools in the pension laws are designed to provide pension participants with appropriate information in order for
them to be able to construct a suitable financial preparation with regards to income in old age, disability and/or income for surviving relatives in case of the passing of a family member.

This paper assesses the costs and benefits of pension information, communication, transparency and awareness arising from the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb) and continues with a discussion on the predominant behavioural biases that influence retirement decisions. The benefits are defined in terms of pension awareness, financial knowledge and saving behaviour. Previous studies report that pension-awareness and financial knowledge is lacking and that only a minority of the household is intending to change her lifestyle (e.g. save more) after the provision of pension information.

The contribution of this paper is primarily on the costs and the aim is to report the total cost resulting from the regulatory information, transparency and communication requirements of the current Dutch pension law. The costs are divided into costs incurred by policy makers and regulators, and the administrative burden for those who have to provide the information. The costs are estimated by means of a survey among the main stakeholders: the pension sector, insurers, regulators and policy makers.

The focus of this thesis is to answer two predominant questions. First, does the present Dutch pension policy - based on providing information, communication and transparency about pensions - help employees take more responsibility to adequately save for retirement? Second, what are the total monetary costs of this communication strategy?

This paper is organized as follows. Section 2, provides an overview of the Dutch pension system and the development of the Dutch occupational pensions in the past 2 decades. Sections 3, presents the main obligatory informative tools used to inform pension members about their pension. In section 4, I define the benefits of pension communication to pension members and assess the degree to which the benefits have been achieved thus far. In section 5, I analyse the costs of mandatory information, communication and transparency provision by the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb). Section 6, introduces the implications of behavioural literature on pension behaviour. Finally, section 7 presents the conclusion.
2 The Pension system in the Netherlands

2.1 An Overview of the Dutch Pension System

The pension system in the Netherlands consists of three pillars: public pension (AOW), the collective occupational pensions and the personal retirement savings that each person can arrange individually (Van Rooij, Kool and Prast, 2007).

The first pillar pension is a state pay-as-you-go pension of about €700 per month for married retired couples who live together and approximately €1000 for retirees who live alone. All individuals between the age of 15 and 65 who have lived or worked in the Netherlands are entitled for the public pension (AOW). However, the AOW amount that each individual will receive upon retirement depends on the number of years that person has worked and lived in the Netherlands.

As mentioned previously, the AOW is a state pay-as-you-go pension system. This means that the first pillar (AOW) is financed by the contributions that are made by the individuals who are working. In addition to these contributions, additional funding comes from taxes as the government can utilize government public funds to finance the AOW.

The second pillar is a collective pension system which is being build up via the employer. More than 90% of employers have arranged a pension contract with their employees. There is little room for choice in these arrangements. In most cases the employees are automatically enrolled into the employer’s pension scheme, the pension funds decide on the investment policy and the social partners (trade unions and employers) determine the contribution rates (Van Rooij, Kool, and Prast 2007). On average, the occupational pension benefit and the AOW benefit are approximately equivalent and together they represent 80 percent of the total pension benefit at retirement (OECD, 2009). The remaining 20 percent consists out of the third pillar. In the third pillar individuals save themselves for their retirement. The private pension products can be purchased as a supplement to the first and second pillar pension schemes. The third pillar is primarily important for the self-employed or individuals that do not participate with the collective pension programs.

| Table 1 |

<table>
<thead>
<tr>
<th>Active participants (*1000)</th>
<th>5.823</th>
<th>1.011</th>
<th>6.834</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market share active participants in %</td>
<td>85,21%</td>
<td>14,79%</td>
<td>100,00%</td>
</tr>
<tr>
<td>Pension liabilities (billions of euros)</td>
<td>€ 704.891</td>
<td>€ 38.444</td>
<td>€ 743.335</td>
</tr>
<tr>
<td>Market share Liabilities in %</td>
<td>94,83%</td>
<td>5,17%</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Source: Dutch Central Bank (dnb.nl)
Another party active in the pension market is the pension insurer. As the table above illustrates, pension insurers represent more than 1 million active participants in the Netherlands, which is circa 15 percent of the total market share for the year 2011. In terms of pension liability they have acquired approximately 5 percent of the total market share.

2.2 The Past, Present and the Future of Dutch Occupational Pensions

In occupational pensions, both employers and employees contribute, but in the initial setting employers bared the investment risk. As a result, if the stock market performed below expectations the employers had to contribute more. Moreover, occupational pension arrangements were and still are capital funded. This means that the pension benefits in the second pillar consists out of the contributions that are made by the participants and the returns that are earned on these contribution in the capital market.

The high investment returns in the 1990’s in combination with a relatively small group of retirees enabled pension funds to make pension payments without causing a danger to solvency ratios. Back then most of the pension arrangements in the second pillar had a defined benefit nature and were based on the final salary of the employee upon retirement.

The poor performance of the stock market in the late 90’s, in combination with the aging of the population and the increasing longevity forced employers to adopt a new type of pension plan. This plan is called a collective defined contribution plan and the key feature is that the investment risk and longevity risk is shifted from the employers to the employees. Furthermore, employers changed the pension contact from a final pay scheme to a career average arrangement with conditional indexation (Alessie, Van Rooij and Lusardi, 2011). If the collective DC plan suffers from investment losses and becomes underfunded a number of adjustments are available. To give a few examples, employees could make more contributions, pension funds could decide not to index the pension benefits or even cut the pension rights.

At the financial crisis of 2008, pension funds experienced enormous loses on the stock market. In addition, the nominal interest rates decreased which automatically increased the present value of pension liabilities. After a study by the Goudswaard Committee (2010), it became obvious that the current pension system was no longer sustainable due to the poor developments in the financial market and the demographic expectations. Either, household received a lower level of pension benefits or the certainty of receiving the pension benefit was lower. In 2010, the socials partners and the government came to a new pension agreement with two predominant changes. First, the accumulated pension and retirement benefits are adjusted to
new insights into life expectancy. As a result, the retirement age is raised to 66 in 2020 and to 67 in 2025. Second, in the new pension contract nominal guarantees are no longer issued. Pensions will become more dependent on the financial returns, and contribution rates are now no longer adapted to future developments in life expectancy or developments in the financial markets. Any shortages or surpluses can be translated into alterations in the pension rights or pension incomes in a maximum period of ten years. There is no solution to the question of whether and how the old pension rights are going to be processed in the new contract.

3 Pension Information and Communication

3.1 Why Pension Communication?

The changes in the pension agreement illustrate that the Dutch pension system is changing from a collective defined benefit system, with guaranteed pension benefits, to a collective defined contribution system with less guarantees and more investment risk for the employees and the pensioners. As a result, employees are expected to take more responsibility in retirement planning. However, evidence indicates that a majority of the public procrastinates and considers themselves financially incompetent (Prast, Van Rooij and Kool, 2007). Hence, planning for retirement is a complex activity for most individuals. In addition, the average Dutch citizen expects to receive a replacement rate between 70 to 80 percent of the final wage, which is more than what pension funds can offer them (Alessie, Van Rooij and Lusardi, 2011). Household should understand that the recent pension reforms imply that pension rights and -payments are dependent on investment returns. Pension funds can either take more risk with probability of higher investment return or invest in save asset with more certainty but lower pensions. Hence, if people don’t save additionally through the third pillar, they should expect a lower pension income with more certainty or they are exposed to more investment risk with the probability for a higher pension income at retirement. Therefore, it is important to inform household on this matter and to enhance financial and pension knowledge that are necessary for retirement planning. And to do so, the Dutch government adjusted the pension law to the path of transparency and accurate information, with respect to pensions between pension providers and pension plan participants, and launched a variety of informative initiatives collectively with the pension industry and the social partners. Unfortunately, the beneficial effect of these policies on pension awareness, knowledge and behaviour is lacking. The next chapters will elaborate more on the costs (supervision costs,
costs by policy makers, and administrative costs by pension providers) and benefits (more pension awareness, enhanced pension knowledge, positive effect on saving intentions and behaviour) of this policy and the degree to which the objectives have been reached thus far. In the following section the focus will be on the background of some important instruments that are used to communicate pension information by pension providers to active members, former members, pensioners and former partners.

3.2 Mandatory Pension Information

On January 1st 2007, the Dutch parliament ratified a novel array of regulations regarding pensions in the Netherlands, referred to as the ‘Pensioenwet’ (Pw). The new regulations replaced the former ‘Pensioen- en spaarfondsenwet (Psw)’ dating from 1954. Since its confirmation, the ‘Psw’ was frequently amended and adapted to the continuously developing society and was eventually substituted by the Pw law. The legislator’s main motive for enacting the novel Pw act is to provide more transparency and security in the process of delegation of knowledge regarding pensions between pension providers and pensioners. The Pw law’s jurisdiction compromises virtually all pension laws affecting relations between employers and employees. The Pw regulation was accompanied by the more explicit ‘Wet verplichteberoeps-pensioenregeling’ (Wvb). The Wvb is applicable to an occupational pension fund. The Wvb regulations are designed for a selective array of ‘liberal’ professions and employees whom work in specific areas such as doctors and pharmacists. The Pw and Wvb regulations united - known as the ‘pensioenwetgeving’ - provided a more stringent duty to report on behalf of pension providers. In the ‘Memorie of Toelichting’, legislators motivated their enactment of the Pw and Wvb laws by emphasizing the necessity for transparency in communication between pension providers, participants and pensioners: “Only on the basis of accurate and clear information are beneficiaries able to make proper financial planning with regards to income at old age, income in case of disability and income distribution to relatives in the case of decease”. In the following paragraphs the focus will be on the background of some important instruments that are used to communicate pension information by pension providers to active members, former members, pensioners and former partners. The main mandatory informative tools are the start letter, the uniform pension overview, the stop letter and information regarding the provision of indexation.

3.2.1 Start Letter

Every new active participant of a pension scheme will be assigned a so-called ‘start letter’
within three months, in which he or she is informed on the essential aspects of the new pension regulations. The self-assessment survey of the AFM (2011) shows that 98% of the pension funds have provided the participants a starting letter within the three-month period. Furthermore, the ‘start letter’ is distributed in writing, lest the participant explicitly request an electronic distribution. Moreover, the ‘start letter’ must include all legally obligated information, such as information on the inscription date of the pension agreement and additional information on any potential distribution of indexation. The precise lay out and language of the ‘start letter’ are to be determined by the pension distributors (Regioplan, 2011).

In a study by the Pensioenfederatie and the Verbond van Verzekeraars (2011), respondents were asked if they are familiar with and have read the pension information in the ‘start letter’ at the commencement of employment. The results of this research indicate that the majority of the respondents are familiar with the ‘start letter’. Almost half of the employees pointed out that they are familiar with and have read the information. While 27 percent are familiar with this information, but have not read the information. And 24 percent are neither familiar nor have read the information. It’s worth pointing out that these results could be biased, because only the new employees who were employed after the year 2008 received a ‘start letter’. Therefore, employees who have been employed prior to 2008 did not receive this letter and this could have influenced the results.

In a qualitative consumer research respondents were questioned about the comprehensibility of the ‘start letter’. The study assessed 55 ‘start letter’ from 39 pension funds and 8 pension insurers. The 25 respondents participating in the research indicated that the ‘start letter’ is not properly structured, the language is incomprehensible and it goes too far in detail on pension techniques (AFM, 2010). On the other hand, interviews with individual participants, members of councils and pension providers show that the comprehensibility and clarity of the ‘start letter’ is not a serious problem. This is because pension funds and pension insurers can adjust the text and structure of the ‘start letter’ in a way that meets the characteristics of their members. However, all parties agree that the ‘start letter’ is too long which increases the possibility that the employees do not read the ‘start letter’ carefully (Regioplan, 2011).

3.2.2 Uniform Pension Overview (UPO)

A second salient feature of the recent pension law reforms is the ‘uniform pension overview’. As of 2007, pension distributors are required to annually distribute a copy of the so
called ‘UPO’ to their participants. Via the UPO, active participants are informed on the pension agreements, indexation and any potential increase of value with regards to preceding years. All former participants and former partners must be offered an UPO at least once every 5 years, while pensioners will receive annual publication of their pension overview. Every UPO model includes a statistical and numerical component accompanied by additional clarification including background information on the terms of agreement, the regulations and explanation of the statistical share of the UPO. Due to its uniform character, this information document provides the possibility for the participants to amass their pensions from a wide array of pension providers. The UPO documents include various models with regards to indexation, capital and contribution rate agreements as well as regulations on disability and occupational pensions (Regioplan, 2011).

In recent years there have been multiple studies regarding the comprehensibility of the UPO. According to the research of the Pensioenfederatie and the Verbond van Verzekeraars (2011), nearly two thirds of the surveyed employees between the ages of 21 and 64 find most of UPO understandable and 15 percent of the respondents comprehend the UPO completely. An additional support for this view is given by the Consumentenmonitor AFM (2011). According to this study 61 percent agrees with the statement that the UPO is clear, while 55 percent agrees with the statement that the UPO is understandable. Hence, based on these two studies we could conclude that the majority of the respondents understand the UPO to a large extent. However, a different image is created by a study from the AFM and GfK (2011). This investigation showed that only 39 percent thought the UPO was clearly structured. In addition, 76 percent felt that supplementary explanation is necessary to understand the UPO and 16 percent of the respondent finds the UPO incomprehensible. A thinkable justification for the difference in outcomes might be due to the fact that the survey from the AFM and GfK (2010) was carried out in 2009 and therefore participants had less knowledge of and experience with the UPO than in 2011. The data also indicates that the older a person gets, the better he or she reads and understands the UPO (Pensioenfederatie/Verbond van Verzekeraars/GfK, 2011). Furthermore, higher educated respondents seem to understand the UPO better than the lower educated counterparts (Consumentenmonitor AFM, 2011). A plausible explanation for this is that the UPO uses jargon that people with lower education do not understand (self-assessment Onderzoek AFM, 2011). Finally, pension providers claim that the great volume of information of the UPO ensures that participants are less willing to read the UPO and depresses the comprehensibility of this document (self-assessment Onderzoek AFM, 2011).
### 3.2.3 Indexation

Indexation is used to sustain the purchasing power of clients throughout the years. Pension providers are required to inform active participants on value diversions in various manners, by means of the previously mentioned start letter, the pension regulations and the UPO. In case of any alterations in the indexation policy or value of indexation, pension contributors are required to notify their participants, pensioners and partners within three months. The legally enforced regulations on the provision of information comprises of two elements: the so called declaration of conditions (Voorwaardelijkheidsverklaring) as a part of the indexation-matrix and the indexation-label (Regioplan, 2011).

The declaration of conditions includes a transcript of the indexation regulations and information on the indexation. The transcript is pre-defined and noted in the legally enforced documents referred to as the ‘indexation matrix’. The matrix provides an overview of the various types of indexation and the declarations of conditions which accompany the indexation models. The matrix defines six different types of indexation distributions, from no indexation to unconditional indexation. Due to regulatory advances in April 2011, pension distributors are no longer required to acquire permission from the Netherlands Authority for the Financial Markets (AFM) when diverting from the standard texts on the declaration of conditions. However, the AFM will examine the diversions from the standard text afterwards (Regioplan, 2011).

The indexation-label is an image presenting the expected development of the pension indexation in comparison to inflation. This image provides insight into the expected indexation in the coming 15 years. The inclusion of the indexation-label is not mandatory and left up to the assessment of the pension distributors on whether it contributes to the quality of the information shared with the participant (Regioplan, 2011).

In the self-assessment survey by the AFM and the Ministry of Social Affairs (2011), pension funds and insurers were asked to what extent they think that the indexation-label contributes to understanding of the participants about indexation. The outcome indicates that 54 percent of the pension funds and 31 percent of insurers have the opinion that the indexation-label does not enhance the comprehension on indexation. What’s more, 29 percent of the pension funds and 46 percent of insurers even believes that it weakens the understanding of participants about indexation. Pension providers find it difficult to offer a good alternative for communication about indexation. Pension funds and pension insurers were also asked whether they think participants will understand the declaration of conditions
(self-assessment AFM, 2011). Approximately a third of the pension funds believe that the text is not comprehensible, 17 percent believes that the text is understandable while the majority of the pension funds neither thinks it is understandable nor incomprehensible. Pension insurers seem to have a similar view. Out of the 13 pension insurers who participated in this survey, 6 of them believe that the text is difficult to understand while 2 of them believe it is understandable. The remaining 5 pension insurers find this text neither understandable nor incomprehensible.

### 3.2.4 Stop Letter

When a participant of a pension program changes from profession or stops to participate in a pension scheme, the original pension deal will cease to exist and the participant will then receive a ‘stop letter’ which includes information on the size of the pension and whether the package includes a pension for his surviving relatives (Regioplan, 2011). Furthermore, the stop letter indicates how the pension wage will develop in accordance to any income increase or price inflation. In addition, the document informs on how to transfer the pension saved from the previous pension contributor to the next. The stop letter is helpful when attempting to estimate your own personal final pension value or that of your surviving relatives (Regioplan, 2011). Based on the self-assessment AFM (2011) survey, we can conclude that the stop letter is generally delivered on time. Unfortunately, there is insufficient evidence to say something about the comprehensibility and clarity of the stop letter (Regioplan, 2011).

### 3.2.5 Other Mandatory Information Provisions

In addition to the above instruments, the pension legislation has recorded a number of supplementary elements with respect to the provision of pension information. In this section some of them will be discussed briefly, however, this list is not inclusive. Firstly, pension funds and pension insurers are obligated to inform their members about cuts in the pension benefits due to a low coverage ratio. Members of a pension plan are also informed if there is an alteration of the pension agreement. In most cases pension providers do this by sending their members a letter. Also, members are informed if they have requested specific pension information, if they are immigrating to another country or in the case of unpaid pension contributions (Regioplan, 2011).

Unfortunately, there is no survey available on the opinion of participants on these
additional information disclosures. Therefore, it is difficult to get a good image on whether participants find them clear and understandable (Regioplan, 2011).

3.2.6 Summary

The self-assessment AFM (2011) survey shows that the majority of pension funds and pension insurers comply with the rules regarding information provision. However, the evidence above demonstrates that the current communication efforts did not have the desired effect. Important information tools such as the Indexation-label, Uniform Pension Overview and the Declaration of Conditions (Voorwaardelijkheidsverklaring) are not sufficiently understandable and clear for participants. On the basis of available information from the Pensioenfederatie/Verbond van Verzekeraars/GfK (2011), it seems realistic to argue that at least one in five participants finds the information that is being communicated by pension providers incomprehensible. Generally, the higher educated participants find the information better understandable than the less educated. Similarly, older participants find the information more understandable than the younger counterparts. This is because they are generally more interested in their own pension relative to the young (Pensioenfederatie/Verbond van Verzekeraars/GfK, 2011). In addition, most of the information is too general. This makes it difficult for participants to form correct pension expectations and prepare adequately for retirement.

3.3 Pension Register

A collective initiative of the Dutch pension funds, the pension insurers and the Social Insurance Bank helped the launch of a foundation which is called the “Stichting pensioenregister”. This foundation launched the website “mijnpensioenoverzicht.nl” in 2011, which primarily is used to inform and provide the Dutch citizen with an overview of one’s accumulated pension benefits with pension funds, pension insurers and the state pension (AOW) privileges. In 2011, the Pensioenfederatie and the Verbond van Verzekeraars (2011) did a research on the actual usage of this website by people between the ages of 21-64 whom participate in a pension scheme. The study shows that 44 percent of the individuals are familiar with the website and use it. More than a third knows the website, but has not used it. And 21 percent of the respondents were not familiar with mijnpensioenoverzicht.nl. In addition, a study by the Consumentenmonitor AFM (2011) shows that 62 percent of the people who have ever logged on mijnpensioenoverzicht.nl did this only once, 26 percent have logged in twice and twelve percent have logged in more than twice. In addition this study
indicates that most respondents (79%) agree with the statement that the information on the site of the Pension Register is understandable. Furthermore, the majority (62%) believe that the website gives a good insight into the pension that one can achieve if they continue to work until their retirement.

The overall opinion of the Pension Register is positive. Nonetheless, the Netherlands Authority of Financial Markets has mentioned a number of opportunities for enhancement. Firstly, the Pension Register should provide participants with an indication of the net pension amount. In the Consumentenmonitor AFM (2011) 53 percent of respondents have indicated that they would be interested to know how high their net pension will be at retirement. Secondly, an overview of income at different life events (e.g. divorce, disability, unemployment) which have significant financial consequences should be added. Thirdly, the participants should be able to play around with variables to have an indication of how alteration to these variables will affect their pension. Finally, the third pillar should be incorporated and participants have to be informed if their pension is insufficient (Consumentenmonitor AFM, 2011).

4 Pension Information & Communication: Analysis of Benefits

In this chapter we will make an attempt to measure the benefits of the policy based on pension information, communication, transparency and awareness arising from the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb). The benefits are defined in terms of pension knowledge, pension awareness, saving intentions and saving behaviour. The emphasis of this chapter will be on the benefits, by evaluating the degree to which they have been achieved thus far, and chapter 6 will focus on the potential importance of behavioural biases as a counter explanation for why policy based on solely information provision might be unsuccessful for influencing decision making. The next chapter will be devoted to the costs of this policy, in which we try to measure the total administrative burden of mandatory pension communication arising from the Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb). The costs are divided into (1) supervision costs created by supervisors, (2) costs created by policymakers and, (3) the administrative costs for those who have to provide the information.

4.1 Lack of Pension Awareness

The lack of interest of a significant share of participants in their own pensions raises the
expectation that the general public is not well informed on their own pension plan. The new developments in the Dutch pension system, such as the increase in the retirement age or the shift of risk to the employees, call for more responsibility in retirement planning by the employees. In order for the employees to be successful at this task, it is important that they are aware of their pension and the changes in the system. Pension awareness is not always defined in the same manner. Usually, a person is aware of his pension if he knows his amount of pension income, how high the costs are, how long he can last with this income after retirement and how he can increase it. Even if a person is lacking this information, he can still be label as “aware on pension” if he is actively searching for this information (Regioplan, 2011).

A research, performed by “Wijzer in geldzaken” (2012) concludes that 69 percent of Dutch citizens, whom were employed and saving up a pension via their employers in 2011, are completely unaware of their pension set-up. Figure 1 clearly demonstrates the development in pension awareness between 2009 and 2011.

**Figure 1**


As you can observe, pension awareness in this figure is divided in four different types of groups. The category “completely pension unaware” represents people who are uninformed on their pension income; have no knowledge regarding the reach of their pensions, nor the possibilities of increasing the pension income. There are no significant alteration within this group, however, it does show a slightly negative development between 2009 (66%) and 2011 (69%). The group of “partially pension unaware” has increased from 7% in 2009 to 14% in 2011. This group is aware of the amount of the retirement income, but does not know if that is sufficient or how it can be increased. The share of “partially pension aware” has drop from 15% in 2009 to 7% in 2011. This group also knows the pension income, as well as the reach
of the pension but has no idea on how the pension income can be potentially increased. Hence, it seems like the share of “partially unaware” has increased at the expense of the “partially aware”. In other words, there are now less people who can determine whether or not their pension income will be sufficient at retirement. Finally, as in previous years only 1 out of 10 participants is fully aware of his pension. This group embodies participants who are conscious about their pension income; know the reach of their pension as well as ways to increase the pension.

Other studies show significantly less alarming statistics; however, the distressing trend of the lack of knowledge amongst the public is confirmed. More recent numbers indicate that 42 percent of the employee’s under the age of 65 have no knowledge of the sum of their pension, and 47 percent is not aware of the costs of their own pension (Research for Policy Beleid, 2011). This study also indicates that the younger groups are significantly less aware of their pensions in contrast to their elders.

A study performed by Montae Pensioen and GFK (2010) found that 53 percent of respondents are unaware of what type of pension settlement they have (final income settlement, mid-income settlement, or available premium settlement) and 73 percent does not know how much he or she contributes to the plan. Moreover, 56 percent of the respondents do not know the monthly amount of pension benefit they can expect after retirement, but expects to receive 70% of the current salary. Finally, the latest study by the Consumentenmonitor AFM (2012) indicates that one out of four non-retirees expects to receive 70% of the last earned gross salary after retirement, whereas in reality only one out of ten retirees actually receives this percentage as gross income. And while the coalition agreement states that 70% of the average gross income is generally the accepted social norm, experts among us know how big the difference between the 70% myth and this standard can be, especially if the pension rights are not fully indexed in the accumulation phase.

In conclusion, we find that the high degree of pension unawareness, and the lack of interest in their own pension settlements of many Dutch citizens, presents a sturdy challenge for pension providers. Individuals showing a lack of interest and awareness must be stimulated to inform themselves on their pension settlements and acquire knowledge on the sum of the pension income and the reach of it, in order to be able to generate a thorough financial planning regarding income in old age, disability and or income in the case of the passing away of a relative.
4.2 Lack of Financial Knowledge

In this section we discuss whether the Dutch citizens have become more financially literate after the implementation of the “Pensioenwet” en the “Wet verplichte beroepspensioenregeling”.

In a recent study, Alessie, Van Rooij and Lusardi (2011) used the 2010 Dutch Household Survey to measure the level of financial knowledge of 2000 participants. The financial knowledge was measured by the number of correct answers that were given to three financial questions. The final sample consisted out of 1665 individuals aged 25 years or older. The first two questions are rather basic and measure the participant’s knowledge on the interest rate and the inflation rate. The third question is rather advanced and focuses on risk and diversification. The results of the survey show that nearly 85 percent of the surveyed answered the interest rate query correctly while that statistic plummeted to 77 percent on the inflation query and dropped even further to 73 percent considering both questions. Regarding risk diversification, merely half of the respondents were able to provide the right answer, which is most likely due to the fact that most Dutch steer clear of holding company stocks or stock mutual funds (Alessie, Hochguertel and Van Soest 2002). In total, merely 45 percent of the Dutch households contributing to the survey were able to answer the three basic questions on financial literacy correctly. In line with previous studies, the study concludes that men have a higher level of financial knowledge relative to women and that financial literacy increases with level of education. In addition, the study showed that the self-employed have the highest level of financial knowledge, followed by the workers, who in turn score better than the retirees. The unemployed seem to be doing the worst.

The interesting question is how the financial literacy has developed between 2005 and 2010. Since the same respondents had answered a similar survey five years earlier, we can make a comparison between the financial knowledge of the participants well before and after the alteration of the pension law. The results are given in the table 2.

Table 2

<table>
<thead>
<tr>
<th>Year</th>
<th>N of obs.</th>
<th>Interest question</th>
<th>Inflation question</th>
<th>Risk question</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correct</td>
<td>DK</td>
<td>Correct</td>
<td>DK</td>
<td>Correct</td>
</tr>
<tr>
<td>2005</td>
<td>755</td>
<td>0.91</td>
<td>0.04</td>
<td>0.82</td>
<td>0.08</td>
</tr>
<tr>
<td>2010</td>
<td>1138</td>
<td>0.86</td>
<td>0.09</td>
<td>0.81</td>
<td>0.12</td>
</tr>
<tr>
<td>Total</td>
<td>1893</td>
<td>0.88</td>
<td>0.07</td>
<td>0.81</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Source: Alessie, Van Rooij and Lusardi (2011)
Even though, the results of the inflation question are not significant, we can still conclude, based on the interest and risk question, that the financial knowledge in 2010 is significantly lower than in 2005 (see the results of the $\chi^2$ statistics or p-values). It seems that the 2005 respondents had less difficulty to answer the interest rate (91 percent in 2005; 86 percent in 2010) and the risk (63 percent in 2005; 56 percent in 2010) questions correctly relative to 2010. Based on the research by Alessie, Van Rooij and Lusardi (2011) we can conclude that despite the initiatives to enhance financial abilities, the overall level of financial literacy of the Dutch citizens has not augmented between 2005 and 2010.

4.3 Saving Intentions in the Netherlands

Pension policy based on information provision relies on the assumption that households save more if they are informed on possible reduction of their pension benefits. In this section we analyse whether this is likely to be the case in the Netherlands.

Recent evidence based on the Dutch household Survey points to the fact that information influences the intentions, however might fail to influence behaviour (Prast, Teppa and Smits, 2012). In the survey the respondents were asked the following question: if your pension income would drop by 25 percent, would you change your current lifestyle in order to have a higher pension income in the future? Approximately 21 percent of the respondents indicated that they would change their current lifestyle, 34 percent answered that it would be wise to adjust their lifestyle but is not likely to do so, 29 percent of the respondents were not planning to adjust the lifestyle at all and finally 16 percent answered: “I do not know”. The majority (70%) of those who answered that they would change their lifestyle would do so by saving more. Note that we speak of merely intentions here and not actual behaviour. Those who answered that it would be wise to adjust their lifestyle but are not likely to do so, were asked why. The majority of this group of respondents indicated that procrastination and the lack of interest of thinking about retirement issues are the predominant reasons why they do not intend to change their lifestyle. Only a small fraction of the respondents indicated that the scarcity of knowledge is to blame.
It is also interesting to assess how these intentions to save have altered since the implementation of the new pension law in 2007. Will people save more after being communicated about possible drops in pension benefits? According to the results of Van Rooij, Prast and Smits (2011), which is illustrated in figure 2, consumers in 2010 are less likely to adjust their behaviour after a possible drop in pension benefits than they were in previous years. Approximately a third of the respondents in 2004 point out that they would save more if their pension was retrenched, while this figure dropped to less than a quarter in 2010. Another clear observation is that, on average, 35 percent of the households perceive a possible drop in pension income not as a problem for today but as a concern for later in life. Based on these figures it does not look promising to state that the current policy based on information, communication and transparency is going to help employees take more responsibility and save adequately for retirement.

Source: Rooij, Prast, Smits (2011)
In this section the focus was only on the intentions and not on the actual behaviour. Therefore, in the next section we will evaluate whether the saving behaviour of the Dutch households has significantly altered since the implementation of the new pension act of 2007.

4.4 Saving Behaviour in the Netherlands

In this section I will assess the saving behaviour of the Dutch households in the pension domain. Of particular importance is to analyse the saving behaviour through the third pillar.

According to the recently published Consumentenmonitor of the Authority for the Financial Markets (2012), about 40% of the Dutch people save additionally on top of the occupational pension and the AOW. Saving through the third pillar can be done in different ways. This is illustrated in the figure below.

**Figure 3**

<table>
<thead>
<tr>
<th>Which financial products do you use to save additionally for your pension? (Multiple answers possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The normal savings account</td>
</tr>
<tr>
<td>Payoff mortgage</td>
</tr>
<tr>
<td>Annuity</td>
</tr>
<tr>
<td>Bank Savings</td>
</tr>
<tr>
<td>Capital insurance</td>
</tr>
<tr>
<td>Investment insurance</td>
</tr>
<tr>
<td>Another financial product</td>
</tr>
<tr>
<td>None of the above</td>
</tr>
</tbody>
</table>

*Source: Consumentenmonitor AFM (2012)*

The majority of the people who save additionally for their pension does this by using a normal savings account (see figure 3). Other frequently used methods are: paying off the mortgage, purchasing an annuity or building up a pension through (special purpose) bank savings (Dutch: bankspaarproduct). Special purpose bank savings is way to save tax-friendly. This financial product is available since 2008 and it can be used for saving additionally for a pension or the repayment of a mortgage. As of 2010, it is also possible to use it for severance or funerals. The figure below presents the amount of funds that are deposited in bank savings products between 2009 and 2011.
As of the end of 2011, Dutch households have nearly 11 billion euro’s deposited in “special purpose bank savings products”. That’s 80 percent more than in 2010 and almost five times as much as in 2009. Special purpose bank savings represents only a small share of total savings in the Netherlands; however its share has increased from less than 1 percent in 2009 to 3.6 per cent by the end 2011. In 2011, Dutch households had 306 billion euros in savings accounts, over 15 billion more than a year earlier.

As the bar charts in figure 4 illustrate, special purpose bank savings is increasingly becoming a popular instrument to enhance savings for retirement. Between 2010 and 2011, bank savings for pension accumulation and pension payment increased by 1.6 billion euros (66 percent) and 0.8 billion euros (50 percent), respectively. The largest increase is seen in bank savings for the repayment of a mortgage, which has increased by 116 percent (1.5 billion euros) between 2010 and 2011.

It is interesting to observe that so many people put money aside for later, while, as discussed in section 4.1, the majority (69%) of the people are uninformed on their pension income, have no knowledge regarding the reach of their pensions or the possibility of increasing the pension income (Wijzer in geldzaken, 2012). According to the Central Bureau of Statistics (2012), a significant part of the increased savings through “special purpose bank savings products” could be explained by the decrease of investments in investment funds,

---

stocks and bonds\textsuperscript{3}. Based on the data presented in this section it remains ambiguous whether the popularity of bank savings could be attributed to the increased supply of pension information to participants. Nevertheless, bank savings is only one type of financial product used to accumulate additional pension income through the third pillar. As figure 3 shows, there are several other financial products to be taken into account in order to have a better understanding of the effect of pension information on the overall savings in the third pension pillar. Unfortunately however, no research to date has examined the influence of mandatory pension information on actual saving behaviour in the Netherlands.

5 Pension Information & Communication: Analysis of Costs

5.1 Data, Methodology and Questionnaire

The data are collected by means of a survey among the main stakeholders: the pension sector, insurers, financial supervisors and policy makers. The survey was offered to the pension funds and insurers via their associations, known as the “Federation of the Dutch Pension Funds” and the “Dutch Association of Insurers”, as well as directly in some cases. In total two financial supervisors, two government ministries, 311 pension funds, 6 pension insurers, the Federation of the Dutch Pension Funds and the Dutch Association of Insurers were invited to participate in this survey in the autumn of 2012. Most of these organizations were unable to provide an overview of the communication costs of the mandatory pension information. Therefore, the final sample consisted out of 12 pension funds, the “Federation of the Dutch Pension Funds, two financial supervisors and one government ministry. Unfortunately, none of the pension insurers were able to provide data for the analysis. Figure 5 presents the reasons given by 39 organizations for not being able to provide the data of the costs. The remaining 268 organizations never replied to the questionnaire. The most common reason for not providing the data is: “Do not know the costs”. Many pension funds indicated that the costs of the mandatory information disclosure were not displayed separately in their statements but incorporated with the aggregate costs, therefore the requested information could not be provided. Two other less frequently used motives for the nonparticipation were the lack of time and the lack of interest to participate.

\textsuperscript{3}http://www.cbs.nl/en-GB/menu/themas/macro-economie/publicaties/artikelen/archief/2012/2012-3666-wm.htm?Languageswitch=on
Table 3 presents a statistical summary of the main background characteristics of the pension funds participating in the survey. The analysis includes active members, deferred members, as well as pension recipients. As the table illustrates, a total of 12 pension funds answered the questions in this survey with the smallest pension fund incorporating 412 participants and the largest pension fund 121,227 participants. Hence, the survey primarily includes small to mid-size pension funds. In total, these 12 pension funds represent 219,517 pension plan members, which is approximately 0.13% of the total number of active members, deferred members and pensioners in the Netherlands.

<table>
<thead>
<tr>
<th>Descriptive Statistics Pension Funds</th>
<th>Number of Pension Plan Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>18,293</td>
</tr>
<tr>
<td>Median</td>
<td>5,044</td>
</tr>
<tr>
<td>Mode</td>
<td>N/A</td>
</tr>
<tr>
<td>Minimum</td>
<td>412</td>
</tr>
<tr>
<td>Maximum</td>
<td>121,227</td>
</tr>
<tr>
<td>Sum</td>
<td>219,517</td>
</tr>
<tr>
<td>Count</td>
<td>12</td>
</tr>
</tbody>
</table>

The main focus of the questionnaire is to measure the total administrative burden of mandatory information provision resulting from the Dutch pension law. The burden is defined in terms of “policy costs”, “supervision costs” and “administrative costs”. Policy costs refer to the government expenditures which are connected with the development, alteration and implementation of the “Pensioenwet” (Pw) and “Wet verplichte beroepspensioenregeling”
(Wvb) and activities associated with it. Supervision costs are the expenses that supervisors incur in the process of monitoring pension providers compliance with laws and regulation. The summative supervision expenses consist out of the costs incurred by the two financial supervisors: the Authority of the Financial Markets (AFM) and the Dutch Central Bank (DNB). Finally, administrative costs are the personnel expenses and other expenditures associated with the mandatory provision of pension information by the pension funds and pension insurers. The aggregate administrative costs for the pension sector is calculated by first measuring the administrative costs of each of the 12 participating pension funds and dividing it by its total number of participants (sum of: active members, deferred members and pensioner) to acquire the costs per participant for each pension fund. Next I continue to add together the costs per participant of each of the 12 participating funds and calculate the average and include the costs per participant of the Federation of the Dutch Pension Funds on top of it, in order to obtain the total costs per participant for the pension sector. This final figure is multiplied by the total number of pension participants (sum of: active members, deferred members and pensioners) in the Netherlands to get the total administrative costs for the pension sector. The number of participants used for the calculations are presented in table 4.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Number of Participants in The Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Members</td>
<td>5,822,898</td>
</tr>
<tr>
<td>Deferred Members</td>
<td>9,046,451</td>
</tr>
<tr>
<td>Pensioners</td>
<td>2,874,529</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,743,878</strong></td>
</tr>
</tbody>
</table>

*Source: Dutch Central Bank (dnb.nl)*

The survey consists out of 18 questions. The first two questions try to measure the aggregate costs that the participating organizations have incurred with regards to pension communication, information, transparency and awareness. These questions are:

1a) **What are the approximate total costs (employment and additional) that your organization has incurred during the period of 1st of January 2002 till first of January 2012 with regards to pension communication, information and activities designed to raise pension awareness?**

1b) **How large are the annual recurring expenses by your organization with regards to pension communication, information and activities designed to raise awareness?**

The time horizon chosen for the analysis is from 2002 until 2012, because the pension
providers, supervisors and the ministries already incurred preparation costs prior to the implementation of the new pension act in 2007. The remainder of the questionnaire asked for the total costs (from 2002 until 2012) and the annual recurring costs with respect to the start letter, stop letter, uniform pension overview, pension register, indexation and the additional information stipulations. The final two questions of the survey concentrate on the expected investment needs and annual recurring costs of the proposed intensification of the mandatory information disclosure by the then Minister responsible for pensions, Kamp, in 2012. In his letter to the Dutch House of Representatives, he argued that the pension providers must enhance the current state of communication with regards to the purchasing power of the pension income and the consequences of the pension risks, tune the communication efforts to the needs of the participants and provide more possibilities for digital information provision. The questions in the questionnaire were asked in Dutch and a copy of it is available in the Appendix in both Dutch and English.

5.2 Results

In this section, I present and analyse the results. First, I provide a summary of the aggregate findings, and next I evaluate the results to the individual instruments (start letter, stop letter, UPO, Pension Register and indexation). The results are based on the costs incurred by the pension sector (pension funds and the Federation of the Dutch Pension Funds), supervisors and policymakers.

5.2.1 Aggregate Results

Table 5 presents a summary of the total costs and the annually recurring costs with regards to pension communication, information, transparency and awareness in the Netherlands.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Total Costs Pension Communication (2002-2012)</th>
<th>Annually Recurring Costs Pension Communication</th>
<th>Annual Recurring Costs Per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension Funds</td>
<td>€ 3,177,910,225,90</td>
<td>€ 355,354,726,18</td>
<td>€ 20,03</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 15,754,714,00</td>
<td>€ 3,386,000,00</td>
<td>€ 0,19</td>
</tr>
<tr>
<td>Policy-makers</td>
<td>€ 456,000,00</td>
<td>€ 538,600,00</td>
<td>€ 0,03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>€ 3,194,120,939,90</strong></td>
<td><strong>€ 359,279,326,18</strong></td>
<td><strong>€ 20,25</strong></td>
</tr>
</tbody>
</table>

Between 1st of January 2002 and the 1ste of January of 2012 the pension sector, supervisors and policymakers invested approximately €3.2 billion to enhance the overall pension knowledge and awareness of pension scheme participants. If we divide this figure by
the total number of active, deferred and pensioners in the Netherlands we get: €180.01. Note that nearly the entire costs (99.5%) involved can be attributed to the pension sector. Supervisors and policymakers represent a relatively small share of the total costs. Numerous pension funds have indicated that the costs have risen relatively faster in the last few years, which can be expected as the novel pension act of 2007 brings along a list of strict communication guidelines for pension providers.

The total annually recurring costs for pension communication, information, transparency and awareness, as shown in the second column of table 5, is about €359.28 million euros. If we divide the total annual recurring costs of €359.28 million euros by the total number of participants (sum of: active members, deferred members and pensioners) in the Netherlands we get approximately €20.25 euro’s per participant per year. This figure provides an indication of the costs for the year 2012 and onwards. Again, as anticipated, a substantial share (98.9%) of this amount can be ascribed to the pension sectors. The annual recurring costs for supervisors is €3.386.000, which is approximately 21.5% of the total supervision costs between 2002 and 2012. The Dutch Central Bank (DNB) and the Authority of the Financial Markets (AFM) are supervising pension funds and insurers as of 2004 and 2007, respectively. This explains why the supervision costs are relatively higher in the last few years. The ministry participating in this study has only started with pension information and communication as of 2011. Hence, the €456.000 euros is the policy costs for 2011 and the €538.600 euros is the expected policy costs as of 2012.

Since it is the participant who eventually has to foot the bill, it would be interesting to know how much a participant is paying for pension communication activities during his lifetime. For example, if a participant is 25 years old and has recently joined a pension scheme, how much are the total costs for this person if he works for 40 years before he retires?

Since it is the participant who eventually has to foot the bill, it would be interesting to know how much a participant is paying for pension communication activities during his lifetime. For example, suppose we assume that the fixed investment for pension communication is €180 euros per participant and the annually recurring costs are €20 euro’s per participant. In addition, we assume that the annual interest rate is 5%, the inflation rate is 0% and everything else remains constants. Now, presuming a participant is 25 years old and has recently joined a pension scheme, how much will be the total costs for this person if he works for 40 years before he retires?
With annually compounded interest rate, this person would pay a total of €3.804 euros during his occupational lifecycle (see figure 6). However, if the inflation rate is non-zero, then the costs per year will change with the annual inflation rate. For instance, if the inflation rate is 2% per year, and everything else remains constant, then the total investment after 40 years will be €4650 euros in nominal terms and €2106 in real terms. Hence, inflation can have drastic influence on the total investment. Furthermore, one could argue that participants could have accumulated a higher pension income if the investment in pension communication was instead deposited in a savings account or invested by pension funds.

5.2.2 Results of the Specific Instruments

In this subsection I will briefly evaluate the total costs, annual recurring costs as of 2012 and the annual recurring costs per participant for each of the specific instruments utilized for communicating the mandatory pension information. The supervisors and policymakers were unable to provide data for each specific instrument. Therefore the aggregate total costs and the aggregate annual costs of supervisors and policymakers will be distributed evenly among each specific instrument. Similarly, a number of pension funds were not able to answer all the questions in the survey for each specific instrument. The results are solely based upon the answers provided by the pension funds which were able to provide such
data. Consequently, the summation of the total costs presented in tables 6 is not identical to the aggregate expenditures of table 5.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Total Cost (2002-2012)</th>
<th>Annually Recurring Cost</th>
<th>Annual Recurring Costs Per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start Letter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 203.948.168,34</td>
<td>€ 20.461.070,33</td>
<td>€ 1,153</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 206.263.984,63</td>
<td>€ 21.021.727,47</td>
<td>€ 1,185</td>
</tr>
<tr>
<td><strong>Stop Letter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 168.070.050,09</td>
<td>€ 17.552.731,37</td>
<td>€ 0,989</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 170.385.866,38</td>
<td>€ 18.113.388,52</td>
<td>€ 1,021</td>
</tr>
<tr>
<td><strong>Uniform Pension Overview</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 1.260.986.598,41</td>
<td>€ 127.468.742,58</td>
<td>€ 7,184</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 1.263.302.414,70</td>
<td>€ 128.029.399,73</td>
<td>€ 7,215</td>
</tr>
<tr>
<td><strong>Pension Register</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 223.038.508,79</td>
<td>€ 25.494.303,00</td>
<td>€ 1,437</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 225.354.325,075</td>
<td>€ 26.054.960,150</td>
<td>€ 1,468</td>
</tr>
<tr>
<td><strong>Indexation-Matrix</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 166.674.214,59</td>
<td>€ 16.389.455,29</td>
<td>€ 0,924</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 168.990.030,88</td>
<td>€ 16.950.112,44</td>
<td>€ 0,955</td>
</tr>
<tr>
<td><strong>Indexation-Label</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 95.438.233,42</td>
<td>€ 9.543.823,34</td>
<td>€ 0,538</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 97.754.049,70</td>
<td>€ 10.104.480,49</td>
<td>€ 0,569</td>
</tr>
<tr>
<td><strong>Other Mandatory Information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension Sector</td>
<td>€ 1.108.478.341,63</td>
<td>€ 182.398.264,74</td>
<td>€ 10,280</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 2.250.673,43</td>
<td>€ 483.714,29</td>
<td>€ 0,027</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 65.142,857</td>
<td>€ 76.942,86</td>
<td>€ 0,004</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>€ 1.110.794.157,92</td>
<td>€ 182.958.921,89</td>
<td>€ 10,311</td>
</tr>
</tbody>
</table>

As shown in table 6, the total expenditure on the “start letter” was approximately €206.26 million euros between 2002 and 2012 in the Netherlands. The annual costs are roughly €21 million euros indicating that each pension plan participant is spending €1.18 euros per year on the start letter. The “stop letter” has a slightly lower cost profile. The total expenses were €170.39 million euros in the period 2002-2012. The annual cost expenses are €18.11 million euros (roughly €1 per participant per year) and in my opinion this figure will increase even further as the Dutch society is aging and more employees are expected to retire in the
near future. The Central Bureau of Statistics (CBS) expects that in the period 2011-2015 the over-65 population will grow by half a million. The growth of the number of people who are over-65 will not stop; the CBS expects that between 2016 and 2040 an additional 1.5 million people are added to this group. In 2040, the over-65 population will include 4.6 million people, which is 2 million people more than in 2011.\(^4\)

The total expenditure on the Uniform Pension Overview was circa €1.26 billion euros between 2002 and 2012. The annual costs are approximately €128 million euros, which translates into €7.2 euros per participants per year. The Pension Register which was implemented in the beginning of 2011, and which serves as a compliment to the UPO, has required a total investment of €225 million euros thus far and it’s expected to costs another €26 million euros each year to maintain. If the Pension Register proves itself successful as an informative tool for the participants, then it could eventually replace the UPO completely, since the figures presented in the UPO form the basis for the Pension Register.

The total investment in the Indexation-Matrix has been about €169 million euros in the years 2002-2012 and the yearly overheads are nearly 17 million euros. Due to regulatory advances in April 2011, pension providers are no longer required to acquire permission from the Netherlands Authority for the Financial Markets (AFM) when diverting from the standard texts on the declaration of conditions. However, the supervisor will assess whether and how a pension provider has deviated from the standard text (Regioplan, 2011).

An additional instrument that is used to enlighten participants about indexation is the Indexation-label. The aggregate costs have been roughly €97.8 million euros between 2002 and 2012 and the expected expenses as of 2012 will be about €10.1 million euro’s. Previous research has indicated that the majority of the pension funds (66%) and insurers (60%) no longer uphold the pension label (Regioplan, 2011). The most common reasons given by pension providers for not including the indexation-label are: it is not clear or comprehensible for participants; it is too complex, causes confusion, does not add value or presents an incorrect/incomplete image of the expected pension (Regioplan, 2011). Pension providers who still do offer their participants an Indexation-label do this for the following reasons: (1) it is too costly and time consuming to abolish the indexation-label from the system, (2) abolishment of the indexation-label could cause confusion/ambiguity for participants who are looking for the indexation-label, because they have become familiar with it, and (3) it is mandatory by law (Regioplan, 2011). In a letter to the Dutch House of representatives, the

AFM concluded that the indexation-label is insufficiently effective in helping participants to assess the quality of the pension scheme (Regioplan, 2011). The AFM believes that the indexation-label should be replaced by a “quality-label”: a document which provides information on the quality, costs, risks and return of a pension scheme. With this document the participants will be able to perform a quality comparison between the different pension schemes. For example, when an employee changes his jobs and pension scheme, he might want to transfer the pension savings from the old scheme to the new one. A register of quality labels will support him in this decision making process, as he will be able the compare the quality, costs, risks and returns between the schemes. The former minister on Pensions, Kamp, has indicated that pension providers have to choose themselves whether they want to include or exclude the indexation-label until further decision on the existence of the label are made (Regioplan, 2011).

Finally, there are other mandatory guidelines with regards to informing pension participants about their pension which are not covered by the instruments we have discussed so far, such as, information on pension cuts, immigration or alteration of pension agreement (Regioplan, 2011). These additional procedures have cost approximately €1.11 billion euros in the era 2002-2012 and are expected to increase by about 183 million euros per year. The pie chart presented in figure 7 clearly illustrates that this category is creating the largest annual costs (€10.31) per participant as it share of total annually recurring costs is 45 percent. The Pie-chart also shows that the Uniform Pension Overview is costing the participant the most in comparison to the other individual informative instruments, as its share of the total annual recurring costs is 32 percent. The share of the annual recurring costs of the Pension Register (6%), Start Letter (5%), Stop Letter (5%), Indexation-Matrix (4%) and the Indexation-Label (3%) is significantly lower than the UPO.

The final two questions of the survey concentrate on the expected investment needs and annual recurring costs of the proposed intensification of the mandatory information disclosure by Minister Kamp in 2012. The policymakers and the supervisors did not provide an answer to this question and therefore the results are solely based upon the costs of the pension sector. The total expected investments necessary for the implementation of the additional communication requirements by the pension sector is circa € 46 million euros which is about € 2.6 euros per participant. The annually recurring costs for these additional communication requirements are approximately € 34.2 million euros and that’s about € 1.9 euros per participant (see table 7).

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Expected Investment</th>
<th>Expected Investment per participant</th>
<th>Expected Annually Costs</th>
<th>Annual Costs per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension Sector</td>
<td>€ 46.006.880,89</td>
<td>€ 2,593</td>
<td>€ 34.200.336,12</td>
<td>€ 1,927</td>
</tr>
<tr>
<td>Supervisors</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
</tr>
<tr>
<td>Policymakers</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
<td>€ 0,00</td>
</tr>
<tr>
<td>Total</td>
<td>€ 46.006.880,89</td>
<td>€ 2,593</td>
<td>€ 34.200.336,12</td>
<td>€ 1,927</td>
</tr>
</tbody>
</table>

Overall, the results we presented thus far present a rough estimate of the total costs of the mandatory information provision resulting from the Dutch pension law. Firstly, the results might be underestimated due to the absent of the costs of the insurers who represent, as discussed in section 2.1, more than a million pension participants in the Netherlands.
Secondly, earlier studies have found strong evidence of economies of scale in pension fund administration (James et al., 2001, Tapia and Yermo, 2008), and Bikker and de Dreu, 2009). Bikker et al. (2010) confirm that if small and medium-sized pension funds increasing in operational scale they can benefit from a lower average administrative costs. This suggests that large pension funds have smaller average administrative costs per participants. If this is the case, then my analysis is overestimating the administrative costs per participants for the pension sector since the results of this study only comprise out of small to mid-sized pension funds. Third, since only one government ministry was able to provide data for the analysis the policy costs are underestimated. Fourth, the introduction of the quality-label and further improvements in the current communication activities will probably surge up communication costs in the future. Finally, the implementation of the pension-dashboard (a digital tool by which each participant can see how, among other, his pension has and will develop in the future according to pessimistic, expected and optimistic scenarios) to mijnpensoenoverzicht.nl could proliferate the costs if it is introduced as an supplementary tool. However, if mijnpensoenoverzicht.nl proves itself successful as an informative tool for participants, then it could possibly replace the UPO completely and lead to lower aggregate costs. The results show that the costs for the UPO are 5 times higher than the costs of the pension register (32% of total costs are for the UPO and 6% for the pension register).

6 Financial Education & Behavioural Factors

6.1 Effect of Financial Education on Saving Behaviour

The influence of financial education on saving behaviour has been commonly examined in the context of educational seminars. For example, Choi et al (2005) discussed the effect of financial education seminars on the saving behaviour of attendees. In their paper they refer to a seminar where the attendees were informed about the company pension plan. After the seminar the attendees were asked if they were planning to join the company plan. What is surprising is that 100 percent of the attendees answered that they would join, while merely 14 percent of them actually did. Bayer, Bernheim and Scholz (2009) found a positive relationship between employer retirement seminars and participation in and contributions to voluntary savings plans. Lusardi and Mitchell (2006) found that retirement seminars have a positive [See letter from the Minister of Social Affairs of 27 February 2012, reference: AV/PB/2011/24068](http://www.afm.nl/nl/professionals/afm-actueel/rapporten/2012/meer-pensioeninzicht-door-een-loket.aspx)
effect on wealth accumulation, but predominantly for people with low wealth or low education levels. Bernheim and Garrett (2003) examine the effect of having an employer offer financial education during a seminar on the household saving behaviour of the employee. Their results showed a positive relationship between financial education during these seminars and plan participation, plan contribution and account balances and overall household saving. However, these results of Bernheim and Garrett could be biased. Firstly, it could be the case that those who attend the seminar are personally more inclined to save. Secondly, firms with better retirement packages could attract employees who are more forward looking and therefore more motivated to save for retirement. Bernheim, Garrett and Maki (2001) found that people who took a financial management course in high school were more inclined to save in their middle age. Later this effect was contradicted by Mandell (2006b) who found little evidence of a positive effect of a high school personal finance course on post high school saving behaviour. Overall, we can state that the effect of financial education provision on saving behaviour is mixed, since other studies are not able to provide evidence of a strong and significant relationship (Duflo and Saez, 2003).

6.2 Behavioural Biases in Decision Making

In this section we review the predominant findings in behavioural economics that are relevant for understanding why people fail to make choices that are more in line with their true preferences. Following the distinction in DellaVigna (2009), individuals deviate from a standard economic model in three ways: nonstandard preferences, nonstandard beliefs, and nonstandard decision making. The objective is to emphasize on findings that are particularly important for retirement planning. For that reason this section will only emphasize on nonstandard preferences over time and nonstandard decision making. In the next section we use these findings to discuss whether information provision will be enough to help people save adequately for retirement.

The theory of nonstandard time preferences suggests that individuals have self-control problems and therefore are unable to have consistent preferences over time (Bodie and Prast, 2011). Rangel, Camerer and Montague (2008) use the theory of hyperbolic versus exponential discounting to illustrate the phenomenon of inconsistent choice over time. Under standard exponential discounting the utilities between two different options are discounted with the same discount factor overtime and therefore the utility that a person extracts from two different options should not change overtime. For example, if $10 today looks more appealing than 11$ tomorrow then, 10$ in a year should be preferred to 11$ in a year time plus a day.
However, in many occasions this does not hold. This inconsistency in behaviour is captured under hyperbolic discounting, where the utility of consumption of the immediate future is discounted with a higher discount factor relative to the utility of the further future periods. As a result, choice becomes inconsistent over time. Hence, when applied in the domain of retirement saving, commitment to save for retirement further down in the future looks more appealing than saving in the immediate future. This is because the discount rate gets steeper as people reach the immediate future and as a result people procrastinate saving for retirement.

When it comes to making decisions with respect to retirement, the decisions that people make do not always correspond to the choices they should take given their preferences. Beshears, Choi, Laibson and Madrian (2010) discuss five circumstances which are particularly relevant for retirement decision making. These are: passive choice, complexity, limited personal experience, third-party marketing, and intertemporal choice. In these five circumstances we discuss behavioural biases in decision making, such as the status quo bias, default effect, the distortive effect of complexity on choice. In the rest of this section we discuss these five circumstances followed by supplementary behavioural biases and inconsistencies that were neglected by Beshears et al. (2010)

i. Passive choice

Passive choice is the option you choose if you do not take any action. So individuals who forget to take action prior to a specific deadline will automatically enrol themselves for the default. There are numerous explanations for the default effect. Firstly, people tend to select the default if the decisions regarding pension plan (e.g. selecting contribution rate, asset allocation, evaluating pension plan option) are too complex (Tversky and Shafir, 1992). By not actively choosing an option they automatically select the default. Secondly, default can be perceived as the recommended choice by experts (Madrian and Shea, 2001). However, this does not suggest that recommended choice is consistent with the preferences of each participant. Furthermore, default may be regarded as the social norm. In other words, if most people choose to participate in a certain plan by default then it must be the right thing to do. Deviation from the social norm to an alternative plan usually requires a substantial amount of effort, money and psychological costs. Therefore, if the transaction cost of switching from the default to an alternative is high then it is more likely that participants accept the default setting. A final reason why people choose the default is because an active choice (act of
commission) results in more regret if things go wrong relative to a passive choice (act of omission) (Potters and Prast, 2009).

Default can also be used as an effective tool to increase the number of participants in a pension plan. In this case, employees are no longer requested to actively enrol themselves into the pension plan but instead are enrolled automatically. Study shows that approximately 95% of the new employees participate in a pension plan if the default is set at automatic enrolment. However, if the default was set not to enrol then the decision regarding pension plan participating was slow. Furthermore, the difference in participation between having an automatic enrolment as a default relative to a non-enrolment as a default was more than 25% after a 2 year period (Beshears, Choi, Laibson and Madrian, 2005).

It is also possible to have default contribution rates. If plan participants are unable to set a specific contribution rate then the default contribution rate will be chosen automatically. One can argue that setting a default contribution rate increases the number of participants who save for retirement (Beshears, Choi, Laibson and Madrian, 2005). However, it’s important that the default contribution rate is set above the level that participants would have chosen themselves. Because if the default rate is set at a level that is too low then the positive effect on savings due to larger group of participants will be more than offset by a negative effect on savings due to low contribution rate, hence leading to lower average savings rate per participant (Beshears, Choi, Laibson and Madrian, 2005).

Default also affects the actions of employees in the allocation of the contributions between funds. Beshears, Choi, Laibson and Madrian (2005) argue that in the event of automatic enrolment, 86% of employees invested a share of their contributions to the default fund relative to the 10% of their colleagues who were not subject to automatic enrolments. Hence, most employees do not choose to invest in the default fund if they are not subject to automatic enrolment.

Finally, pension participants can also be facing default choices when they wish to take out their pension savings at retirement. In Switzerland for example, retirees can choose to withdraw their pension benefits either as a lump sum or in annuities. The choice people make between the two options can be significantly influenced if one of them is made the default option (Bütler and Teppa, 2005).

ii. Complex choice

According to the basic principles of economic theory, the more choice a consumer has the better it is. Based on this theory consumers welfare should increase as the number of
retirement options expands. However, in retirement planning more choice will have costs in decision making. This is because more choice means that a consumer has to put more effort in obtaining information and comparing it with alternative investment options. This process is highly time consuming and requires financial knowledge and sophisticated decision making ability (Mottola and Utkus, 2003). Hence, if people have too many alternatives the decision to choose between them becomes more complex. The complexity often makes people delay their decision (O’Donoghue and Rabin, 1999) or even avoid decisions (Shafir and Tversky, 1992).

Moreover, more choice can also reduce participation rates in the pension plan. Iyengar, Jiang and Huberman (2003) argue that most plans should provide a limited investment options to make the decision making for consumer more simplified. The results of this research suggest that after controlling for employer match, participants demographics and other variables, the likelihood that a worker will participate in the pension plan will decrease as the number of investment options increase. On average for every additional 10 investment option the participation rate drops by 2 percent. This proves that complexity results into choice avoidance. One plausible explanation for this behaviour is that people are afraid that they will select an alternative which they will regret and more choice increases the possibility of the wrong choice (Schwartz, 2004).

An additional element that can contribute to the complexity in the pension domain is the time horizon of the task. When people plan their retirement they need to be able to predict how much they need to save to be able to have a comfortable retirement. However, it is relatively difficult to forecast the consequences of today’s choices in 40 years relative to simulating the outcomes for the next day. According to Mitchell and Utkus (2002), there is a high degree of uncertainty involved in calculating the saving level that is required for retirement. One needs to be able to accurately estimate lifetime earnings, assets return, employment, bequests, tax rates, health status, and longevity. Therefore, the longer the time horizon one needs to take into account for the choices one makes today, the more complex it is to forecast the consequences of these choices.

iii. Limited personal experience

Another contributing factor for the irrational choices that people make is the limited personal experience. Most people learn from their mistakes by getting feedback for the choices they make. For example, many credit card holders learn to pay their debt on time by paying additional late fees (Agarwal et al., 2010). Therefore, feedback can change the behaviour of individuals in a way which is more in line with their true preferences. But this is
not always possible. For example, when a 30 year old person is starting to save for retirement he or she is unable to get feedback on whether the amount she is saving is enough to provide her with a standard of living that she wishes at retirement. This person will get the feedback on this saving plan at retirement and at time little can be done to compensate for the shortfalls. Hence, when it comes to saving for retirement people have little opportunity to learn from past personal experience. It could be argued that people could learn from the mistakes of others. However, previous research indicates that people have a tendency to ignore the experience of other individuals. A plausible explanation for this behaviour is that most people feel uncomfortable to take unpleasant events into account and overestimates their knowledge, underestimate risks, and overstate their ability to control events (Akerlof and Dickens, 1982).

iv. Instant gratification in intertemporal choice

A rational person who is focusing on maximizing lifetime utility from consumption will decide to forgo current consumption in exchange for consumption at later stage. This is only possible in a perfect world with perfect certainty and consistent preferences (Samuelson, 1937). However, in reality this is not the case. Most people are unable to sacrifice immediate gratification to favour delayed outcome due to self-control problems. Therefore, the assumption that preferences are consistent over time is doubtful. One of the first economists to discuss the problem of will power was Adam Smith (1759). In his book “The Theory of Moral Sentiments” Adam smith argued that the will power dilemma is a clash between the “passions” that results in short-sighted behaviour, and the “impartial spectator” which favours the forward looking attitude (see Ashraf, Camerer and Loewenstein, 2005).

Thaler and Shefrin (1981) speak in this context of a conflict between the ‘doer’ and the ‘planner’ in us. While the doer always pursues short-term goals, the planner on the other-hand tries to maximize the utility over our long-term goals. Often the doer wins from the planner and the individual is stuck with the poor self, which leads to problems like incomplete pensions.

In behavioural economics it is often referred to hyperbolic discounting model to model lack of self-control, by having $0 < \beta < 1$ in the quasi-hyperbolic model. According to this model the discount rate gets steeper as you get closer to the experience the event (see, e.g., Ainslie & Haslam, 1992; Loewenstein & Prelec, 1992). If we insert saving for retirement in this model, then we see that the utility we will get from increased consumption in the distant future is discounted more heavily relative to the utility that is derived from the current
consumption. Therefore people may be reluctant or delay saving money for retirement even though this would be in their best interest.

An important question is how these differences between the short and long term objectives can be used to understand and change behaviour in a way that is more in line with people’s true preferences.

A clear outline is given by the construal level theory. This theory basically states that we tend to perceive the events in the distant future in an abstract manner. While an event in the short run is perceived in more detail. According to construal level theory, people focus more on the feasibility of the events/objects in the short run while in the long run the emphasis is on the desirability of these events/objects (Trope and Liberman 2003). Ergo, it makes sense that most individuals who have to choose a pension scheme identify retirement in abstract terms since it is in the distant future. If we could manage to make people focus on the long term objectives then we can generate behaviour that is better for their decision making.

v. Third-party marketing

In many occasions profit maximizing firms take advantage of the psychological biases of their customers. They use pricing techniques, strategic contract designs and other types of marketing strategies to exploit their client’s behavioural biases, such as their status quo bias (option of doing nothing or to choose to maintain the current option), their inability to make complex choices and sensitivity to defaults (Samuelson and Zeckhauser, 1988). An example would be an automatically renewed credit card contract. On a regular basis, credit card companies offer low interest rates on their products in the first year and increase the interest rate in the second year. These companies are aware that most people, who sign these contracts to benefit from the lower interest rate in the first year, will suffer from the status quo bias and procrastination behaviour. Therefore they offer contracts which are automatically renewed after the first year to take advantage of the biases of their clients (Ausubel, 1999). Hence, the manipulative interference of the profit maximizing firm is making a person choose an option which does not correspond to his or her preferences.

Additional Behavioural Biases & Inconsistencies

Beshears et al (2010) did an outstanding job in elucidating the five circumstances for biased decision making in the pension domain. However, there are several inconsistencies and biases which are neglected from their study. Therefore, the remaining of this section will discuss myopic loss aversion, money illusion and the time diversification fallacy.
Myopic loss aversion

In behavioural finance the term myopic loss aversion is used to describe a risk averse investor who makes irrational investment choices due to the fact that he evaluates the performance of his portfolio on a short-term basis (Benartzi and Thaler, 1995). Myopic loss aversion is based on two assumptions. Firstly, investors are assumed to be loss averse. In other words, investors have the tendency to strongly prefer avoiding losses relative to acquiring gains. Secondly, investors are assumed to assess their portfolios frequently. Benartzi and Thaler (1995) call this combination “Myopic loss aversion”. Since risky assets are more volatile in the short run, the probability of a loss in the short run is relatively higher than in the long run. Given that investors evaluate their portfolios on a short-term basis the losses have a larger psychological impact than the gains. Therefore, investors who are investing for retirement, in other words the long term, tend to invest in portfolio’s which are not risky enough because they evaluate the performance of their portfolio on a short-term basis and are too anxious for losses.

Money illusion

Money illusion refers to the tendency of people to think of currency in numerical value (nominal value), instead of what you can buy with that money (real value). For example, if the inflation rate is 2 percent annually, then a 1000 euro’s today is worth only 820 euro’s in ten years. Therefore, a guaranteed nominal pension of 1000 euro’s says nothing about the purchasing power of that amount at retirement. People who suffer from money illusion underestimate the effect of inflation and are more likely to think that they have sufficient resources for retirement, while not actually having the real value that they expected at retirement (Prast and Snippe, 2010).

Time diversification fallacy

Time diversification is the belief that the standard deviation of the annualized return decreases over the long run. As a result, the young should invest more in stocks relative to the old because they have additional time for the upcoming good years to offset bad years. However, pensioners are not interested in the standard deviation of the annualized return. Instead they are more concerned about the final value of their pension benefit and the standard deviation associated with that. Unfortunately, the total return becomes more uncertain as the investment horizon increases if we assume that stock return are serially independent. To illustrate, assume the annual expected return on a stock is 15% with a standard deviation of
20%. An investor purchases this stock and holds it for 10 years. What happens to the standard deviation? The standard deviation of the annualized return decreases from 20% to 6.32% \[20/\left(\sqrt{10}\right)\] after 10 years. However, in the case of a displeasure of one standard deviation the total return of this investment is effected by 52% \[(1—0.0632)^{10} = 0.52\], which is more than the 20% standard deviation of the annualized return. Hence, the probability that an investor loses money in the long run decreases but the amount that he can lose increases substantially with time. As a result, a long investment horizon does not necessarily mean that you should always invest more in the risky asset\(^9\).

A valid argument supporting the idea that the young should invest more in equity relative to the old contains what is called “human capital”. In this theory, total wealth consists out of human capital and financial capital. The term "human capital" is basically the present value of all the labour income a person will earn over his or her working life. Financial capital refers to liquid assets, like money, bank accounts, and stocks or bonds. This theory basically argues that if young individuals face low human capital risk then they should hold more stocks in their portfolio in order to optimally diversify the risk between human- and financial capital (Merton, 1971). In contrast, if the young face higher human capital risk then the optimal allocation is to hold fewer stocks in the beginning of their professions (Benzoni et al., 2007). Hence, the impact of human capital risk on the optimal asset allocation crucially depends on the correlation between labour income and the return on the risky asset. The lower the correlation, the higher the stake in risky financial assets has to be.

### 6.3 Implications of Behavioural Factors on Pension Communication

The behavioural findings discussed in the previous section and the complex nature of saving and investment decisions for retirement indicate that the current policy based on merely information provision is insufficient to help individuals make decisions that are in accordance with their true preferences. Fortunately, there are policy instruments such as, defaults, mandated choice or commitment mechanisms that can help people cope with their behavioural biases without disregarding their freedom of choice.

Defaults, for instance, are especially effective in the pension sphere were people are usually reluctant to make active investment decisions. As we discussed in section 4.4.3, defaults could be used as a powerful tool to influence plan participation, contribution rates, asset allocation, and postretirement allocations (Beshears, Choi, Laibson and Madrian, 2005). However the design of the default should well-thought-out. In essence a well-designed default

---

\(^9\) http://www.citeman.com/5083-time-diversification-investments.html#ixzz27nAqdJVN
should take account of the prospective characteristics and needs of employees who will be automatically enrolled into it (Bodie, Prast and Snippe, 2008). If for example the majority of the employees have low income levels, no additional assets, and are on the onset of the old age then defaults should be designed conservatively in terms of investment strategy and asset allocation.

Another possible arrangement for dealing with behavioural biases is “mandated choice”. In this case the employees are required to make an active decision. Bodie and Prast (2011) discussed a case for the Netherlands in which both employees and the self-employed could benefit from active decision making arrangement with limited choice. With respect to the employees, the authors suggested a system in which the employees can actively choose from several options with respect to retirement age, minimum target income, ambition income, and the risk that the ambition is not attained. As for the self-employed, Bodie and Prast (2011) recommend that the self-employed actively decide whether they want to join a pension scheme. A possible arrangement could be for example, when the self-employed register their company at the Chamber of Commerce.

In some cases people are aware of their self-control problems, but still fail the temptation of foregoing consumption now in order to have more in the future due to myopia, status quo bias, loss-aversion and/or time-inconsistency (Thaler and Benartzi, 2004). Commitment mechanisms may help people overcome these biases. By using a commitment device, an individual constrains himself from various time-inconsistent decisions or temptations (Benhabib and Bisin, 2005). An example of a commitment strategy in the pension domain is the “Save More Tomorrow” program, whereby employees can sign a contract now in which they agree that part of their future salary increase will be saved for retirement (Thaler and Benartzi, 2004). An evaluation of the program indicated that 78% of the employees who were offered the program joined, and 80% of the once who joined remained in the program for several consecutive pay increases, with their average savings rate enhancing by 10 percent over a period of 40 months (Stewart, 2005).

The discussion in this chapter clearly indicates that the actions of the average consumer are not in line with their actual preferences. If this is the case, then policymakers should focus on designing a policy that takes into account the behavioural biases, because they seem to have a significant effect on behaviour and do not reduce freedom of choice as much as regulations do (Nijboer and Boon, 2012).


7 Concluding Remarks

In the ‘Memorie of Toelichting’, legislators motivated their enactment of the ‘Pensioenwet’ (Pw) and the ‘Wet verplichteberoepspensioenregeling’ (Wvb) by emphasizing on the necessity for transparency in communication between pension providers, participants and pensioners: “Only on the basis of accurate and clear information are beneficiaries able to make proper financial planning with regards to income at old age, income in case of disability and income distribution to relatives in the case of decease”. However, the behavioural evidence presented in the section 6.2 and the costs and benefit analysis executed in this paper makes us doubt whether policy based on solely information provision is enough to help individuals make choices in a system were employees are exposed to asset market risk.

Based on our cost and benefit analysis of the current mandatory information disclosure we can conclude that there has been a tremendous investment in pension communication with little or no positive effects on pension awareness, financial literacy or saving intentions. As discussed in the section 4.1, approximately 70% of the employees in 2011 are completely unaware of their pension set-up and pension awareness has deteriorated between 2009 and 2011 (Wijzer in geldzaken, 2012). In addition, the financial knowledge of the Dutch employees has not enhance between 2005 and 2010 (Alessie, Van Rooij and Lusardi, 2011) and the majority of the Dutch households are not intending to change their behaviour after a drop in pension income (Van Rooij, Prast and Smits, 2011). Hence, the evidence in this paper demonstrates that the current mandatory communication efforts have cost the participants approximately €3.2 billion euros in total but do not display the desired positive effects on pension awareness, financial literacy and saving intentions.

Based on the behavioural findings presented in this paper, I conclude that pension providers, financial supervisors and policymakers should work together to design an alternative policy which takes account of behavioural biases and inconsistencies (e.g. self-control problem, status quo bias, default effect) in pension related decision making. Policy instruments such as, defaults, mandated choice or commitment mechanisms can be used to steer people’s choices in a welfare improving directions without removing their freedom of choice (Sunstein and Thaler, 2003). However, an indict costs and benefit analysis is necessary to find out which policy instrument is especially suitable for the Dutch pension system.
8 References:


Committee on the Sustainability of Supplementary Pension Schemes (Goudswaard Committee) (2010). A strong second pillar -Toward a sustainable system of supplementary pensions, The Hague.


Prast, H. M. and Snippe, J. (2010). De kruik gaat zo lang te water tot zij barst, NRC 6 september


9 Appendix

9.1 Appendix I

**Vragenlijst kosten pensioencommunicatie, -informatie en –bewustmaking**

A. Totale kosten

**Vraag 1a**

Wat zijn globaal de totale kosten (personele kosten en overige) die Uw organisatie (voor Pensioenfederatie en Verbond van Verzekeraars geldt steeds: branche) in de periode 1 januari 2002 – 1 januari 2012 heeft gemaakt met betrekking tot pensioencommunicatie, informatie en bewustmaking?

**Vraag 1b**

Hoe hoog zijn de jaarlijks terugkerende kosten die Uw organisatie maakt met betrekking tot pensioencommunicatie, informatie en bewustmaking?
B. Kosten Startbrief

Pensioenuitvoerders sturen nieuwe deelnemers binnen drie maanden na aanvang van deelname een startbrief. De startbrief informeert de nieuwe deelnemer over de belangrijkste elementen van de nieuwe pensioenregeling.

**Vraag 2a**

Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van de startbrief?

**Vraag 2b**

Hoeveel (in euro’s per jaar) zijn de doorlopende kosten die uw organisatie momenteel maakt met betrekking tot de startbrief?

C. Stopbrief

Wanneer iemand niet meer deelneemt aan een pensioenregeling, dan moet hij of zij tijdig een stopbrief krijgen met informatie over bijvoorbeeld hoeveel pensioen er is opgebouwd en hoe het pensioeninkomen eventueel meegroeit met de loon- of prijsstijgingen (indexatie).

**Vraag 3a.**

Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van de stopbrief?

**Vraag 3b**

Hoeveel (in euro’s) zijn de jaarlijkse kosten die uw organisatie momenteel maakt met betrekking tot de stopbrief?

D. Uniform Pensioenoverzicht

Pensioenuitvoerders moeten actieve deelnemers jaarlijks een Uniform Pensioenoverzicht (UPO) sturen. Hiermee worden deelnemers geïnformeerd over de opgebouwde pensioenaanspraken, de te bereiken pensioenaanspraken, de toeslagverlening en de waardeaaangroei in het voorafgaand kalenderjaar.
**Vraag 4a**
Hoeveel kosten zijn er door uw branche of organisatie sinds 2002 gemaakt voor het Uniform Pensioenoverzicht?

**Vraag 4b**
Hoeveel (in euro’s per jaar) zijn de doorlopende kosten die uw organisatie momenteel maakt met betrekking tot het Uniform Pensioenoverzicht?

**E. Pensioenregister**

**Vraag 5a**
Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van het Pensioenregister?

**Vraag 5b**
Hoeveel (in euro’s) zijn de jaarlijkse kosten die uw organisatie momenteel maakt met betrekking tot het Pensioenregister?

**F. Toeslagverlening**
De verplichte informatieverstrekking over toeslagverlening bestaat uit twee elementen: de voorgeschreven teksten uit de toeslagenmatrix en het toeslagenlabel.

*i) Toeslagenmatrix*
De toeslagenmatrix bevat vaste, voorgeschreven teksten (de voorwaardelijkheidsverklaring) waarmee pensioenuitvoerders hun deelnemers informeren over toeslagverlening.

**Vraag 6a**
Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van het Toeslagenmatrix?
Vraag 6b
Hoeveel (in euro’s) zijn de jaarlijkse kosten die uw organisatie momenteel maakt met betrekking tot het Toeslagenmatrix?

ii) Toeslagenlabel
De toeslagenlabel geeft de deelnemer met behulp van een afbeelding inzicht in de verwachte toeslagverlening en de toeslagverlening in een pessimistisch scenario.

Vraag 7a
Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van het Toeslagenlabel?

Vraag 7b
Hoeveel (in euro’s) zijn de jaarlijkse kosten die uw organisatie momenteel maakt met betrekking tot het Toeslagenlabel?

G. Overige informatiebepalingen
In de pensioenwetgeving zijn er naast de boven genoemde instrumenten ook een aantal andere informatiebepalingen vastgelegd voor het vertrekken van informatie over het pensioen.

Vraag 8a
Hoeveel kosten zijn er door uw organisatie of branche sinds 2002 gemaakt op het gebied van pensioencommunicatie, -transparantie en –informatie die NIET vallen onder de startbrief, stopbrief, UPO, Pensioenregister, de toeslagenmatrix en het toeslagenlabel?

Vraag 8b
Hoeveel (in euro’s) zijn de jaarlijkse kosten die uw organisatie momenteel maakt op het gebied van pensioencommunicatie, -transparantie en –informatie die NIET vallen onder de startbrief, stopbrief, UPO, Pensioenregister, de toeslagenmatrix en het toeslagenlabel?

H. Nieuwe kosten
In een recente brief aan de Tweede Kamer heeft Minister Kamp van Sociale Zaken en Werkgelegenheid aangegeven dat de communicatieverplichtingen voor pensioenuitvoerders
aangescherpt moet worden. Minister Kamp verklaard dat pensioenfondsen duidelijker moeten communiceren over de koopkracht van het pensioeninkomen en de gevolgen van de pensioenrisico’s, meer ruimte moet zijn voor maatwerk en meer mogelijkheden voor digitale informatieverstrekking.

Vraag 9a

Hoeveel verwacht uw organisatie of branche te moeten investeren op het gebied van pensioencommunicatie, -transparantie en –informatie om de aanpassingen te verrichten die Minister Kamp wil uitvoeren?

Vraag 9b

Met hoeveel (euro’s) zullen de jaarlijkse kosten op het gebied van pensioencommunicatie, -transparantie en –informatie voor uw organisatie toenemen als deze aanpassingen aan de pensioenwet doorgevoerd worden?

9.2 Appendix II

Questionnaire Costs Pension communication, -Information and -Awareness

Total Costs

Question 1a

What are the approximate total costs (employment and additional) that your organization has incurred during the period of 1st of January 2002 till first of January 2012 with regards to pension communication, information and activities designed to raise awareness?

Question 1b

How large are the annual recurring expenses by your organization with regards to pension communication, information and activities designed to raise awareness?

B. Start letter

Pension providers offer novel clients a start letter within three months of admission. The start letter informs the new clients on the important elements of the new pension scheme.
**Question 2a**
How large are the costs incurred by your organization regarding the start letter since 2002?

**Question 2b**
What are the current on-going costs (in euro’s per year) incurred by your company with regards to the start letter?

**C. Stop letter**
In the event of a client discontinuing one’s participation with a pension agreement, the pension provider is required to provide the person with a stop letter; providing information on the size of the pension accumulated thus far, and explanation on how the pension income will increase in contrast to average income developments and price inflation.

**Question 3a**
How high are the costs incurred by your organization regarding the stop letter since 2002?

**Question 3b**
What are the current on-going costs (in euro’s per year) incurred by your organization with regards to the stop letter?

**D. Uniform Pension overview**
Pension providers are required to provide active participants a Uniform pension overview. The UPO is designed to inform participants on their accumulated pension claims, the claims yet to attain, the indexation and the value growth in the preceding year.

**Question 4a**
How high are the costs incurred by your organization with regards to the uniform pension overview since 2002?

**Question 4b**
What are the current on-going costs (in euro’s per year) incurred by your organization with regards to the uniform pension overview?
E. Pension Register
As of January 6, 2011, all Dutch people have access to the digital Pension Register (www.mijnpensioenoverzicht.nl). On the website of the Pension Register, people can see how much pension (first and second pillar) they will receive in the future. All pension providers are required to collaborate and make the data available for the Pension Register. The AFM is monitoring this.

Question 5a
How high are the costs incurred by your organization with regards to the pension register since 2002?

Question 5b
What are the current on-going costs (in euro’s per year) incurred by your organization with regards to the pension register?

F. Indexation
The compulsory information provision regarding the indexation incorporates two elements: the prescribed texts from the indexation-matrix and the indexation-label.

i) Indexation-matrix
The grant matrix incorporates prescribed texts, which are utilized by pension providers to inform their clients on the indexation distribution.

Question 6a
How high are the costs incurred by your organization with regards to the indexation-matrix since 2002?

Question 6b
What are the current on-going costs (in euro’s per year) incurred by your organization with regards to the indexation-matrix?

ii) Indexation-label
The indexation-label provides the client a clear overview and insight into the expected indexation distribution and indexation distribution in a pessimistic scenario by means of an
image.

**Question 7a**
How high are the costs incurred by your organization with regards to the indexation-label since 2002?

**Question 7b**
What are the current on-going costs (in euro’s per year) incurred by your organization with regards to the indexation-label?

**G. Additional information stipulation**
The pension regulations include the above mentioned elements, as well as several additional information regulations with regards to mandatory information distribution.

**Question 8a**
How high are the costs incurred by your organization with regards to pension communication, -transparency and –information, excluded from the start letter, stop letter, UPO, pension register, indexation-matrix and indexation-label since 2002?

**Question 8b**
How high are the current on-going, annual costs incurred by your organization with regards to pension communication, -transparency and –information, excluded from the start letter, stop letter, UPO, pension register, indexation-matrix and indexation-label?

**H. New costs**
In a recent letter to the Dutch House of representatives, former Minister of social affairs and employment, Henk Kamp proposed to intensify the communication obligations of pension providers. Minister Kamp argued that the pension providers must enhance the current state of communication regarding the purchasing power of the pension income and the consequences of the pension risks, tune the communication efforts to the needs of the participants and provide more possibilities for digital information provision.

**Question 9a**
What are the expected investment costs in the field of pension communication, transparency
and information to attend to the reforms proposed by Minister Kamp?

**Question 9b**
How much (in Euro’s) will the annual costs of your organization increase in the areas of pension communication, transparency and information if the pre-mentioned propositions are made law?