Individual pension information. Recommendations for the case of Spain based on the experiences of other countries*.

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ABSTRACT

The aim of this paper is to establish some basic guidelines to help draft the information letter sent to individual contributors should it be decided to use this model in the Spanish public pension system. With this end in mind and basing our work on the experiences of the most advanced countries in the field and the pioneering papers by Jackson (2005), Larsson et al. (2008) and Sunden (2009), we look into the concept of "individual pension information" and identify its most relevant characteristics. We then give a detailed description of two models, those in the United States and Sweden, and in particular look at how they are structured, what aspects could be improved and what their limitations are. Finally we make some recommendations of special interest for designing the model for Spain.

JEL: D14, D81, H55, H83, I22.

Key words: Actuarial balance, Sweden, Transparency, US, Pension Information.

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1.-Introduction

Pensions, according to Jackson (2005) and Larsson et al (2008), are complex agreements with compulsory participation (purchase) in many cases and characteristics which make it difficult to provide clear and concise information to the contributor. They are long-term contracts with contributions made throughout the working lifetime, although the retirement benefits are obtained much later: "money in the future for money paid now". In some cases affiliates contribute in order to gain entitlement to benefits they may or may not need, e.g. disability, or that other people would receive, e.g. survivor. In some pension systems these benefits may depend explicitly on long-term demographic and economic factors such as earnings growth, life expectancy, inflation, returns on assets, productivity and other factors that are hard to predict, and it is difficult for contributors to understand how they may be affected by them. For many individuals, pension wealth and protection against certain risks is their most important asset, but it is not often perceived that way.

Retirement provisions in many countries may come from different pillars: compulsory public defined benefit (DB) or defined contribution (DC) plans, compulsory or voluntary private company schemes that may also be DB or DC, and individual pension plans. Having information about the public system alone may not be enough for someone with more pension plans, and therefore individual pension information can become very complex.

There is empirical evidence - Mitchell (1988) and Lusardi & Mitchell (2006 and 2007a) among others - that individuals in general know very little about the characteristics of benefit systems and what key variables may affect the amount of their final pension. Individual pension information is therefore needed to enable them to make the right decisions regarding consumption, savings and risk cover. Various authors such as Lusardi & Mitchell (2006), Lusardi & Mitchell (2007b), Fajnzylber et al (2009) and Biggs (2010) show that having a certain amount of financial knowledge and adequate planning can have a positive effect on saving and retirement decisions. There is also evidence - Sunden (2009) - that having knowledge about benefits affects retirement age. Workers who underestimate their pensions, for example, are less likely to take early retirement than those who overestimate them.

One of the reasons why people do not usually have financial knowledge is the difficulty involved in learning about pensions. The process of retiring or becoming disabled happens only once, so people cannot learn from their mistakes. In many cases this involves a psychological cost. In addition, affiliates generally do not appreciate the benefits of having information about pensions because they expect the public pension system to provide them with enough benefit.

Pension information is aimed at increasing the knowledge contributors have about the contributions they make, the expected benefits and the degree of cover they have for the various risks to which they are exposed during their work. One important objective is to motivate affiliates to think about their retirement and the risks they are exposed to in order to make them analyse the effect that the various actions they take in the course of their lives could have on their estimated amount of pension. This information could lead them to take decisions based on the need to make more effort (savings) in order to have a high enough level of consumption during their retirement and improve their cover of certain risks.

Individual pension information can be defined as all the details that need to be provided to individuals to enable them to adequately plan their retirement and cover the risks mainly associated with disability and death. As Larsson et al (2008) have pointed out, it is worth noting that many countries significantly improved the information they supplied or started to supply it as part of their pension system reform.

The existence of personalized information like the orange envelope in Sweden, the blue envelope in France, the yellow in Germany and what is known as the "Social Security Statement" in the United States, apart from giving accounting information and an estimate of the benefits and risks covered, can also provide information about the pension system itself and how it works. It would be useful to have this kind of information especially if the system were to undergo any type of reform or immediately after it was carried out.

As far as Spain is concerned, given the dearth of information about pensions that contributors receive, the uncertainty as to the financial health of the public pension system, the recent reform that has just come about and the fact that many pensioners rely on the public pension as their only income after retirement, it is essential that the Social Security Administration (SSA) should seriously consider the possibility of introducing a periodic information model similar to that sent out every year to affiliates by the SSAs in more advanced countries². This is the justification for the basic aim of this paper: the establishment of some basic guidelines to help draft the information letter sent to individual contributors should it be decided to use this model in the Spanish public pension system.

After this brief introduction, the structure of the paper is as follows. Based on the pioneering work done by Jackson (2005), Larsson et al. (2008) and Sunden (2009) and the experiences of the most advanced countries in this field, Section 2 conceptualizes what is understood by "individual pension information" and looks at its most relevant characteristics. Section 3 analyses reports of certain countries and describes two models in detail - the United States and Sweden - concentrating on their structure, aspects that could be improved and their limitations. Section 4 includes a number of recommendations of particular interest for designing the Spanish model. The paper ends with bibliographical references and two appendices containing the individual statements for both the United States and Sweden.

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At the draft bill stage as of April 2011. The changes are important ones and substantially alter retirement pension expectations for young and middle-aged contributors. The legal retirement age will rise progressively from today's age 65 to age 67. This will be applied over a transitory period between 2013 and 2027, and in order to receive 100% pension it will be necessary to have contributed 37 years as opposed to the current 35. A 100% pension will be possible at age 65 with 38.5 years contributions rather than today's 35. Early retirement will be possible from age 63 with 33 years contributions or at age 61 in times of economic crisis. There will be better incentives for extending one's working lifetime, the period for calculating the qualifying base will increase from 15 to 25 years, and the percentage of the full pension received by a worker will be proportional to the numbers of years contributed, starting at 50% for 15 years working up to 100% for 37 years working. By comparison, before the reform the system was biased in favour of shorter careers. Finally, a so-called sustainability factor will be introduced from 2027 based on the evolution of life expectancy for 67-year-olds.

² The FIPROS 2010/27 project "General and individual information on the Spanish social security system: proposals for improvements".

2.- Individual pension information

As mentioned in the introduction, individual pension information can be defined as all the necessary details that the participant/contributor/pensioner needs to receive from the system/plan to which they are currently affiliated - basically contributions made, probable amount of pension entitlement, replacement rate, retirement choices, accrued or consolidated rights, etc. - to enable them to adequately plan their retirement period and cover the risks mainly associated with disability and death.

Following Larsson et al. (2008) and Sunden (2009), there would basically be three levels of individual pension information:

a) "Accounting information" is the most basic level and involves the fundamental elements that affect acquired rights (retirement, disability, survival), i.e. contributions, amount of contributions, length of time contributed, contribution bases, etc. This type of information helps make contributors aware that the amount of their future pension depends to a large extent on the amount of the contributions made. It conveys the idea that retirement pensions are like savings and that contributors should think about whether they have adequate cover for certain risks.

In defined contribution (DC) pension systems such as those in Sweden, Chile and Singapore, this is achieved by showing the individual balance which describes the evolution of the financial or notional capital by giving details of movements for the period (year), basically the difference between the amounts at the start and end of the period. In defined benefit (DB) systems such as those in the United States and Japan, however, this is done using the contribution record for the complete working lifetime up to the date the information is issued.

This information level helps make the pension system more transparent. However, although the information given is necessary information, it is not generally sufficient.

b) "Action/course of event information" is information given to the contributor to quantify how different actions they may take (contribute more, take early retirement, etc.) or future events that may come about (increase in longevity, lower than expected economic growth, lower than expected financial returns) could affect their estimated amount of benefit.

The main question that arises at this information level is how to show the amount of benefit:

- 1) In a DB system the provisions or benefits are determined by a formula that combines the level of contributions with the years worked. This formula expresses the part of the final salary or pensionable earnings to be replaced by the retirement pension as a replacement rate. In this type of system there is a great deal of implicit uncertainty deriving from the possibility that the authority governing the system may decide to carry out a reform for any number of reasons and reduce the contributors' accredited rights and/or the amount of the pensions in payment. The explicit uncertainty increases even in countries with DB systems because, according to Vidal-Meliá et al (2009 and 2010), there is a tendency to link pensions to the evolution of demographic parameters or what are known as ABMs (Automatic Balancing Mechanisms), such as those in Portugal, Finland, Germany and recently introduced in Spain.
- 2) In a DC system the provisions or benefits basically depend on contributions made, the return on those contributions, and life expectancy at the time of retirement. At retirement age the accumulated amount (notional or real) is converted into either a lifetime annuity, programmed withdrawal or in some cases a combination of a lifetime

annuity plus an initial lump sum payment. The benefit amount is not defined in advance but depends on the aspects mentioned above, and for that reason the explicit uncertainty is greater.

Another question is how the expected benefits vary according to retirement age:

- 1) In DB systems, both the normal retirement age, when retirement pension would be payable without any reduction, and the early retirement age, which would mean a reduction in benefit, are normally specified. The formula for calculating the pension provides information on how much of a reduction would be applied to the full pension in the case of early retirement. It is easy to understand at what age benefit will be paid and how much it will be, but it is not so easy to make the contributor understand that an increase in normal retirement age will mean a bigger reduction in the replacement rate at early retirement age.
- 2) In DC systems it is only necessary to specify a minimum retirement age and not a normal retirement age. Converting the capitalization account into a monthly payment is not easy and that makes it even more complex to *guess* how the choice of retirement age will affect benefit. The conversion basically depends on life expectancy. Given a specific retirement age, for example, the initial annual benefit will decrease over time as life expectancy at that age increases.

A final question at this information level is how employment mobility can affect the amount of benefit:

- 1) In a DB system mobility could have a negative effect on benefit as it is difficult to assess the balance or mathematical reserve and a number of years' affiliation are required for benefit entitlement. This could be solved by quantifying the balance and periodically informing the contributor of the present actuarial value of the accredited benefits, as proposed by Jackson (2005).
- 2) In a DC system this problem does not exist since affiliates constantly have the value of their consolidated rights quantified and it is easy to integrate this amount into any other system with similar characteristics.
- c) "Uncertainty (risk) information". Estimating future benefits is not easy even though details are given about how the estimate is made. Affiliates also need to be able to understand the information. If the forecast supplies just one result for the amount of future benefit, this may give an impression of certainty when in fact the final result is extremely uncertain, especially if the contributor is far from retirement. It would be useful to provide information explaining that the result given could be affected by financial imbalances in the system as a whole, which would be shown in the actuarial balance. It is this aspect, according to Boado-Penas & Vidal-Meliá (2011) that is the main link between general (the system's actuarial balance) and individual information. The connection between the two types of information is obvious. If the solvency or sustainability indicators deriving from the general information show an uncertain financial position, this is a sign telling contributors that they will have to increase their contributions in size or over time and/or the benefits will decrease in order to maintain the system's sustainability.

DC capitalization systems, such as that in Chile, make financial investments, and affiliates are therefore exposed to all the financial risk that this involves. For this reason the information should include enough details to enable them to quantify the risk their benefits carry. In any case, information should be given about so-called pension risk - Bernstein (2010) - using a density function for replacement rate probability which would include all the various risks the contributor faces, although it is only fair to point out that it is more than doubtful that the average contributor will be able to understand this information.

In NDC notional account systems such as Sweden's, contributors take on a risk in so far as they do not know for certain what the internal rate of return (IRR) on contributions will be or what replacement rate will be achieved. According to Vidal-Meliá et al (2006) and Boado-Penas et al (2007), this risk can be qualified as non-diversifiable or systemic as it is directly associated with the overall risk of the economy. The risk affecting contributors is the economic risk (basically due to a reduction in the growth rate of GDP or salaries), which is also influenced by demographic risks (e.g. increased longevity, lower fertility, higher unemployment) that affect economic activity and the financial health of the pension system.

Most public pension models are based on pay-as-you-go and many countries face long-term deficits or serious solvency problems, which means they will have to carry out automatic or discretionary reforms to solve them. This in turn means they will either have to cut future benefit levels, increase the retirement age, raise the contribution rate or apply a combination of measures. It is very important to stress in the individual statements to contributors that their benefits are conditioned by two aspects: the individual, i.e. amount contributed, contribution history, retirement age, and the collective, i.e. the system's ability to meet its acquired obligations with contributors and pensioners.

It needs to be pointed out that the Social Security Administration in Spain only supplies annual information about contributions made, the aim being that the contributor should inform the SSA if they notice any discrepancy. In other words the individual information provided covers only a small part of the first level described above.

3. - Experiences in some selected countries, with special reference to the US and Swedish models

Personalized statements are a relatively recent phenomenon. Apart from Chile, which introduced a basic version in 1981 and a personalized pension forecast in 2005, it was not until the end of the 20th century and the early years of the 21st that most of the countries selected starting using them. Tables 1a and 1b summarize details of the most important characteristics of the individual statement in Sweden, Chile, Finland, France, Germany, the US, the UK, Japan and Canada. All the countries considered have personalized statements that are sent out to contributors every year. Generally speaking, this concern with keeping people informed individually about pensions is associated with the existence of reforms to the pension system either already carried out or about to be carried out.

Most of the countries that appear in the tables have reformed their pension systems and one of the purposes of sending out these individual statements is to let people know about the reform and generate confidence in the new system. In almost all the countries there is a section in the statement that briefly describes the pension system. However, most of them give no information about the system's sustainability, the exceptions being the US and Germany.

One of the general purposes of sending out individual information common to all countries is to provide details of contributions made and future benefits and pensions. The statements aim to make contributors aware that it is important to think about their retirement and about covering certain risks such as disability or death. They need to be aware of how certain decisions they take in the course of their lives may affect their benefits when they retire, and they need to have useful information when deciding whether to take up an additional form of savings to complement their retirement pension. A target common to all the countries, therefore, is to make the information transparent and accessible.

In general the statement provides information about contributions made up to that date in such a way that the information made available by the SSA can be compared with details held by the contributor. This would be the first level of information. However, the information differs between DC pension systems, DB systems and mixed systems. In a DC system, providing information about contributions is something that is obtained directly, whereas in DB systems the information is normally less transparent because the contributions and taxes may not have been made completely clear for each affiliate. In a number of countries such as Sweden, Finland, the US, Canada, Japan and France, the statement itself, apart from serving as a vehicle for comparing the details held by the SSA as regards contributions made or pensionable earnings, requires the affiliate to check the information and contact the SSA if they find any mistakes so that the discrepancy can be rectified.

One important question concerns whether all affiliates should receive information or whether it should be directed exclusively to particular groups who need to be fully informed. A number of different approaches have been considered here. Age is one of the common factors for deciding who should receive the statement. Some countries exclude younger contributors when they send out individualized information because they are not thought to be overly concerned about retirement and still have very few contributions. Some SSAs such as Sweden's send a statement to anyone who has made a contribution; this is also the case in Canada and the UK. Some countries differentiate by age and gender, as is the case in the UK and Chile. Three groups are considered in Canada - the young, the middle-aged and those close to retirement age - but no distinction is made by gender. Statements in the US are sent out to people aged 25 or over, while in Finland they are sent to everyone from age 18. Japan used to send them to groups aged 35, 45 and 55, but since 2009 the process has been generalized and statements are now received by all affiliates. Finally, in Germany the statement is sent from age 27 as long as the affiliate has at least 5 years of contributions.

Table 1a: Characteristics of statements sent to contributors in certain countries with defined contribution or mixed systems					
Items	Sweden	Chile	Germany	UK	
Type of system	DC	DC	DB	DB	
Type of system	Notional account and capitalization	Individual capitalization	Points and capitalization	Pay-as-you-go and capitalization	
Retirement age	Flexible from age 61	60 for women 65 for men	Age 63-67	60-65 for women	
			0	65-68 for men	
Sent to	Anyone who has paid any	Different types of statement to: Women: 30-50; 51-59	From age 27 to anyone with 5 years	Different types of statement to: Men: 20-49; 50-64	
Sent to	contributions	Men: 30-55; 55-64	contributions	Women: 20-49; 50-59	
Frequency	Yearly	Yearly	Yearly Yearly		
Trequency	1999	1981-Cartola cuatrimestral	ŕ	1988 (on request)	
Year introduced	Den Allmanna	2005-Proyección pensión	2004 (trialled from 2001)	Automatic State Pension Forecasts	
	Pensionen	personalizada	Renteninformation	(APF)	
Purpose of the statement	1To increase contributors' and pensioners' interest in the pension system after the 1999 reform. 2To help plan retirement now that responsibility lies with contributors and new variables such as life expectancy have an influence.	To estimate the amount of pension affiliates would obtain when they become entitled (they can carry on working) and suggest ways of increasing it.	1. To inform people of the impact of the various reforms since 1992 and enable them to visualize whether additional savings are needed. 2. To compare personal information with that held by the ASS.	To help contributors plan for their retirement and make them think about the increase in life expectancy, the amount needed in order to retire	
Description of pension system	Yes	No	Yes	Yes	
Information about the system's sustainability (actuarial balance)	No, although an actuarial balance is compiled every year.	Not necessary. The defined contribution capitalization system is by definition sustainable.	Yes, but no annual actuarial balance is compiled. Reference is made to what is termed the sustainability factor.	No, although an actuarial balance is compiled every five years.	
Information about other benefits	No	No	Yes. Disability.	No	
How are the contributions incorporated into the statement?	Total of previous balance + contributions made over the last year = accumulated total (See Appendix 2)	Previous balance, list of monthly contributions after tax, current balance.	Total contributions during working lifetime + employer's contributions + total contributions paid by third parties = total contributions from work.	No	

Table 1a: Characteristics of statements sent to contributors in certain countries with defined contribution or mixed systems (continued)					
Items	Sweden	Chile	Germany	UK	
Forecasts	Forecast in real terms from age 28	Forecast in real terms from age 30	In real terms	For two groups: under-50s and 50 and over. Different for men and women.	
Hypothesis as to future pensionable earnings in the forecast	Same as the last one, constant in real terms	Various assumptions, average of the last 6 years but with various contribution densities	Average of pensionable earnings for the last 5 years	Same as the last one recorded when carrying out the forecast	
Is a "minimum pension" included in the forecast?	Yes	Yes	No	Yes	
Hypothesis as to interest rate	3.5% real annual	5% real annual rate of return	Not applicable	Not applicable	
Websites	Cooperation between the state and insurance companies http://www.pensionsmyndigheten.se /prognos www.minpension.se	http://www.spensiones.cl/compendio/ o/ 577/w3-propertyvalue-4213.html		http://www.direct.gov.uk/en/ Pensionsandretirementplanning /StatePension/StatePensionforecas t/DG_10014008	

Item	Finland	USA	France	Japan	Canada
	DB	DB	DB	DB	DB
Type of system	Pay-as-you-go	Pay-as-you-go	Points	Pay-as-you-go	Pay-as-you-go
Retirement age	Age 62-68	Age 62-67	From age 60	Age 60/63	From age 60, changes between 2011 and 2016
Sent to	Ages 18 to 67 but not pensioners	Workers over age 25	Different types of statement to contributors aged 35, 40, 45, 50, 55.	Different types of statement to contributors 1Under 50 250 and over	Different types of statement to contributors 118-29 230-50 350-70
Frequency	Yearly	Yearly	5-yearly, every 2 years on request	Yearly	Yearly
Year introduced	2008	1988-1989 (on request) 1995 (60 and over) 2000 (25 and over) Social Security Statement	2007 1Le relevé de situation individuelle 2L'estimation indicative globale	2009 Nenkin Teiki bin	1997 Statement of contributions
Purpose of the statement	To check the information held by the SSA.	1To help contributors plan for retirement and make them aware of how their disability or death could affect them (and their families). 2To check whether the information held by the SSA regarding recorded contributions is accurate and complete.	1To check the information held by the SSA. 2To inform contributors of the rights they have already acquired and those they could acquire for their retirement if they continue working.	1To give contributors basic information about the pension system following the 2004 reform and an estimate of their benefits. 2To increase the level of confidence in the public pension system and reduce people's concern. 3To check whether the information held by the JSS regarding recorded contributions is accurate and complete.	1To help contributors plan for retirement and make them aware of how their disability or death could affect them (and their families). 2To check whether the information held by the CPP regarding recorded contributions is accurate and complete.
Description of pension system	Yes	Yes	Yes	No	Yes. In appendices.
Information about the system's sustainability (actuarial balance)	No, although an official actuarial balance is compiled every three years	Yes. An official actuarial balance is compiled every year	No	No, although an official actuarial balance is compiled every five years	No, although an official actuarial balance is compiled every three years

Information about other benefits How are the contributions incorporated into the statement? Forecasts Forecasts	No Not indicated ecast in real terms from age 50	Disability and survivor Annual pensionable earnings (see Appendix 1) In real terms	Annual income and contributions obtained Forecast for those aged 55 of the amounts they will obtain at ages 60, 61, 62, 63, 64 and 65,	No Pensionable earnings In real terms	Disability and survivor Year's contributions
incorporated into the statement?	ecast in real terms from	(see Appendix 1)	contributions obtained Forecast for those aged 55 of the amounts they will obtain at		Year's contributions
Forecasts		In real terms	the amounts they will obtain at	To well towns	
			in euros per year	in real terms	In real terms
pensionable earnings in the	average of pensionable ings for the last 5 years. 1% and 2% growth.	Same as the last recorded when carrying out the forecast	Same as the last	Same as the last recorded when carrying out the forecast	Average of the contribution bases of the entire working lifetime
Is a "minimum pension" included in the forecast?	No	Yes	Not applicable	Not applicable	Yes
Hypothesis as to interest rate	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Wahsites	etk.fi/Default.aspx?Lang =2 tyoelake.fi/Page.aspx?Se ction=43800	www.socialsecurity.gov/estima tor www.socialsecurity.gov/applyf orbenefits www.socialsecurity.gov/WEP www.socialsecurity.gov/GPO www.medicare.gov www.socialsecurity.gov/pubs/ #Retirement	http://www.info- retraite.fr/index.php?id=gip	http://www.sia.go.jp/top/kai kaku/kiroku /teikibin/e/index.html	http://www.servicecanada.gc. ca/eng/isp/cpp/ soc/explain.shtml

Source: Based on Usuki et al (2006), Försäkringskassan (2008), GIP (2007), Larsson et al. (2008), TPS (2009), Berstein et al. (2009), Fajnzylber, et al (2009), SSAB (2009), Kalliomäki (2010), Sailer (2010), Couch & Smith (2010), SSA (2011), Boado-Penas & Vidal-Meliá (2011) and own based on various websites.

The usual way the statements are sent in all the countries considered is on paper via the postal system. In many cases the envelope is associated with a particular colour - orange in Sweden, for example, blue in France and yellow in Germany. Japan uses different colours depending on the purpose, while Finland uses white to make it stand out from advertising materials and give it a more formal touch. In the case of Sweden, much time was spent considering the advantages of using paper and sending the orange envelope out every year to affiliates rather than offering something they would access anonymously via the internet. These advantages can basically be summarized as follows: it has a special design and a colour with which it is associated and which identifies it; the information is concentrated once a year; the media refer to it, it attracts the attention and is mentioned whenever pensions are referred to; it has become a pension brand along the lines of any commercial brand; and banks and insurance companies use it in sales campaigns for their products.

In most of the countries considered, the information supplied in the statement can be used in conjunction with online services provided through a number of websites. This information channel will increase in line with the more widespread use of internet and computer access in the future. The possibility of consulting additional personalized information is very interesting because it not only means that the information sent by post can be more basic and understood by most affiliates, but it also enables the statement to be enriched in a more personalized way. This is especially appropriate as regards the aspect of risk, which is something most of the statements deal with inadequately.

Some of the countries considered with defined benefit systems, such as the USA, Japan, Canada and Finland, as well as having the general aims mentioned earlier like checking the information held by the SSA and helping to plan for retirement, also try to make contributors aware of how disability or death could affect them and their families. Information about this type of provision is only provided in statements in the USA, Canada and Germany, with the latter restricting itself to disability.

Most of the statements show an estimate of future benefits in real terms. In countries with defined benefit systems, the formula used to calculate benefits normally specifies the level of provisions as a replacement rate, and contributors can therefore have a fair knowledge of their level of benefits if they know the general lines along which the pension system works. However, these formulas can be complicated and in many cases the retirement age is gradually being increased due to reforms to the pension system, such as in the USA, Canada and Germany, which complicates matters further.

In defined contribution systems, information needs to be given about the benefits contributors might expect to receive given the contributions they have made. These future benefits can be affected by retirement age, life expectancy, economic risk, etc., especially if part of them comes from a real capitalization account. In Sweden and Chile, which both have defined contribution pension systems, the focus is mainly aimed at helping people plan for retirement, as responsibility is in the hands of the contributors, and providing an estimate of the amount of pension the affiliate would obtain.

The individual statement in Sweden provides information about how future benefit would be affected depending on whether the affiliate retires at age 60, 65 or 70. The aim here is to make it clear that working longer will mean an increase in the estimated benefit. The annual individual statement in the USA provides an estimate of benefits at the normal retirement age of 67, age 62 (the earliest age at which one can retire), and also at age 70. Because the normal retirement age is gradually being increased, individuals receive an estimate for the normal retirement age for their generation, e.g. for those born in 1956 this

would be 65 years and 10 months. Hence everyone understands that the new normal age of retirement of 67 is gradually being introduced.

Estimates of future benefits are offered to two groups in the UK, the under-50s and the over-50s. As far as the under-50s are concerned, the statement includes an additional set of questions to help affiliates regarding future employment, income, degree of cover from other pension plans and the possibilities of saving out of their current income. The statement for the over-50s focuses on planning for retirement and therefore tells affiliates about the need to set aside some of their savings for this period and also to consider possible expenses during retirement. The UK statement has less information about accrued rights and contributions than normally found in the countries analysed, but it does include practical advice on how the information provided should be used. It also includes a separate leaflet with more information on savings options, which is something other statements do not have. In France the information provided to contributors over 55 is an estimate of how much pension they will receive for the range of ages between 60 and 65.

Affiliates in Chile who are over 10 years away from reaching legal pensionable age, i.e. women between 30 and 50 and men between 30 and 55, receive a personalized enclosure that estimates their pension according to two extreme scenarios: in the first, the person contributes every month until the legal retirement age and average earnings for the last six contributions are used for the estimate; in the second, the person stops contributing and retires at the legal age with the funds accumulated earlier. Affiliates who are less than 10 years away from the legal pensionable age, i.e. women between 51 and 59 and men between 56 and 64, are given an enclosure explaining the advantages of postponing their retirement. One forecast is made for everybody in which the affiliate contributes half the months until reaching the legal retirement age and then applies for the pension at that age, and another in which he contributes half the months until 3 years after the legal retirement age (63 for women and 68 for men) and then applies for the pension.

When estimating future benefits, the SSA has to make assumptions about future earned income, e.g. about growth in salaries and interest rates. In France, Sweden, the USA, the UK and Japan, the hypotheses regarding future pensionable earnings are all equal to the last one recorded before carrying out the forecast and constant in real terms. In Chile, Germany, Finland and Canada, different averages are calculated. In Chile, for example, an average is made of the last six years but with various contribution densities. In Finland and Germany they use an average of the tax base for the last 5 years and in Canada the average contribution base for the entire working lifetime. On carrying out the estimate, some countries include a minimum pension. This is the case with Sweden, Chile, the UK, the USA and Canada. In Chile and Sweden, where the system is based on full or partial capitalization, a real interest rate has to be considered for the forecast, this being 5% per annum in Chile and 3.5% per annum in Sweden, although no reference is made to the fact that the contributor has to carry a high level of risk because the actual interest rate could be lower. It could be said that the hypotheses used to estimate future pensions are in general over-optimistic and, especially where young contributors are concerned, tend to overestimate benefits.

Given that the estimates represent possible future benefits, it is important that affiliates know how to interpret the amounts correctly. The best way to do this is to provide different scenarios to convey the idea that benefit can vary according to economic growth and life expectancy because the difference between the age the statement is received and the date of retirement makes the uncertainty increase. In general the personalized pension forecasts do not focus much on the different types of risk the contributor faces. It would be useful to introduce some kind of sensitivity analysis of the different variables and quantify their effect on the estimated pension. It is important to provide an accurate pension forecast, but it would also be interesting to incorporate some measure of variability and have a prediction interval with some kind of error margin, like any other statistical prediction. One problem that arises is that information of a higher quality may require a higher level of education to understand it correctly. It is therefore essential to design a basic document that can be complemented via other channels to provide more detailed information.

Now that the main characteristics of the statements in selected countries have been described, we will make a rather more detailed analysis of the statements in the United States, because it is a defined benefit pension system similar to some extent to the current Spanish system, and in Sweden, because this is the country that has led the way with this type of information and popularized it over the last few years, a benchmark or role model for many countries when they undertook the reform of their own pension systems. We will focus especially on structure, aspects that could be improved and limitations.

3.1.- The "Social Security Statement" (SSS) in the USA

This is a 4-page individual statement (see the example in Appendix 1) that the US Social Security Administration (SSA) sends out each year to every worker over 25. According to Couch and Smith (2010), the first statements were sent out to affiliates on request in 1989. In 1995 it was sent out automatically to all contributors over 60, and from 2000 to everyone over 25.

It has two basic purposes: to help people plan for their retirement and explain how contributors (and their families) could be affected by disability or death, and to check whether the information held by the SSA as regards recorded contributions is accurate and complete. Benefits paid by Social Security are directly conditional upon recorded contributions, with the best 35 years taken into consideration, and therefore the reliability of the estimates depends on this information being as complete as possible.

The first page contains an introductory message explaining the importance and value of having a social security system. It points out that the SSA covers not only the retirement contingency but much more; it also covers disability and can provide benefits to the contributor's family in the event of death. It reminds workers that it is only one of the income sources that they should consider when planning for retirement, and that therefore other sources such as personal savings, investments and private or other types of pension plan should also be considered. To find out more about how to save and why, it refers recipients to a federal government website designed to show them basic aspects regarding how to manage their personal finances. Finally it contains a section which gives a future outlook warning of the possible financial difficulties facing the social security system and the need to solve them by reforming the system to make it viable.

The second page provides an estimate of different types of benefit: retirement, disability and survivor in the event of the contributor's death. It also indicates whether the individual has worked enough to receive Medicare. There is a basic explanation about how the benefits have been calculated and the assumptions used, and then there are two paragraphs referring to the implications of two laws - the Windfall Elimination Provision

and the Government Pension Offset - either of which could reduce any benefits the individual might receive from Social Security, along with websites giving more detailed information about them both.

The third page contains a table with personalized information showing the contributions paid to Social Security and Medicare for each year of the individual's working lifetime. It also shows the total contributions paid to Social Security by both the worker and the employer over the whole working lifetime. It then recommends that the details provided should be checked to make sure they are correct. If any mistake is found, this should be reported to the SSA via the Toll free number provided.

Finally on the last page a number of matters are explained that should be taken into account regarding different Social Security programs and benefits that the individual or his family may be entitled to in terms of retirement, disability and death. It mentions what benefits may and may not be expected from Social Security and the advisability of having private insurance.

Criticism and limitations of the SSS

Ideally the SSS should reach everyone, but according to the SSA (2009) it contains too much information. Therefore the most important points such as the contribution record, estimates of future benefits and the normal age of retirement do not stand out clearly and obviously.

The form the statement takes today is a "one size fits all" which has to be used for everyone. The information sent does not distinguish by age, income level or type of family. It is static, unchanging over time, and this can make it seem boring to the recipient, who might end up ignoring it completely without even reading the most important information. Finally, the language used is often difficult to understand, very dense, bureaucratic and confusing. This could lead the contributor to make the wrong decisions through misunderstanding the information.

Benefit information is given in terms of monthly payments, no doubt to be consistent with the formulas the SSA uses to calculate them, according to Jackson (2005). But when the statement refers to income or earnings levels, this is done in terms of annual salary, i.e. twelve times higher than the monthly levels used before. This makes it more difficult for the recipient to calculate the replacement rate, i.e. the pension as a percentage of final salary or average of salaries.

When estimating lifetime earnings in order to forecast benefits, it is assumed that contributors will maintain the same level of contributions as in the last year until they retire. There are at least two problems involved with this:

- It looks like workers obtain no significant increase in benefit for working an extra
 year, as if the right to receive the estimated benefit were totally acquired when in
 fact this is not the case and many people still have to complete a very long working
 lifetime
- The hypothesis about maintaining the same level of contributions is quite extreme and people should be warned more explicitly of the consequences should this not be the case.

The way the SSS deals with the uncertainty surrounding benefit payment is limited in a number of aspects. Contributors should in theory consider two different types of uncertainty: uncertainty about laws that may be applied in the future due to imbalances that show up in the actuarial balance⁶, and uncertainty about the likelihood of any particular individual receiving the benefits described:

- The same importance is given to the uncertainty about legislation regardless of whether the individual is young or old. If cuts need to be made, then it is likely that they will be greater in the case of a young person than of an older person. However, as the same warning is given in both cases, this could be seen as being either too alarmist or too reassuring depending on the age group of the participant.
- Another source of uncertainty lies in the possibility that the contributor may not live long enough to receive retirement pension, or not receive all the provisions that may have been planned for certain years. Neither is it clear what assumptions contributors make about their own mortality. If an affiliate uses demographic predictions to gauge his life expectancy from a particular age close to retirement, age 65 for example, he can expect a reasonable number of years in which to receive the benefit. However, this life expectancy is conditional upon reaching age 65, and the risk of mortality in the period between making the calculation and reaching that age may not be insignificant.
- Another important question concerns the likelihood that participants may have the
 other two types of benefit described in the SSS: disability benefit and survivor
 benefit. Unlike retirement pension, these other benefits provide cover for unlikely
 events. The current SSS provides no information as to the likelihood of these
 events happening or the likelihood of these benefits being needed by contributors.

Finally, as already pointed out, some of the assumptions made when calculating future retirement pension tend to overestimate it, given that the chances that the contributor will stop paying for contributions in any future period are not considered.

3.2.-The Orange Envelope in Sweden

The orange envelope was first used in 1999 when a series of reforms was carried out on the Swedish pension system, and it is the fundamental tool for communicating with affiliates. The reform of the Swedish pension system was far-reaching and significantly strengthened the actuarial link between benefits and contributions by establishing a mixed NDC/capitalization system⁷. With this reform the importance that the increase in life expectancy has on the system's financial stability is recognized and certain mechanisms have been designed to adjust benefits as a response to changes in longevity and other variables Affiliates have more responsibility when planning their pensions as this is a defined contribution system and, unlike in a defined benefit system, it is the contributor that has to take on explicit risk.

Every year the Swedish SSA sends out a 5 page⁸ notification concerning the value of consolidated rights of retirement, the orange envelope. This notification informs people of the balance in their notional and capitalization accounts along with any movements during the year, plus in most cases an estimate of the amount of future pension. It also explains how the new pension system works and warns affiliates that the estimated benefits

⁶ See BOT (2010).

⁷ The retirement contingency of the Swedish pension system is mixed. 86.49% of contributions are allocated to the notional defined contribution pay-as-you-go system, rate of contribution16%, while the other 13.51% goes to the defined contribution capitalization system, rate of contribution 2.5%. Total rate of contribution for the contingency of retirement is 18.5%. See Försäkringskassan (2010).

⁸ It is actually 6 pages, but the last page explains how contributors can request a reconsideration of the decision.

are determined by the contributions they make in the course of their entire working lifetime.

The first page shows the contributions made to the two accounts over the period. These contributions are based on earnings over the last year obtained from each individual's income tax return, i.e. they are paid not on taxable earnings for the current year but on those of the previous year. Details are given of the amounts saved so far towards the retirement pension, i.e. the value of the consolidated right for each of the two accounts. Finally an estimate of what the contributor will receive as a monthly retirement pension before tax at age 65 is given, and he is informed that if he postpones his retirement beyond that age, this could mean up to 10% more benefit for each year postponed.

The second page gives information about the contributions (or pension credits) assigned to each of the two accounts, the taxable earnings used to calculate these contributions, the contribution rates for each of the two accounts, whether there are additional credits for special situations (e.g. military service, child years, unemployment), and maximum pensionable income for the year.

The third page shows the movements determining the value of the consolidated rights at 31-12-2010, based on the value assigned at 31-12-2009, for each of the accounts in 2011. The statement includes the pension credits assigned, the redistribution of the notional accounts of deceased contributors of the same generation (known technically as the survivor dividend), the explicit administration costs, the notional rate of return for the NDC account and the financial return for the capitalization account, which is expressed by "change in value"

The fourth page lists the composition of the capitalization account portfolio assigned to the contributor, giving full details of the administration costs and return achieved on each type of fund and comparing them with the average pension saver.

Finally the fifth page gives an estimate of what the contributor will receive as a monthly pension before tax for the different retirement ages of 61, 65 and 70. The assumption that salaries and prices remain unchanged means the pension estimates can be compared against the current salary or pensionable earnings. The message is conveyed that benefit can vary in line with economic growth and retirement age, but given that the forecasts are static, they do not take into account the uncertainty that exists.

Criticism and limitations of the Orange Envelope

The first serious limitation is that the way the estimated pension is calculated tends to overvalue the pension that contributors are informed about in a number of ways:

- 1.-It is assumed that the individual will continue making contributions continuously until retirement age, which is an over-restrictive and probably unreal hypothesis for many younger contributors.
- 2.-The rate of return considered for the capitalization account is unrelated to what the system has actually achieved up to now. It would be more realistic to use a rate of return based on experience for the forecast.
- 3.-It is not specified whether the pension deriving from the capitalization account can be paid out in the form of a life annuity with contingent survivor benefit or not, or as programmed withdrawal, or that the pension deriving from the NDC account can decrease in real terms if the growth in average salaries is lower than predicted or the ABM is activated.

The second serious limitation is that there is no explicit information about the risk the contributor takes on in either the NDC or the capitalization system. As mentioned earlier, the contributor takes on a risk in the NDC system in that he cannot be sure what the internal rate of return (IRR) on his contributions will be, or the replacement rate achieved or the amount of the pension. Similarly in the capitalization account there is a financial risk dependent on the investment strategy, the annual performance of which so far has varied greatly, Försäkringskassan (2010).

A third point is the misleading message conveyed as to the virtues of the capitalization system in so far as the return on the capitalization account considered for the forecast is 3.5% higher than the return on the notional account. The contributor may be led to believe that there is an implicit cost in notional accounts equivalent to the difference in return, although if the contributor's degree of risk aversion were taken into account or if the return were adjusted for risk, the return differential could actually be negative. In the example in the statement, the sum of 2,900 SEK, which out of the total monthly pension comes from the capitalization account, corresponds to 22.83% of the final pension of 12,700 SEK per month, so its weight is almost twice what it should be if the returns were equal. The state is giving out the message that the capitalization account is better, but it does not take the risk into account.

4.- Final comments and recommendations for the case of Spain

Sending out information about public pensions to the contributor is a recent process, usually associated with pension system reform. It also tends to be linked to the actuarial balance of the system as a whole or to other solvency or sustainability indicators. According to Vidal-Meliá et al (2010), this is something that helps increase the pension system's transparency and depoliticize its management by minimizing so-called populism in pensions.

The aims of these statements are perfectly clear: to encourage contributors and pensioners to take more interest in the pension system; to help people with basic planning for retirement in those systems in which responsibility is in the hands of the contributors and new variables such as life expectancy, retirement age and financial or notional return have an effect on the amount of pension; to make contributors aware of the real level of cover as regards risks such as disability and death; and to check whether the contributor's details held by the SSAs are correct, especially as regards contributions.

It must be admitted that despite the advances made by introducing this type of reform, a number of limitations can be detected, and this leads one to think that there is still a long way to go before the content of the statements is satisfactory. It should be pointed out that in most countries the benefit forecast is overestimated, basically due to the hypotheses and assumptions applied, and this could be counterproductive in many cases. Neither is the aspect of risk dealt with satisfactorily. Indeed in some cases the information given in the statement could lead the contributor to believe that he is not exposed to any risk at all.

Inkomstpension system was 2.81% and barely 0.41% for the premium pension system. Unfortunately the Swedish Pensions Agency has not published the data necessary to update the calculation of the risk-adjusted return up to 2009.

⁹ According to Försäkringskassan (2010), this margin has not been achieved during the period 1995-2009.
¹⁰ According to Vidal-Meliá et al (2010), for the period 1995-2007 the risk-adjusted return for the

As far as Spain is concerned, the pension reform of 2011, which was unexpected by most contributors¹¹, significantly alters a great many contributors' pension expectations as it changes the essential parameters of the system and introduces a financial adjustment mechanism based on the evolution of life expectancy. This provides even more justification for considering the introduction of this type of statement. Our recommendations for its design after analysing the experiences of other countries are:

- 1.- It needs to get the message across that having a social security system is important and worthwhile; that the system is important not only for the retirement contingency but also for other things it covers disability and can provide benefits to the family in case of the contributor's death. The public social security system is a collective asset that should be run according to principles of transparency, fairness and solvency in order not to frustrate the expectations of contributors and pensioners.
- 2.- It needs to make the contributor understand that his benefits are conditional on two aspects: the individual, deriving from his own actions, i.e. the amount of contributions made, the length of time contributed, retirement age, etc., and the collective, i.e. the capacity of the system to meet the obligations acquired with contributors and pensioners, because any financial and/or solvency problems in the system can also affect the amount of benefit. This would be the main link between general information - an actuarial balance for the system would also have to be introduced in Spain - and individual information. The individual statements would therefore have to be linked to information about the system's sustainability. This could be done by showing some kind of solvency indicator for the system in the statement. This aspect is much more important than it may first appear because if the solvency or sustainability indicators deriving from the overall information show a dubious financial position, the contributors will receive clear signals that they will have to increase their contributions either in quantity or over time and/or the provisions will need to be decreased in order to maintain the system's sustainability. If the contributors are able to absorb the message conveyed via the individual information, they will be much more likely to accept the necessary reforms willingly.
- 3.- Like in Canada and the USA and in conjunction with the first recommendation, it needs to give information about the contributor's estimated entitlement to retirement, disability and survivor benefits.
- a) In order to avoid overestimating the benefits, especially as regards the retirement of younger contributors, more realistic hypotheses than those normally established would need to be used, or at least a brief sensitivity analysis should be shown.
- b) To prevent the contributor from getting the impression that his benefit will not improve if he contributes for an extra year, Jackson (2005), it would be a good idea to distinguish the amount accrued, and by comparing this year by year with the forecast pension it would lessen the feeling of pointlessness and strengthen the idea of saving.
- c) In order to make it easier for the contributor to calculate the replacement rate, the amounts should be given per annum, thereby clarifying the relationship to the final salary or average of salaries, which are normally shown in annual terms.

point out. The government authorities had systematically denied that the pension system had sustainability problems, a situation which was not helped by the absence of an official actuarial balance.

¹¹ It can be considered unexpected because, according to official information in the MTIN (2008) issued in October 2008, it was forecast that the Spanish public pension system would have no financial difficulties until at least 2029, when in fact the system already had a current treasury deficit in 2010. In Spain there has always been a difference between what the politicians say and what the experts say, as Boado-Penas et al (2011) point out. The government authorities had systematically depied that the pension system had sustainability

- d) In order to improve how the contributor perceives the possibility of the events covered by social security actually happening, he would need to be informed about the likelihood of reaching a particular age (normal retirement age), the likelihood of becoming disabled and the likelihood of dying. Many contributors are "convinced" that certain events will never happen to them, and so there are certain provisions they do not consider worthwhile.
- 4.- As is already the case in some countries, the statement should discriminate according to age rather than have a one-size-fits-all format. Younger contributors, whose retirement pension forecast incorporates a very high level of uncertainty, should be specifically informed of this. The self-employed, who can decide the amount of their pensionable earnings, should be made aware of exactly what this means as regards possible disability and/or death. The estimated retirement pension for older contributors should clearly show the benefits of postponing retirement and the disadvantages of retiring early, assuming the law allows this. Informative meetings could even be held for groups of older contributors interested in this problem area.
- 5.- Risk should be dealt with in a personalized way via the SSA website, with this possibility being referred to in the actual statement. The basic factors that can reduce a contributor's estimated pension in a defined benefit system are that the real contribution bases may be lower than those forecast for a variety of reasons, there may be gaps in contributions due to long-term unemployment, or the system may undergo a reform that could affect expectations, just as happened unexpectedly in Spain in 2011.
- 6.- The actual design of the statement is also important. In general terms the design should be attractive and dynamic, it should be associated with a particular colour, the language should be transparent, simple and accessible and at the same time accurate and concise, and it should have a maximum recommended length of between 4 and 5 pages.
- 7.- Finally, in a second phase in which insurance companies, pension plan managers and friendly societies would work together with the SSA, the individual information on pensions in the public system could be joined by information on the various instruments that complement public provisions, in a similar way to what happens in Sweden. This would enable the contributor to have a complete idea as to his level of risk cover. In order for the contributor to become better informed as to how and why he should save and provide himself with better cover in the face of certain risks, a public website should be set up in collaboration with these companies. It would be designed to show citizens basic questions about how to manage their personal finances, stressing the message that systematic financial savings at the start of working life are the most worthwhile, as pointed out in the statement in Chile, because the effect of time on financial capitalization is exponential when it comes to accumulating capital. This would be also be advantageous for the companies as a way of advertising their products, and for that reason it would not be difficult to obtain their collaboration. It would also be a way of integrating public and private social protection, as Merton et al. (1987) point out.

5.-Bibliographical references

- Berstein, S (2010), "Midiendo el "Riesgo Pensión" y cómo informarlo" presented at the IV Seminar on Social Provisions: Investments, Retirement and Risk. Centro de Políticas Públicas, Pontificia Universidad Católica de Chile, Santiago, 25 August 2010.
- 2. Berstein, S; P. Castañeda, E. Fajnzylber and G. Reyes (2009), Chile 2008: Una reforma previsional de segunda generación. Superintendencia de Pensiones, Santiago de Chile, Chile.
- 3. Biggs, A. (2010), "Improving the Social Security Statement" WR-794-SSA, October 2010.

- Boado-Penas, C, I. Domínguez-Fabián and C. Vidal-Meliá (2007), "Notional Defined Contribution Accounts (NDCs): Solvency and Risk; Application to the Case of Spain". International Social Security Review, 60, 105–127
- 5. Boado-Penas, C.; and C. Vidal-Meliá (2011), "The Actuarial Balance of the Pay-As-You-Go Pension System: the Swedish NDC model versus the US DB model." In "Non-Financial Defined Contribution (NDC) Pension Systems: Progress and New Frontiers in a Changing Pension World". Edited by Robert Holzmann, Edward Palmer and David Robalino. The World Bank and Riksforsakrings Verket. Forthcoming.
- 6. Boado-Penas, C, Settergren O. and Vidal-Meliá, C. (2011), "El balance actuarial del sistema de reparto. Modelo "sueco" frente a modelo "EE.UU.", posible aplicación al caso español. Revista Española de Financiación y Contabilidad. Vol. XL, 149. 97-123.
- 7. Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds (BOT) (2010), 2009 *Annual Report*. Washington, D.C.: Government Printing Office.
- 8. Couch, Kevin and Barbara Smith. (2010), The Social Security Statement: Background and Implementation. Presented at the 1st Annual Conference of the Financial Literacy Research Consortium. Washington, DC: Social Security Administration
- 9. Fajnzylber, E.; G. Plaza and G. Reyes (2009), "Better-informed workers and retirement savings decisions: impact evaluation of a personalized pension projection in Chile" Serie Documentos de Trabajo, 531. Superintendencia de Pensiones de Chile, September.
- 10. Gip Info Retraite (2007), Dossier de présentation du Gip Info Retraite, available at http://www.info--etraite.fr
- 11. Jackson, H. E. (2005), "Accounting for Social Security Benefits" Harvard Law and Economics Discussion Paper No. 520. available from SSRN: http://ssrn.com/abstract=839246 published in Behavioral Public Finance (Edward J. McCaffery & Joel Slemrod eds., 2006).
- 12. Kalliomäki, K. (2010), "Communication on pension rights in Belgium and Finland" In Communication on Pension Rights in Europe, 25 November 2010, Brussels. Finnish Centre for Pensions
- 13. Larsson, L., A. Sundén and O. Settergren (2008), "Pension Information: The Annual Statement at a Glance." OECD Papers, 2008 (3), 129-170.
- 14. Lusardi, A., and O. S. Mitchell. (2006), "Financial Literacy and Planning: Implications for Retirement Wellbeing." Pension Research Council Working Paper 2006-01, the Wharton School, University of Pennsylvania.
- 15. Lusardi, A., and O. S. Mitchell. (2007a), "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education Programs." *Business Economics* 42(1): 34–44.
- 16. Lusardi, A., and O. S. Mitchell. (2007b), "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth" *Journal of Monetary Economics* 54: 205–224.
- 17. Merton, R., Bodie, Z., Marcus, A. J. (1987), "Pension plan integration as insurance against Social Security risk", in *Issues in Pension Economics* (NBER), pp. 147-172. Edited by Bodie, Z., Shoven, J. B. and Wise, D. A. The University of Chicago Press

- 18. Mitchell, O. (1988), "Worker Knowledge of Pension Provisions." *Journal of Labor Economics* 6(1): 28–39
- 19. MTIN (2008), "Estrategia Nacional de Pensiones", Ministerio de Trabajo e Inmigración, October 2008.
- 20. Sailer, M. (2010), "Pension Information in France and Germany. A comparative assessment using the German experience". Social Security Development and Pension Provision Unit Department for Research and Development German Pension Insurance Federal Institute Berlin, Germany
- 21. Social Security Administration Customer Help, SSA (2011), "What is a Social Security Statement?" http://www.ssa.gov/mystatement/
- 22. Social Security Advisory Board, SSAB (2009), The Social Security Statement: How It Can Be Improved.
- 23. Sunden, A. (2009), "The Challenge of Reaching Participants with the Message of NDC" Swedish Social Insurance Agency, November 29.
- 24. The Swedish Pension System. Orange Annual Report 2009. (2010), Ed. Gudrun Ehnsson, Swedish Pensions Agency (Försäkringskassan), Stockholm. http://www.pensionsmyndigheten.se/Publications en.html
- 25. The Swedish Pension System. Orange Annual Report 2007. (2008), Ed. Ole Settergren, Swedish Pensions Agency (Försäkringskassan), Stockholm. http://www.pensionsmyndigheten.se/Publications en.html
- 26. The Pension Service, TPS (2009), "Your pension statement explained" Part of the Department for Work and Pensions.
- 27. Usuki, M, K. Nakajima, and T. Kitamura (2006), "Improving the Public Pension Statement—Suggestions Based on Survey Results". Pension Forum, Financial Research Group.
- 28. Vidal-Meliá, C., M.C. Boado-Penas and O. Settergren (2010), "Instruments for improving the equity, transparency and solvency of pay-as-you-go pension systems: NDCs, ABs and ABMs." Chapter 18 in M. Micocci, G. N. Gregoriou and G. B. Masala, eds., *Pension Fund Risk Management. Financial and Actuarial Modelling.* Chapman & Hall/CRC Finance Series.
- 29. Vidal-Meliá, C., M.C. Boado-Penas and O. Settergren (2009), "Automatic Balance Mechanisms in Pay-As-You-Go Pension Systems". *The Geneva Papers on Risk and Insurance: Issues and Practice.* 33 (4), 287-317.
- 30. Vidal-Meliá, C., I. Domínguez-Fabián and J. E. Devesa-Carpio (2006), "Subjective Economic Risk to beneficiaries in Notional Defined Contribution Accounts (NDC's)". *The Journal of Risk and Insurance*, 73, 489-515.

Appendix 1.- Example of the US model



Prevent identity theft-protect your Social Security number

Your Social Security Statement

www.socialsecurity.gov

Prepared especially for Wanda Worker

August 16, 2010

WANDA WORKER 458 ANYWHERE AVENUE MAINTOWN, USA 11111-1111

What Social Security Means To You -

This Social Security Statement can help you plan for your financial future. It provides estimates of your Social Security benefits under current law and updates your latest reported earnings.

Please read this Statement carefully. If you see a mistake, please let us know. That's important because your benefits will be based on our record of your lifetime earnings. We recommend you keep a copy of your Statement with your financial records.

Social Security is for people of all ages...

We're more than a retirement program. Social Security also can provide benefits if you become disabled and help support your family after you die.

Work to build a secure future...

Social Security is the largest source of income for most elderly Americans today, but Social Security was never intended to be your only source of income when you retire. You also will need other savings, investments, pensions or retirement accounts to make sure you have enough money to live comfortably when you retire.

Saving and investing wisely are important not only for you and your family, but for the entire country. If you want to learn more about how and why to save, you should visit www.mymoney.gov, a federal government website dedicated to teaching all Americans the basics of financial management.

About Social Security's future...

Social Security is a compact between generations. Since 1935, America has kept the promise of security for its workers and their families. Now, however, the Social Security system is facing serious financial problems, and action is needed soon to make sure the system will be sound when today's younger workers are ready for retirement.

In 2015 we will begin paying more in benefits than we collect in taxes. Without changes, in 2037 the Social Security Trust Fund will be able to pay only about 78 cents for each dollar of scheduled benefits.* We need to resolve these issues soon to make sure Social Security continues to provide a foundation of protection for future generations.

Social Security on the Net...

Visit www.socialsecurity.gov on the Internet to learn more about Social Security. You can read publications, including When To Start Receiving Retirement Benefits; use our Retirement Estimator to obtain immediate and personalized estimates of future benefits; and when you're ready to apply for benefits, use our improved online application—It's so easy!

Michael J. Astrue Commissioner

* These estimates are based on the intermediate assumptions from the Social Security Trustees' Annual Report to the Congress.

http://www.ssa.gov/mystatement/currentstatement.pdf

Appendix 2.- Example of the Orange Envelope, Sweden

Swedish Pensions Agency

Demo Person

2011

Your National Public Pension

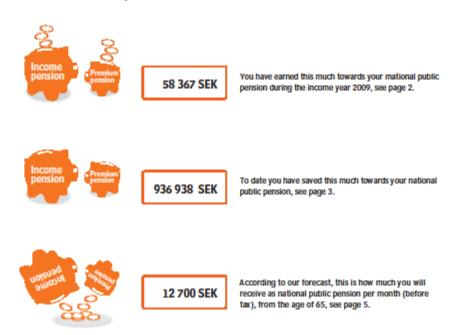
- part of your total pension

This annual statement is about Sweden's national public pension system. Besides the national public pension most wage earners receive an occupational pension through their employer. This means that your total pension will be greater than is shown here.

At www.pensionsmyndigheten.se/prognos you can make forecasts which also include the occupational pension and a possible private pension. The forecasts are made in co-operation between the state and the pension companies.



A short summary of the contents



Your public pension can be up to 10 percent greater for each year that you postpone your retirement.

①

http://www.pensionsmyndigheten.se/download/18.751693cb12c7dc5ab9580006189/%C3%85B11+standard+engelska.pdf