Master Thesis Economics and Finance of Ageing
Netspar
Social Insurance Bank
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Legislation Based on Reality?

A Master Thesis on the Characteristics of Poor Elderly

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Abstract

Elderly with an incomplete public pension benefit and no or limited other income sources have the possibility to claim income support by the government. In the Netherlands, the conditions to claim income support are under pressure. In order to alleviate old-age poverty in an effective way, the characteristics of poor elderly should be known such that income support is designed to cover those elderly who are more likely to be poor. This thesis investigates which characteristics of poor elderly can be found in the legislation on income support in the Netherlands, Belgium and Denmark. Furthermore, we check whether the characteristics found in the legislation also appear in reality and to what extend legislation and reality match with each other. We also estimate the effects of these characteristics on the probability of old-age poverty

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Preface

This thesis has been realized during an internship at the Social Insurance Bank (SVB). During those four months I have been introduced into the juridical world. To understand legislation requires a total different way of reading. To translate legislation into economic consequences and implications is the most important aspect I have learned during my internship at the SVB. I could not have done this without my colleagues from department *Recht en Beleid*. I would like to thank them for answering my questions about the legislation. They have been really helpful and made my stay at the SVB a real pleasant one.

I would like to thank my supervisors at the SVB, Marjolein van Everdingen and Robert Olieman. They have read my chapters with a critical eye, made comments and suggested new improvements.

Furthermore, I am very grateful to Arthur van Soest, my supervisor from Netspar and Tilburg University. He proposed interesting methods for empirical analysis and helped me to overcome problems with the data. Due to the comments of my supervisors I was able to improve the quality of my thesis substantially. Many thanks to my supervisors.

Chapter 1 Introduction

In the Netherlands, the supplemental benefits on incomplete old-age state pensions, which are part of the social assistance benefits, are under pressure. Nowadays this social assistance benefit is regulated under the WWB (Work and Social Assistance Act). Several interest groups, who represent the elderly, express their discontent about the way the eligibility conditions for elderly are organized. Also the implementation of the WWB 65+ is under debate. In a report to the Dutch Parliament, issued on the seventh of July 2008, the future of the WWB 65+ and its implementation is described.

For retirees with an incomplete public pension benefit, limited resources and no or little income out of occupational pensions, social assistance is the last possibility to claim income support. This thesis gives an overview of legislation of social assistance schemes for elderly with an incomplete public pension benefit in the Netherlands and two other countries. Based on these schemes, we extract different characteristics of poor elderly with incomplete public pension benefits. Then we will look at the characteristics of poor elderly in realty and the factors that determine old-age poverty. This thesis focuses on the characteristics of poor elderly based on social assistance schemes and to what extent they match with reality and the effects on old-age poverty.

This chapter starts with a short overview of the opinions of interest groups with respect to the organization of the conditions for supplemental benefits in the Netherlands. Subsequently, we stress the research question and its motivation. We will discuss the research methods used in this thesis and we will end with the structure of the thesis.

1.1 The Vision of Interest Groups

In the Netherlands, a person is entitled to a full AOW-benefit (National Old-Age Pensions Act) when he lives for 50 years within the Netherlands between its 15th and 65th birthday. Every year lived in the Netherlands accrues 2 percentage points of the AOW-pension benefit. People who miss several years can buy additional pension rights. Persons who do not may be eligible for social assistance benefits.

The conditions for a social assistance benefit for elderly are not viewed as optimal by several interest groups. Their main argument is that the rules are too strict and capture a

group of elderly which is considered as too small. Especially the income test is under discussion.

The CSO (Centrale Samenwerkende Ouderenorganisaties) expects an increase of the number of elderly with an incomplete AOW-benefit. Whereas this number equaled 170,000 in 2005, it is expected to double in 2015, under the assumption of unchanged policy (CSO, 2008). The increase of the number of people with an incomplete public pension is considered as too large. Therefore, the CSO proposes several measures to decrease this number. Their first proposal is to change the way this benefit is constructed. The CSO believes that this period has to decrease to 40 years between a persons 15th and 65th year. The yearly accrual percentage must be 2.5 (CSO, 2008).

Anyone who wants to claim the WWB-benefit is subject to an income and assets test. These tests also apply for retirees. The CSO asserts that an increase of the maximum allowed amount of income and assets will decrease poverty among the elderly.

The Christian Trade Union Federation (CNV) and the Dutch Trade Union Federation (FNV) share the opinion of the CSO with respect to the strictness of the income and assets tests (CNV, 2008 and FNV, 2008). The CNV states that the means-test serves as an incentive for the unemployed to apply for a job. As elderly older than the age of 65 do not have to work anymore, the strictness of these tests can be liberalized (CNV, 2008).

The trade unions as well as the CSO state that the WWB should be less strict for people out of the labour force and for elderly eligible for an old-age benefit. The reason being that the social assistance benefit is a temporary solution for people between age 15 and 65. It is viewed as a temporary source of income which stops as soon as a person becomes employed again. For people aged over 65 and little or no income from occupational pensions, the WWB-benefit is the final source of income (CSO, 2008). They have an incomplete AOW-benefit and do not have to return to the labour market. The WWB-benefit increases their income to the level of a full AOW-benefit.

As the social assistance phase is the last resource of income support for elderly aged 65 and over, the maximum amount of income and assets held by these people should be

expanded. Thus is it a larger group of elderly becomes eligible for a WWB-benefit and fewer elderly live in poverty.

1.2 Research Question

Social assistance benefits serve to protect elderly with an incomplete state pension against poverty. Often a certain subsistence level is guaranteed by the government. In order to be as efficient as possible, i.e. to capture only those people who are unable to fulfill the basic needs themselves -and to prevent abuse- eligibility criteria are imposed. To select only those retirees who really need the social assistance benefit, the government defines the eligibility criteria in an income and/ or assets test (i.e. means-tested social assistance benefits). In general, the stricter these criteria are set, the smaller the group of elderly who are potentially eligible.

The eligibility criteria should be designed such that only those retirees who really need income support qualify themselves for social assistance. This means that we should be able to determine certain characteristics of poor elderly eligible for income support. It is interesting to investigate whether these theoretical characteristics also appear in reality. This brings us to the following research question.

> *To what extent do the socio-economic characteristics of poor elderly with an incomplete public pension benefit, found in the social security arrangements for these elderly correspond with the characteristics that appear in reality?*

The focus of this paper will be on elderly with an incomplete pension benefit. The reason is that the social assistance regulations are mainly designed to guarantee a certain income level. Elderly that receive a (for one reason or another) reduced public pension benefit and have no or little income from other resources, are potentially eligible for these benefits. Their eligibility is determined by different criteria

The aim of the research, in fact, is fourfold and can be divided into four sub-questions.

- *What characteristics of poor elderly with an incomplete public pension benefit are reducible from the social assistance arrangements for the elderly with an incomplete public pension benefit?*
- *What characteristics do poor elderly have in reality?*
- *What are the effects of the characteristics of poor elderly in reality on old-age poverty?*
- *To what extend do the characteristics in legislation and realty differ?*

In order to define poverty, we use a poverty line. The poverty line, used in this case, is a measure for relative poverty. The boundary condition which determines poverty is an income lower than 60 percent of the median income in a country. This measure is frequently used in studies on poverty in countries within the Organization for Economic Co-operation and Development (OECD) and other developed economies (Smeeding, 2001 and 2003). Different variants of this measure, like 40 and 50 percent of the median income, will be used in this paper.

An implicit assumption used is this paper is that elderly with an incomplete pension benefit and no other sources of income are poor. Later on we will verify this assumption more intensively.

With socio-economic characteristics we mean characteristics like: age, the housing situation, house ownership, number of children, level of education, continue working after the legal retirement age and more. We will estimate how these characteristics influence the probability of being poor at retirement.

To target the potentially eligible group of elderly in an efficient way, social security arrangements should be designed such that they cover those people who are the most vulnerable to old-age poverty. This justifies intensive research to the characteristics of poor elderly. We will take a look at the social assistance legislation for three countries, namely, the Netherlands and two other economies.

1.3 Research Methods

In order to obtain insight in how people end up with (in)complete state pension benefits in different countries, we will start with an overview of the pension systems of different

economies. The focus of this part will be on the different ways of pension rights accruals. Also the possibility for elderly to receive an income supplement that compensates for an incomplete state pension is part of this overview. We try to define different forms of social assistance for the elderly.

Subsequently, we will take a look at indicators of old-age poverty. The poverty line is defined and we take a closer look at the poverty rates of different western economies. As we try to identify specific characteristics of poor elderly, we are interested in countries with relatively high poverty among retirees. Country selection is will be based on the poverty rates. We will try to select countries with different forms of social assistance for the elderly. The reference country will be the Netherlands, next two other economies will be selected.

Next, the selected countries are investigated more specifically with respect to their social assistance regulation for elderly. We will investigate the eligibility criteria and try to extract the characteristics of the poor retirees. Within the eligibility criteria we define the aspects of interest. Then we will describe the social assistance regulation with respect to retirees in the three selected economies. Empirical analysis on the social characteristics will be done by means of a limited dependent variable model. Based on these findings we describe whether the selected economies cope sufficiently with the social characteristics of the poor. Additional characteristics like age and environment will be discussed.

1.4 Survey of Health, Ageing and Retirement in Europe (SHARE)

With the empirical analysis we try to find characteristics that influence the probability of being poor. This analysis will be based on the *Survey of Health, Ageing and Retirement in Europe*[1] (SHARE). To be more specific, we use the second release of the first wave (release. 2.01) of the dataset. SHARE consists of the countries: Austria, Belgium, Denmark, France, Greece,

[1] The SHARE data collection has been primarily funded by the European Commission through the 5th framework programme (project QLK6-CT-2001- 00360 in the thematic programme Quality of Life). Additional funding came from the US National Institute on Ageing (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, Y1-AG-4553-01 and OGHA 04-064). Data collection for wave 1 was nationally funded in Austria (through the Austrian Science Foundation, FWF), Belgium (through the Belgian Science Policy Office), France (through CNAM, CNAV, COR, Drees, Dares, Caisse des Dépôts et Consignations et le Commissariat Général du Plan) and Switzerland (through BBW/OFES/UFES. The SHARE data collection in Israel was funded by the US National Institute on Aging (R21 AG025169), by the German-Israeli Foundation for Scientific Research and Development (G.I.F.), and by the National Insurance Institute of Israel. Further support by the European Commission through the 6th framework program (projects SHARE-I3, RII-CT-2006-062193, and COMPARE, CIT5-CT-2005-028857) is gratefully acknowledged. For methodological details see Boersch-Supan and Juerges (2005).

Germany, Italy, Israel, the Netherlands, Spain, Sweden and Switzerland, the data were collected in 2004. The first wave is publicly released in 2005. The data contains information on the individual and household level with a specific focus on income-(components), household composition and the socio-economic situation. The second wave of SHARE is forthcoming in July 2008.

The main advantage of this dataset is the detailed information on different components of household income, socio-demographic and socio-economic characteristics of individuals and households in different countries. A second advantage is that the survey contains only households of which at least one household member is aged 50 or more. This means that the dataset has a lot of information on income of retirees. The use of sample weights makes the sample representative for the different populations. SHARE is very useful for cross-country comparisons, since the same survey method is used in the different countries, which is another advantage.

A possible drawback is that the richest and the poorest households might be underrepresented. However, this is a problem which arises in most surveys (see for example Knoef, Alessie and Kalwij (2008). Another drawback is that the dataset only contains one wave; this makes dynamic panel-analysis impossible.

1.5 Structure of the Thesis

The structure of this thesis is as follows: In chapter 2 we start with an overview of the state pensions of different countries. Described will be how people end up with incomplete state pensions and subsequently which regulations compensate for this incompleteness. Our third chapter deals with indicators of old-age poverty and the values of these indicators for the SHARE economies. We will select the countries used for further research. The next chapter describes the eligibility criteria in the form of income and assets tests on supplemental benefits for incomplete state pensions for the selected economies. Their schemes are described in detail. Subsequently, empirical research to the characteristics of the poor will be presented in chapter 5. Then we will end this thesis with a summary and conclusion.

Chapter 2 Overview of Public Pension Systems

Public pension schemes differ across economies. Differences, with respect to pension rights and the way they are calculated during lifetime, are wide-spread. Especially the regulations and pension laws differ in detail. However, when we try to summarize the pension schemes to some essential elements, they become comparable. Then it is possible to compose an overview of public pension schemes among countries and discover similarities.

In order to understand the structure of supplemental benefits on public pensions, it is important to know the different conditions for eligibility of the benefits. These conditions are the main causes for incomplete public pension benefits. The supplemental benefits that supplement these incomplete pensions should be based on these conditions, such that they cover the targeted group in an efficient way. Therefore, it is important to know the different pension schemes.

This chapter briefly describes public pension schemes. Special attention is paid to the way pension rights are calculated and the qualifying conditions for a minimum and a full public pension. The building process of pension rights immediately shows when incomplete pensions appear. Subsequently, we end this chapter with an overview of types of regulations that cover incomplete public pensions.

The presented countries will be western-economies, since they all have well-developed pension schemes that ensure reasonable incomes for the elderly. These are mainly the OECD economies. Within this group, special attention will be paid to the countries that belong to the SHARE-dataset, since these are the economies used in the empirical part.

2.1 Overview of Public Pensions

The basis of the analysis of public pension schemes is presented in Table 1 in the Appendix. It shows, in two sub tables, the types of systems, the way pension rights are accrued, conditions and the types of social assistance that cover incomplete state pensions. This table is based on previous studies of Edward Whitehouse, the OECD and information out of the MISSOC tables (Mutual Information System on Social Protection).

2.1.1 Beveridge vs. Bismarck

The first difference with respect to public pension schemes that appears is their so-called type[2]. This distinction is classical and goes back to the early developments of pension schemes. The two common types of pension schemes are named after their creators Otto von Bismarck (1815-1898), the first Chancellor of Germany, and William Beveridge (1879-1963), a British economist and social reformer.

Both systems differ in their goals. Public pension schemes characterized by a Bismarck approach aim to replace individual earnings during working-life, whereas Beveridge schemes tend to avoid old-age poverty (Hinrichs, 2006). Bismarckian pension systems cover, in the first place, employees. The height of the benefits is earnings-related and dependent on employment history. The benefits are financed by contributions of employees and employers. The Beveridge type of pension system tends to cover the entire population (Pieters en Schoukens, 2006). The pension benefits under the classical Beveridge style are flat and therefore the same for everybody, under the assumption of a full pension benefit.

Please note that these two types do not exist in their purest form (Pieters en Schoukens, 2006). These two types have been the origin of the early social security systems. However, almost every country has reformed its system in such a way that they now combine elements of both types (Hinrichs, 2006). In that sense there has been a convergence of pension schemes. In some countries, like Norway and Sweden, reforms of the pension system have changed the type of the system. Both countries, whose system initially could be indicated as a Beveridge system, now have a system which follows more the Bismarckian style (Hinrichs, 2006). Although these types do not exist in their purest forms, they are a first indicator of different pension schemes across countries.

When we take a look at the economies in table 1a, most Anglo-Saxon countries have a pension system which has characteristics of the Beveridge type. In contrast, most continental European economies, including the northern ones, tend to have a Bismarckian system. The

[2] Note that the type of the pension system indicated in the second column of table 1.1a often is based on the authors' opinion and could be discussed. The type is determined after looking at the characteristics of the pension system of an economy and determining which type fits the characteristics the best.

East-European countries tend to opt for a Bismarck type of system. This witnesses a trend of more individualization in pension systems.

2.1.2 Field of Application

The field of application of public pension systems can roughly be divided into two categories. This is done in the second column of table 1a. A residence based pension system and one that covers economically active people. In order to be eligible for an old-age benefit the insurance condition, in a residence based system, is the years of residence. The only criteria is being an inhabitant, it does not matter whether a person is employed or unemployed. Pension premiums are paid out of wage income and social assistance benefits. The accrual of pension rights continues during periods of unemployment. There is no link between the height of the benefit and the premiums paid in the past. Someone who never has paid premiums enjoys the same benefit as a person who has paid the maximum premium (Pieterse en Schoukens, 2006)

Pension systems focused on economically active inhabitants are divided into three subcategories in table 1a, since there is too much heterogeneity among these pension systems. The first subcategory is the one labeled by *employees*. Only employees on a contractual base are covered by this pension system. Self-employed have to save for their own pension or they can voluntarily insure themselves. Systems that also cover self-employed explicitly are labeled by *ec active*. Required is that they make contributions to pension funds like employees do. The third subcategory also covers periods of (temporarily) unemployment, which has the label *ec active*+. The accrual of pension benefits continues for periods of unemployment. Also other periods in which persons do not carry out economic activities are covered. Examples are: study, military services and a fixed number of months for each child raised by women. For this subcategory, the inactive periods counts "as if" the contributions are made, these periods count as fictive periods (Pieters en Schoukens, 2006).

Pension systems with a focus on economically active persons are characterized by a higher degree of actuarial fairness than systems on a residential base. Actuarial fairness means that the discounted expected value of the benefits should equal the discounted expected value of the premiums paid (Disney, 2004). The height of the benefit is dependent on the premiums paid in the past.

2.1.3 Conditions for Eligibility of an Old-Age Public Pension

The conditions that determine whether a person is eligible for a public pension are the waiting period and the conditions that determine the height of the benefit. The third column of table 1a describes the waiting period for each country. The waiting period can be seen as the minimum condition for eligibility for a public pension benefit. For systems based on residential status, the minimum requirement is a fixed number of years of residence. This number varies from 1 year in the Netherlands to 15 years in Estonia. Ten years of residence is the most common number of years.

Pension systems based on years of insurance or a number of contributions usually require a minimum period of insurance or a minimum number of contributions made. Also this minimum period varies per country, which can be seen in table 1a. However, there is one exception. Belgium does not require a minimum period of membership. As soon as someone is employed, the person is entitled to a (partial) old-age pension benefit (Pieters en Schoukens, 2006).

Just like the waiting period, the conditions to be eligible to the full old-age pension benefit vary between economies[3]. Residential based systems often require 40 years of residency. The Netherlands is an exception, since it requires 50 years of residence between the age of 15 and 65. Insurance and contribution dependent systems often require a fixed period before someone is eligible for a full old-age pension benefit. However, for some countries the pension benefit is completely dependent on the number of contributions or insurance years. These countries do not have a concept of a full first pillar pension, but the height increases with the numbers of contributions made in the past (MISSOC, table VI, 2007). These economies are labeled by *none* in table 1a. Switzerland requires that a person has made the same number of contributions as the average of its age group before he is eligible to the full public pension benefit (MISSOC, table VI, 2007).

2.2 Causes of Incomplete Pensions

Incomplete public pension benefits are caused by three legal conditions. First of all, a public pension deficit occurs when a person does not belong to the field of application. This

[3] Most countries also use a legal retirement age as condition for eligibility. This is not registered in table 1.1a. The most common age is 65 (OECD, 2007). However, in most countries it is possible to apply for early retirement.

applies, for example, to migrants who have lived only for a few years in their country of destination. Assumed is that migrants have accrued pension rights in their native country. Then a migrant is eligible for the (proportionally reduced) old-age benefit of that country. Another vulnerable group consists of people who never have carried out economic activities. This is characteristic for systems based on economic activities. A person, who has never worked during his live, does not have a problem in a system based on residential status. Being a resident insures eligibility. Some countries with an economically active based pension system try to reduce this problem by awarding pension credits for inactive periods. For example: involuntary unemployment or military services.

Second, a person who does not meet the waiting period is not eligible for an old-age benefit at all. In some countries with a contribution or insurance based system, a person who has made contributions in the past, but does not meet the minimum requirement, often gets back his contributions made in the past (Pieters en Schoukens, 2006).

The third cause of incomplete old-age benefits is when the minimum conditions are met, but the conditions for the maximum benefit are not. In this case, the pension benefit often is reduced proportionally (Pieters en Schoukens, 2006). The last two problems could arise in both the residential and in contribution based pension systems.

Now that we have discussed the conditions and their implications on incomplete public pensions, we can identify the groups vulnerable to incomplete pensions. A group that often faces incomplete public pension benefits is migrants (SVB, 2007c). There is a possibility that when they migrate, they do no meet the waiting period in the country of destination. Then they lose the right to social benefits. This causes severe problems. Therefore the European Union came up with EC Regulation 1408/71 (SVB, 2007c). The Regulation states that for migrants within the Union and from Iceland, Liechtenstein, Norway and Switzerland, the number of years lived or contributions made in these countries are included in the waiting period. Then the conditions for the waiting period are met. However, Regulation 1408/71 does not hold for residence of insurance periods from other countries than the ones mentioned above. Sometimes these periods do count thanks to bilateral agreements on social security.

As discussed before people without economic activities or without periods to which pension rights are credited, also have problems to fulfill the waiting period. They do not

have this problem in residence based pension schemes. Without economic activities or contributions paid, someone has no eligibility for the pension benefit in the Bismarckian schemes.

2.3 Overview of Income Support Regulations

Elderly, who did not accrue enough pension rights to be eligible for a full pension, usually have the possibility to claim social assistance benefits. Every economy, within the OECD and the European Economic Area, has a social security or social assistance network to guarantee its citizens a minimum income (Pieters, 2002). Although there are differences with respect to the whether these networks apply for elderly only or for society as a whole.

Although not every country has a social assistance scheme for elderly, we refer to social security arrangements for elderly as social assistance. The structure of the benefits and the eligibility conditions differ per country. For the sake of simplicity we categorize these arrangements of income support for elderly under one name.

Some governments have constructed social assistance benefits which can only be claimed by retirees. Usually these conditions for retirees are less strict and the benefits of a higher level than for people out of the working-age population. Other countries have a social assistance system in which no distinction is made between retirees and other groups within the population. Another option is to construct a minimum guarantee which is integrated into the public pension system. Table 1b gives an overview of which option is used by each country. The column titled *social assistance* says whether countries have a social assistance benefit especially for *retirees*, or a *general* social assistance network for the society as a whole, or the *pension system* guarantees a minimum benefit for elderly.

A look at table 1.b shows that most countries have a social assistance benefit which only can be claimed by retirees. An example is Belgium which has the IGO (*Inkomensgarantie voor Ouderen* or *Guaranteed Income for the Elderly*). With the IGO, the Belgium government guarantees elderly aged 65 or more a fixed monthly income per person when they have a pension income lower than a threshold (Pieters en Schoukens, 2006). Germany has a need-based pension supplement in old-age which is combined with a regulation for people with a reduced earning capacity (MISSOC, table XI, 2007).

Social assistance benefits especially for retirees usually require a certain age equal to the legal retirement age (MISSOC, table XI, 2007). Usually these benefits are higher for

people living alone than for cohabitants. Often one only can apply for a social assistance benefit when income does not exceed an income-threshold.

When there is no special social assistance scheme for elderly, retirees with an incomplete public pension and little or no income out of occupational pensions are forced into the general social assistance network. An example is the Netherlands with the WWB. Anyone, living legally in the Netherlands and with an income lower than an income- and asset-threshold, can claim this benefit. For elderly with an incomplete AOW-benefit, the WWB-benefit supplements income up to a full AOW-benefit.

Since these social assistance regulations capture a larger part of the population, they are subject to a stricter income and asset test than the regulations for elderly only. This implies that retirees are more easily eligible for a social assistance benefit for elderly only than for a general social assistance benefit. However, this cannot be confirmed without further research. The strict means-tested benefit is, as stated in the previous chapter, a very important aspect of the criticism on the system in the Netherlands.

Only three economies, i.e. Denmark, Iceland and Sweden, have pension systems which take care of retirees with an incomplete public pension (Table 1.b). Iceland has, besides a basic pension, a means-tested income supplement for low-income or single people (Herbertson, 2006). Denmark and Sweden have comparable regulations (MISSOC, table VI, 2007 and Sundén, 2006). An interesting aspect to note is that these three economies all are Scandinavian.

When we take a look at the SHARE economies we see that the three different options of social assistance for the elderly are represented. Austria, Greece, and the Netherlands have no special regulations for the elderly. Belgium, France, Germany, Israel, Italy, Spain and Switzerland do have special social assistance for retirees. The countries of which the pension system provides an income guarantee are Denmark and Sweden.
The group of retirees who do not qualify for a full public pension benefit is the group of interest for further research during this thesis. They are applicable for a supplemental benefit in the form of social assistance.

2.4 Conclusion

Although public pension schemes differ across economies, they share similar features. They can be categorized into systems focused on economically active citizens and systems based on residential status. Problems with incomplete public pension benefits especially appear for people who do not meet the waiting period but who did not accrue enough pension rights to be eligible for the full benefit. These people are covered by the social assistance benefits of countries or supplemental benefits within the pension system. Some economies have a social assistance network in which benefits only can be claimed by retirees. In other countries there is no distinction made between elderly and other claimants of social assistance benefits.

Chapter 3 Old-Age Poverty in SHARE-economies

People with incomplete career paths or short periods of residence face the risk to end up with a low income during retirement. Often they do not have a large amount of income out of occupational pensions or savings. As stated earlier in the previous chapter, migrants and people who never carried out economic activities are groups with these characteristics. They also face difficulties to obtain the full public pension. This combination results in a low income during the retirement phase.

This chapter deals with poverty among retirees and indicators of poverty. First we will define the concept of poverty we use followed by a description of the indicators. Subsequently we will take a look at the actual values of these indicators for the SHARE-economies. Then we will try to identify countries that have a remarkable combination of values of poverty indicators and poverty rates. As we try to identify characteristics of the poor, we are interested in countries with high poverty rates and preferably different social assistance schemes for retirees. After we have studied these social assistance schemes carefully, we try to explain poverty in these economies.

Important to keep in mind is the following: the previous chapter we showed that especially migrants are vulnerable to old-age poverty. A report of the SVB (2006) shows that especially migrants from Turkey and Morocco have a reduced AOW-benefit. Those groups are potentially eligible for the social assistance scheme. However, for SHARE in the Netherlands, only people who were able to speak Dutch were interviewed. This means that in the data for the Netherlands, migrants will be underrepresented. A similar issue will also hold for the data of other countries. This implies that the poverty rates presented below probably will be underestimated and should be somewhat higher. One could correct for this when one has information on the fraction of migrants living in a country. However, that is beyond the scope of this thesis. All statistics below are population weighted, but not corrected for the fraction of migrants.

3.1 The Definition of Poverty

Whether a person is considered as poor, is determined by a *poverty line*. The poverty line is a certain threshold of income, below which someone is labeled as poor. This line, "… *represents a minimum level of "acceptable" economic participation*", (Ray, 1998, p. 250). To define poverty, the World Bank uses an income threshold of 1 dollar a day, purchasing power adjusted[4]. Of course this threshold of one dollar a day cannot be used to define poverty in the western economies we are interested in. Therefore, the poverty line is made country dependent.

A widely used measure to define poverty in developed economies is a certain percentage of the median income of an economy, for example fifty percent (Smeeding, 2001 and 2003). Assumed is that people with an income of half the median income are able to fulfill their basic needs. The median income instead of the mean income of economies is used, because mean incomes are highly affected by the tails of the distribution of income (Wooldridge, 2006). Using the median income of each country makes the poverty line a national one.

The measure to indicate poverty is the poverty rate, which is defined as fraction of the population with an income below the poverty line. This fraction is known as the head count ratio (*HCR*) (Ray, 1998). Or in mathematical terms:

$$HCR = \frac{HC}{n}, \tag{3.1}$$

where HC is the number of people with an income below the poverty line and *n* is the total size of the population. Poverty rates are based on individuals. Household income is corrected for the number of equivalent adults in a household and reduced to the individual level.

3.2 Poverty Indicators

Before we take a look at the actual values of the poverty rates, we first define indicators of old-age poverty. Differences in the poverty rates among countries could be (partly) explained by differences between the indicators. We will use two indicators to explain differences

[4] See www.worldbank.org

between poverty rates. Namely: the Gini coefficient and the net replacement rates of public pensions. The first one reflects the distribution of income over the population. The second one gives the level of pension income as percentage of net income before retirement.

3.2.1 Gini Coefficient

The Gini coefficient is a widely used measure of income inequality. It is a widely used measure because it satisfies the four criteria of inequality measurements[5]. The value of coefficient ranges between 0 and 1. The higher the value of the Gini, the higher inequality is in a country.

The Gini coefficient is based upon the sum of the absolute difference of all possible pairs of income. In a population of *n* observations, n^2 pairs can be constructed. The sum of all absolute differences is normalized by dividing it by n^2 and the mean income (μ) of the population (Ray, 1998). The formal expression of the Gini coefficient is as follows:

$$G = \frac{1}{2n^2\mu}\sum_{i}^{n}\sum_{j}^{n}\left|y_i - y_j\right|, \qquad \textbf{(3.2)}$$

where y_i, y_j are the incomes of individuals *i* and *j*. The differences are summed twice, first we sum over al *j*s, while we keep *i* constant. Then we do the same for all *i*s. This method of summing counts every pair twice, first as $\left|y_i - y_j\right|$ and second as $\left|y_j - y_i\right|$. Therefore the total sum also is divided by 2 (Ray, 1998). Note that this formula is the easiest one to interpret the Gini coefficient. When we calculate the Gini, we use another formula which will be explained below.

A graphical representation of the distribution of income, hence income inequality, is obtained by using Lorenz curves. When the income of all individuals is arranged from the lowest to the highest one, the Lorenz curve shows which share of income is held by each population share. The larger the income shares of, for example, the richest 10 percent of the population, the more unequal the income distribution is (Ray, 1998). The higher the

[5] The four criteria are not important for this analysis and therefore not mentioned here. An extensive description of these criteria can be fount in Ray 1998

inequality within a population, the more skewed the income distribution and the larger the Gini coefficient.

When the income share of the 20 percent with the lowest incomes of the population is low, it indicates that poverty among these individuals could be rather severe. That is why we are interested in Gini coefficients, because they are a first indicator of poverty under retirees. We will present Gini coefficients for the entire country population in SHARE as well as the coefficients for the sub-populations of people younger than 65 and elderly aged 65 and older.

3.2.2 Replacement Rates

The replacement rate indicates the height of pension income at the time of retirement as proportion of pre-retirement earnings (Whitehouse 2006b). The higher the replacement rate is, the smaller the difference of income between the two phases. Net replacement rates reflect after-tax income. Due to tax advantages for retirees, net replacement rates often exceed gross replacement rates (Whitehouse 2006a and 2006b). The replacement rates reflect the generosity of pension systems. Replacement rates could be higher than 100 percent, indicating that retirement income exceeds pre-retirement earnings. However, in most countries this will not be the case.

Public pensions usually are a large determinant of retirement income. The role they play is larger for low income workers than for higher income workers. For high income workers occupational pensions are the largest determinant of retirement income. Therefore, it is interesting to make a distinction in the replacement rates for low income workers, the average income workers and high income earners.

3.3 Values of Poverty Indicators in SHARE

Now that have we described the poverty indicators in a theoretical way, we will take a look at the actual value of the poverty indicators. The definition of income used, in SHARE release 2.0.1 from July 2007, is the total net income of households. The data excludes imputed rent from owner-occupied housing, (Paccagnella and Weber, 2005). Since, there always appear problems with non-response and missing observations, the data used includes imputed incomes. In this way, the data is corrected for missing values and non-response. Because there is no imputed income data for Israel, this economy will not be analyzed.

Total gross income is transferred into total net income using OECD estimations on taxation and contributions to social security for different countries and different income categories (Paccagnella and Weber, 2005).

Net income is *Purchasing Power Parity* (PPP) adjusted. This means that the income is internationally comparable, because it is adjusted for international differences in consumer prices. Also nominal incomes are converted into real ones (Ray, 1998). All statistics are population weighted such that there is corrected for differences in the fraction of retirees in societies.

Also net income is corrected for household size i.e. *equivalent adults*. The equivalence scale used is the square root of the number of adults in a household. This approach also is used by Zaidi and De Vos (2002). In general every country has a specific equivalence scale which is the most suitable for that country. However, as we make use of cross-national comparisons, the square root of the number adults is applicable for all countries (Zaidi and de Vos, 2002). Equivalised income is calculated by dividing total net household income by the square root of the number of adults. Economies of scale appear for cohabitating adults in a household, therefore the square root of the number of adults is used in stead of the actual number. The values of the replacement rates stem from the Pensions at a Glance report from the OECD of 2007.

3.3.1 Gini Coefficients in SHARE

A simplified formula for Gini coefficients, other than the one presented above, is used to calculate the Gini's in the new release of the SHARE data. All observations on individual net income have to be sorted in an increasing order, such that $y_i \leq y_{i+1}$. Then the formula for the Gini coefficient is:

$$G = \frac{1}{n}\left(n+1-2\left(\frac{\sum_{i=1}^{n}(n+1-y_i)}{\sum_{i=1}^{n} y_i} \right) \right). \qquad \textbf{(3.3)}$$

Rewriting this formula results in:

$$G = \frac{2\sum_{i=1}^{n} iy_i}{n\sum_{i=1}^{n} y_i} - \frac{n+1}{n}, \qquad \textbf{(3.4)}$$

where *i* is the position of the individual income and *n*, the number of observations. However, this formula can only be used when the coefficients are calculated for the whole population. As we only have population samples, the formula is somewhat different and the coefficients have to be estimated instead of computed. The estimator for the Gini coefficient is consistent, but not unbiased. Since the sample size is very large, an unbiased estimator for the population Gini coefficient does not exist (Wikipedia, 2008).

The formula for the estimator (Gs)[6] is:

$$G(s) = 1 - \frac{2}{n-1}\left(n - \frac{\sum_{i}^{n} iy_i}{\sum_{i}^{n} y_i} \right). \qquad \textbf{(3.5)}$$

The Gini indexes for eleven countries are presented in table 2a below. We calculated the indexes for the total sample as a whole and we created two sub samples for people younger than 65 and people aged 65 and older. The Gini index is the Gini coefficient presented as a percentage, i.e. the Gini coefficient times one hundred (Ray, 1998).

Table 2a indicates that income inequality, in the total sample, is the lowest in the northern economies, i.e. Denmark and Sweden. The highest income inequality can be found in Spain. However, also Belgium and France also have a high income inequality. Compared to the other southern countries countries, Greece has a more equal distribution of income.

Income is more equally distributed among retirees than it is among people below the age of 65. This tendency also can be found in Bonsang, Perelman and Van den Bosch (2005), who

[6] See www.en.wikipedia.org/wiki/Gini_coefficient

calculated the Gini indexes for three different regions and more age categories. Only the Northern countries have an increasing income inequality over age. Especially Denmark has a remarkable difference of income inequality between the two age groups.

Table 2a: Gini Coefficients in SHARE

	Gini Coefficients		
Country	**65-**	**65+**	**Tot**
Austria	47%	43%	45%
Belgium	53%	48%	51%
Denmark	29%	35%	34%
France	50%	51%	51%
Germany	45%	38%	43%
Greece	43%	39%	42%
Italy	47%	45%	47%
Netherlands	44%	44%	44%
Spain	58%	49%	55%
Sweden	33%	35%	34%
Switzerland	46%	46%	47%
Average	**45%**	**43%**	**45%**

Source: Authors Own Calculations SHARE rel. 2.01

Bonsang, Perelman and Van den Bosch (2005) also calculated Gini indexes for the distribution of consumption and wealth. These indexes stem from the first release of the SHARE dataset. The Gini indexes for consumption and wealth as well as the Gini index for income (for the sake of completeness) are listed in table 2b.

Inequality in consumption is lower than income inequality. Consumption in this case is defined as food consumption at home and outside home (Bonsang, Perelman and Van den Bosch, 2005). When only food consumption is considered, the lower inequality can easily be explained. After reaching a certain income threshold, expenditures on food do not tend to increase as much as income increases (Ray, 1998). The reason being that food is a basic good. Richer people do not spend relatively much more of their income on nutrition; as a result the expenditures on food are distributed more equal than income itself.

On the other hand, wealth is much less equally distributed than income. Bonsang, Perelman and Van den Bosch (2005) give as an explanation that the long term differences in consumption motives, personal income, bequests and health result in a relatively unequal

distribution of wealth. As wealth includes more components than income, it makes sense that the distribution of wealth is less equal than the distribution of income for all countries.

Table 2b: Gini Coefficients Net Income in SHARE

	Gini Coefficients		
Country	**Income**	**Consumption**	**Wealth**
Austria	51%	33%	58%
Denmark	32%	28%	62%
France	47%	45%	61%
Germany	42%	25%	62%
Greece	45%	28%	52%
Italy	41%	47%	64%
Netherlands	42%	25%	62%
Spain	56%	26%	68%
Sweden	33%	22%	59%
Switzerland	47%	38%	63%
Average	**44%**	**32%**	**61%**

Source: Bosang, Perelman and Van den Bosch (2005)

3.3.2 Replacement Rates in SHARE Economies

The replacement rates indicate, as stated above, the level of pension income as a percentage of the pre-retirement earnings. The replacement rates, presented in table 3, reflect the rates of mandatory pension plans. They do not capture exclusively public pension plans, but also mandatory occupational pensions. For example, in the Netherlands, almost the entire working population is covered by occupational pensions (OECD, 2007).

The replacement rates are based on a full-career worker with median earnings. Low earnings are defined as a half times the median wage or less, whereas high earnings are equal to two times the median wage or more (OECD, 2007). The gross replacement rates are corrected for personal income taxes and contributions to the social security system paid by workers (OECD, 2007).

Public pensions are especially important for low income workers. For these workers, the net replacement rates are the highest in most countries, except for Austria and Spain. On a national level there seems to be a negative relation between pre-retirement income and replacement rates, indicating that the public pension benefits play a less important role in income after retirement for high income workers. High replacement rates for high income

workers, as in the Netherlands, demonstrate that the country has a large mandatory occupational scheme. However, that does not hold for every country. It also could be that public pension benefits are income dependent and high income workers receive a lower benefit. Other economies also have large occupational pension schemes, although they are not mandatory. Tax advantages are the largest for low incomes (OECD, 2007). The difference between gross and net replacement rates is the largest for low and average earnings.

Table 3: Replacement Rates by Individual Earnings Level

	*Gross replacement rates			**Net replacement rates		
	Individual earnings, multiple of average			Individual earnings, multiple of average		
Country	***0.5***	***1***	***2***	***0.5***	***1***	***2***
Austria	80.1	80.1	58.8	90.4	90.9	66.4
Belgium	57.3	40.4	23.5	77.3	63.0	40.7
Denmark	119.6	75.8	57.1	132.7	86.7	72.2
France	63.8	51.2	44.7	78.4	63.1	55.4
Germany	39.9	39.9	30.0	53.4	58.0	44.4
Greece	95.7	95.7	95.7	113.6	110.1	107.0
Italy	67.9	67.9	67.9	81.8	77.9	79.3
Netherlands	80.6	81.9	82.6	97.0	96.8	94.8
Spain	81.2	81.2	67.1	82.0	84.5	72.4
Sweden	79.1	62.1	66.3	81.4	64.0	73.9
Switzerland	62.5	58.4	30.5	75.0	64.3	35.1
OECD average	**73.0**	**58.7**	**49.2**	**83.8**	**70.1**	**60.7**

Source: OECD (2007)

* Individual pension entitlement as a percentage of individual pre-retirement gross earnings

**Individual pension entitlement net of taxes and contributions as a percentage of individual pre-retirement earnings net of taxes and contributions

The replacement rates reflect the rates of mandatory pension plans

3.3.3 Poverty rates in SHARE

As mentioned above, the findings on poverty are based on imputed, total net income of households. Poverty rates are presented based on three different poverty lines. The net median income of a country is the determining factor. The income of retirees is compared to the income of the total population. Equivalised income means that the household income is corrected for equivalent adults in the household, as described earlier this chapter. The poverty rate indicates the percentage of the population with an income below the poverty line.

The poverty lines are 40, 50 and 60 percent of the median income, respectively. The reason to choose these cut-off points is that these values are commonly used poverty lines (Smeeding 2001). Especially the change between the poverty rates based on 50 and 60 percent of the median income are interesting. The percentage of people with an income lower than 60 percent of the median equivalised income is living "at risk of poverty" (Ray, 1998). Due to unexpected shocks, they are more likely to face future poverty than people above this poverty line. The poverty rates for the three different cut-off points are presented in table 4. The poverty rates reflect poverty amongst people aged 65 and over. The last column represents the change in poverty rates when the age-corrected poverty line increases by ten percent.

When we compare our results to poverty rates obtained by Eurostat (2008), we notice that our rates are lower than the ones calculated by Eurostat. This is remarkable since we have used the same definition income, poverty and age class, i.e. 60% of the median equivalised income, ppp adjusted. As the poverty rates of retirees are rather low compared to numbers found by Eurostat (2008), it is likely to assume that the poor are underrepresented in the data. This idea is confirmed when we take a look at the tables 5a and 5b in *Appendix II*. Table 5a presents the median equivalizsed incomes of different age categories found in Eurostat and for two age classes in SHARE. A comparison of the incomes corrected for purchasing power shows that the median incomes in SHARE are generally higher than the incomes for the same age classes in Eurostat. Table 5b shows the ratios of the median income of elderly to the incomes of other age categories and the one of the total population. There are some similarities in the ratios in Eurostat and SHARE, but for most countries the ratios differ.

As the median equivalised income is higher in SHARE, we compare the income of retirees to the median income of the total population in SHARE. When we would use the median incomes of Eurostat, poverty rates would be considerably lower and underestimated too much. The poverty rates presented below still are rather low. However, the patterns of changes in the poverty rates when the cut-off points are increased by ten percent are similar to the patterns found by Lyberaki and Tinios (2005).

Table 4: Poverty Rates (65 and older)

Country	Median Income	Poverty Rate 40%	Poverty Rate 50%	Poverty Rate 60%	change 50%-60%
Austria	19462.00	2.85	5.28	8.77	3.48
Belgium	16648.00	3.01	5.84	10.01	4.17
Denmark	22551.00	2.87	8.21	15.36	7.15
France	19641.00	3.54	7.13	11.93	4.80
Germany	19875.00	4.51	7.51	11.58	4.07
Greece	11645.00	3.99	7.08	9.83	2.75
Italy	13943.00	3.88	7.39	12.74	5.35
Netherlands	24585.00	3.14	4.56	10.81	6.25
Spain	11090.00	4.08	8.24	14.90	6.66
Sweden	20707.00	2.13	3.34	8.81	5.47
Switzerland	28439.00	6.09	13.57	16.25	2.68
Average	18962.36	3.65	7.10	11.91	4.80

Source: Authors Own Calculations SHARE rel. 2.01

Sweden and Austria have the lowest poverty rates among all the SHARE economies. The distribution of income in Sweden is relatively equal. However, the last feature also holds for Denmark, while poverty among retirees in Denmark is rather high. The poverty rate at the third cut-off point is the second highest number, i.e. 15.36%. However, the poverty rate at 40% is one of the lowest numbers in SHARE. The increase from the median income ate the second cut-off point with 10% results in an increase of the poverty rate by 7.15 percent points. The replacement rates in table 3 showed that in Denmark low income workers have high replacement rates. This seems to contradict the high old-age poverty in Denmark. However we must keep in mind that income inequality increases with age in Denmark. This is an indication of high poverty among retirees. Because of the remarkable pattern with respect to poverty indicators and poverty rates, Denmark's social assistance scheme for retirees will be studied intensively the next chapter.

Old-age poverty seems to be a larger problem in southern economies, except for Greece, although the differences with France and Germany are not considerably large. Switzerland however, has a striking poverty rate. A first explanation can be found in the Swiss pension system and the incentives it creates for retirees, these are described by Bütler and Teppa (2007).

Switzerland only has a small first-pillar public pension; the second pillar is the most important source of income after retirement. It is mandatory for all employees and fully funded. Within this occupational pension system retirees have the choice to convert their accumulated capital into a monthly life-long annuity or to withdraw it (partly) as a lump-sum. When the combined pension income of a household is too low to cover basic needs, a household has the possibility to claim a means-tested supplemental benefit. According to Bütler and Teppa (2007) this option to claim social assistance provides an incentive to choose the lump-sum option and cash-out accumulated second pillar pension capital. Especially for retirees with an incomplete public pension benefit and low accumulated pension wealth in the second pillar, it is an interesting option to choose the lump-sum transfer. Once accumulated capital is depleted, an income guarantee is given by the social assistance benefit. In terms of utility is the best option to choose (Bütler and Teppa, 2007).

Bütler and Teppa (2007) also state that the supplemental benefit is high enough to supplement household income above the poverty threshold[7]. However, as we use the median income of the population in SHARE, which typically is higher than the ones found in Eurostat, the supplemental benefit is not enough to lift household income above our poverty line. Of course this is only one possible explanation of old-age poverty in Switzerland. Therefore, this conclusion is probably not the only one and cannot be drawn without further research, which will not be a part of this thesis.

The strong incentive to deplete accumulated pension wealth and to claim a supplemental benefit is a reason not to cover Switzerland in the next chapter. As the poverty rates of other countries do not differ that much, we must select an economy based on other interesting features.

Another country with interesting features is Belgium. The poverty rate of Belgium is close to the one in Netherland, especially for the poverty rate at the cut-off point of 40%. At 50% of the median income Belgium faces a higher poverty among elderly. However, the increase of the poverty line with 10 percent up to 60% percent is higher in the Netherlands than it is in Belgium. One of the explanations could be the social security arrangements for the elderly.

[7] The definition of the poverty line differs from the definition we use. Bütler and Teppa (2007) use the maximum income an individual is entitled to by claiming the social assistance benefit.

Belgium has a social assistance scheme special for retirees while the Netherlands treat elderly the same as the working population. The different social assistance scheme between these countries is our main reason to choose Belgium as our third country.

Now we have selected two other countries beside the Netherlands with different social assistance schemes for retirees. The social assistance schemes for retirees of Belgium and Denmark will be compared to the one in the Netherlands. The next chapter describes the systems of these three economies and to what extend they differ.

3.4 Conclusion

The social assistance schemes for retirees in the Denmark, Belgium and the Netherlands will be described extensively. The combination of poverty and replacement rates, Gini coefficients and the patterns of poverty are remarkable for these economies. The large number of people living at risk of poverty could be caused by failures in the social security systems. The next chapter defines the strictness of the social assistance schemes of these countries.

Chapter 4 Theoretical Characteristics of Poor Elderly in the Netherlands, Belgium and Denmark

Elderly with an incomplete public pension and little or no income out of occupational pensions or other resources are dependent upon the social assistance network. These poor elderly are possibly eligible for social assistance benefits. This chapter compares the social assistance schemes for retirees in Denmark and Belgium with the system in the Netherlands. The last one serves as a reference and we will discuss the differences in the structure of the means-tested benefits within these three economies.

First we discuss some theoretical aspects of means-tested benefits with respect to poverty alleviation and their difference with universal provision of benefits. In the next section we explain the aspects of interest with respect to means-tested assistance schemes and. Subsequently in case studies we describe the regulation on the means-tested benefits. This chapter ends with a description of the characteristics of poor elderly extracted from the legislation on social assistance.

4.1 Means-tested benefits in theory

Social assistance programs, or other forms of income maintenance by the government, are present in all western economies (Currie, 2004). Roughly speaking there are two pure forms, namely; means-tested benefits and universal provision. Means-tested social assistance benefits require a personal income below some threshold set by the government, usually the (official) poverty line (Besley, 1990). Only people with an income below the poverty line are potentially eligible to the scheme. The benefit is transferred as a lump-sum amount to supplement personal income up to the income threshold. However, nowadays not only personal income determines eligibility but also the amount of financial assets may not exceed a certain amount. Or the benefit is dependent on the household situation and house ownership (Pieters and Schoukens, 2006). These criteria are introduced to ensure that the benefit only can be claimed by those who really need it, doing so reduces the burden on public finances (Pudney, Hancock and Sutherland, 2006).

In contrast to a means-tested scheme, in a universal provision scheme of assistance benefits, the rich and the poor both receive the benefit regardless of personal income

(Besley, 1990). Income support on a universal basis aims to provide a minimum level of income to all individuals at reasonable cost to the government (Currie, 2004). As a result also people who do not really need the benefit receive it. An example of universal provision of a social security benefit is the child benefit in the Netherlands, i.e. *National Child benefits Act (Algemene Kinderbijslagwet)*. As soon as their child is registered officially, parents receive a document to claim the child benefit. The level of the benefit is independent of personal income and hence, the same for rich and poor households. However, social assistance schemes tend to be targeted to the poorest segment of a population. Universal provision of social assistance schemes is very uncommon (Currie, 2004).

Means-testing is effective to determine whether one is eligible to claim a benefit or not, it also causes problems of non take-up i.e. those people who are entitled but do not claim the benefit (Pudney, Hancock and Sutherland, 2006). Non take up is a serious problem and can be caused by several reasons however; they do not specifically have to be a result of means-testing criteria. First off all there has to be awareness of the possibility to claim a benefit. The lack of knowledge of a social security system or the complexity of it could be one of the reasons not to claim a benefit. A social related cause of non take up is that in some cultures of migrants it is not done to talk about financial problems. Social assistance is not claimed because of feelings of shame (Verwey-Jonker Instituut, 2007).

An economic reason not to claim income support is the non-pecuniary costs for individuals (Besley, 1990). These and the monetary costs are not compensated by the program. The non-pecuniary costs involve the time to request and obtain the benefit. As means-tested benefit mostly tops income up to the level of the threshold, total costs exceed the level of the benefit for elderly with an income slightly below the income threshold. This means that non take-up increases with the costs of claiming a benefit (Besley, 1990).

Research of the SVB to non take-up of the WWB benefit in the Netherlands shows that one out of three elderly, with an incomplete AOW, benefit does not claim the WWB benefit, while eligibility is established. In 2005, out of all retirees with an incomplete AOW benefit, 26 percent was eligible for a WWB benefit. One third of them did not claim it. Non take-up under migrants with the Turkish nationality is the highest (SVB, 2008).

Non take-up is not only a problem in the Netherlands also the United Kingdom experiences a relatively high non take-up (Pudney, Hancock and Sutherland, 2006, Currie

2004 and Sutherland 2003). Estimations of the Department for Work and Pensions indicate that 32 percent of all retirees and 41 percent of all single pensioners received a means-tested assistance benefit. Estimates of non take up for the general income maintenance benefits, the Income Support and Minimum Income Guarantee, show that between 28 and 37 percent of all entitled elderly did not receive an assistance benefit (Department for Work and Pensions, 2004).

Non take-up of social assistance benefits is not the only problem of means-tested income support; also the incentives given by the regulations could be problematic. In order to be eligible for a means-tested benefit, total household income and the amount of assets may not exceed a certain threshold. Pensioners with an incomplete public pension benefit and no or little income out of occupational pensions do not have this problem with respect to the income criteria. However, the threshold for assets could be a reason to deplete assets and savings accumulated in the pre-retirement phase. The case of the Swiss pension system and the means-tested income assistance, described by Bütler and Teppa (2007), is a good example of unintended incentives of means-tested benefits. Estimates of the effect of means-tested benefits on savings in Belgium, Denmark and the Netherlands are not available.

A second important incentive effect is the choice of claimants to work less to ensure qualification of the assistance benefits (Besley. 1990). The result is abuse of benefits and the system. This increases the costs of the system. Mean-tested benefits require eligibility tests which are time-consuming. However, when the government's aim is to provide income maintenance only to those who really need it, an eligibility test based on means-tested thresholds is unavoidable. With universal provision, benefits float to those who are self-supporting and do not need social assistance. This could be undesirable from an income-leveling perspective.

4.2 Elements of Interest in the Eligibility Criteria of Means-Tested Benefits

This section describes the aspects of the qualification criteria on which we compare the systems of the three case studies. Based on these aspects we try to find similar characteristics of poor elderly. To make the systems comparable to each other, we must restrict ourselves

to some elements and not lose ourselves into too many details and exemptions available in the law of social assistance benefits.

The first restriction we impose is that we will compare only the social assistance systems for retirees and do not describe assistance benefits for the general population. As the Netherlands have the same social assistance system applicable for the whole population, the first problem arises. The focus of this thesis is on social security arrangements for poor retirees. Therefore, we discuss the general rules of the social assistance scheme, but we limit ourselves to the criteria and the amounts relevant for elderly.

The second restriction is that we only discuss the current legislation from 2008. We subtract from recent reforms. The data stems from 2004-2005, this means that the households in the dataset were possibly subjected to other regulations and thresholds. We are interested in current legislation. However, for all the three countries holds that the legislation has not changed dramatically since 2004. The difference of timing does not have harmful consequences for the analysis in the next chapter, since this will be merely based on social characteristics and not on income components.

The first aspect of interest is whether a work-test is imposed on eligibility. Elderly with an incomplete public pension accrual and only a small amount of income out of occupational pensions know that their income after retirement will be low. The decision to continue work after the legal retirement age is an option to increase savings or accrue more occupational pension rights. Another option is work part-time and lower working hours over time. The question is whether eligibility allows for income derived from labour. If so to what extent is labour income exempted? A work stop could be required before elderly are eligible for social assistance.

The next aspect is income out of occupational pensions. The targeted group of retirees with an incomplete public pension benefit may also have income, although low, out of occupational pensions. We investigate which country makes use of an exemption for income out of occupational pensions and to what extent this is allowed.

Subsequently, we consider the amount of financial assets allowed before eligibility is established. Often savings also are subjected to a certain threshold, i.e. some savings are

allowed, like in Switzerland (Bütler and Teppa, 2007). The amount of savings allowed is not unlimited. The reason is not to make a distinction between households who built up income at retirement via asset accumulation and families who paid pension premiums. The first category of elderly does not have an income out of occupational pensions but has accumulated savings themselves. Compared to the elderly who accrued pension rights, it would not be fair to claim income support and to give the lack of income out of pensions as a reason.

House ownership is our last element. Housing is a form of an illiquid asset; elderly have invested in housing in the past. Liquidizing the invested capital would mean to sell their house, which might be undesirable.

Based on these eligibility criteria and the amounts of the benefits we must be able to determine at least four characteristics of poor elderly.

4.3 Case Studies

Now we will take a close look at the legislation with respect to means-tested benefits in the three selected countries with respect to the aspects described earlier. First we will describe the situation of the Netherlands; it will function as a reference point. It will be followed by the means-tested benefits in Belgium and Denmark. Appendix III consists of an overview to compare the three systems more easily.

4.3.1 The WWB in the Netherlands

The WWB benefit, described in the Work and Social Assistance Act, is a safety net for those who have an income below the subsistence level. This form of income support has a complementary character. The WWB benefit is aimed to top income up to a level with which a person or a household is able to meet his basic needs, but only for those who have insufficient income resources themselves (SZW, 2008a). The act stems from October 9th 2003. The responsibility and execution is carried by municipalities in the first place. But a municipality has the choice to mandate the Social Insurance Bank for the execution of the WWB for the elderly. From 1 January 2010 onwards, the SVB is officially mandated by the minister of Social Affairs and Employment to execute the WWB65+ for every municipality

in the Netherlands. As the SVB also executes the Dutch public pensions, it is very efficient in determining who has an incomplete AOW benefit and is potentially eligible for social assistance.

Every person with the Dutch Nationality or legally residential migrants under the Aliens Act (VW, 2000), living in the Netherlands, whose resources are below the level considered as insufficient to fulfill the minimum subsistence level, is potentially eligible for the WWB (art. 11, par. 1, WWB). Migrants and other people with an incomplete AOW benefit have the option to claim the WWB benefit, when other resources are insufficient to fulfill their basic needs.

For elderly, also for non-retirees, the family situation is trivial for the height of the total benefit. A joint household is the most important concept. Registered partners (married or cohabiting) who live in the same residence form a joint household. Children below the age of 18 living in the same residence, give the right to a higher benefit.

For a one person household, the full AOW benefit (per January 1st, 2008) is equal to 963.78 Euros. In case of a lower AOW benefit and eligibility to the WWB, the WWB complements income up to this level. This level is called the standard of national social assistance or *bijstandsnorm* in Dutch. A single parent receives 1,187.92 Euros, whereas a married couple, both aged 65 or older gets 1,321.84 Euros, or 660.92 Euros per person. For married couples with one of the spouses younger than 65, this amount is the same. However, this is only the case when the younger spouse has no income itself (art. 22, WWB).

The WWB is assigned by virtue of all resources of a household. The definition of resources contains all asset- and income components a single or a family reasonably is assumed to poses (art. 31, par. 1, WWB). The amount of resources taken into account is the amount of resources after the deduction of all indebted wage and income taxes, national insurance and pension premiums (art 31, par 3, WWB). Assets are reduced by the total outstanding debt (art. 34, par. 2, WWB). The income component of total resources contains net income out of labour or assets, social security benefits and pension income (art 32, par 1, WWB). For married couples with one non-rightful claimant, total family income only for the amount

exceeding the standard of national social assistance for married couples, is taken into account (art 32, par. 3, WWB).

Nowadays, only for non-retirees there exists an exemption of income out of labour of 25 % with a maximum of 181 Euros per month. This means that the maximal allowed income form employment is 724 Euro of which 181 Euro is exempted. Income form employment higher than 724 Euro is subtracted from the WWB benefit. However, retirees do not have an obligation to work. Elderly who want to apply for the WWB benefit and continue to work after the age of 65 are allowed to do this. The WWB benefit is skimmed with the total amount of income received from employment.

The WWB allows for periodical pension income. A one person household and a single parent are allowed to have a monthly pension income out of occupational pensions of 17.60 Euros (per 1 January, 2008). For married couples this amount equals 35.20 Euros (art 33, par. 5, WWB). The reason for the pension exemption is to prevent a distinction between people who built up an old age pension and people who accumulated assets (SZW, 2008b). A monthly pension income higher than the previous amounts is subtracted from the WWB benefit.

WWB claimants are allowed to hold some assets. The total net value of the assets of the family is taken into account. For households consisting of one person, the boundary per January 1st, 2008 is 5,325 Euros, whereas single parents and cohabiting couples have a boundary of 10,650 Euros (art. 34, par. 3, WWB). If the value of assets exceeds the boundary value, claiming the WWB benefit requires a depletion of assets in a responsible way.

The boundary condition for the value of the owned house including the value of the corresponding area equals 44,900Euros (art 34, par 2, WWB). This value is the net value, i.e. the total value of the house minus the current value of the outstanding mortgage on that house. When the corresponding housing value exceeds this amount, a claimant has the option to receive the WWB benefit as a mortgage with the house as warrantee. This only is

possible when capitalizing the value of the house cannot be deemed reasonably (art 50, par. 2, WWB).

A single persons' AOW income is complemented to the full standard of national social assistance if and only if: 1) he stops working. 2) Monthly occupational pension income does not exceed 17.60 Euros. 3) the value of assets is not higher than 5,325 Euros. And the net value of the residence is below the amount of 44,900 Euros. Only in the case of a higher value of the house, the WWB-benefit is given as a credit loan.

In the note to the Dutch parliament, the ministry of Social Affairs and Employment discusses the possibility of an extension of the absolution for occupational pension income and assets held by retirees (SZW, 2008b). First of all, both exemptions are admitted in the act for the reason described earlier, namely not to make a distinction between the two forms of ensuring income after retirement. The two boundary amounts are chosen such that they correspond with each other. After all, the amount of assets of 5325 Euros approximately corresponds to a monthly occupational pension income of 17.00 Euros from the age of 65 until the age 90. Hence, an extension of pension income would improve the position of retirees who ensured income after retirement via occupational pensions compared to asset accumulation and *vice versa* (SZW, 2008b).

A second reason not to increase monthly allowed income out of occupational pensions is that it would create inequalities. Increasing the boundary for second pillar pensions, makes people with an incomplete AOW benefit better off than retirees with the full AOW benefit, who are not eligible for the WWB. Total income after WWB benefit and occupational pensions could be higher than the full AOW benefit which is undesirable (SZW, 2008a).

Interest groups suggested an extension of the assets held by retirees to the same boundary as the third box in the taxation of income (20,014 Euros per person). However, this violates the complementary character of the WWB. The WWB only supports people with insufficient resources to fulfill the basic needs. Retirees with a total amount of assets as the suggested amount do, according to the Ministry of Social Affairs and Employment, not need the WWB benefit (SZW, 2008a and b).

Elderly are not stimulated to continue work after the legal retirement age, which is undesirable from an ageing perspective. Therefore, it is likely that, in the future, elderly will face the same exemption for labour income as non-retired claimants. This fits within the opinion of the government of higher responsibility for retirees with an incomplete AOW benefit. Continuing work after the age of 65 improves their income position compared to retirees with a complete residence period of 40 years in the Netherlands (SZW, 2008b).

4.3.2 The IGO in Belgium

The Income Guarantee for Elderly (*Inkomensgarantie voor Ouderen*) is a warrant of income for poor elderly in Belgium. Elderly (aged 65 or older) who are actually accommodated in Belgium and who are eligible for the Belgium old-age or survivor pension are eligible to the IGO (van Langendonck and Put, 2006). Nowadays, the legal age differs somewhat for men and women, depending on the day of birth. From 2009 onwards, the eligibility age is 65 for both sexes. The IGO is executed by the National Office of Pensions (*Rijksdienst voor Pensioenen*).

In contrast to the WWB in the Netherlands, the difference in the IGO benefit stems from the situation of housing. The 'normal' benefit is given to cohabiting individuals, i.e. individuals living with more persons in the same main residence. Institutionalized elderly living in a sanatorium are not seen as cohabiting individuals. In comparison with the 'normal' benefit, the level of the benefit of non-cohabiting partners is increased by 50% (van Langendonck and Put, 2006). The benefit is calculated on a yearly base, but remitted monthly (RVP, 2008).

A cohabiting claimant receives a benefit of maximal €6,491 a year, this is equal to 540.92 Euros (per December 1st 2007) a month. Single living persons enjoy a benefit of 9,545 Euros a year, i.e. 811.35 Euros per month (RVP). The benefit of the IGO is thus lower than the WWB benefit, a further comparison of the aspects discussed is required to draw more conclusions.

The IGO benefit is fully dependent on the average total resources per cohabiting partner. The resources per person are the sum of total resources of cohabiting partners divided by the number of cohabiting individuals. Children, for whom a child benefit is received, are not considered as co-residents (RVP, 2008). After the calculation of the resources per person, a general exemption is applied. For retirees who are a (no) head of the family the exemption equals 1,000 (625) Euros. This exemption reduces the resources per person. Subsequently, the maximum benefit is reduced by the remaining part of total resources per person.

This is the general procedure of the calculation of total resources per person. The aspects of interests affect resources per person in different ways. Only pension income does not affect the total resources per person, but influences the IGO benefit directly. Next a description, of how the resources and the benefit are affected by the aspects of interest, follows.

Employment activities are allowed when claiming the IGO benefit. However, income from employment is counted as means of existence, i.e. total resources per person (RVP, 2008). Income form employment lowers the maximal benefit. This criterion is the same as it is in the Netherlands, since the WWB-benefit also is reduced with income out of employment.

The IGO benefit is lowered with 90% of total actually paid pension income per person (RVP, 2008). This means that ten percent of the pension income is exempted; there is no limit to the amount of exemption. Nor is there a difference between cohabiting and non-cohabiting retirees. This amount of exemption is larger than in the Netherlands, since the Netherlands has a clear defined maximum.

Capital on saving accounts and invested capital not higher than the amount of 6,200 Euros do not influence the height of the benefit. When accumulated capital exceeds this amount but not the amount of 18,600 Euros, it only increases total resources by 4 percent. Any value of assets above this value it raises total resources by 10 percent (RVP, 2008). This regulation is far less strict than it is in the asset component in the WWB, since in the WWB, exceeding the boundary for assets requires depletion of the assets before a claim is approved. Also the total exempted amount per person is higher in the Netherlands.

Calculating the magnitude of how total resources are affected by house ownership is not really straight forward. House ownership affects total resources by means of cadastral income. First, the total cadastral income for all cohabiting individuals on the same main residence is calculated. Then, this amount is reduced by 743.68 Euros. Subsequently, the result is multiplied by three. This total sum is divided by the total number of cohabiting persons. Finally, total resources per person from house ownership are added to the total amount of the previous calculation (RVP, 2008).

As described above, the components result in the total resources per person. This amount is reduced by the corresponding general exemption. Finally, the maximum benefit is reduced by the latter, resulting in the IGO benefit for the claimant. Large values of the different resource components automatically filter out all claimants who do not necessarily need the IGO. When the level of the benefit becomes zero or negative, the benefit the benefit cannot be claimed (RVP, 2008).

Pension income and asset accumulation affect the level of the benefit in a less strict way than they do in the Netherlands. Also the criterion for house ownership does not seem to be that strict, since there is no maximum value. Overall, the conclusion can be drawn that the eligibility criteria for the IGO in Belgium are not that strict as they are applied to its Dutch counterpart, the WWB.

4.3.3 Means-tested benefits in Denmark

Retirees in Denmark with a disadvantaged financial position have several possibilities for income support. All of these regulations are integrated with the Danish pension system and means-tested. The act that describes the benefits and the qualifying conditions is called the Consolidation Act on Social Pensions (CASP). The act stems from 28 January 2004. The public pensions are executed by the National Social Security Agency (*Sikringsstyrelsen)*, from which the current amounts (since January 1st 2008) of the benefits are received.

The amounts in the CASP are presented in the local currency (Danish Krone, DKK). For comparison purposes we transfer the amounts into Euros according to the

official exchange rate of the tenth of July 2008[8]. Also the mentioned amounts are gross amounts. After taxation, the actual paid benefit is lower.

The first means-tested benefit is the public pension (Folkpension) itself. Danish residents who lived in Denmark for 40 years, with a minimum of 3 years, between the age of 15 and 65, are entitled to the full public benefit (part 1, section 2-3.4, CASP). Danish citizens, residential in another country under EC Regulation 1408/71, but who have lived at least 10 years in Denmark after the age of 15 are also entitled. All benefits, also the social assistance ones, are proportionally reduced for every year not lived in Denmark.
The benefit consists of a basic amount and a personal supplement. The personal supplement depends on the household situation and total household income. The maximum basic amount is the same for every entitled individual with the same income. Wages and salaries (including income from self-employment), interest and income from securities, all before taxation, are included in the income definition.

The maximum basic amount equals 683.15 Euros (5096 DKK). When annual gross income exceeds 34,814.60 Euros, it is reduced by 30 percent of the income basis (part 4, section 31, CASP). Entitlement on the basic amount stops when annual income is higher than 62,135.42 Euros (NSSA, 2008). The basic amount is independent of cohabiting partnership.

Contrary to the basic amount, the pension supplement is dependent on both income and household situation. Singles receive a supplement of at most 687.71 Euros a month, for cohabiting partners this is 321.20 Euros. For singles, the supplement is reduced by 30% of the income basis when income is higher than 7,681.47 Euros and ceases above 35,189.96 Euros. The boundary conditions differ for married couples where both spouses receive a social pension and married couples in which only one of the spouses receives a social income (NSSA, 2008). For both categories the supplement lowers if household income exceeds 15,461.56 Euros. Again, the supplement is reduced by 15% (30%) of the income basis when both (one) of the spouses receive a social pension. The supplement is no longer received when income, for the first category, is larger than 41,021.44 Euros. When one of

[8] The official exchange rate July 10, 2008: 1 DKK = 0.134057 EUR or 1 EUR = 7.45953 DKK. www.x-rates.com

the spouses has no social pension, this amount equals 28,259.22 Euros. However, for married couples and cohabitants, 50% of the income of the spouse is exempted, with a maximum of 24.049 Euros. The exceeding part of a spouse income is taken into account completely (NSSA, 2008).

A single pensioner receives a public benefit of at most 1,370.87 Euros per month, for a couple the benefit is maximally 1,004.36 Euros. The actual received amount is reduced proportionally for every missing year of residence or for income exceeding the corresponding boundaries. Also there are possibilities for a health allowance in case of a bad health. However, these will not be described here.

Entitled pensioners in a disadvantaged financial position are potentially eligible to the Supplementary Pension Allowance, which can be seen as a social assistance allowance. The benefit depends again on the income position, household situation and the value of liquid assets. Also the supplementary allowance is reduced proportionally for missing residential years (NSSA, 2008).

The maximum allowance is 1,045.65 Euros per month. This is higher than it is in the Netherlands. The benefit is reduced by 30% of the annual income that exceeds the amount of 2,225.35 Euros. Eligibility stops after 7,681.47 Euros for a single pensioner. Married or cohabiting pensioners receive a reduced allowance when total income exceeds 4,986.92 Euros, the allowance ceases with an annual income of 15,416.56 Euros (NSSA, 2008).

Claiming pension benefits while working, is possible in Denmark. However, the hours worked may not be higher than 1.000 hours a year (NSSA, 2008). The earnings from employment are taken into account for the boundary conditions, i.e. the pension benefits are reduced or not paid at all. Exceeding the boundaries results in a reduction of the pension benefit by 30% of the income basis. Compared to the Netherlands this is less strict, since in the Netherlands the benefit is completely reduced by income out of employment.

Occupational pension income is totally deducted from the income basis and hence does not result in a reduction of the pension benefit (part 4, section 29.4, CASP). This is remarkable compared to the Netherlands and Belgium. Also house ownership does not influence the pension benefits.

Singles as well as married or cohabiting retirees will lose the right to the supplementary allowance when the value of their liquid assets is higher than 8,030 Euros (NSSA, 2008). Compared to the Netherlands the eligibility condition on assets for singles is less strict. However, couples are allowed to have less illiquid assets.

4.4 Comparison of Social Assistance Schemes

Although the eligibility criteria differ among the three countries and calculation of height of the benefits differs significantly, we were able to make the systems comparable.

Employment activities are allowed in all three economies. However, the benefit is reduced completely in the Netherlands and Belgium. Labour income in Denmark does not influence the height of the benefit as longs as the worked hours do not exceed 1,000 hours per year. The benefit is only reduced when the worked hours exceed the boundary condition and annual income exceeds a certain amount.

In Belgium and the Netherlands income out of occupational pensions is allowed, although only to a certain extent. In Denmark, occupational pensions do not influence the height of the allowance, whereas in the other two countries, assistance benefits are reduced. The consequences of income out of occupational pension income on the height of the benefit are the largest in the Netherlands, since in the Netherlands the allowance for pension income is restricted to a maximum.

Accumulated assets do not result in a reduction of the benefit in Belgium, Denmark and the Netherlands, as long as the value does not exceed a certain amount. When the value exceeds the maximum amount, retirees lose the right to claim income support in the Netherlands ad Denmark. In Belgium, it has less severe consequences; it only results in a reduction of the benefit.

House ownership has no relevance for the social assistance benefit in Denmark. For Belgium it depends on the height of cadastral income. This influences the total resources per person, which might result in a reduction of the IGO benefit. In the Netherlands, the value of the house may not exceed an arbitrary amount. When it does, the WWB-benefit can only be received as a credit loan.

To summarize our findings with respect to the social security arrangements for elderly with an incomplete public pension benefit: we can conclude that the system in the Netherlands, with its clear-cut defined boundaries on income components and criteria is, stricter than the systems of Belgium and Denmark.

4.5 Theoretical Characteristics of Poor Elderly

Based on the findings above we can conclude that the criteria in the Netherlands to receive social assistance are stricter than they are in Belgium and Denmark. The Netherlands makes use of strict eligibility criteria in order to ensure that the WWB is only claimed by those retirees who really need the benefit. The system of Denmark is less strict than the ones from the Netherlands and Belgium.

The three countries have higher benefits for single elderly. As singles cannot share the costs of living, it is more likely that singles experience higher costs and are more likely to be poor.

Employment activities after the legal retirement age are discouraged heavily in Belgium and the Netherlands. We do not expect to find many individuals who remained employed after the age of 65. Most elderly will opt for complete retirement, which is far more attractive. In Denmark, employment activities should be an important factor to alleviate poverty. Working part-time is stimulated due to the exemption of 1,000 working hours a year.

Savings are allowed in the three countries. The benefits of income support are reduced when the asset value exceeds certain boundaries. In the Netherlands the right to WWB deceases. We expect that also poor elderly will hold financial assets.

House ownership also is an important element of old-age poverty. House ownership reduces social assistance benefits; however, it is still possible to receive assistance. For elderly who have bought their houses in the past, their mortgage is likely to be amortized, but the costs of maintenance are likely to increase over time. This places a heavy burden on their incomes and social assistance could be desired.

Based on the description of the three systems to alleviate old-age poverty we are able to formulate some expectations for the empirical. The first one would be that compared to cohabiting elderly, singles have more difficulties to prevent old-age poverty. Cohabiting is

expected to decrease the probability of poverty in all three countries. Although Denmark only makes a distinction in the boundary conditions and not in the actual amounts, the possibility of sharing costs and another possible income source should be more important.

Employment activities are an attractive option in Denmark. Occupational pension income does not influence the height of income support. This combination makes the option to continue work after the age of 65 very attractive for elderly with incomplete public and little occupational pension benefits. We expect the negative effect of income from employment on old-age poverty to be the largest in Denmark.

As assets tend to deplete at the old-age, we expect that an increase in age, increases the probability of old-age poverty. Financial assets also should have a negative effect on old-age poverty, especially above thresholds of the maximum allowed amounts.

Chapter 5 Characteristics of the Poor in Reality

Based on legislation that covers people with an incomplete public pension benefit, we have distinguished theoretical characteristics of poor elderly. Using data for the three earlier selected countries, we discuss the characteristics that appear in reality. Moreover, we also estimate the effects of these characteristics on the probability to become poor after the age of 65. The model used is a limited dependent variable model (LDM). The results provide some insight in variables which influence old-age poverty and enable us to make recommendations to policymakers.

The first section is a description of the data for the Netherlands, Belgium and Denmark. We take a look at the characteristics of the poor elderly with respect to aspects of the previous chapter. Furthermore, we also include age and education in our description. The reason is that education is positively associated with wage, i.e. negatively with poverty. Costs of medication and other health expenditures tend to increase with age, for this reason we expect the relation between age and poverty to be positive. Then, in the next section we describe the model used to estimate the effects of the different aspects on the probability of being poor. The results of these estimations will be presented in the third section followed by the interpretation. This chapter will end with a conclusion and some recommendations to policymakers.

5.1 Characteristics of Poor Elderly

The analysis will be limited to persons older than the age of 65. Unfortunately, the data does not contain any information on ethnic origin. This means that we are unable to select people who potentially have an incomplete pension benefit due to migration. However, we are able to select the criteria described in the previous chapter.

Now we will take a close look at the distribution of different characteristics among the elderly. The results will be presented by means of frequency tables. The selection of elderly aged 65 and older resulted in a sample size of 3628 observations divided over the Netherlands, Belgium and Denmark. Of these elderly, 941 of them are poor according to the

same poverty line (cut-off point at 60%) as used in chapter 3. Nowadays, the legal retirement age in Denmark is 67. However, by the time of the data collection (2003), it was still 65.

This age selection gives higher poverty rates than the ones found in chapter 3. The explanation is rather simple. In chapter 3 we compared the financial position of elderly relatively to the total population in SHARE. We compared the incomes of elderly to the median income of the population in SHARE. The poverty rate, per country, is equal to the number of poor elderly divided to the total number of individuals in. Now we only look at individuals aged 65 and older, which can be seen as a sub-sample. However, we use the same definition for poverty, namely a net-income below 60% of the median income of the total population. The ratio changes into: the number of poor elderly divided by the number of individuals aged 65 and older. This means that the numerator remains the same, but the denominator decreases due to the limit on age, resulting in higher poverty rates for the three countries.

Table 8, presented below, gives the frequencies and corresponding percentages for the different characteristics. The columns indicated by *percentage* show the distribution of the population over the characteristics; per characteristic the percentages add up to 100. The last column represents the percentage poor per characteristic, which is the most interesting column. In the Appendix IV this table is divided into frequencies for each characteristic for every single country.

The sub-sample for Belgium is the largest. The pattern of poverty rates is the same as found in Chapter 3. The rates for Belgium and the Netherlands in this chapter do not differ that much from each other (neither they differ much in Chapter 3), while Denmark has, by far, the highest fraction of poor elderly. With 37.2 percent, old-age poverty is more than 15 percent points higher in the Netherlands and Belgium. In Chapter 3 this difference is roughly 5 percent. Poverty is relatively larger among elderly than it is among individuals below the age of 65.

Within the sample, the majority of individuals live in a more-persons household. However, the percentage one-person households that is poor is considerably larger compared to more persons households. Poverty is observed more frequently among singles than it is among households of more persons.

The number of children does not reflect the number of dependent children (i.e. aged below 18), this information is not available. It is the total number of children of a household. The poverty rate among households without children is the highest; increasing the number of children does not raise poverty. We expected a different outcome, since having children increases the cost of living for families and results in less saving for retirement.

Table 8: Characteristics of Total and Poor Population

	Total		Poor		percentage
Characteristics	number	percentage	number	percentage	**of total**
Sample size	3628	100	941	100	25,9
Netherlands	1180	32,5	249	26,5	21,1
Belgium	1749	48,2	384	40,8	22,0
Denmark	699	19,3	263	27,9	37,6
One persons hhd	1439	39,7	462	49,1	32,1
More persons hhd	2189	60,3	479	50,9	21,9
No children	411	11,3	125	13,3	30,4
One child	575	15,8	134	14,2	23,3
Two children	1172	32,3	286	30,4	24,4
> Two children	1470	40,5	396	42,1	26,9
Asset value<0	135	3,7	52	5,5	38,5
Asset value=0	278	7,7	113	12,0	40,6
Asset value 0-5300	1154	31,8	390	41,4	33,8
Asset value 5300-10600	454	12,5	142	15,1	31,3
Asset value>10600	1607	44,3	244	25,9	15,2
Age 65-69	1107	30,5	249	26,5	22,5
Age 70-74	970	26,7	224	23,8	23,1
Age 75-79	762	21,0	215	22,8	28,2
Age 80-84	510	14,1	160	17,0	31,4
Age >85	279	7,7	93	9,9	33,3
Primary or no education	1037	28,6	344	36,6	33,2
Low educated	1106	30,5	337	35,8	30,5
Intermediate educated	866	23,9	185	19,7	21,4
High educated	619	17,1	75	8,0	12,1
Big city (+suburbs)	1253	34,5	310	32,9	24,7
Large town	640	17,6	181	19,2	28,3
Small town	1045	28,8	267	28,4	25,6
Rural area	680	18,7	183	19,4	26,9
Employed after 65	288	7,9	32	3,4	11,1
House ownership	2357	65,0	537	57,1	22,8
Early pension	193	5,3	35	3,7	18,1
Widow	333	9,2	76	8,1	22,8

Source: Own Calculations SHARE rel. 2.01

Poverty line is set at 60% of median income of a country.

Asset value is calculated as the net value of financial assets of a household. Like the net household income, the net value of financial assets is corrected for ppp and the number of equivalent adults. The net value of assets is divided into 5 categories in order to get more insight in the distribution of the asset values and their relation with poverty. As individuals have possibilities to borrow beyond their means, negative values are possible, this is the first category. The second one consists of families who have no financial assets at all. The boundaries of the next three categories are based on the current boundaries of the Dutch eligibility criteria of the WWB. The boundaries are a value 5,300 and 10,600 Euros.

Taking a look at the frequency table shows that a large share of all households has a net value of financial assets that is higher than 10,600 Euros. Another large share is formed by families who have a value between 0 and 5,300 Euros. Note that these are the asset values per equivalent adult; the net values per household are even larger. Having a negative or a zero net value of financial assets is uncommon. Our thoughts about the underrepresentation of the poor are strengthened by these numbers[9].

Increasing the net value of financial assets lowers the poverty rates somewhat. As expected the lowest poverty is found among elderly with asset value in the highest category. The households that exceed the eligibility boundaries with respect to assets value do not qualify for income support. However, these people deserve special attention for executive organizations of social assistance. As these people are poor based on the income definition, their income is rather low. In order to fulfill their basic needs they have to rely on their financial assets. The value of assets depletes over time. This means that at the moment of retirement, income support is rejected but these families could pass the eligibility criteria at a later point in time. The executive organizations should keep an eye on these families and cooperation with, for example, Inland Revenue Service is required to follow the income position of these households carefully.

Due to mortality, the number of observations decreases over age. However, poverty increases over age. Elderly often have to rely on income they receive out of pensions or their own savings. Both resources are accumulated during their working life and these assets are

[9] Note that the poverty definition is based on the net income of households; asset value is not a part of this. This means that households with an income below the poverty lines are classified as poor. However, their value of assets may be large enough to keep them out of poverty

depleted during the retirement phase. As poverty is likely to increase over age, social assistance legislation could cope with this feature with an extra age-dependent allowance for poor elderly. Poor retirees who pass the means-tested criteria qualify themselves for an allowance on the existing social assistance amounts. This is especially interesting for elderly with an incomplete public pension. Also an increasing age is associated with bad health. As the costs of living increase with age, the age dependent allowance could cover these extra costs. As their income out of occupational pensions is also likely to be rather low, they have to rely on their accumulated savings. As their asset value depletes over time, this extra allowance would be more than welcome.

Education is divided into four categories and is based on the *International Standard of Classification of Education* code from 1997 (ISED-97 code). Different levels of education are classified into different categories such that they are internationally comparable. The categories are based on the level of difficulty and years of education. The first one consists of individuals with no or only primary education. The category indicated by *Low educated* consists of individual who have completed the lower forms of secondary education, for example MAVO in the Netherlands, and the following tertiary education (MBO in the Netherlands). The higher levels of secondary education (HAVO and VWO in the Netherlands) and the technical educational forms, such as the MTS in the Netherlands, are labeled by *Intermediate educated.* The category with the highest education is formed by individuals with a university degree or other a degree in other forms of higher tertiary education (HBO).

The relationship between educational level and old-age poverty tends to be a negative. Individuals who have completed the highest educational forms face the lowest poverty rate at retirement. Higher education is associated with higher wages, hence higher income out of occupational pensions.

As most poverty is expected to be in the larger cities of countries, the location of the main residence is included. The division is based on the number of citizens of the municipality and is also included in SHARE. The largest city also includes the people who live in the suburbs of the largest city. There does not seem to be a clear-cut relationship between location of the main residence and poverty.

When we take a look at other characteristics we found in the previous chapter we cannot find much evidence for them in the data. When we consider individuals who receive income form employment activities and who are aged over 65, we find that only 288 individuals receive income from either labour or self-employment. Of all poor individuals only 3.4% remains employed after the age of 65. A higher allowance for income out of labour or a lower reduction of the benefit could make the choice to continue work much more attractive. A side effect is the increase in responsibility of pensioners, with an incomplete benefit, for their own income after employment. Note that not everyone is able to work after the age of 65. However, for those who can, a higher allowance makes the option more attractive. The others remain fully retired.

A majority of the individuals, even when we only consider the poor ones, owns a house. Of all house owners 22.8% is poor. House owners who have difficulties to fulfill their basic needs have the option to sell their house and search for alternative residence in the form of a rented house. Keeping this in mind it is not necessary to extend the exemption for house owners.

Only 193 of all individuals, and 35 of the poor, receive income out of early pensions, public and/or private. This also fits within the context of incomplete pension benefits. Retirement before the legal retirement age lowers the value of yearly pension income, since it has to be spread over a longer time-span. When you already have an incomplete pension benefit and only little income out of occupational pensions, you do not consider early retirement as a serious option. It lowers income out of occupational pensions.

Individuals who receive a public or private survivor pension are not present in large numbers. From the people with a survivor pension 22.8% is poor. Based on expected life-time it is likely to assume that this group consists mainly of women. However, we cannot confirm this based on the data we have.

To summarize the results based on the frequency table, singles seem to be more likely to end up in old-age poverty. The costs of living cannot be shared with co-habiting partners and are relatively large. The effect of children is difficult to determine, since we have no information on the number of dependent children. The value of financial assets is important for eligibility on social assistance on a later point in time. Old-age poverty increases with age, an age

dependent allowance could be considered by policymakers. The relationship between education and poverty is as expected. However, for policy makers, it is difficult to take education into account in poverty-alleviation programmes. House ownership also is an important factor in old-age poverty. As liquidizing invested capital in housing is undesirable, giving income support as a credit loan is a good option. Doing so does not force elderly to sell their house and the loan could be paid back when the house actually is sold. Empirical research should confirm these preliminary results.

5.2 The Empirical Model

The empirical model is designed to estimate the probability of being poor. The dependent variable is a binary response variable, which can only take two values (0,1), that indicates whether an individual is poor (1) or not (0). The estimations are obtained by a binary response model. It is more sophisticated than linear probability models (LPM) (Cameron, 2005). One drawback of LPM is that the obtained predicted probabilities can be less than zero or greater than one, this is undesirable. Another drawback is that the partial effects of explanatory variables are constant. Binary response models overcome these limitations (Wooldridge, 2006).

The limited dependent variable (y_i) represents the underlying unobserved latent variable (y_i^*). The underlying latent variable determines the value of our dependent variable (y_i) and is the result of a set of observed explanatory variables ($x_i'\beta$) and some unobserved influences (ε_i) (Cameron, 2005). Net income corrected for equivalent adults (and ppp corrected) is one of the explanatory variables. We use net income for equivalent adults to define poverty. When equivalised net income (Yn_i) is smaller than the country-dependent poverty line at the cut-off point of 60% of the median income, y_i is equal to 1. Otherwise the dependent variable is equal to 0, or in mathematical terms:

$$y_i^* = x_i'\beta + \varepsilon_i,\ \varepsilon_i \sim \text{NID}\ (0,1)$$
$$y_i = 0 \text{ if } y_i^* < 0$$
$$y_i = 1 \text{ if } y_i^* > 0. \qquad \textbf{(5.1a)}$$

And the value of the dependent variable, at 60 % of the median income, is country specific. Such that:

$$y_i = 1 \text{ if } Yn_i < 14{,}751.00 \text{ if } i \text{ lives in the Netherlands}$$
$$\text{or } Yn_i < 13{,}530.60 \text{ if } i \text{ lives in Denmark}$$
$$\text{or } Yn_i < 9{,}988.80 \text{ if } i \text{ lives in Belgium}$$
$$y_i = 0 \text{ otherwise,} \qquad \textbf{(5.1b)}$$

where $x_i'\beta$ are the unobserved explanatory variables and their coefficients. And the error-term ε_i is Normally Independent Distributed of all explanatory variables.

The estimated probability $\left(P\left(y_i = 1 \middle| x_i\right)\right)$ is unknown, but if we assume that it is distributed according to the standard normal distribution, we can use a probit model to estimate the probability (Wooldridge, 2006). The probit model is estimated by means of Maximum Likelihood, i.e. by means of an iterated process. Maximum Likelihood Estimation (MLE) automatically accounts for possible problems of heteroskedasticity. As MLE is based on the distribution of y given *x* (the set of explanatory variables), heteroskedasticity in the variance of *y* given *x* (Var(y | x)) is automatically accounted for (Wooldridge, 2006).

The model has the following functional form:

$$P\left(y_i = 1 \middle| x_i\right) = F(x_i'\beta) = \int_{-\infty}^{x_i'\beta} \frac{1}{\sqrt{2\pi}} \exp - s^2 dS = \Phi(x_i'\beta), \qquad \textbf{(5.2)}$$

where *F* is the functional form, $(x_i'\beta)$ is a linear combination of a set of explanatory variables, *exp* is the shorthand notation for exponent, *s* is a standardized variable for all real numbers (Cameron, 2005). The result has a cumulative normal distribution function (Φ) of N(0,1). The probit regression estimator has a limiting lower bound of 0 and a limiting upper

bound of 1. There is no possibility to obtain a probability below 0 or greater than 1 (Dougherty, 2002).

The set of explanatory variables contains of the same elements as table 9. To estimate the different effects that variables have on the probability of old-age poverty, we interact some variables with the country dummies. These variables are indicated with the country code at the end of the variable name. Interacting all explanatory variables equals three estimations of the regression for the three countries separately. We will not do this, since we are interested in characteristics of poor elderly that appear in the three countries. The first interacted explanatory variable is the dummy that indicated whether an individual lives in a two or more person's household. Differences in the amounts between singles and cohabiting partners could result in different effects on the probability of being poor at an older age. As all three counties have child allowances in their social security, we estimate the general effect of having children. The number of children is included linearly. Age (interacted), also is included as a linear. Educational level as explained in paragraph 5.1 is the next explanatory variable, followed by location of the main residence. Next we estimate the effects of employment activities countries and house ownership in the three economies. Net financial assets for each country are estimated linearly. Last but not least we estimate the effect of being a widow(er) on the probability of old-age poverty.

An early estimation of the model (not presented) showed a negative effect of early retirement on the probability of old-age poverty. Based on this we must conclude that only individuals who can afford early retirement choose this option. This causes an endogeneity problem and therefore, the early retirement is not included as a variable.

Pension income (or a dummy for it) does not appear in the regression. The reason is multi-colinearity with employed after the age of 65. Individuals who do not opt for employment activities are assumed to be retired.

The model is estimated by three specifications based on the definition of the old-age poverty. The first one definition of poverty is an income below 60 percent of the median income of the total population in SHARE. The second one is an income below 50 percent of the same median income. For our last specification, we use a different definition of old-age poverty. We calculated the maximum yearly amounts that the social assistance system, of

the three countries, provides to individuals who fully rely on social assistance. Of course, most individuals have a reduced benefit since many persons have some form of income. The poverty line is set at the maximum amount an individual could receive when he has no other income sources. We call this level, the *Social Assistance Level*. An income below this level indicates poverty.

Table 10 displays the poverty rates for the different definitions of poverty in the three economies. In percentages of the median income of SHARE, a full WWB benefits is equal to 47 percent of the median income in the Netherlands. For Belgium and Denmark, these percentages are equal to 84 and 55, respectively. The Belgium median income is the lowest for the three countries. However, the ratio of social assistance level and the median income is the highest.

Table 10: Poverty Rates at Different Definitions

	60% Med Inc	50% Med Inc	Soc Ass Level
Netherlands	21.1	5.3	4.2
Belgium	22.0	6.2	9.8
Denmark	37.6	3.9	6.0
Total	25.9	15.4	20.0

5.3 Empirical Results and Interpretation

As explained in the previous section the probability of being poor for individuals aged 65 or older is obtained by means of a probit estimation. The results are presented in table 12 below. For interpretational purposes, the marginal effects of a small change in the variables are presented instead of the coefficients themselves. The first column of each specification contains the name of the variable (x_i), the second one the corresponding marginal effect $\left(\frac{\partial p_i}{\partial x_i}\right)$. The last column contains p-values for the obtained marginal effects. Any value below 0.05 indicates a significant variable at level at 5%. The lower part of the table represents some general statistics for each specification.

Table11: Marginal Effects on Probability of Old-Age Poverty

	Specification 1		Specification 2		Specification 3	
Poverty line at	*60% of med. income*		*50% of med. income*		*Soc. As. level*	
	Marg. Eff.	p-value	Marg. Eff.	p-value	Marg. Eff.	p-value
More persons hhd (NL)*	-0.02208	0.314	-0.03550	0.051	-0.02684	0.170
More persons hhd (BE)*	**-0.05840**	0.002	**-0.04036**	0.007	**-0.05228**	0.001
More persons hhd (DK)*	**-0.09364**	0.000	-0.03569	0.070	**-0.06342**	0.000
Number of Children	**0.00753**	0.040	0.00141	0.621	0.00386	0.227
Age (NL)	0.00002	0.983	-0.00009	0.904	-0.00101	0.244
Age (BE)	0.00038	0.706	-0.00048	0.549	0.00043	0.613
Age (DK	**0.00365**	0.000	0.00108	0.166	**0.00252**	0.003
Low educated*	**-0.06640**	0.000	**-0.04152**	0.000	**-0.05005**	0.000
Intermediate educated*	**-0.11050**	0.000	**-0.07162**	0.000	**-0.08780**	0.000
High educated*	**-0.15114**	0.000	**-0.09133**	0.000	**-0.10706**	0.000
Large town*	0.01212	0.517	0.02326	0.139	**0.03680**	0.037
Small town*	0.00312	0.854	0.01049	0.447	0.02117	0.160
Rural area*	0.00389	0.833	0.02804	0.077	0.02526	0.139
Employed after 65 (NL)*	**-0.08229**	0.003	-0.03327	0.168	-0.01052	0.755
Employed after 65 (BE)*	**-0.11928**	0.000	**-0.06707**	0.017	**-0.08514**	0.000
Employed after 65 (DK)*	**-0.14056**	0.000	**-0.09594**	0.000	**-0.11620**	0.000
House ownership (NL)*	0.02829	0.241	0.03026	0.133	**0.05117**	0.041
House ownership (BE)*	0.01259	0.571	0.13759	0.458	-0.00049	0.979
House ownership (DK)*	-0.04815	0.076	-0.00657	0.777	-0.02776	0.225
Net Fin Assets (EA) (NL)	**-9.46E-07**	0.000	**-7.66E-07**	0.000	**-8.23E-07**	0.000
Net Fin Assets (EA) (BE)	**-2.24E-06**	0.000	**-3.85E-07**	0.000	**-1.65E-06**	0.000
Net Fin Assets (EA) (DK)	**-8.88E-07**	0.000	**-1.19E-06**	0.000	**-6.51E-07**	0.000
Widow (NL)*	-0.00384	0.934	**-0.06130**	0.007	**-0.06847**	0.024
Widow (BE)*	**-0.06827**	0.003	**-0.03852**	0.033	**-0.05852**	0.001
Widow (DK)*	**-0.15953**	0.000			**-0.13207**	0.000
Log likelihood	-1820		-1419		-1581	
Log likelihood Ratio	502		257		459	
p-value of LR	0.000		0.000		0.000	
Number of observations	3628		3588		3628	
Pseudo R^2	0.1212		0.0830		0.1268	

(*) is the marginal effect for a discrete change of the dummy variable from 0 to 1
Bold marginal effects are significant at the 5% level. Results of the Log likely Ratio test refer to the hypothesis that the explanatory variables are jointly significant.

The first thing to notice is that the three specifications have a poor fit. The Pseudo R-square, a measure for the goodness-of-fit of the model, is ranged between [0,1] (Wooldridge, 2006) is rather low. It has a value of only 0.1268 for the third specification. This indicates that only 12.68 percent of the variation in our dependent variable is explained by the set of independent variables.

However, the Log Likelihood Ratio (LR) test, which is comparable to the F-test in OLS-estimations, is passed for all three models (Dougherty, 2002). The LR is defined as two times the difference of the log likelihood of the unrestricted model (L_{ur}) minus the likelihood of the restricted model (L_r), i.e.

$$LR = 2 * (L_{ur} - L_r). \quad \textbf{(5.3)}$$

In equation *5*.3, the unrestricted model is the model estimated above and the restricted model only contains a constant as explanatory variable, i.e. all other variables are set to zero (Wooldridge, 2006). The result, LR, has an approximately Chi-square distribution with 25 degrees of freedom (Wooldridge, 2006). The test-statistic for the third specification equals 459, whereas its critical value only is 44.31 at the 1% significance level (Wooldridge, 2006). This means that at least one of the explanatory variables has some predictive power, which also is indicated by the p-value of 0.000.

All three specifications of the probability of old-age poverty give similar results. Only a few variables change in significance. The second specification of the model has the poorest fit, because of the lowest number of observations indicated as poor.

The empty entry for being a widow(er) in Denmark states that- at 50 percent of the median income- from 40 individuals receive a survivor pension, none of them is poor. The model, then perfectly predicts poverty for this category, which results in a coefficient of minus infinity. These 40 observations are dropped from the data.

The marginal effect represents the change in the probability of old-age poverty in percentage points. For example increasing the number of children from 2 to 3 increases the probability of old-age poverty with 7.5 percentage points, in the first specification. The variables indicated with an asterisk represent the marginal effect from a change in the dummy variable from 0 to 1.

Living together with two or more persons in a household decreases the probability of old-age poverty compared to living in a one-person household. The possibility of the sharing the

costs of living and having extra income resources are important factors. However, it is not a significant factor in the Netherlands. Apparently, the difference in amounts is too small to make a significant difference. In Belgium and Denmark the effects are larger than in the Netherlands. For Denmark the results may come from the fact that the maximum amount of income support does not differ between singles and cohabiting partners. In Belgium the maximum amount for singles equals 1.5 times the maximum amount for cohabiting adults. This difference is larger in Belgium than it is in the Netherlands. Probably this results in significance effects for living in a more-persons household in Belgium and the Netherlands.

The number of children is only significant for the variant with the highest level of the poverty line. This indicates the higher benefits for dependent children, or child allowances are enough to alleviate old-age poverty at the lower levels of the poverty line. The extra benefits for dependent children are enough to overcome the costs of having children. Please note that it is unlikely that elderly have children that are still dependent. Most children of elderly will be aged above 18 years. In the Netherlands, an extra benefit for dependent children is introduced for cases such as guardianship. Then the elderly take care for dependent grandchildren which increases the cost of living.

The expected positive relationship between age and old-age poverty can only be confirmed for Denmark. An increase in age by one year, results in a 2 or 3 percentage point increase of the probability.

The relationship between educational level and old-age poverty is, as expected, negative. A higher level of education results in higher wages, income and a lower probability of being poor at the old age. The marginal effect increases with educational level, since the reference category (nor or only primary) education remains the same.

Employment activities indeed are an important factor of poverty alleviation. Their effect is the largest in Denmark. Opting for employment after the age of 65 reduces the probability of old-age poverty in Denmark with 14 percent points (for the first specification). At lower variants of the poverty line the effect is smaller. This indicates that the option becomes less interesting when the ratio of the social assistance level and the medial income becomes smaller.

The dummy for house ownership is only significant in specification 3 for the Netherlands. The positive relation indicates that house owners are more likely to be poor

than elderly who rent. However, one must keep in mind that income is not corrected for house ownership or the obligation to pay rent. Mortgages of elderly are likely to be amortized, whereas elderly who rent their house still have to pay rents. Correcting net income for this could result in a different relation between house ownership and old-age poverty. Another possible explanation is that the reference group consists of individuals. For individuals, the financial burden in case of a non-amortized mortgage is relatively high. Individuals who rent and have limited income sources often have possibilities to apply for a housing grant. This grant lowers the financial burden of housing.

Financial assets are an important source of income provision. Their marginal effect is rather low, because the mean asset value is rather high for the three countries. For people with lower levels of asset values, the marginal effect of increased assets is higher. The differences between the countries are too small to draw further conclusions.

Receiving a survivor pension reduced the probability of old-age poverty significantly compared to being single and not receiving a (occupational) survivor pension. People who become a widow(er) cannot share the costs of living anymore with their spouses. However, they are compensated by means of a survivor pension benefit. Singles also fully bear the costs of living, but do not receive any extra benefit. This explains the negative relation.

The fact that there are no poor widow(er)s in Denmark, when we consider the second variant of the regression, indicates that the Danish system of survivor pensions is very effective in guaranteeing a reasonable income. However, further research on survivor pension benefits is necessary in order to draw further conclusions.

The estimations of old-age poverty show that the Danish system of income support to the elderly is very effective in alleviating old-age poverty at the lower part of the income distribution. Poverty is concentrated between 50 and 60 percent of the median income. Income inequality increases with age. This could result in a positive relation between age and old-age poverty in Denmark. The fact that, in Denmark, only the boundary conditions in income allowed and not the amounts themselves differ could result in the highest marginal effects of living in a more-persons household.

5.4 Differences in Marginal Effects Explained By Differences in Legislation

Based on the empirical results we can conclude that several characteristics found on poor elderly in reality correspond with the characteristics found in the legislation for poor elderly. However, cross-country differences in the legislation for income support to elderly result in different marginal effects on the probability of old-age poverty.

Different amounts for singles and cohabiting partners are justified based on the effects of the probability of old-age poverty. From Chapter 4 we know that in Denmark the amount does not differ between singles and cohabiting partners. In Belgium, the difference between the maximum amount for singles and a more-persons household is smaller than the difference in the Netherlands. Different marginal effects on old-age poverty stem from differences between the treatment of singles and cohabiting elderly in the three economies.

As there does not seem to be a significant relationship between age and old-age poverty, an age dependent allowance for poor elderly is not necessary. However, more specific estimations should verify the relationship between age and poverty in order to determine whether these conclusions are valid, since other studies have showed that a significance relationship between age and poverty exists (Smeeding, 2001)).

Different exemptions with respect to income from employment result in different marginal effects on the probability of old-age poverty. Larger exemptions lead to a higher exploitation of the option to continue employment activities after the legal retirement age. Working part-time in Denmark is an interesting option for especially low-income workers. As long as the worked hours do not exceed the limit of 1,000 hours a year and the limit for income is not exceeded either, working after the legal retirement age is very attractive. This is confirmed by the frequency tables in which we find that the majority of the elderly, who choose to continue to work, lives in Denmark.

The clearly defined limits on assets held by elderly and the loss of the possibility to claim a WWB benefit make the marginal effect of financial assets in the Netherlands the smallest among the three countries. As Belgium has less strict boundary conditions, a higher exemption and no direct loss but rather a reduced benefit, the negative effect of assets on old-age poverty is larger. As we compare the amount of assets held by individuals and we keep in mind that the limit for individuals in Denmark is larger than in the Netherlands, we

can conclude that a larger maximum amount results in a larger negative effect on old-age poverty.

5.5 Policy Applications

Cohabiting elderly in Belgium and Denmark are definitely better off than singles in those countries. Cohabiting elderly in these two countries seem to be relatively overcompensated for the costs of living. The difference, in the Netherlands, in maximum amounts for singles and cohabiting partners does not result in a significantly better position for elderly living in a more-persons household. This is an indication that the difference in maximum amounts is fair, such that cohabiting elderly that claim social assistance are not better supported than singles.

As education is an important factor to decrease the probability of old-age poverty, education should definitely be stimulated by governments. As lower educational levels are, on average, associated with lower income levels, it is likely to assume that the majority of individuals who claim social assistance benefits is low educated. Their benefits are higher because they have, on average a lower income than higher educated people. This indirectly results in more support for lower educated than for higher educated people.

Awareness of and understanding the regulation for income support are important factors that determine whether an individual claims social assistance or not. In the pre-retirement phase, an adequate provision of information about these possibilities and regulation to lower educated elderly and migrants is required for old-age poverty alleviation. This means that the information must be written such that it is easy to understand for these groups.

Especially elderly who are living at risk of old-age poverty should be stimulated to work beyond the legal retirement age. To continue working after the legal retirement age, improves their financial position. The reduction of the benefit does not stimulate this. Therefore, the upcoming change in the Dutch legislation is a first step in the right direction. Of course, employers should be stimulated to hire those elderly. It requires not only a change in legislation but also a mental change of society.

For migrants and others with an incomplete public pension benefit, this option is interesting to ensure a reasonable income level after the retirement age. An extension of the maximum allowed amount of income out of employment is an important step to take. It increases the responsibility for people who were unable to build up the full pension benefit. In times of increased costs of living due to the increase of fuel and food prices, employment activities ensure an adequate standard of living.

One should keep in mind that employment activities after the legal retirement age are not suitable for everyone. Even those poor elderly who are willing to continue working might be forced to stop because of health problems. For those elderly, the social safety should be kept alive.

Another limitation of this option is that, for employers, it is difficult to insure employees older than the age of 65. In order to stimulate employment activities for elderly, a change of institutions is required.

Increasing the exemption for income out of occupational pensions also increases the number of people who become eligible for social assistance. As the Dutch government does not want to make a distinction between elderly who made contributions to occupational pensions and elderly who accumulated assets, the allowance for pension income should move in line with the allowance for financial assets.

Limiting the amount of assets is validated by the fact that financial assets can be liquidized easily. Elderly who are not eligible for social assistance benefits, based on the asset-test, should first deplete their asset stock. However, it is likely that they will be eligible at a later point in time. Therefore, the financial assets movements of these elderly should be kept in mind. Boundaries on the speed of depletion should be determined and the annuitization of own savings should be promoted. In the Netherlands, there are already limitations to the speed of the depletion of assets. However, watching the asset movements is not commonly used yet. An increase in the allowed asset amount increases the number of elderly who are potentially eligible in the future. Whether this is desired should be discussed by policymakers.

The relationship between house ownership and old-age poverty is not significant in most cases. The fact that Denmark does not take house ownership into account as a benefit

determining factor seems to be valid. However, some distinction must be made with respect to the value of the house. An unlimited value of the house seems to be counterintuitive with the target of social assistance. Namely; to help those elderly who are unable to fulfill their basic needs. Therefore, the regulation in the Netherlands to give the WWB as a credit loan when the value of the house exceeds a certain amount seems to be valid.

Chapter 6 Summary and Conclusion

Despite international differences with respect to eligibility and the height of benefits, all supplemental benefits on incomplete pensions serve to protect elderly against old-age poverty. These supplemental benefits are organized in different ways. They can be part of the social assistance/security network of economies or are integrated with pension schemes. For the sake of simplicity, we capture these benefits under the name of social assistance benefits for elderly. Elderly who have an incomplete public pension benefit or little or no income out of occupational pensions are potentially eligible for these benefits.

In the Netherlands, the social assistance scheme for elderly is subjected to heavy critics from interest groups who represent the elderly. The main point of these interest groups is that the social assistance applicable for the Dutch population as a whole. The same eligibility rules apply to people from the labour force as well as to elderly. For people out of the working population, the WWB is a temporary source of income support, which stops as soon as a person finds a job. However, for elderly social with low income out of occupational pensions and other income sources, the WWB their last possibility of income support. Elderly do not have to apply for a job anymore. Therefore, the interest groups suggest less strict eligibility criteria for elderly.

The eligibility criteria for income support should be designed such that the benefits go to those elderly who are unable to fulfil their basic needs. To alleviate old-age poverty in an effective way, the eligibility criteria should cover those people who are likely to end-up in old-age poverty. This means that certain characteristics of poor elderly can be found in the legislation on income support to elderly.

Our question of interest is to what extend do the characteristics of elderly with an incomplete public pension found in the social security arrangements for these elderly, correspond with the characteristics that appear in reality?

During this research we have determined which groups are likely to have an incomplete public pension benefit. Besides the Netherlands, we have selected two other countries. Belgium and Denmark were selected based on their poverty rate and system of income

support for elderly respectively. The legislation on income support benefits of these three countries has served to extract characteristics of poor elderly. Subsequently, we extracted the characteristics of poor elderly that appear in reality based on SHARE data. A summary of the described activities is presented below followed by the conclusion.

6.1 Elderly with Incomplete Public Pension Benefits

Incomplete public pension benefits are the result of missing accrual periods. Although there are international differences in the accrual of pension rights we are able to determine groups that are likely to end up with incomplete public pensions. These groups also are more likely to claim income support than other groups in the population.

Migrants have problems to build up a full public pension in both residence based pensions schemes as well as pensions systems based on economic activities. They are missing years of residence or they are unlikely to make enough contributions for the full benefit. Another vulnerable group consists of people who never carried out economic activities. In pensions systems whose benefits are determined by the number of contributions, also people without economic activities are unlikely to make enough contributions for a full pension benefit. In a system based on years of residence, these people don not face this problem.

6.2 Country Selection

Analysis to old-age poverty showed that old-age poverty is the largest in Denmark. The poverty rate, with a cut-off point at 60 percent of the median equivalised income, is the highest among all SHARE economies. For this reason, we have chosen to study the Danish legislation on income support for the elderly. The reason to choose Belgium is not its poverty rate. The poverty rate of Belgium is close to the poverty rate in the Netherlands and shows a similar pattern. Our main reason to choose for Belgium is that Belgium has a social assistance scheme that applies to elderly only, whereas the Netherlands has a social assistance scheme for the population as a whole.

6.3 Characteristics of Poor Elderly in Legislation

Due to missing possibilities of sharing the costs of living, poor singles receive higher benefits than cohabiting elderly. Only in Denmark, the boundary conditions rather than the amounts differ between singles and cohabiting retirees.

Employment activities after the legal retirement age and claiming social assistance benefits seem to be a combination that is unlikely to be present. Employment activities are discouraged by the legislation on social assistance in the Netherlands and Belgium. Many poor elderly who claim income support should quit their jobs in order to be eligible for the full benefit. In Denmark, working part-time is stimulated.

Occupational pensions are allowed, although they may not exceed certain boundaries. An income out of occupational pensions that exceeds these boundaries lowers the social assistance benefits in the Netherlands and Belgium. Pension income is totally exempted in Denmark.

Poor elderly are allowed to hold financial assets, although exceeding the boundaries on assets reduces the benefit in Belgium. In the Netherlands and Denmark social assistance no longer can be claimed when the amount of assets exceeds the boundary conditions. However, poor elderly are expected to hold some assets since it is allowed in all three countries.

House ownership is a characteristic that seems to bring poor elderly in a disadvantageously position. It lowers the benefit in Belgium and the right to claim the WWB-benefit disappears in cases of a too large value of the house in the Netherlands. In Denmark, house ownership does not influence the benefit at all.

6.4 Characteristics of Poor Elderly in Reality and the Effects on Old-Age Poverty

Singles have a higher probability of old-age poverty than cohabiting elderly. The significant relationship in Belgium and Denmark indicates that cohabiting elderly are overcompensated

As expected, the combination of being a poor and employment activities after the legal retirement age does not appear very often. The country with the largest exemption (Denmark) on income out of employment has the largest number of elderly who choose this option. Continuing employment after the legal retirement age significantly reduces the probability of old-age poverty. The negative effect on old-age poverty is the largest in Denmark.

Many elderly, also poor ones have a positive amount of financial assets. Asset ownership has a negative effect on the probability of old-age poverty. The effects are the largest in Belgium which has the largest possibilities for poor elderly to hold financial assets.

House ownership only is significant in the Netherlands, when the poverty line is set at the level of social assistance. This indicates that the burden of house ownership is rather heavy for single elderly.

Furthermore, it appears that educational level has a significant effect on old-age poverty. Elderly with low levels of education have a higher probability to end up in poverty than elderly with higher educational levels. This negative relationship stems from the relationship between educational level and wages. This indicates that lower educated elderly receive higher benefits since their income is lower.

Compared to single elderly who do not receive a survivor pension (public or private), being a widow(er) and receiving a survivor pension lowers the probability of old-age poverty significantly. Widow(er)s receive higher benefits than singles who do not receive a survivor pension and have the same problems with respect to sharing the costs of living.

6.5 Conclusion and Policy Applications

When we take a look at the theoretical characteristics of poor elderly we must conclude that all of them also appear in reality. Furthermore, we can conclude that larger boundary conditions on income components result in a higher use of that source of income. Extending the boundaries results in a larger group of elderly that is potentially eligible for income support. Depending on circumstances policymakers should determine whether this is desired or not.

The discouragement of employment activities after the legal retirement age results in only a few poor elderly who choose to continue to work. Employment activities should be stimulated especially for those elderly who are more likely to be poor than others, for example migrants. For elderly who are unable to work the possibility of social assistance should be preserved.

Extending the boundaries on occupational pensions and/or accumulated assets will result in elderly claiming income support while they are still able to fulfil the basic needs themselves. Policymakers should carefully determine the level of income which is sufficient to fulfil the basic needs. Elderly with too many assets should be informed that they are not eligible yet, but that they might be eligible in a later point in time.

As lower educated elderly are more likely to be poor, the information of social assistance should be designed such that is easy accessible for lower educated elderly. Awareness of the possibility to claim income support should be increased. Information must be easy understandable for lower educated elderly.

6.6 Acknowledgements of Further Research

The extension of SHARE with more waves over time opens up possibilities for panel analysis. This makes it possible to study the distribution of income and poverty over time. Due to the inclusion of more countries into SHARE international comparisons can be extended. International differences in the trends of income distribution and old-age poverty can be found. Based on experiences of the past and experiences from other economies, policymakers can use conclusions from expansions of the SHARE dataset to make the right decisions.

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Appendix I Overview Pension Systems

Table 1a: Overview Public Pension Systems

Country	Type	Field of Application	Waiting Period for Eligibility	Conditions for Full Pension Benefit
Australia	Beveridge	residence	10 years residence	age 65
Austria	Bismarck	ec active	15 years insured	45 years insured
Belgium	Bismarck	ec active	none	career of 43 years
Bulgaria	Beveridge	ec active	15 years insured	67+ 37 years insured
Canada	Beveridge	residence	10 years residence	40 years residence
Czech Rep.	Bismarck	ec active+	15 years insured	25 years insured
Denmark	Beveridge	residence	3 years residence	40 years residence
Estonia	Beveridge	residence	15 years residence	none
Finland	Bismarck	residence	3 years residence	40 years residence
France	Bismarck	ec active	3 months contributions	40 years contributions
Germany	Bismarck	ec active	5 years insured	63+ 35 years insured
Greece	Bismarck	employees	15 years insured	35 years insured
Hungary	Beveridge	ec active	15 years contributions	none
Iceland	Beveridge	residence	3 years residence	40 years residence
Ireland	Beveridge	ec active	insured before age 55	annual average of 48 weekly contributions
Italy	Bismarck	ec active	5 years insured	40 years insured
Japan	Bismarck	ec active	25 years contributions	40 years contributions
Latvia	Bismarck	ec active	10 years insured	none
Lithuania	Bismarck	ec active	15 years insured	30 year insured
Luxembourg	Bismarck	ec active	10 years insured	40 years insured
Netherlands	Beveridge	residence	1 year residence	50 years residence
New Zealand	Beveridge	residence	10 years residence	10 years residence
Norway	Bismarck	residence	3 years residence	40 years contributions
Poland	Bismarck	ec active+	25 years insured	none
Portugal	Bismarck	ec active	15 years contributions	40 years contributions
Romainia	Bismarck	ec active+	11 years contributions	31 years contributions
Slovakia	Bismarck	ec active	10 years insured	none
Slovenia	Bismarck	ec active+	15 years insured	age dependent
Spain	Bismarck	employees	15 years contributions	35 years contributions
Sweden	Bismarck	residence	3 years residence	40 years residence
Switzerland	Beveridge	residence	1 year contributions	same number of contributions as his age group
UK	Beveridge	ec active	11 years contributions	44 years contributions
US	Beveridge	ec active	10 years contributions	40 years contributions

Sources: MISSOC (2007). OECD (2007). Hinrichs (2006) and Whitehouse (2006b)

Table 1b Social Assistance

Country	Social Assistance
Australia	
Austria	general
Belgium	Retirees
Bulgaria	retirees
Canada	retirees
Czech Republic	general
Denmark	pension system
Estonia	retirees
Finland	retirees
France	retirees
Germany	retirees
Greece	general
Hungary	retirees
Iceland	pension system
Ireland	retirees
Italy	retirees
Japan	
Latvia	retirees
Lithuania	retirees
Luxembourg	general
Netherlands	general
New Zealand	
Norway	retirees
Poland	general
Portugal	retirees
Romainia	general
Slovakia	retirees
Slovenia	general
Spain	retirees
Sweden	pension system
Switzerland	retirees
UK	retirees
US	retirees

Source: MISSOC. table XI (2007)

Appendix II Median Income per Age Category

Table 5a: Median Income Per Age

	Median Income (Eurostat)						Median Income (SHARE)		
Country	**0-59**	**0-64**	**50-64**	**55-64**	**65+**	**Total**	**50-64**	**65+**	**Total**
Belgium	16688	16558	16636	15398	12085	15812	18764	14840	16648
Denmark	16826	16798	18660	18229	11763	15968	26814	16365	22551
Germany	15995	15940	16643	16074	14795	15718	22103	17602	19785
Greece	11421	11382	11412	11098	9044	10864	13895	9881	11645
Spain	12425	12391	12676	12416	9342	11726	13570	9717	11090
France	14707	14751	16987	16750	13258	14533	21295	17746	19641
Italy	14196	14241	15698	15561	12039	13730	15163	12195	13943
Netherlands	16473	16456	18063	17566	14455	16147	26528	21812	24585
Austria	17660	17703	19095	19188	16780	17604	19744	19209	19462
Sweden	14661	14910	18330	18384	11891	14303	24088	16506	20707

Source: Eurostat (2008) and SHARE rel 2.01

Table 5b: Income Ratio's Per Age

	Ratios Median Income 65+ (Eurostat)					SHARE	
Country	**0-59**	**0-64**	**50-64**	**55-64**	**Total**	**50-64**	**Total**
Belgium	0.7242	0.7299	0.7264	0.7848	0.7643	0.7909	0.8914
Denmark	0.6991	0.7003	0.6304	0.6453	0.7367	0.6103	0.7257
Germany	0.9250	0.9282	0.8890	0.9204	0.9413	0.7964	0.8897
Greece	0.7919	0.7946	0.7925	0.8149	0.8325	0.7111	0.8485
Spain	0.7519	0.7539	0.7370	0.7524	0.7967	0.7161	0.8762
France	0.9015	0.8988	0.7805	0.7915	0.9123	0.8333	0.9035
Italy	0.8481	0.8454	0.7669	0.7737	0.8768	0.8043	0.8746
Netherlands	0.8775	0.8784	0.8003	0.8229	0.8952	0.8222	0.8872
Austria	0.9502	0.9479	0.8788	0.8745	0.9532	0.9729	0.9870
Sweden	0.8111	0.7975	0.6487	0.6468	0.8314	0.6852	0.7971

Source: Authors Own Calculations

Appendix III Comparisons of Social Assistance in the Netherlands, Belgium and Denmark

Table 6: Maximum Amounts Social Assistance for Elderly (NL. BE and DK)

Maximum amount	WWB	IGO	SPA
Single	963.78	811.35	1045.65
Single Parent	1187.92	811.35	1045.65
Married couple (both 65)	660.92	540.92	1045.65
Married couple (one 65)	660.92	540.92	1045.65

Source: WWB (2003). RVP (2008). NSSA (2008)

NB: Amounts in Euros per person per month for January 2008

These amounts are the legal amounts per person, the total amounts received married couples is obtained by multiplying this amount by 2.

Table 7a: WWB Criteria in the Netherlands

Income from	Max allowed	Implication for benefit
Labour	not allowed	toally subtracked
Occ Penions	17.60	toally subtracked
	35.20	toally subtracked
Assets	5.325	right expires
	10.650	right expires
Housing	44.900	right expires/credit loan

Source: WWB (2003)

Amounts are net amounts

Table 7b: IGO Criteria in Belgium

Income from	Max allowed	Implication for resources per person
Labour	Not allowed	totally taken into account
Occ Penions	10%	90% of actual paid pension income
Assets	< 6.200	totally exemped
	6.200-18.600	total resources increased by 4%
	> 18.600	total resources increased by 10%
Housing	no max	increases resources per person

Source: RVP (2008)

NB: Total resources per person larger than 6.200 Euro after the general exemption are subtracted totally from the maximal benefit

Table 7b: SPA Criteria in Denmark

Income from	Max allowed		Implication for height of the benefit
(Labour)income	(1000 hours)	2.225.35	benefit reduced by 30% income basis
Occ Penions		no max	totally deducted from income basis
Assets		8.030	right on SPA expires
Housing		no max	no influence

Source: CSAP (2004) and NSSA (2008)

Appendix IV Frequency tables for the Netherlands, Belgium and Denmark

Table 9a: Characteristics of Total and Poor Population: The Netherlands

	Total		Poor		percentage
Characteristics	number	percentage	number	percentage	**of total**
Sample size	1180	100	294	100	24,9
One persons hhd	437	37,0	123	41,8	28,1
More persons hhd	743	63,0	171	58,2	23,0
No children	148	12,5	39	13,3	26,4
One child	137	11,6	23	7,8	16,8
Two children	341	28,9	83	28,2	24,3
> Two children	554	46,9	68	23,1	12,3
Asset value<0	57	4,8	7	2,4	12,3
Asset value=0	60	5,1	23	7,8	38,3
Asset value 0-5300	384	32,5	131	44,6	34,1
Asset value 5300-10600	134	11,4	42	14,3	31,3
Asset value>10600	560	47,5	292	99,3	52,1
Age 65-69	396	33,6	105	35,7	26,5
Age 70-74	320	27,1	67	22,8	20,9
Age 75-79	232	19,7	47	16,0	20,3
Age 80-84	146	12,4	45	15,3	30,8
Age >85	86	7,3	30	10,2	34,9
Primary or no education	338	28,6	121	41,2	35,8
Low educated	449	38,1	115	39,1	25,6
Intermediate educated	248	21,0	46	15,6	18,5
High educated	145	12,3	12	4,1	8,3
Big city (+suburbs)	494	41,9	82	27,9	16,6
Large town	259	21,9	72	24,5	27,8
Small town	135	11,4	74	25,2	54,8
Rural area	292	24,7	66	22,4	22,6
Employed after 65	89	7,5	17	5,8	19,1
House ownership	524	44,4	120	40,8	22,9
Early pension	61	5,2	12	4,1	19,7
Widow	65	5,5	19	6,5	29,2

Source: Own Calculations SHARE rel. 2.01

Table 9b: Characteristics of Total and Poor Population: Belgium

	Total		Poor		percentage
Characteristics	number	percentage	number	percentage	**of total**
Sample size	1749	100	384	100	22,0
One persons hhd	656	37,5	169	44,0	25,8
More persons hhd	1093	62,5	215	56,0	19,7
No children	216	12,3	53	13,8	24,5
One child	342	19,6	65	16,9	19,0
Two children	519	29,7	111	28,9	21,4
> Two children	672	38,4	155	40,4	23,1
Asset value<0	35	2,0	13	3,4	37,1
Asset value=0	122	7,0	37	9,6	30,3
Asset value 0-5300	612	35,0	170	44,3	27,8
Asset value 5300-10600	250	14,3	70	18,2	28,0
Asset value>10600	730	41,7	94	24,5	12,9
Age 65-69	524	30,0	103	26,8	19,7
Age 70-74	468	26,8	87	22,7	18,6
Age 75-79	377	21,6	100	26,0	26,5
Age 80-84	367	21,0	71	18,5	19,3
Age >85	113	6,5	23	6,0	20,4
Primary or no education	686	39,2	217	56,5	31,6
Low educated	345	19,7	81	21,1	23,5
Intermediate educated	347	19,8	51	13,3	14,7
High educated	320	18,3	35	9,1	10,9
Big city (+suburbs)	473	27,0	100	26,0	21,1
Large town	217	12,4	47	12,2	21,7
Small town	712	40,7	166	43,2	23,3
Rural area	342	19,6	71	18,5	20,8
Employed after 65	83	4,7	6	1,6	7,2
House ownership	1378	78,8	286	74,5	20,8
Early pension	33	1,9	33	8,6	100,0
Widow	228	13,0	50	13,0	21,9

Source: Own Calculations SHARE rel. 2.01

Table 9c: Characteristics of Total and Poor Population: Denmark

	Total		Poor		percentage
Characteristics	number	percentage	number	percentage	**of total**
Sample size	699	100	263	100	37,6
One persons hhd	346	49,5	170	64,6	49,1
More persons hhd	353	50,5	93	35,4	26,3
No children	77	11,0	33	12,5	42,9
One child	96	13,7	46	17,5	47,9
Two children	262	37,5	92	35,0	35,1
> Two children	264	37,8	92	35,0	34,8
Asset value<0	63	9,0	32	12,2	50,8
Asset value=0	96	13,7	53	20,2	55,2
Asset value 0-5300	158	22,6	89	33,8	56,3
Asset value 5300-10600	65	9,3	31	11,8	47,7
Asset value>10600	317	45,4	58	22,1	18,3
Age 65-69	187	26,8	187	71,1	100,0
Age 70-74	182	26,0	182	69,2	100,0
Age 75-79	153	21,9	153	58,2	100,0
Age 80-84	97	13,9	97	36,9	100,0
Age >85	80	11,4	80	30,4	100,0
Primary or no education	0	0,0	0	0,0	0,0
Low educated	262	37,5	141	53,6	53,8
Intermediate educated	275	39,3	88	33,5	32,0
High educated	162	23,2	34	12,9	21,0
Big city (+suburbs)	231	33,0	83	31,6	35,9
Large town	164	23,5	62	23,6	37,8
Small town	198	28,3	77	29,3	38,9
Rural area	106	15,2	46	17,5	43,4
Employed after 65	116	16,6	49	18,6	42,2
House ownership	455	65,1	131	49,8	28,8
Early pension	99	14,2	10	3,8	10,1
Widow	40	5,7	7	2,7	17,5

Source: Own Calculations SHARE rel. 2.01