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Ageing and pension rights

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1. Introduction

Ageing does not come unexpected. In most developed countries, after a brief increase after World War II, fertility rates have been declining steadily since the sixties of the previous century. Furthermore, medical and health care technology has improved impressively the last fifty years, meaning people will live longer. Consequently, the ratio between the elderly and the younger generations is shifting in favour of the elderly. In the years ahead of us, these elderly individuals are about to reach the retirement age. This means that a significant number of people will claim their pension rights to replace income from labour. Due to the lowered fertility rate, those that have retired will not be replaced entirely within the labour population. They will also live longer, thus receiving more pension benefits than generations before them did. Hence, ageing might place a burden on the sustainability of national pension systems and government finances, as more people than ever before expect to receive an old age income while the number of people within the labour population who support a pension system through tax and benefits remains roughly equal.

The above is applicable to The Netherlands as well. The fertility rate for Dutch women has dropped from 3.97 in 1946 to 1.73 in 2004[1]. In addition, the life expectancy for men has improved from 71 years in 1946 to 77 in 2004, while the life expectancy for women has improved from 69 years in 1946 to 81 in 2004. For both men and women, these current life expectancies have been predicted to increase by 2 years for 2040. The current population is 16.3 million and is expected to stabilize at around 17 million shortly after 2020 until at least 2050. The current labour population is 10.9 million and will remain stable at 10.8 million until 2020, then drop slightly towards 10.1 million by 2040.

In stark contrast is the rise of the population of elderly, i.e. those of 65 years and older. Today, there are 2.3 million persons who are above 65. In 2020 there will be 3.2 million elderly persons, and in 2040 there will be 4 million people older than 65. This means in 2040 there will be 1 elderly person for every 2.5 persons within the labour population. This ratio today is 1 elderly person for every 4.7 persons within the labour population. After 2040, for The Netherlands at least, the population bubble will have disappeared from the demographic distribution, so that a new equilibrium within this distribution can be established. Until that time, ageing is here to stay and presents us with the challenge to absorb the effects of a changing demographic distribution.

Whether ageing will have such a widespread financial and societal impact as the numbers suggests is yet unclear. However, with regard to the pension system and the associated pension rights and old age income provisions, it would not be unreasonable to question the sustainability of government finances and the pension system over the coming years (CPB, 2006). On the one hand there is an increased output in the form of more and higher pension benefits, as more people retire who will also live longer. On the other hand there is a slightly decreasing input, as the labour population who will pay taxes and contributions shrinks. So, that ageing will influence Dutch government finances and the pension system is clear, but it is not clear how far reaching this influence will be. This in turn depends on other aspects related to ageing and the pension system, which will be discussed further on in this paper.

Detailed information is required to be able to adequately predict how ageing will affect government finances and the pension system, and what measures need to be implemented to mitigate the effect of ageing. Hence, we advocate the need for a comprehensive and detailed statistic in which information is presented that indicates the pension rights for demographically characterized groups of the labour population. A pension right is the claim an individual has towards a future pension benefit or old age income. A pension right of 1,000 euro indicates that an individual is ensured of a yearly income of 1,000 euro when he or she reaches the retirement age. With this statistic is becomes possible to know

[1] If no source is given, figures within this paper come from Statistics Netherlands, and can be found in StatLine, the statistical database of Statistics Netherlands.

which groups can expect to achieve a sufficient old age income, and which groups can be expected to fall short of the norm and require assistance. This will give an indication of the financial reserves required to provide the general population with an adequate pension. Furthermore, an important use of this pension rights statistic is as a foundation for policy decisions and introduction of changes within the broad area of old age provisions and labour affairs.

The Dutch pension system is build on three pillars, and as such is similar to that of many developed countries. The first pillar consists of a basic state pension, based on a pay-as-you-go (PAYG) defined benefit, financed from taxes and linked to the minimum wage, with a fixed retirement age of 65. Because of the PAYG nature of this pillar, it is the first pension pillar which attracts the most attention when it comes to the financial future of the pension system. The second pillar consists of labour-related pensions with a flexible retirement age, organised mutually and mandatory by employers and employees on the firm- or sector level. Traditionally a strong pillar within Dutch society, this pillar is the mainstay of the pension system and is fully funded. The third pillar is made up of individual arrangements to provide an old age income. As such, it is the open end of the Dutch pension system. The main focus with regard to the effects of ageing on the pension system lies on the first and second pillar.

In the remainder of this paper we will briefly describe the perceived financial and societal effects of ageing that has fuelled political discussions and public debate. In section 2 we will detail these effects, what has been done and what can be done to mitigate the effects of ageing, and discuss the relation between ageing and specific elements of the Dutch pension system. Section 3 describes the current status of the Dutch pension system and the old age income for current pensioners is detailed. In section 4 we will present the current state of affairs for the pension rights statistic, for all three pension pillars, and describe the methodology employed to gather data and construct the statistic, as well as some of the analysis that underlie this statistic. In this section is also given an examination of the expected benefits of the first pillar for the current labour population, derived from the first completed part of the pension rights statistic. A summary and concluding remarks for discussion are given in section 5.

2. Ageing, its effects and proposed countermeasures.

The reality of ageing and the effect the ageing process will have on the demographic distribution are clear. In the years to come, compared to the labour population, the number of people over the age of 65 will increase, and they will also live longer. But beyond that, although it is the subject of intense debate, the effects ageing will have on Dutch society are of yet unclear. A number of studies and reports have been presented in which these supposed effects are detailed (e.g. CPB, 2006; Knaap, Bovenberg, Bettendorf & Broer, 2003; SER, 2005). The main focus in those studies lie on the macro-economical aspects of ageing, i.e. the sustainability of government finances and the pension system. But equally important and related to this is the micro-economical effect of ageing, i.e. provisions for a sufficient current and future income of the elderly, the societal effects of ageing and the labour market.

In an attempt to moderate the financial effects ageing can have on government finances and the sustainability of the pension system, almost anyone ranging from the government, political parties, scientists, advisory institutions, financial institutions and everybody else remotely involved have suggested or implemented measures to reduce the effects of ageing. The Netherlands Bureau for Economic Policy Analysis predicts that a surplus of approximately 4.5% of the Dutch GDP on the structural government balance is required to achieve an equilibrium for the effects of ageing (CPB, 2006). In this section, the debate for each of these themes will be briefly presented, along with the hypothesized results of the measures involved. These themes are the future pension provisions, labour market, government finances and inter- and intragenerational solidarity. Below, we have grouped effects and measures per theme.

2.1 Future pension provisions

Most concerns are directed entirely at the first pillar, the basic state pension, which is based on a PAYG-method and financed wholly from taxes paid by the labour population. As the number of elderly who are entitled to this form of social security increases, something needs to happen to balance the premium income and expenses for the first pillar. In 1994 this difference was only 500 million euro, while in 2004 this difference has risen to nearly 4,000 million euro. The gap between premiums received and benefits paid out will increase even further the next few decades. An option would be to reduce benefits, either in height or in duration. As the basic state pension is linked to the minimum wage and thus the minimum financial standard of living, the height can not be reduced, unless the link between minimum wages and social benefits is disconnected. This way, the basic state pension will lag behind the wages, and thus will cost relatively less over the years.

The duration of the basic state pension can also be limited, by increasing the official retirement age with a number of years. The rationale behind this is that when the basic state pension was instituted, life expectancy was less than it is now, so the elderly nowadays receive benefits over a longer of period of time. In 1957, at the age of 65, the life expectancy for males was 78, while for women it was 80. Today, those at the age of 65 have a life expectancy of 80 for males and 83 for females. Increasing the retirement age would 'repair' this effect of ageing, and have those who would have otherwise retired at 65 pay a few years more worth of benefit. Suggestions for the new retirement age range from 67 to 70. The Netherlands Bureau for Economic Policy Analysis predicts that raising the official retirement age will decrease the above mentioned sustainability gap of 4.5% of GDP with more than 0.5% (CPB, 2006).

Instead of reducing the benefits it is also possible to increase the input from premiums for the basic state pension. This can be done by either increasing the premiums paid by the labour population as the premium percentage for the labour population with an income is now fixed at nearly 18% limited to the first 30,600 euro, or charging premiums to those who already receive the basic state pension, i.e. the over 65's. Elderly who are over 65 and thus receive the basic state pension are exempted from paying premiums for the basic state pension. Recently, it has been suggested that elderly who have a large enough income or wealth from the second or third pillar, should help counter the cost of ageing, as the basic state pension is a social security provision, a last resort for those with insufficient means. The Netherlands Bureau for Economic Policy Analysis predicts that extending payment of premiums for the basic state pension to those above 65 will decrease the above mentioned sustainability gap of 4.5% of GDP with 1% (CPB, 2006).

This gap between premiums and benefits is less of an issue for the second pillar, since this pension pillar is fully funded. During their working years, employees pay premiums for their own old age pension. Pension funds and pension insurance companies manage these pooled premiums, and with actuarially-based subsidiary collectivism are able to provide their members with a sufficient old age pension. The norm for an old age pension to be considered sufficient in The Netherlands is 70% of an employee's final wage, including the basic state pension, although the ongoing shift from end-wage pensions to middle wage-pensions makes this difficult. But even the fully funded second pillar is under pressure from ageing. More employees will retire the coming years, thus forcing the pension funds and pension insurance companies to sell off investments to provide more pension benefits. Due to the buffer effect of being funded, the gap between premium income and benefits expenses is of less significance, but still something that requires attention, as pension funds are forced to sell their investment to pay benefits. Knaap et al. (2003) state that given the current rate of return on investment and current level of premiums, combined with pension reserves managed by pension funds, future provisions for pensions will be insufficient to fully index-link pension benefits to wages. While the labour population and the premiums they collectively pay will remain approximately at the same level, the benefits paid to pensioners will rise over the coming years. The investments pension funds will have to sell off to pay

for these benefits which will have an influx of capital into the international market. In turn, more capital leads to a lower rate of return on investments, which means a lower value of the provisions pension funds keep to pay for future pensions. This can result in an increase in premiums employees will have to pay to keep provisions on a sufficient level. All in all, for the second pillar, ageing is the possible starting point for a chain of events undermining the sustainability of the second pillar.

2.2 Government finances

Apart from the basic state pension, other government expenses are being affected by ageing as well. Health care expense for example grows as people get older and medical treatments get more specialized and thus more expensive. More elderly people mean a higher collective health care expense. This becomes clear when we examine the total public health care expense, which has grown from 3,300 million euro in 1997 to 7,900 million euro in 2003.

The cost of ageing not only includes the pension system, health care and additional requirements for the increasing number of elderly (e.g. housing). To maintain the integrity of government finances, and limiting debt and deficit, either additional income or cutting down on expenses is required. Nearly the only method for the government to increase income is by generating or raising taxes. One way of generating more taxes is by having more people work via increased labour market participation, partially to replace the elderly that retire. An additional effect of this is a drop in unemployment benefits for the unemployed. This way, the formerly unemployed no longer need social benefits, reducing pressure on government finances, while they now pay taxes, increasing government income. The expenses of social benefits, both in unemployment benefits and social welfare, are nearly 10000 million euro. A significant drop in social benefits will help pay for the gap between premiums and benefits of the basic state pension. Hence, increased labour market participation may be a positive effect of ageing.

Another alternative is stimulating child birth and immigration, to increase the future labour population. Although this appears to be positive at first, as a larger labour population means a higher tax and premium income, in the long run it would be detrimental to government finances (Knaap et al., 2003; Derks, Hovens & Klinkers, 2006). The Musgrave criterion (Musgrave, 1986) states that future generations too should receive a positive net benefit from the government (e.g. schooling, old age pensions). Hence, a larger future generation would cost more than they would contribute to government finances and to the sustainability of those finances. It is easier for governments to reduce spending. The Netherlands bureau for Economic Policy Analysis has calculated that within the next government term, 15000 million euro needs to be saved from government expenses (CPB, 2006).

2.3 Labour market

Ageing affects the labour market as well. Those that will retire in the coming years will not get adequately replaced by youngsters within the labour population, leading to a (slight) drop in the size of the labour population. This may hamper economic growth, as a shortage of personnel occurs. It is even possible unemployment may shift from being a quantitative issue (not enough jobs for the labour population) to a qualitative issue (Derks, Hovens & Klinkers, 2006). When unemployment is qualitative, those that are unemployed do not match on the requirements and skills the labour market demands. Re-education is needed to enable the fit between labour population and labour market. To remedy this, both the size of the labour population and the active part of the labour population may need to be increased, e.g. more employees who are willing to work full-time instead of part-time.

Apart from raising the official retirement age, the current government has dedicated themselves to eliminating early retirement schemes to encourage people to work longer. In addition, they have tried to get more of the elderly of the age group between 55 and 65 to work. The idea behind this is that elderly

who work a) pay pension premiums and receive no pension benefits, b) a growing economy with an ageing population needs every man and woman within the labour population.

The Netherlands Bureau for Economic Policy Analysis predicts that an increased labour participation of the elderly will decrease the above mentioned sustainability gap of 4.5% of GDP with nearly 0.5% (CPB, 2006). However, research shows that employees still want to retire early after a working life of 40 years, where 63 is the preferred age (Randstad, 2006). Employers on the other hand are afraid that elderly employees will be on sick leave more often due to their age and associated health problems, and prefer younger, cheaper employees. So the theory of working more and longer may sound solid, the practicality of it may be unmanageable. In addition, there is also criticism on the proposition that working more and longer is essential to achieve economic growth (Derks et al., 2006). Most (75%) of our economic growth and material well-being in previous decades has been achieved by (technological) productivity increases due to smarter and more efficient working processes, not by working more and longer. Economic growth only serves to enhance material well-being, while economic stability maintains our material well-being at its current level. This raises the philosophical question whether we really need more material well-being, or that we should be happy with what we have now. Furthermore, economic growth and material well-being may be pleasant for people, it certainly won't be for the environment and Earth's natural resources.

2.4 Inter- and intragenerational solidarity

Although societal effects of ageing fall outside the scope of this paper, we like to mention one issue that can affect solidarity between generations. With the number of pensioners approaching 4 million, and bearing in mind that there will also be approximately 2 million people in the age category between 55 and 64 with an interest in retirement issues, this means that out of a population of 16 million, nearly 6 million will be retired or close to retirement. As a significant portion of the Dutch population is above 55, and the distribution of income and wealth is unevenly distributed in favour of these above 55, it is possible that the Dutch economy becomes geared towards the elderly, their needs and interests, with possible detrimental results for other age groups. Examples of this are specialized health care and housing for the elderly, whereas other age groups need those subjects too. Furthermore, the age group of above 55 has the power to make it happen. Those below 18 (almost 4 million) are not eligible to vote, thus increasing the percentage of people above 55 to almost 50% of the voting population. That is a large power block, even more so if we assume that those between 18 and 55 years of age are more heterogeneous than the age group above 55. After all, for the latter retirement and an old age income is much more salient than it is for those below 55. Any political intervention or other real or perceived act against their interest can be stopped or even turned in their favour. Ageing and its financial effects can thus lead to a schism between population groups.

This intergenerational solidarity comes into play as increasing taxes and/or saving government expenses raises an all-important question: who is going to pay the bill? Most policy measures suggested have effects for particular demographic groups. A direct or step-wise increase of the official retirement age means the labour population has to work longer, while those already retired remain unaffected. Scrapping the exemption for paying premiums of those over 65 leads to a lowered old age income for this group, while the labour population remain unaffected. Allowing the age group between 55 and 65 to retire early means an increased pressure on pension funds and thus higher pension premiums for those on the labour market who are below 55. In all, the intergenerational solidarity that has formed the foundation of the Dutch pension system is under pressure. An example of this is the formation of a new union for younger people, as a reaction to existing unions who have a largely older (45+) generation of members. In recent negotiations with the largest pension fund, ABP, and the government, these traditional unions have opted to protect pension privileges for older workers, which has lead to higher pension premiums for younger employees. When suggesting measures to achieve the sustainability of government finances and the pension system, it is vital not to deviate too far from the Musgrave

criterion for intergenerational distribution (Musgrave, 1986). Each generation should receive a constant net benefit from the government relative to their income. If this relation becomes skewed over generations, intergenerational solidarity will suffer.

But it is not just intergenerational solidarity which is under pressure, it is also the solidarity between rich and poor that is showing signs of cracks. It is expected that differences in income and wealth between the elderly will increase in the period until ageing reaches its peak around 2038 (SER, 2005). The elderly as a group will get wealthier than ever before, due to incomes from the second and third pillar, but several categories of the elderly who have not had a paid job for a large part of their lives (e.g. disabled) or have had a low-income job do not benefit from this. The same applies to differences between incomes within the younger generation. Those with a high enough income will be able to save for an early retirement, while those with a low income will be forced to work until the official retirement age.

To summarize, if the sustainability of the pension system and government finances is under such pressure that changes are needed, these changes may well affect the height of pension benefits the elderly will receive. The effects of ageing make it necessary to be able to understand and predict the current and future income of the elderly. The pension rights statistic that Statistics Netherlands is compiling partially helps to shed light on this. Whether something needs to be done, if so, what measures must be taken, and whether ageing is a blessing or a curse, remains an issue of lively debate.

3. Where we are today.

Any policy measure to counter the financial effects of aging will have to be founded on reliable information, either detailing the present situation as well as the predicted future. The pension rights statistic which Statistics Netherlands will set up can be used to review and predict the income of future generation of pensioners. We plan to integrate this pension rights statistic into the Dutch national accounts.

As a starting point for the pension rights statistic, the Dutch national accounts contain macro-economic information on the current financial status of the pension system. As the first pillar, the basic state pension, is based on PAYG, the national accounts detail the premiums paid by the household sector to the government sector, and the benefits paid by the government sector to the household sector. As indicated earlier, the gap between the two has grown over the last ten years to nearly 4,000 million which is more than 17% of total benefits paid. The average state pension per pensioner is almost 10,000 euro, while the average premium paid per head of the labour population is almost 1,750 euro. The part of the pension rights statistic that describes in detail the first pillar is already completed, and will be discussed further in the next section.

3.1 Macro-economic aspects of the Dutch pension system

The second and third pillars of the pension system are funded, and as such are represented in the national accounts as well. It is here the strength of the Dutch pension system becomes clear. The second pillar, which is fully funded and founded on the Pension- and Savings Law which states that it is mandatory for employers to provide their employees with the opportunity to build up a pension based on their occupational contract. These pensions are administrated and managed by pension funds, of which there are more than 800 in The Netherlands. Pensions can also be administrated and managed by pension insurance companies, of which there are approximately 80 in The Netherlands. The percentage of people of the active labour population who participate in an occupational pension scheme is approximately 90% (SER, 2002). The remaining 10% consists of self-employed individuals, temporary workers and employees who as a consequence of specific regulations build up no pension. The funded nature of the mandatory collective labour related pension provisions has resulted in a very large sum which can be used for future pensions of the elderly. The goal of the second pillar is to provide retired

employees with 70% of their final wage (including the basic state pension). The table below indicates the sum of premiums paid and benefits received, as well as total provisions for future pensions, for the previous ten years.

Table 1. Indicators of second pension pillar, in million euro.

Year	Premiums employer	Premiums employees	Pension Benefits	Pension Provisions	Individual savings with pension funds and insurance companies.
1995	7272	22878	12874	242900	374100
1996	7790	23843	14039	265200	422600
1997	8355	25343	14794	282500	478800
1998	9702	27105	15737	302900	538800
1999	10439	27723	17482	334800	617300
2000	12178	27533	19381	375500	641700
2001	14531	27023	20881	385900	638700
2002	18173	26527	22809	434300	628600
2003	20921	28413	22142	468300	679100
2004*	23446	29993	23271	454700	736700

* indicates a provisional figure.

Table 1 indicates that pension premiums paid by employees have risen steadily over the years, as a result of wage increases. Premiums paid by employers have tripled the last decade, which may have been the result of the booming economy in that period and formal agreements between labour unions and employer organisations. Employers could have used premiums for pensions as a job incentive. Benefits too have risen over the last ten years, perhaps as a result of wage increases, as well as more and more retirees who have arranged to have an additional pension income for themselves during their working years. For 2004, the average additional pension income per retired individual is slightly more than 10,000 euro. Together with the basic state pension, the average pensioner receives nearly 20,000 euro. This is an overestimate, as the number of persons who retire while not yet having reached the official retirement age of 65 is quite large in The Netherlands, and do not benefit from the state pension yet. For the last known year, the volume of provisions for pensions in the second pillar managed by pension funds is almost 455,000 million euro. The provisions for pensions in the second pillar managed by pension insurance companies adds another 73,000 million euro to that (CVS, 2005), making the sum of provisions for second pillar pensions a grand total of 523,000 million euro. That is 1.2 times the Dutch Gross National Product. Over the years until ageing reaches its peak around 2040 many millions of this large sum of pension provisions will be paid out to pensioners.

The volume of pension provisions grows into an even more impressive figure if life insurance provisions are included. Over 2004, pension funds and pension & life insurance companies managed and administrated more than 736,000 million euro (5th column, which includes the 6th column). Not all of that money will fall within the scope of the second and third pillar, as for example mortgage related life insurances or funeral insurances are not part of the third pillar. It still indicates that the Dutch have saved an enormous amount of money to provide for their old age. Of course, it is not known which individual receives what part of the overall total. The strength of the pension rights statistic will be that certain weak and strong demographic groups from within the larger population can be identified with regard to their pension rights. For this pension rights statistic, the macro-economic figures given here will be used as upper boundaries to which the individual pension rights for the various pillars should sum up. As a precursor, it is possible to detail the pension income for a few demographic groups of elderly persons. This information can be used as a baseline income distribution to which the pension rights distribution within the pension rights statistic can be compared.

3.2 Old age income of the elderly

As a precursor for the pension rights statistic, which details future old age incomes, we will examine the old age incomes for the current generation of elderly. The income of those above 65 will for the largest part consist of the basic state pension and an additional pension from the second and third pillar. Figure 1 below indicates the ratio between state pension and additional pension for various demographic groups of pensioners.

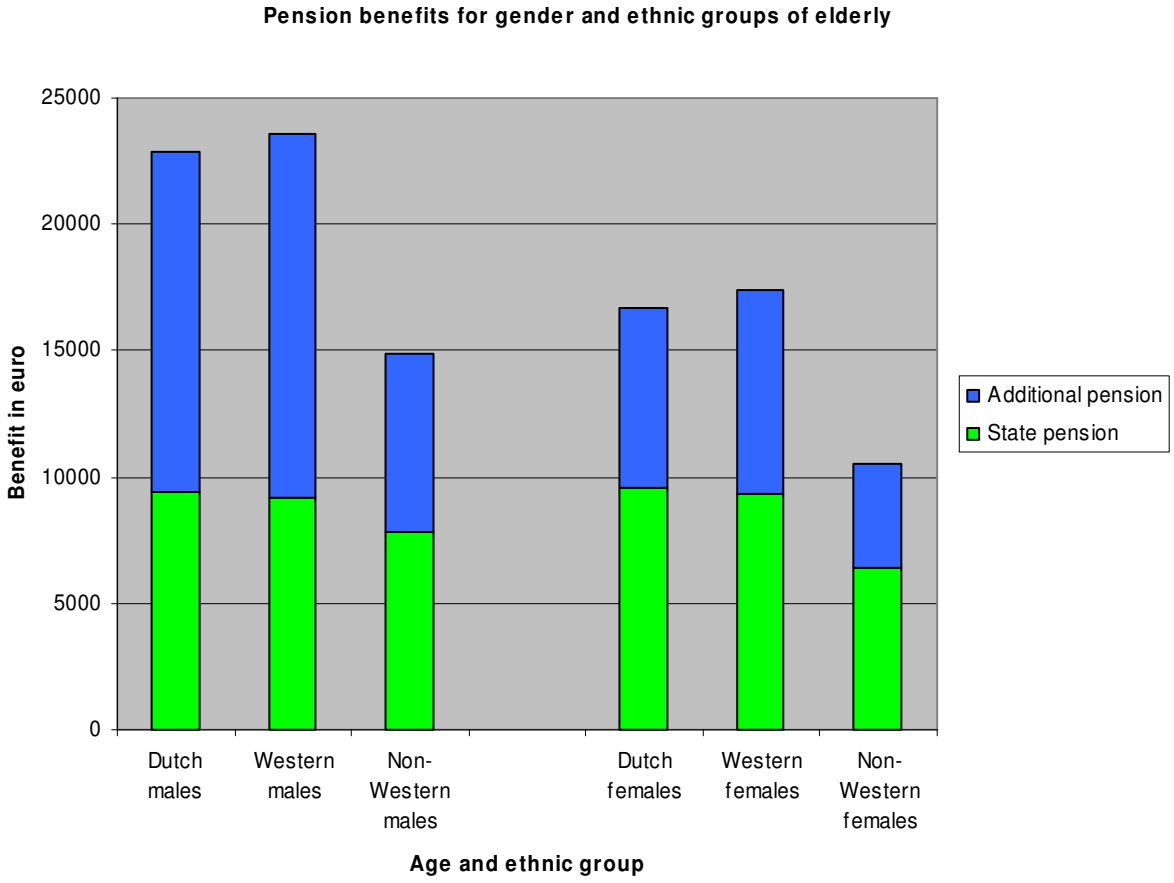

Figure 1. Income components per demographic category.

Figure 1 leads to a few observations. While Dutch natives and Western foreigners have a nearly similar and complete basis state pension, non-Western foreigners have less than the full basic state pension, as a result of an incomplete build up of pension rights. It are especially the non-Western women who have a low basic state pension. As men are traditionally those who have had a paid job, they have a higher additional pension than women do. It is also clear that while the native population and immigrants from Western countries in general receive an adequate old age pension, immigrants from non-Western countries do not. This is especially true for women, who are at the wrong end of several factors. First of all, immigrants do usually not build up the full state pension, since they arrived after the age of 15. Non-Western immigrants have mostly had low-paying jobs, with a matching low build-up of pension rights. In some cases, they did not build up any pension at all. And this is certainly true for non-Western women, who mostly came here for family reunion purposes. Thus, it will be mostly non-Western immigrants who are in danger of having an old age pension below the Dutch poverty line. But this is a real danger for other groups of pensioners too, as Figure 1 only gives an average. Recently there has been increased attention for impoverished pensioners with only a basic state pension without additional

pension, as this group of people is one of the worst hit by the current economic recession. This is even worse for single elderly, as they have a lower average additional pension than households with an elderly couple. In 2004 there are approximately 298,000 households, of which 167,000 are single elderly households with no additional pension income. Seven percent of those above 65 fall below the low-income line, which is 10.200 euro for single elderly and 14.000 euro for elderly couples (SCP, 2005).

3.3 Old age income and early retirement

However, concerns are not limited to the group of pensioners above the age of 65 and the pressure they place on the sustainability of the pension system. As was indicated in the previous section, attempted measures to counter the financial effects of ageing are directed to lower the number of employees below 65 who retire early, and to increase the labour participation of women. To begin with the latter, the above has shown that elderly women in general, and elderly single women in particular have a low pension income. Partial reason for this is that the participation grade of women within the labour population has only increased gradually over the last few years. Within the labour population per 2005 62.3% of men have a paid job. For women, this is only 44.3%. In addition, many women (73,2% of women who have a job) have a part time job which leads to a lower pension build up. Of all men with a job, only 20,9% has a part time job. This also has an adverse effect on the future of the pension system; the participation of both men and women within the labour population is required to contribute premiums for the first and second pillar, so that the gap between premiums and benefits does not become too large.

The same applies to the group of people just below the retirement age. Although the official retirement age is 65, few persons actually retire at 65. Early retirement is immensely popular within the Netherlands, and although the current government has tried to discourage people from early retirement by cancelling most advantageous fiscal and labour related policies, employers and employees have found other methods to sustain early retirement. Of the age group between 55 and 59, 72.2% of the men and 38.3% of the women still have a paid job which is in line with overall figures of participation within the labour population. But for the age group between 60 and 64, participation drops of sharply. Only 25.1% of the men and 11.5% of the women within that age group have a paid job. Even if we consider other factors such as unemployment or being otherwise unable to work, it is still clear that early retirement is very attractive to many elderly employees. But early retirement also places pressure on the second pillar, as benefits need to be paid out, and paid out for a longer time as well. In addition, those within the age group between 60 and 64 who do retire will no longer contribute to building up pension rights, leaving that burden to the younger generation. In this light, the intergenerational solidarity which is the basis of our pension system discussed in the previous section may be threatened. But also those between 60 and 64 might suffer from the detrimental financial effects of early retirement (SCP, 2005). Before receiving the basic state pension at 65, it will be difficult to sustain a decent income with only an early retirement pension benefit. The average income of those retired before the age of 65 is 21,800 euro a year. This average also means that a substantial part of this group has a lower income, bordering on the minimum standard of living. Five percent of the older population within the category 55-64 years fall below the low-income line as a result of early retirement (SCP, 2005).

4. Foundation of the pension rights statistic.

The pension rights statistic will be based on data about the pension rights the labour population has build up so far. These data on pension rights will be on an individual level, and will be linked to individual demographic characteristics derived from the Central Register of Population and other databases. These demographic characteristics are gender, age, ethnicity, income and education level. When all data on pension rights has been collected and linked, we will have a micro-level database for the entire labour population residing within The Netherlands. These pension rights will then be aggregated on the various demographic characteristics to specify a number of population groups, for

which several index numbers on pension rights will be calculated, such as the average, distribution indices and normative deviation. Statistics from the national accounts serve as upper sum totals for the pension rights statistic. A basic example of what the pension rights statistic contains is shown below in table 2.

Table 2. Example of pension rights statistic

	Etnicity									
Gender	**Male (or single person household)**					**Female (or multiple person household)**				
Age group Income	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**
0-10.000										
10.000-20.000										
20.000-30.000										
30.000-40.000										
40.000-50.000										
50.000 or more										
Total										

As discussed before, specific statistics from the pension rights statistic can be used by policy makers and others involved with ageing to identify demographic groups that appear to have insufficient pension rights to ensure a decent old age income in the future. With that particular knowledge, action can be taken to prevent that from happening. In a wider perspective, the pension rights statistic will clarify what financial input may be required to enable a sufficient old age income for all, and which demographic groups can be asked to contribute to this cost of ageing. The strength of the pension rights statistic is that we will be able to provide detailed information on all three pillars. The first pillar, which detailed pension rights for the basic state pension, has been completed. The statistics for the second and third pillar are still under construction, and are expected to be completed early 2007. In the next subsections, we will discuss some methodological issues regarding these two pillars. First we will present the results of first pillar statistic.

4.1 Pension rights within the first pillar

Although the largest part of the pension rights statistic is still under construction, the first pillar or basic state pension has already been completed. The basic state pension is a PAYG-financed lump-sum benefit linked to the minimum wage. A retired couple over 65 both receive 50% of the minimum wage, a single elderly receives 70%. Premiums are paid by everyone who has an income within the Netherlands. Pension rights for the basis state pension are build up between the age of 15 and 65. This comes down to a build-up of 2% pension rights per year, with a maximum of 50 years. Most Dutch people will succeed in building up the full 100% of pension rights for the basic state pension, just by living in The Netherlands for their entire life. But there are a number of reasons why some people do not acquire the full 100% of pension rights. There are four causes for partial entitlement to a basic state pension. People may not have been able to build up a full pension entitlement because:

- They do not or did not live in the Netherlands for a number of years between the ages of 15 and 65;
- Refusal to pay premiums;
- They are a resident of The Netherlands but employed outside The Netherlands and thus pay wage tax in the country of employment (cross border workers);
- They are employed by an organisation falling under international law, and are covered by social insurance of that organisation.

The first two reasons account for by far most of reduced entitlement, although it is possible to voluntarily contribute and pay premiums for an individual if he or she has missed a few years in the past. The first pillar pension rights statistic is based upon information provided by the Social Insurance Bank which were linked to population registers with demographic characteristics of the entire labour population. Pension rights build up by the labour population could not be expressed in a quantitative amount of money, since the actual amount of money a pensioner would receive at the age of 65 can change due to future legislation and the height of the minimum wage. Furthermore, expressing claim to an old age pension in a monetary value would require these claims to be entered into the national accounts. A solution was found in expressing an individual's pension right in a percentage of what he or she could have build up if they were eligible to participate in the build up of pension rights within the first pillar, coupled to the actual number of years he or she has contributed. Thus, a 45-year old person could have build up pension rights for 30 years. Had he or she lived abroad for 3 years, that individual would have build up pension rights for 27/30=90% of the basic state pension.

This statistic identifies demographic groups within the labour population who are at risk of building up insufficient pension rights for the basic state pension. Knowing which groups these are, and what their gap in pension rights is, can be a precursor for necessary policy measures to prevent poverty as well as what amount of money may be required to fill this gap via other social security institutions. Below selected results form the first pillar pension rights statistic are presented. However, these results should be interpreted with care. Old age income is a matter of three pillars, not just the basic state pension. It may well be that those with insufficient first pillar pension rights have secured large enough income components from labour and individual related retirement incomes. Conversely, a full first pillar pension right does not automatically mean a sufficient old age income. A full basic state pension without second or third pillar contributions is just a step away from the poverty line. The results serve as examples of what a complete pension rights statistic can contribute to the ongoing discussion on ageing and old age income.

Of the labour population in 2004, 13% had some level of incomplete pension right build up, whereas of the current pensioners only 7% are not entitled to the full amount (Verschuren, 2006). Thus, it is to be expected that a larger part of future pensioners will have an incomplete basic state pension than is the case today. In Figure 2 it can be seen what the average pension right build up is for the first pillar, per age, ethnicity and gender category.

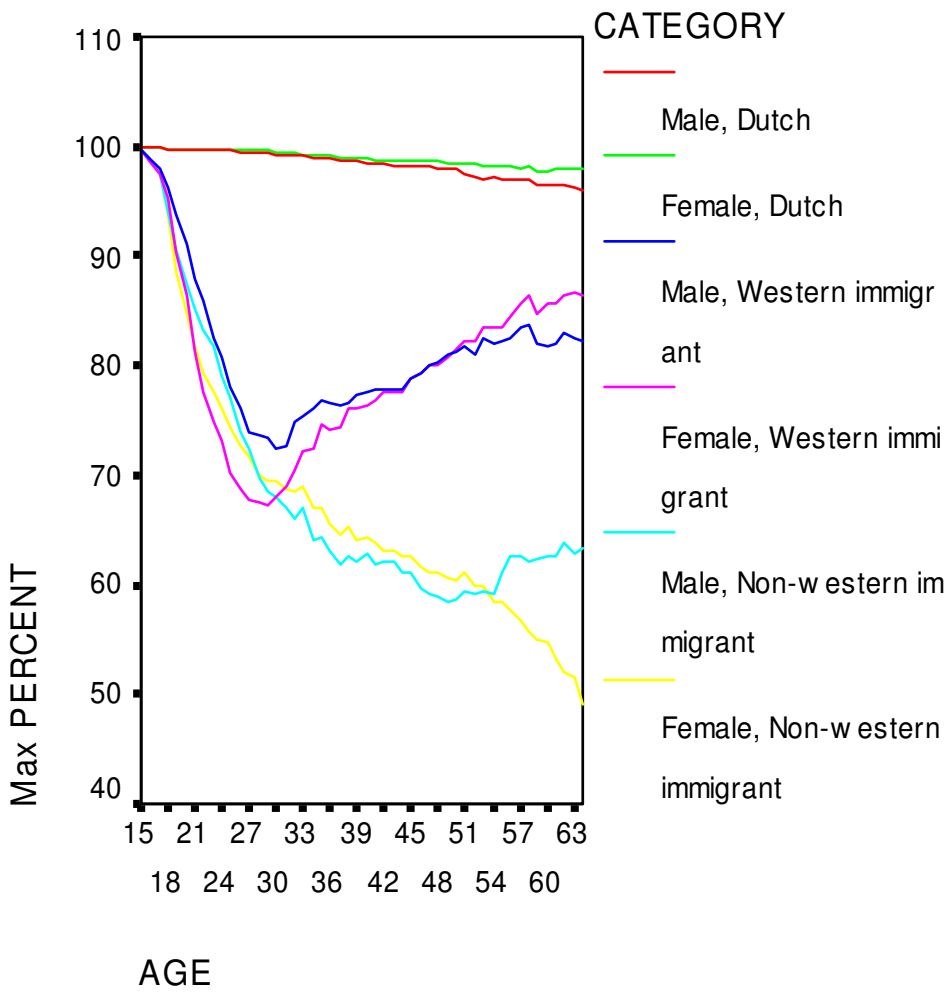

Figure 2. Basic state pension rights in percentages of maximum possible build up.

This figure shows that for the native Dutch population there is a slight but negligible drop in the build up of pension rights for the first pillar. Apparently there are a small number of native Dutch people who do not have full pension rights for the basic state pension, a number which increases for older age year-categories. This does not come as a surprise, as older people have had more opportunities to move abroad and back for work or other purposes. There is also a minor difference between native Dutch men and women in the build up of pension rights. An explanation for this may be that men move around more for work. But overall, it appears that most of the native Dutch population will receive close to a 100% of the basic state pension. The full pension rights statistic will be able to differentiate in more detail differences in pension rights between various demographic categories. Immigrants from Western and Non-western countries have build up significantly lower pension rights, as they came to The Netherlands in a later stage of their lives. For both types of immigrants, the percentage of build up pension rights drops of sharply until the age of 30. However, for non-Western immigrants this percentage continues to drop after the age of 30, while for Western immigrants the percentage of build up pension rights begins to climb steadily after the age of 30. This may be because Western immigrants arrive here for a job or their study early in their lives. This mechanism may not be the same for non-Western immigrants, where additional immigrants arrive and have arrived after their 30th year for a variety of reasons apart from work. In addition, non-Western immigrants are a more heterogeneous group than Western immigrants. Many non-Western immigrants are of Turkish and Moroccan origin,

but also include refugees. The gap in pension rights between men and women from non-Western countries will in all likelihood be related to family reunions at a later age. All in all, it appears that the native Dutch and Western immigrants are not that much of a problematic group when it comes to pension rights for the basic state pension. Immigrants who arrive here early in their life will still be able to attain a decent percentage of the maximum pension rights. Furthermore, Western immigrants usually have well-paid jobs with which they will be able to build up enough additional pension income. Things look a lot bleaker for non-Western immigrants. The younger generation of them has the opportunity to build up more years for their basic state pension rights, but the elderly do not. They run the risk of only having slightly more than half of the basic state pension. In addition, elderly non-Western immigrants have mostly had low paying jobs or even periods of unemployment in which they were unable to build up an additional pension income within the second or third pillar. It is quite likely they will be one of the weaker groups with regard to pension rights who will be brought to light with the aid of the pension rights statistic.

4.2 Second pension pillar statistic.

An old age income within the second pension pillar is build up via an employer. These pension rights are by law administered exclusively by pension funds and pension insurance companies. Hence, data on pension rights of the labour population will have to come from pension funds and insurance companies. There are over 800 pension funds, who manage approximately 80% of all second pillar pension rights. The other 20% are managed by 30 out of the 80 private pension insurance companies, for which complete data will be gathered. For both the pension funds and pensions insurance companies, there is a significant skewness in size distribution. Of this 80% managed by pension funds, the two largest pension funds in The Netherlands, ABP (civil servants) and PGGM (health workers) manage 43% of these pension rights and 26% of employees associated to pension funds, while the largest 150 pension funds manage 95% of these pension rights and 90% of employees associated to pension funds. The remaining 650+ pension funds distribute the remaining 5% of pension rights and 10% of employees between them.

Because of this skewness, we have opted for collecting the full pension rights data of only the largest 150 pension funds, and a limited number of smaller pension funds. For the remaining pension funds, we will only ask the social-fiscal number of all persons within their database who are still building up pension rights. With this method, we have details of over 95% of all pension rights, and 100% of all those within the labour population who are building up pension rights. This information allows us to build a model to approximate with a sufficient level of reliability the remaining 5% pension rights detailed over demographic groups.

Due to the complexity of building up pension rights and the diversity of pension schemes, there are a few difficulties in collecting data from pension funds and pension insurance companies. First of these is the sheer number of organisations that we approach in order to collect pension rights data from. There are over 150 pension funds and 80 pension insurance companies from which we require their full administrative database with regard to pension rights. There are many differences between these organisations when it comes to administrating pension rights. This makes it difficult to construct a pension rights questionnaire which can be applied uniformly for all organisations.

Besides administrative differences, the pension right can be valued differently. Pension rights for *defined benefit* schemes are construed as claims to a yearly income, based on an individuals current income, age, and length of participation in a scheme. This yearly income is defined as the old age income an individual would receive at the retirement age, without any further contribution from now on (i.e. frozen pension rights). Pension rights for *defined contribution* schemes are construed as the current value of a sum of money, based on premium contributions, with which an individual can buy an old age income when he or she retires. This current value is defined as the provision a pension fund or pension

insurance companies reserves for a particular individual. As these two entities have an intrinsic different meaning, they can not directly be compared for use in the pension rights statistic. However, claims from defined benefit schemes can be translated into current value of a sum of money with the aid of standard actuarial calculations, so that these two different pension schemes can be compared to each other. Thus, for the pension rights statistic, pension rights will be expressed as current value of the sum of money an individual has build up, whether he participates in a defined benefit scheme or a defined contribution scheme.

Another added difficulty involving pension rights is that there is not one single pension right, but several pension rights for a number of pension types. Next to the regular old age pension, it is also possible to (partially) retire before the regular retirement age of a pension scheme. This is a very popular route, as shown earlier by the low number of over 60's who still have a paid job. To enable this early retirement, employees are allowed to build up separate pension rights for an early retirement scheme. However, it is not mandatory to use these pension rights; they can also be exchanged for regular old age pension rights. The employee can at any time choose to do this, but as this is a future choice, we have no certainty under which header the particular pension rights should be brought in the present time. Both options do not have the same pension right value. Depending on the pension scheme, this exchange can lead to an increase or decrease in actuarial value of the associated pension right. This means that for the pension rights statistic it is either possible to report a single pension right for old age income, by adding the two together, or to report two separate pension rights, indicating whether a demographic group is building up enough pension rights to use for early retirement. But not only do employees build up pension rights for themselves, they also can choose to build up pension rights for their partner, to ensure an old age income for their partner if the employee dies. Hence, pension rights for the provisional old age income for a partner need to be associated with that partner within the pension rights statistic.

The most complex characteristic of the pension system within the second pillar is the procedure of dividing pension rights in case of a divorce. Per 1995 the law states that in case of a divorce, both partners will receive 50% of each others pension rights that was build up during the years of their marriage, unless both partners formally agree to a different distribution. Some pension funds calculate such settlement of pension rights when a divorce occurs, while most others only calculate a settlement when benefits need to paid out. Again, as was the case for early retirement and employees, the moment of settlement is a choice of the pension fund, making it difficult for us to accurately divide both partial pension rights. As pension rights, and the wage the premiums are derived from, vary from year to year, this is rather a demanding and difficult calculation to execute on an individual level. Past information from an employee is required too, but is not always available. To approximate the pension rights build up during a marriage, we begin by using a simple model that uses the ratio between number of year's marriage and total number of years building up pension rights as the percentage of pension rights build up during marriage. We compare these results with actual values from pension funds who do calculate settlements immediately. From there, we refine the model by adding variables such as indexation rates over the years, wage development, and past developments per specific sector of employment. This process is still ongoing, but it appears that the model including this ratio and a generic wage development is a sufficient approximation of pension rights within a settlement. Wage development over a person's lifetime is projected to follow a 3-2-1-0 progression. Wages are expected to increase by 3% yearly between the ages 25 and 35, while this increase drops off by 1% every 10 years of an individual's career. This projection allows us to estimate wages over an individual's career, including and excluding the period that he or she was married. While on an individual level this model has limited predictive value in the sense that we exactly know how much of an individual's pension rights need to be transferred to his or her ex-partner, the overall macro-distribution of pension rights remains accurate enough to be usable for the pension rights statistic.

To test the questionnaire, resolve problems mentioned above and to obviate any unknown problems, we have initiated a pilot-study with 10 pension funds, large and small. It appears the pension funds and pension insurance companies are capable of delivering the data on pension rights, although they have some difficulty in using a standardized format, due to the large variety of pension schemes.

4.3 Third pension pillar statistic

Although the discussion on aging and the financial effects thereof are mainly concerned with the first and second pillar, the third pillar may play a pivotal role in the sustainability of the pension system. The pension rights statistic may show that while aging has a detrimental effect on the sustainability of the state pension and the labour-related pension, individual savings and pension schemes may be sufficient to at least supply some demographic groups with enough of an old age income in addition to the first two pillars. As of yet, this view remains an assumption, one which the pension rights statistic will shed some light on. However, there are some recent events and political discussions that enhance the potential relevance of a third pension pillar. Over the last few years, there has in The Netherlands been a drive towards a higher level of individualism and personal responsibility, one which has also been extended to income and old age provisions. As of 2015, the state pension will be purely on an individual basis, and the extra allowance a pensioner would receive if his or her partner was below 65 will disappear. In addition, the largest pension fund in The Netherlands has halved the surviving relative's pension. And last, some groups do not qualify to build up a pension within the second pillar, such as self-employed individuals. There is also a very vivid discussion going on regarding the possible necessity or raising the pension age from 65 to 67 (or higher). If one wants to be sure to be able to retire early and have a decent old age income, it appears that the third pension pillar is required to generate this additional pension income. The pension rights statistic will indicate if this is true, by being able to compare the quantitative volume of the second pillar to that of the third pillar.

Whereas the first pillar (public state pension) and the second pillar (labour-related pension) are well defined and outlined, the third pillar (individual pension) is less so. The descriptions given by various organisations only give a broad guideline on what type of pension should be considered a third pillar pension scheme. The Worldbank suggest the third pillar is made up of pension schemes which are 'voluntary and privately managed individual accounts', while the International Labour Organization defines the third pension pillar as a fully funded defined contribution scheme, perhaps privately managed'. The CODED-classification which Eurostat uses to describe the third pension pillar is that of 'financial sources an individual saves which can be used as a means to provide an old age provisions'. This classification in turn is based on the most widely used description of the third pension pillar, that of the OECD, which states that the third pillar consists of 'personal pension plans in the form of saving and annuity schemes' (OECD, 2005). So the general meaning of the third pillar is clear, it being an individual supplement to the public state pension and the labour-related pension.

The open ended nature of the third pillar is not a problem when it comes to categorizing national pension systems and getting an understanding of what separates the third pillar from the second pillar. This is where the rather broad and general description of the third pillar presents us with a problem. Before a statistic is compiled, it is necessary to know what to include in this statistic and where to gather the required data. If the description the OECD uses is applied to the third pension pillar, 'personal pension plans in the form of saving and annuity schemes', we are left with virtually everything that an individual can use as a provision for an old age income. In other words, the third pillar is open ended, which the first and second pillars are not. Thus, not only annuity schemes, but also a stock portfolio, a house, a Van Gogh or money under the mattress falls within the third pillar as an old age income. Another blurred line within the third pillar as it is described above is the distinction between old age, or retirement age, and non-retirement age. The first and second pillars provide a replacement income when an individual retires, making a clear distinction between working age provisions (i.e. wages) and old age provisions (pensions). The third pillar does no such thing. It is quite

possible for someone aged 60 who still has a full-time job to receive the benefit of an endowment insurance or 120.000 euro, which may or may not be used as an old age provision. So to be able to adequately capture the third pension pillar in a statistic, a clear and workable definition needs to be made, excluding certain types of personal wealth which may or may not be used to provide an old age income. The prime goal should be to make the third pension pillar qualitatively comparable to the first and second pillar. By doing this, quantitative differences between the second and third pillar have meaning.

The first step towards a limitation on the scope of the third pillar would be to exclude all non-financial assets and property that can be used as an old age provision. This includes houses, stocks and shares and other items that can be sold for money. While these undoubtedly can be used as an old age income, it is hardly practical to include every valuable item around within a pension rights statistic, even if we could find and quantify them all. By limiting the third pillar to direct financial assets we are able to compare to the first and second pillar, as they too consist of a quantifiable financial volume. By defining the third pension pillar, the nature of pensions in the second pillar will be used as a guideline. As pension rights within the seconds pillar are build up over a (large) number of years and cannot be withdrawn in the intervening period, short-term savings and other financial assets with a short-term nature which can be withdrawn freely are excluded from the third pension pillar. Hence, the third pillar is limited to premium-based financial deposits that build up added value over a longer period of time, that are not risked-based and have a guaranteed payment of benefits (excluding funeral insurance). These benefits can occur in two forms. A life insurance benefit can be received direct and in full, while a life insurance benefit can also be received periodically. The former is wealth-based; once you receive and spend it, it's gone and will not be replenished. The latter is income based; after spending it, it will be paid out again the next period. This is also true for a second pillar pension. An old age benefit from a labour pension is an income, and thus has a periodical nature. To be able to compare the second and third pillar, we will limit the third pension pillar to income-components from life insurance policies, i.e. the annuity life insurances. Life insurance policies that are wealth-based will be excluded form the third pillar pension rights statistic. However, as wealth from financial or non-financial assets can be used as an old age provision, a wealth-based 'fourth pillar' statistic will be compiled next to the three pillar pension rights statistic.

Annuity life insurances are managed by the Dutch life insurances companies, of which there are 80. All life insurance companies will be asked to provide data on individual claims to life insurances. Aggregating data for the third pillar and compiling the third pillar statistic will be done in a similar way as for the second pillar statistic, although for the third pillar, things are expected to be simpler. Annuity life insurances policies are more straightforward and homogeneous than pension schemes are. For the third pension pillar statistic a pilot study will be executed among 5 life insurance companies. Early results of this pilot study show that there are mostly administrative differences between life insurance companies. Life insurances companies exclusively define claims to a life insurance as the provision a life insurance company has to maintain to pay the current premium-free value of the insurance policy. As this type of provision is similar to provisions used by pension funds within the second pillar, these provisions are comparable within the pension rights statistic.

5. Discussion and conclusion.

In this paper we have argued the necessity for solid information on pension rights and old age income over the whole spectrum of the Dutch pension system, and the inclusion of this information into the national accounts. Ageing, the effect ageing will have on a pension system and government finances, and measures to counter these effects will almost certainly influence current and future old age incomes of a number of demographic groups. To fairly and evenly distribute the costs of ageing over the whole of society, it is essential to know which groups can carry this financial burden, and which groups require support. The pension rights statistic will provide this information for the whole of the labour

population. It is planned to repeat this pension rights statistic once every three years, to build a knowledge base from which to predict future old age incomes of the current labour population. It will only focus on pension rights and old age income of the labour population, as detailed information on old age incomes of those above 65 is already known. Furthermore, all other issues related to and derived from ageing, apart from pension rights and old age income, will be disregarded. Although in this paper we have detailed the context of ageing, its effect and countermeasures, the pension rights statistic will only provide information on the distribution of pension rights over various demographic groups. The pension rights statistic is a tool, and a valuable one at that, as it provides policy makers and other parties involved in ageing with a grounded base point for decision making.

However, as this statistic is currently being developed, there are a number of methodological and intrinsic issues that need to be resolved. The first of these is of a practical nature and concerns the scope of sources of data on pension rights. Although all pension rights within the second pillar are managed by pension funds and pension insurance firms, and pension rights within the third pillar are managed by life insurance firms, we will only gather data from Dutch-based pension funds and insurance firms. Due to a growing influence of liberalisation and the single European market, it is possible that individuals, companies and entire industry sectors will shift the build-up of pension rights to a pension funds or insurance firm based outside of The Netherlands. These rights will be difficult to include in the pension right statistic, leading to conservative estimates within the pension rights statistic. With regard to the second pillar, this is not yet much of an issue, as pension funds and pension insurance firms have to oblige to some stringent rules and regulations on managing pension provisions under the Dutch Pension- and Savings Law. But it is not unthinkable that this will change in the near future, as national governments cede more and more control to the European government in Brussels. For individuals, it is already possible to build up a third pillar pension with any European or worldwide insurance firm. Although accurate figures are not known on how many individuals build up third pillar pension rights outside of The Netherlands, we assume that not many individuals actually choose a foreign insurance firm, as people prefer their financial institutions to be close at hand in case contact is required. But perhaps this might change, as globalization and enhances internet services increases.

An issue of a more structural nature is the choice whether to base the pension rights statistic on individuals or households, as both have their advantages and disadvantages. Pension rights and old age incomes are build up individually in all three pension pillars, with two exceptions, surviving relative's pension and annuities on both partners. Thus, it would make sense to base the pension rights statistic on pension rights of individuals within demographic groups. This too would give a clear indication of pension rights within various demographic groups, whereas these groups would be harder to separate if households were to be used as a base for the statistic. But pension rights and old age incomes will not be consumed by individuals, if they have a partner. It is the entire household that will benefit from an old age income. A pension rights statistic that will report on pension rights for individuals only will give an unfair view of the practical distribution of pension rights, as both partners in a household live off pension benefits. A pension rights statistic based on individuals could lead to the conclusion that some demographic groups who did not build up a pension are at risk of having no or a low old age income. A pension rights statistic based on households and their pension rights gives a more accurate view. However, a pension rights statistic based on household pension rights is not entirely free of problems as well. Taking a household as the basic unit of analysis means an aggregation of demographic data with the associated loss of accuracy and level of detail. Simply put, households have less discriminating power than individuals do, so that less demographic groups can be formed. This undermines the power of the pension rights statistic, for which differences within and between demographic groups is essential. So, the choice between individuals and households appears to be a trade-off between realism and detail.

Furthermore, there are also the above mentioned two exceptions to consider. Individuals who build up pension rights via an employer can choose to build up (additional) surviving relative's pension rights, which will be paid to their partners when they die after their retirement. These surviving relatives pension right have a real value which can be ascribed to an individual (or a household). Payment of a surviving relative's pension only occurs when the individual that has build up the pension rights dies after retirement and before his or her partner dies. If his or her partner dies before the individual that has build up the pension rights, the value of the surviving relative's pension is added to the regular old age pension. Thus, it is unclear who should receive the pension rights of the surviving relative's pension: the individual who builds up the regular old age pension, his or her partner (even though it is a risk based pension right) or the household in general (where both pension rights are simply added up). A similar construction occurs within the third pension pillar, where annuities can be partially or fully assigned to both partners, where no distinction is made between these partners. Again, if the pension rights statistic is based on individuals and their pension rights, a split in annuities and rights has to be made between partners. For households, this is less relevant.

Another issue concerns the open end of the third pillar. An old age income does not necessarily have to be build up exclusively within the three pension pillars. Wealth, from whatever source, can be used to supplement an old age income. As wealth can not be deducted from the pension rights statistic, it is essential to use a wealth statistic alongside a pension rights statistic for an integral view on income and wealth for the old age of the current labour population. If this is not done, the pension rights statistic can lead to an incorrect overview on future old age incomes. After all, an elderly couple with a low pension income can have a million euro in savings on a bank account from which they supplement their old age income with interest. This wealth statistic can be considered a fourth pension pillar, filled with data on savings, investments, property values and other quantifiable financial assets owned by individuals and households.

Although a number of decisions regarding the methodological and intrinsic nature of the pension rights statistic still need to be made, its structure and goal is clear. When completed, it will provide policy makers and other stakeholder's valuable information on expected old age incomes of the whole Dutch labour population. Based on this information, sensible measures and actions can be considered. Gathering the required data on pension rights from pension funds and insurance firms is a demanding task but considering the lack of reliable information a necessary task.

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