

Ireen Hendriks

Living Longer in Your Own House
Could a Reverse Mortgage Be the Solution?

Tilburg University

Tilburg School of Economics and Management

Economics and Finance of Aging & Fiscal Economics

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Name:	Ireen Hendriks
Master studies:	Economics and Finance of Aging & Fiscale Economie
Administration number:	s792776
Supervisors Tilburg University:	Prof. Dr. A.L. Bovenberg & Mr. B. Starink
Supervisor PGGM:	Drs. C.E. Kortleve
Email address:	I.C.M.Hendriks@tilburguniversity.edu

Table of contents

Chapter One

Introduction

§ 1.1. Reason for writing this thesis

§ 1.2. Design

Chapter Two

Releasing equity; Which possibilities are there or have been there

§ 2.1. Introduction

§ 2.2. Description of different products and their characteristics

§2.3. Schematic overview

Chapter Three

Possibilities of releasing equity from an international perspective

§ 3.1. Introduction

§ 3.2. Possibilities, experiences and results abroad

§ 3.2.1. United States

§ 3.2.2. Australia

§ 3.2.3. United Kingdom

§ 3.2.4. Italy

§ 3.2.5. France

Chapter Four

Research into the needs and wishes of people about living, care and pensions at later age

§ 4.1. Introduction

§ 4.2. Design and composition of the survey

§ 4.3. Expectations about the standard of living and residential needs after retirement

§ 4.4. Willingness to release equity for extra care/ extra income during retirement and desires for care at later age

§ 4.5. Rating the reverse mortgage, which motives and objections do people have to release the equity in their homes

Chapter Five

Which possibilities are provided in the Netherlands in terms of releasing equity and what are the main similarities and differences with foreign products

§ 5.1. Introduction

§ 5.2. Which possibilities of releasing equity are or were offered in the Netherlands

§ 5.2.1. The reverse mortgage in the Netherlands

§ 5.2.2. The sale constructions to release equity in the Netherlands

§ 5.2.3. Other possibilities to use the excess value on the house

§ 5.3. Comparison of Dutch and foreign backgrounds about pensions and care and a graphical comparison of all products

§5.3.1. Comparison of pension and care systems, replacement rates etc.

§5.3.2. Graphic display of the different product on the domestic and foreign market

Chapter Six

Key issues for the Equity release market

§ 6.1. Introduction

§ 6.2. Issues for releasing equity by borrowing on your house

§ 6.2.1. Issues for consumers

§ 6.2.2. Issues for providers

§ 6.3. Issues for releasing equity by selling your house

§ 6.3.1. Issues for consumers

§ 6.3.2. Issues for providers

§ 6.4. Possible legislative issues

Chapter Seven

Overview and decision tree

§ 7.1. Overview of all covered products and their characteristics

§ 7.2. Decision tree where people get to their ideal product by answering a number of questions

Chapter Eight

The current economic consequences for paying off a mortgage and releasing equity in certain ways in the Netherlands, what can be improved to make it successful in the future and which parties can be involved

§ 8.1. Introduction

§ 8.2. "Paying off mortgage" phase

§ 8.2.1. Different ways to pay off the mortgage

§ 8.2.1.1. Paying off by annuities

§ 8.2.1.2. No repayments, but saving in box 3

§ 8.2.1.3 "Spaarhypothek 2.0"

§ 8.2.1.4 Renting a home and save

§ 8.2.2. Economic and fiscal consequences to pay off mortgage in a certain way

§ 8.3. "Equity release" phase

§ 8.3.1 Different ways of releasing equity

§ 8.3.1.1. Reverse mortgage

§ 8.3.1.2. Sell bare ownership, keep usufruct

§ 8.3.1.3. Sale and rent back

§ 8.3.1.4. "Spaarhypothek 2.0"

§ 8.3.2. Economic and fiscal consequences to release equity in a certain way

§ 8.4 The different options compared fiscally and fiscally neutral options in the future

§ 8.4.1. The different options compared fiscally

§ 8.4.2. Fiscally neutral options

§ 8.5. Possibilities for tenants

§ 8.6. Which role can the government and pension funds play in making equity release a more common and attractive possibility

§ 8.6.1. Government

§ 8.6.2 Pension funds

Chapter Nine

Conclusions and Recommendations

References

Appendices

§ 1.1. Reason of writing this thesis

A member survey held by Cooperation PGGM at November 2010 showed that 49% of the respondents want to live in their own house after retirement. Also 16% wanted to live in a more suitable home for their age and another 16% of the respondents answered that they didn't care where as long as it's independent. The need to live independently for as long as possible is therefore very high and to match these needs several parties could develop new financial products to make that independent life easier.

Internationally there are a lot of possibilities concerning equity release products. Which possibilities are there already internationally and are these possibilities a success? Is there a need in the Netherlands to create such products as well? Which role can different players in the market play, for instance the government or the pension sector? All these questions will be focused on in this thesis.

§ 1.2. Design

Before the description of the different possibilities of releasing equity in chapter two, this thesis will analyze living, care and retirement all through life. What needs do people have at certain times in their lives. After that this thesis will focus on the different ways of releasing equity and the characteristics every possibility has. In the latest paragraph of this chapter there will be a schematic overview of all the possibilities and the underlying differences.

In chapter four there will be made an international comparison. Which kind of products are already available in countries like the United States, Australia and some European countries. Are these products successful in terms of sales, how did these products develop over time and which possible difficulties were there when the products were introduced.

I have written this thesis at PGGM, a pension administrator in the Netherlands, and from them I got the opportunity to do a survey among their members. What are these members needs and thoughts about living, care and retirement. Also these members got an introduction of the characteristics of a reverse mortgage. After that they had to rate this product and give motives or objections why they were or were not interested in this certain product. The design and results of this survey will be shown in chapter five of this thesis.

The Dutch products will be described in chapter six. Which kind of products are or were sold in the Netherlands? How do they compare with the products in for example the United States and to what extent do they meet the needs of the Dutch consumer that emerged of the survey of chapter five.

Chapter seven will describe the key issues that equity release products can bring along. The consumer as well as the provider can feel certain issues in buying or providing such a product. These issues can be different for a loan model equity release product or a sale model equity release product. These different

kind of equity release models will therefore be treated independently. Also possible legislative issues will be addressed in this chapter.

All the products and their characteristics discussed in the previous chapters will be summarized in a product overview in chapter eight. For every product this table describes what type of equity release the product is, which party the property owns, where the risks lie etcetera. This chapters also contains a decision tree, where people, by answering some questions, can find their ideal type of equity release product.

In chapter nine this thesis discusses the current economic and fiscal consequences for paying off a mortgage and releasing equity in a certain way in the Netherlands. What's the economic difference in paying off a mortgage by an annuity scheme or don't pay off the mortgage but save instead and have full interest deduction for instance. What can be improved to make equity release more interesting for more people, what possibilities are there for tenants to create equity and what roles can certain parties play in the development of releasing equity.

To answer the question which parties can play a role in this development we also should have a look at the consumers' confidence in certain parties. A survey from Centerdata in april 2011 showed for instance that consumers' confidence in banks is lower than the confidence in pension funds.

Table 2.1: Consumers' confidence in financial parties, arranged by trust/distrust , 2011¹

	Confidence		
	No/Little	Neutral	Some/much
Dutch Central Bank	17	40	43
Pension funds	23	35	42
Government	25	34	41
Banks	30	36	34
Insurers	44	36	20
Financial intermediaries	59	30	10

Apart from the confidence in certain parties, also the conditions of certain products play a huge role in their success, who for instance bears the risks of depreciation of the house and which party has the legal and economic ownership.

¹ <http://www.mejudice.nl/artikel/631/hoerwinners-pensioenfondsen-banken-en-verzekeraars-het-vertrouwen> and <http://www.mejudice.nl/artikel/166/overheid-winnaar-in-vertrouwenscrisis-pensioenbeheer>

All this taken into account, the following research question will be focused on in this thesis:

Will there be a future in the Netherlands for an equity release product in which you can liquidate the equity that is stuck in your home, while staying in that home and which characteristics should this product have to make it on the one hand as attractive as possible and on the other hand legally and fiscally sustainable?

To answer this research question as good as possible some sub questions were set out:

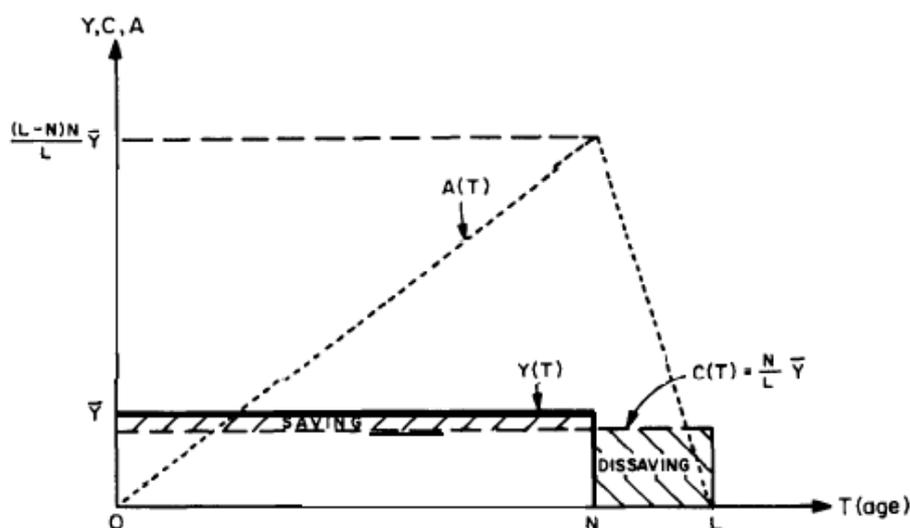
- Which possibilities are already on the market to release equity?
- Which wishes and needs do people have concerning living, care and retirement?
- Which arrangements about releasing equity are already existing abroad and which arrangements can be useful and relevant for the Netherlands?
- Is there a need for certain (fiscal) facilities to make releasing equity a more attractive option?
- What are peoples thoughts about life after retirement, there living standards etcetera?
- Are people aware that the equity in their house can be deployed to create some extra pension income?
- Which parties can play a role by developing equity release products in the Netherlands?
- Specifically, if there is a role, what could be the role for the pension sector?

§ 2.1. Introduction

According to Modigliani and Bruemberg who described the “Lifecycle hypothesis” in 1954 people save and dissave at specific times in their lives. To be specific people save during the working part of their lives and dissave all their saving after retirement. Two assumptions were made by Modigliani and Bruemberg namely 1. Income is constant during working life till retirement, after retirement income will be zero. 2. People consume at a constant level during life and there will be no savings left at death.

The graph below shows the path of income (Y), consumption (C), savings and dissavings and equity (A). N is the retirement age and L is the age of death.

Graph 3.1 Lifecycle hypothesis according to Modigliani and Bruemberg (1954), where there is no money left at time L^2



INCOME, CONSUMPTION, SAVING AND WEALTH AS A FUNCTION OF AGE

However several researches have shown that dissaving goes slower than Modigliani and Bruemberg described. Reasons for this slower than expected dissaving can for instance be a bequest motive people have or a certain precautionary motive.³ People like to have some financial buffer for possible unforeseen circumstances in the future.

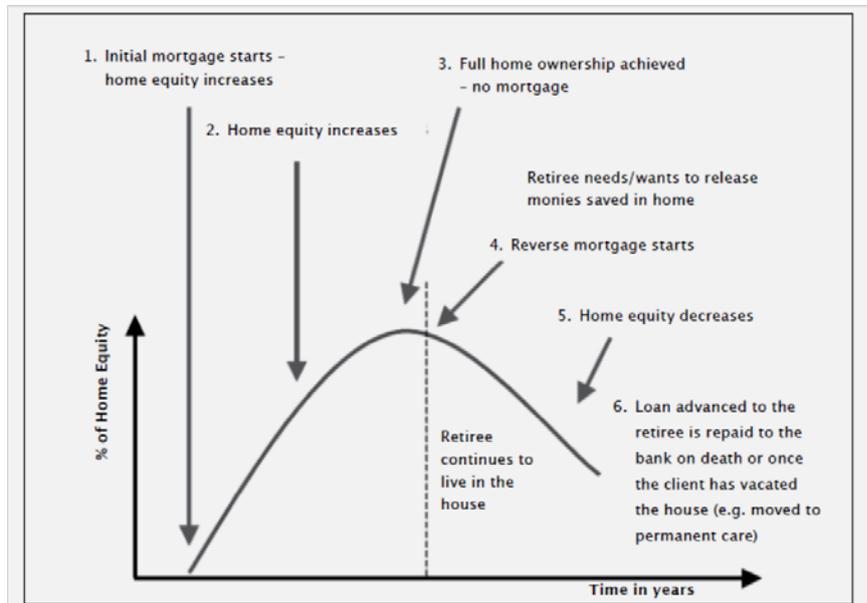
Generally it is expected that the equity people build up in their house follows the same path as described by Modigliani and Bruemberg. With the purchase of a house people get a mortgage, which is being repaid over the years. At retirement the house is often fully owned by the purchaser who then can release

² Modigliani, F., “Life cycle, individual thrift and the wealth of nations”, from website: http://www.nobelprize.org/nobel_prizes/economics/laureates/1985/modigliani-lecture.pdf

³ See for instance Carroll et al., “The Buffer Stock Theory of Saving: Some Macroeconomic Evidence”, Brookings Papers on Economic Activity, 1992

this equity by buying a reverse mortgage or some other equity release product. When buying a reverse mortgage at retirement the lifecycle of home equity will be as follows⁴:

Graph 3.2. Lifecycle of home equity when buying a reverse mortgage at retirement



The first arrow is the start of the mortgage, people start with repaying the mortgage and more and more equity will be built up in the house. This graph assumes people will repay the mortgage during the years, something that is not that common in the Netherlands. A lot of mortgages that were sold are interest only mortgages. In 2011 the rules for new mortgages became stricter and only 50% of the value of the house might be financed with an interest only mortgage.⁵ From January 1, 2013 on people can only deduct mortgage interest from their income if they repay the mortgage with an annuity scheme.⁶

At the third arrow there is full ownership of the property and from that point a reverse mortgage can be bought. With this reverse mortgage people slowly are “eating” their equity. This “eating” of equity can happen in different ways, there are loan model equity release products and sale model equity release products. Which specific ways of releasing equity there are and which characteristic every product has will be described in the next paragraph.

§ 2.2. Description of different products and their characteristics

There are a lot of possibilities to release equity. When people do not have the need to stay in the particular home they live in they can of course also sell their house and buy or rent another house. When people however do feel the need to stay in their own house there are several ways to liquidate their wealth stuck in the house while staying in that house.

⁴ Australian Securities and Investments Commission, “Equity release products”, Rapport nr. 59, 2005

⁵ <http://www.nvb.nl/home-nederlands/dossiers/hypotheken/gedragscode-hypothechaire-financieringen.html>

⁶ Coalition agreement ‘Bruggen slaan’, 29-10-2012

People can for instance borrow on their house again, through a normal mortgage or through a reverse mortgage. This reverse mortgage is an equity release product that already has been sold in the Netherlands and abroad. In case of a reverse mortgage people borrow on their house but where in a conventional mortgage people pay off that mortgage, people do not in this reverse mortgage. Next to that people do not pay any interest now as well. With this mortgage you can therefore liquidate your housing equity without getting higher monthly costs due to interest payments or mortgage payoff.

However the interest will be paid eventually, it will be credited to the loan. When the house is no longer occupied by the consumer who bought the product, due to moving to a nursing home for instance, the loan plus interest should be paid off. This total loan can be paid off by selling the house or if for instance a child of the consumer pays off the loan and the house can stay within the family. There are many different versions within the reverse mortgage. People can borrow only on a part of the house, so that there will always be some bequest left for the children. People can liquidate the money all in once, or by periodic payments. With these periodic payments people get a certain amount of money for the rest of their life and with that they cover longevity risk.

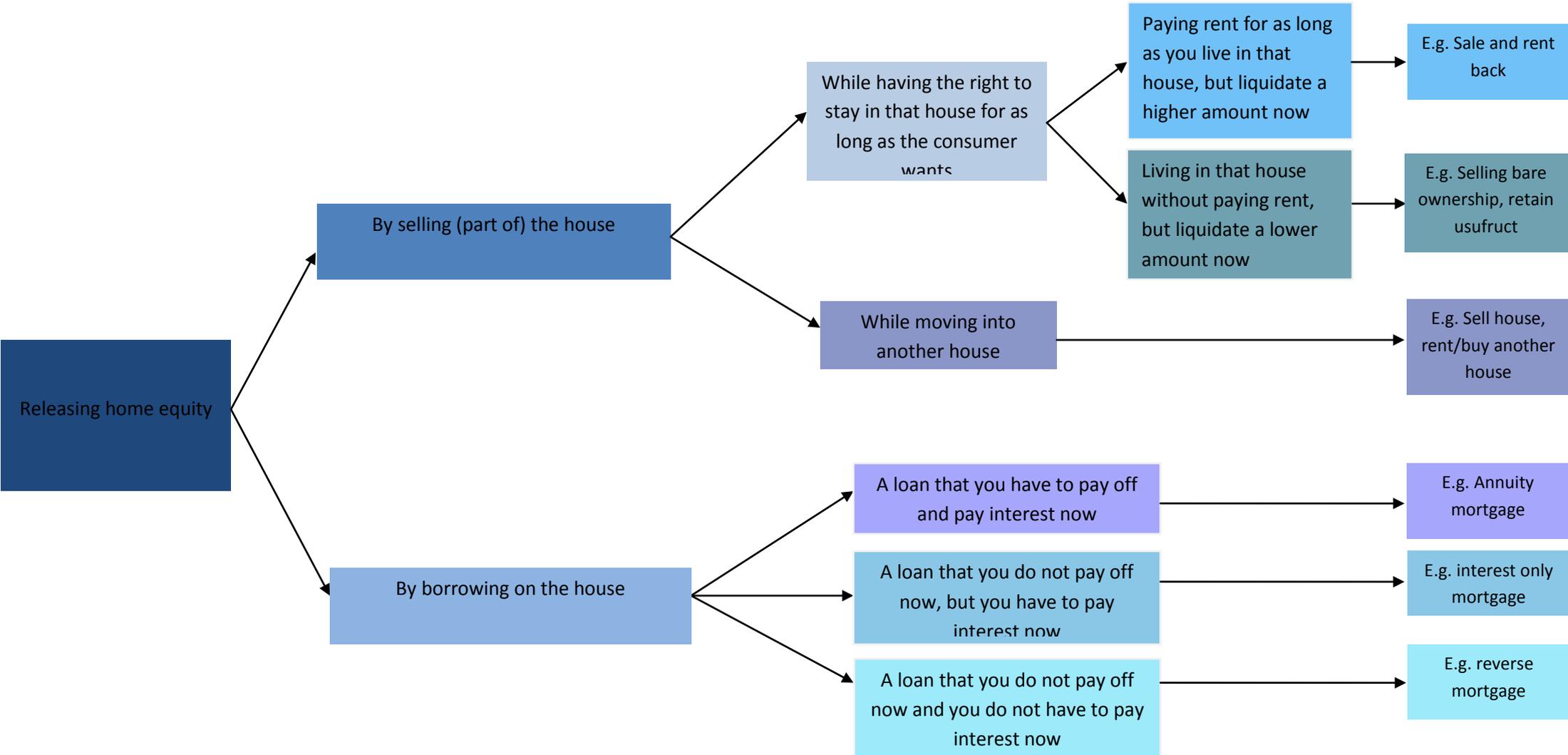
Next to that there is also the possibility to borrow against your house in a more conventional way, for instance a linear or an interest only mortgage. Due to new regulation of the AFM, the Dutch Financial Market Authority, these mortgages are not available for everybody. To buy such a mortgage people have to meet certain income requirements, to be more sure that the loan can be paid back in the future. People who do not meet these requirements but do feel the need for some extra income during retirement might find a solution in the reverse mortgage products.

Besides loan model equity release there is also the possibility of releasing equity by selling your house. Within this sale model there are different versions of releasing equity as well. One option is to sell the bare ownership of your house. The consumer retains the usufruct of the house and with that has the right to live in that house for as long as he or she will or can. By selling the bare ownership you therefore do not get the whole value of your house in cash, but only the value of the bare ownership of that house. The provider of this product therefore buys the bare ownership of the house and at the moment the consumer leaves the house that house will belong to the provider and can be liquidated by him. The consumer can choose to buy an annuity of the money he or she gets from liquidizing the bare ownership to cover longevity risk and to ensure him or herself from getting a fixed amount of money periodically for as long as he or she lives. With this option, selling the bare ownership, people do not have higher monthly costs due to rent or something.

There is also the option of selling the house completely, so the bare ownership and the usufruct, and rent it back from the provider. This option is called "sale and rent back" and with this you liquidate the whole amount of equity stuck in your house. On the other hand people get higher monthly costs, because from now on people have to pay rent to live in their own house.

A third option within the sale model equity release system is the possibility to sell only a part of the house. The original owner of the house will not be a usufructuary now, but will be shared owner. For the part the consumer sells he or she will get an amount lower than the market value of that part. When the consumer leaves the house, due to moving to a nursing home for instance, the house will be sold and the provider gets his part of the selling price. If for example the provider has bought 50% of the house in the first place, for less than the market value, he eventually has the right to get 50% of the selling price when the house gets sold. Difference with a loan construction model is that in this case the percentage share of the provider stays the same over the years, whereas in a reverse mortgage the loan becomes bigger and bigger and therefore the percentage share becomes bigger as well. The profit for the provider in the sale product will be mainly made by the appreciation of the property.

§2.3. Schematic overview



§ 3.1. Introduction

The equity release market is in a number of countries way further than in the Netherlands. Some countries even have a good developed market for equity release products, for instance the United Kingdom, the United States and Australia. This chapter will discuss the various possibilities of releasing equity these countries plus France and Italy have. All countries have an established market when it comes to equity release but they all have their own characteristics, sales and issues. The second paragraph of this chapter will contain 5 subparagraphs where all the countries will be researched independently.

In the first subparagraph the thesis will focus on the United States. In 1989 a new kind of reverse mortgage started, called the Home Equity Conversion Mortgage. What are the characteristics of this product and what made it, compared to other equity release products, a success? Then Australia will be looked at. The equity release market grew a lot during the years, but especially in 2004-2005, when new products were introduced.⁷ What's the current state of the market and which developments have been made since? In the subparagraphs 3 to 5 this thesis will focus on the European countries United Kingdom, France and Italy. The United Kingdom is of the European countries the one with the most developed market, but due to missellings in the past the product has somewhat of a bad reputation. How does this affect the sales of the products and will there be a future? In France and Italy there is a very special kind of equity release product, called respectively viager and nuda proprieta, where one consumer sells the bare ownership of a house to another consumer, who gets full ownership the moment the seller of the bare ownership leaves the house. How popular are these products and what are the specific risks? All these questions will be answered in the following paragraph.

⁷ Australian Securities & Investments Commission, *Equity release products*, Report 59, November 2005

§ 3.2.Possibilities, experiences and results abroad

§ 3.2.1 The United States

§ 3.2.1.1. Products and providers

The American reverse mortgage market has a lot of different products, where one product stands out namely the Home Equity Conversion Mortgage (HECM). This product started in 1989 and was introduced by the Federal Housing Administration (FHA). Next to this government secured reverse mortgage there are two other kinds of reverse mortgages on the market, the single purpose reverse mortgage and the proprietary reverse mortgage. The single purpose reverse mortgage is a reverse mortgage provided by local governments or nonprofit organizations and the provider determines beforehand where the amount of money should be used for, for instance renovation of the house. People cannot use the money on whatever they want, they have to spend it on that one purpose only. The proprietary reverse mortgage is a product where some company is the provider of the mortgage. This product is mainly interesting for people who have a high valued home and do not still have a high mortgage on it.⁸ The product of the FHA is by far the most popular one and this paragraph will therefore only focus on this product.

The characteristic that makes the HECM so special is that this product has a government backed insurance. If the loan becomes higher than the value of the house, for instance because the consumer lives longer than expected, the amount of money higher than the value of the house will be backed by the government, so the provider nor the consumer have to bear the costs of longevity risk. Next to that the government also backs the consumer in case the provider fails to pay if you are paid out in periodic payments. These characteristics have made the HECM into a popular product. Before this product was introduced there were other reverse mortgage products as well but they did not give these insurances and partly because of that the reverse mortgage market did not develop the way it did after 1989.⁹ The HECM started in 1989 as a pilot where there was room for 2500 reverse mortgages. This number grew in the early 90s to 25000 and in 1996 it expanded again.¹⁰

To qualify for an HECM people have to meet certain standards: the consumer has to be older than 61, if there is any mortgage left on the house this should be paid off first with the money people get out of the reverse mortgage and people must meet a government approved advisor. There are no requirements concerning income or other outstanding debt besides the mortgage.¹¹ If people meet these requirement,

⁸ <http://www.ftc.gov/bcp/edu/pubs/consumer/homes/rea13.shtm>

⁹ Mayer, C.J., Simons, K.V., "Reverse Mortgages and the Liquidity of Housing Wealth", Journal of the American Real Estate and Urban Economics Association, 1994, V22

¹⁰ Caplin, A., "The Reverse Mortgage Market: Problems and Prospects, June 2000

¹¹ Neil, B.A., Neil, B.A., "Is a reverse mortgage a viable option for baby boomers?", Journal of Business & Economics Research, June 2009

and therefore can apply for an HECM, the principal limit will be calculated. This is the amount of money the consumer can borrow and depends on three criteria:¹²

- the age of the youngest borrower
- the lower of the Maximum Claim Limit or the Federal Housing Administration appraised value of the home
- The current expected interest rate¹³

The first two criteria have a positive correlation with the amount of money people can get, the higher the age of the youngest borrower, the higher amount of money people can get. The interest rate is negatively correlated with the maximum amount.

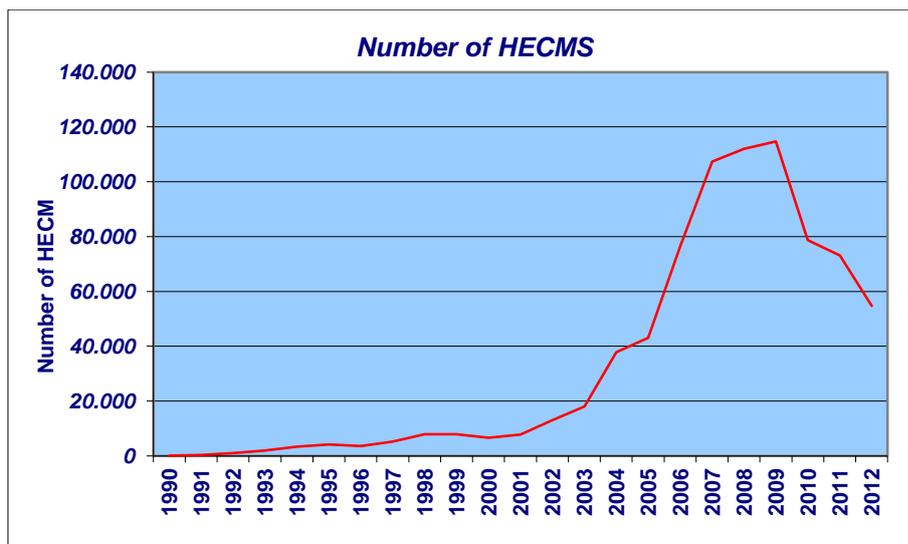
People can choose how they get paid out and there are four ways to do so:

- a fixed monthly payment for a certain amount of years
- a fixed monthly payment for as long as the consumer lives in the house
- A credit line where people can decide themselves when and how much they want to get paid up to the principal limit
- a combination of the credit line and a monthly payment

§ 3.2.1.2. The development of the market

The first years after the introduction of the HECM its popularity was not that high. Not even one percent of the eligible households had a reverse mortgage. However in time the product became more and more known and its popularity grew. In the graph below the number of sold HECMs during the years are displayed:

Graph 4.1 *Number of sold HECMs*



Source: <http://portal.hud.gov/hudportal/documents/huddoc?id=hecm0212.xls>, data till 09/30/2012

¹² <http://ezinearticles.com/?Reverse-Mortgages---What-Does-the-Term-Principal-Limit-Mean?&id=2750513>

¹³ Based on the current 10 year LIBOR rate plus a stated margin for the adjustable rate HECM.
source: <http://ezinearticles.com/?Reverse-Mortgages---What-is-the-Maximum-Claim-Amount?&id=2713995>

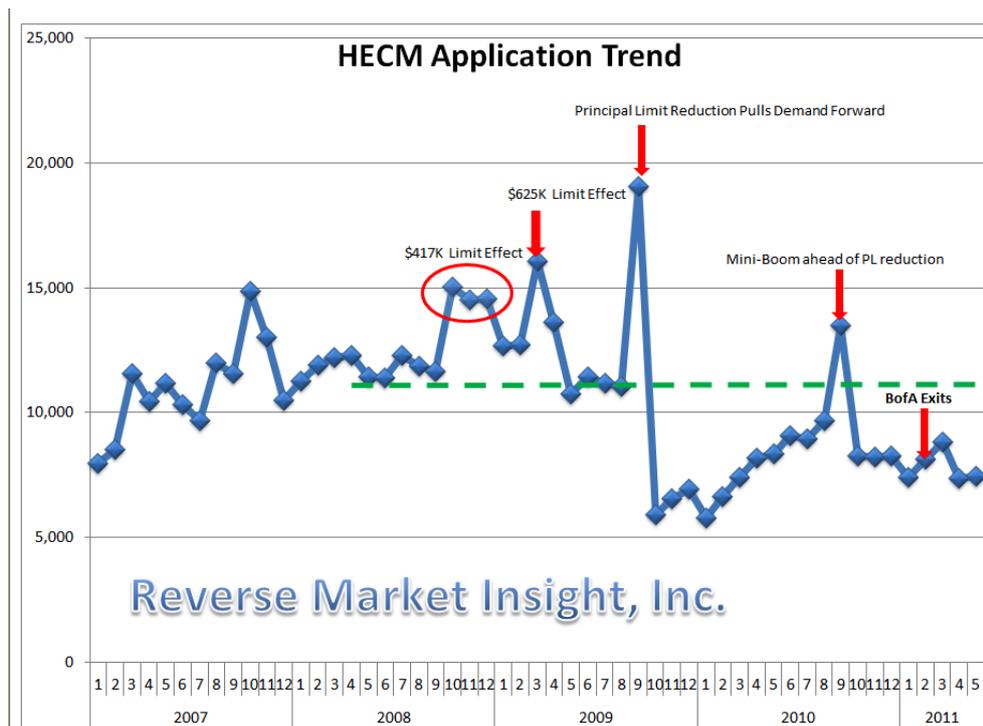
This graph shows that after a slow start the HECM became more and more popular. After 2007 the growth decreases and in 2009 the number of sold HECM decreased. During that time the principal limits were reduced and next to that some of the main providers stopped to offer the product.¹⁴

§ 3.2.1.3. The issues

Since 2009 the number of sold HECM decreased as we saw in the prior paragraph. There are a lot of reasons to explain this decrease. The three main providers, Wells Fargo, Bank of America and Financial Freedom, all decided in 2011 to stop offering the HECM. The last two banks say they stopped because they wanted to focus on their core business, while Wells Fargo stated that it was not because of the profitability but because of the fact that this product was introduced in an economically completely different time.¹⁵

The exit of these three providers has caused a downward effect on the sales in 2011.¹⁶ Next to that the reduced principal limits, the maximum amount of money someone can get out of his/her house, has caused a downfall in sales. The next graph shows the effect of the reduced principal limits:¹⁷

Graph 4.2 Consequences of lowering principal limits on HECM sales



¹⁴ Retrieved from website: <http://blogs.reuters.com/reuters-money/2011/07/29/reverse-mortgage-loans-headed-for-third-straight-declining-year>

¹⁵ Retrieved from website: <http://reversmortgagedaily.com/2011/06/16/wells-fargo-largest-reverse-mortgage-lender-to-exit-retail-business>

¹⁶ Retrieved from website: <http://blogs.reuters.com/reuters-money/2011/07/29/reverse-mortgage-loans-headed-for-third-straight-declining-year/>

¹⁷ Retrieved from website: <http://www.rminight.net/wp-content/uploads/2011/07/AppTrend.png>

In October 2009 and October 2010 the government of Housing and Urban Development reduced the principal limit. According to the FHA this was necessary to keep the program viable. The graph shows that just before the announced reduces there was a peek in HECM sales and just after the implementation there was a huge drop in sales.

Another explanation for the declining HECM sales are the also declining housing prices since 2007. In the first quarter of 2006 the equity in property was about \$13.5 trillion, in 2009 this number fell to a little under \$5.3 trillion, a decline of over 60%. Because of these declining house prices the number of eligible people for an HECM fell drastically. For instance because of the principal limit, that declines if the house prices decline, was lower than the outstanding mortgage debt.¹⁸

Then there were the premiums that came with buying an HECM. These premiums could be very high, for instance the origination fee which contains a 2% premium over the first \$200.000 of the value of the house plus 1% over the value above \$200.000, with a maximum of 6000 dollars. This premium has to paid beforehand. Next to that there is a monthly insurance premium of 1,25% on the outstanding loan. All these effects plus the current worldwide economic crisis that is going on made the product less attractive or not possible for people to buy.

At the end of 2010 a new version of HECM, the HECM Saver, was introduced. This product is mainly introduced for people who only need a small amount of money and therefore the premiums that have to be paid can be much smaller.¹⁹ The origination fee that has to be paid beforehand for the HECM Saver for instance is only 0,01%, which makes it better possible for people to buy the product.

§ 3.2.1.4. Opinions and expectations

Expectations are that reverse mortgages are becoming more popular again in the future since the boomer age wave accelerates and many people are reaching retirement with inadequate sources.²⁰

Marttila Strategies researched in 2010, commissioned by the National Reverse Mortgage Lenders Association, the thoughts and expectations of 1800 elderly and their adult children. 85 percent of the elderly were very pessimistic about the economic climate. Next to that almost 50% of the elderly were concerned about their economic situation during their retirement, they are scared that they do not have enough resources to meet their needs. More than 80% of the elderly wanted to stay in their own house during retirement and that they would use their home equity if necessary. Next to that people's opinions

¹⁸ Chakrabarti, R., et al., "Federal Reserve Bank of New York Staff Reports; Household Debt and Saving during the 2007 Recession, Januari 2011

¹⁹ Retrieved from website: <http://www.hud.gov/offices/adm/hudclips/letters/mortgagee/files/10-34ml.pdf>

²⁰ Retrieved from website: <http://blogs.reuters.com/reuters-money/2011/07/29/reverse-mortgage-loans-headed-for-third-straight-declining-year/>

were also asked about reverse mortgages. Of the respondents who already had a reverse mortgage 74% were very positive and 75% of the respondents stated that they fully understood the conditions.²¹ All these opinions and positive experiences, the innovation that came with the introduction of the HECM Saver and the aging society could have a positive effect on reverse mortgage sales.

§ 3.2.2. Australia

§ 3.2.2.1. Products and providers

In Australia there are two mayor equity release products, the original reverse mortgage and the home reversion. To be eligible for a reverse mortgage in Australia one has to meet certain conditions made by the provider. The conditions therefore can differ between providers and there are no general rules every provider has to have, like there is in the United States. A couple of possible conditions are:

- The consumer has to do the maintenance of the house
- The consumer has to have certain insurances and has to pay for that him or herself
- The consumer has to ask permission to change something in the house

There are therefore no specific age requirements, but in general a reverse mortgage is available for someone who is 55 years or older.²² There is no specific legislation for reverse mortgages in Australia, but there is a general conduct, the Uniform Consumer Credit, which contains rules for traditional financial products. Some providers of reverse mortgages felt that consumers could not be fully protected while there was not a general regulation and it was very easy for 'bad' providers to enter the market which could harm the reputation of the product. They therefore established an association, the Senior Australians Equity Release Association of Providers (SEQUAL). Providers who are a member of this association have set up a code of conduct where they are bound to certain requirements, namely:²³

- All products should have the 'no negative equity' guarantee, the loan cannot be higher than the value of the house
- All costs, transaction costs etc., should be made clear for the consumer
- Give full disclosure on the costs, benefits, obligations and limitations of the product
- Require customers to obtain independent advice

Besides the reverse mortgage market there is another equity release product in the market, hom reversion or Debt Free Equity Release. With this product one sells a part of the house for a lower price than the market value (mostly between 35 and 60%) while one has the right to stay in that house for as long as one can or want. Say for instance that the provider buys 50% of the house for only 50% of that parts market value then the provider gets 50% of the selling price when the house is sold (when the

²¹ National Reverse Mortgage Lenders Association, "Research Shows High Levels of Consumer Satisfaction with Reverse Mortgages", Press release, 13 december 2010, verkregen van: http://dev.nrmlaonline.org/rms/press.aspx?article_id=878 op 20 april 2012

²² Australian Security & Investments Commission, report 59, Equity release products, november 2005

²³ Zie 25

consumer has left the house). The profit of the provider lies in the appreciation of the house. In this case there is for that matter no loan and interest that grows higher and higher, but one just sells part of the house and lost the rights on that part of the house when the house is sold. The consumer stays owner for that part of the house he has not sold, which stays at relatively the same level. Therefore there is no need to have a “no negative equity” guarantee, since it cannot be the case that there is negative equity.

There is another kind of guarantee called the early sale rebate. If someone buys a home reversion for for instance 50% of the house which has a value of \$1.000.000,- , he or she gets about \$250.000 in cash now, while the market value is \$500.000. If the consumer then dies shortly after he or she bought the home reversion product, that part of the house was sold for a very low price. The early sale rebate gives somewhat of that ‘too low’ price back to the heirs of the consumer. This compensation will be smaller as the consumer lives longer in the house. The home reversion product is very young and therefore it is not that well known as for instance a reverse mortgage. But also on the supply side there are some issues. The longevity risk as well as the residential value risk lie with the provider and as long as the consumer lives the provider cannot liquidate its investment and next to that there is also the absence of an active market where the provider can liquidate its holdings. Perhaps the government could play a role to develop the current illiquid market into a liquid one, which could lead to more providers on the market.²⁴

§ 3.2.2.2. The development of the market

In Australia the market for reverse mortgage products has grown steadily the last couple of years. More than 80% of the people who reached retirement age are home owner and most of them are mortgage free.²⁵ About 85% of the older couples who own a home do not have any mortgage debt and for older singles this is 74%. Yet two-third of the older couples and 75% of the older singles are living on social security, while there is a huge amount of equity stuck in the house.²⁶ The development of reverse mortgages has lifted, partly because of the aging process, to a higher level. In the table below the growth of the last couple of years is depicted: ²⁷

Table 3.1 Total size of the reverse mortgage market from 2005 to 2010

	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec - 10
Outstanding market size	\$0.9b	\$1.5b	\$2.0b	\$2.5b	\$2.7b	\$3.0b
Number of loans	16,584	27,898	33,741	37,530	38,788	41,600
Average loan size	\$51,148	\$54,233	\$60,000	\$66,150	\$69,896	\$72,474
Settlements	\$315m	\$520m	\$466m	\$321m	\$264m	\$322m
Facility (settlements)	\$519m	\$714m	\$627m	\$426m	\$367m	\$449m
Additional drawdowns	n/a	n/a	\$125m	\$116m	\$126m	\$131m
Discharges	n/a	n/a	\$203m	\$253m	\$309m	\$354m

²⁴ Deloitte report in opdracht van SEQUAL, “Australia’s reverse mortgage market reaches \$3bn at 31 December 2010”

²⁵ Toussaint, J., “Housing wealth in retirement strategies; Towards understanding and new hypotheses”, Proefschrift, Delft, juni 2011

²⁶ Ong R., “Unlocking Housing Equity Through Reverse Mortgages: The Case of Elderly Homeowners in Australia”, International Journal of Housing Policy, 8:1, 61-79, 2008

²⁷ Deloitte report in opdracht van SEQUAL, “Australia’s reverse mortgage market reaches \$3bn at 31 December 2010”

This table shows that the growth of the market is still there in 2010, despite of the fact that it does not meet the growth in 2007. The size of the market in December 2010 has grown 11% relative to December 2009. People see that the house can serve as the key to an easier retirement and to keep up the living standard of before retirement. Ong (2008) has written an article about the effect that reverse mortgages can have on the financial situation of “income poor- asset rich” elderly home owners. She has compared the poverty rates of people with and without a reverse mortgage. The results are showed in the table below:

Table 3.2 Poverty rate for families with and without a reverse mortgage

Characteristics	Poverty rate		Percentage of income-poor lifted out of poverty (%)	Population of income-poor (%)
	Without reverse mortgage (%)	With reverse mortgage (%)		
All	31.3	1.6	95.0	342,803
Housing equity decile ^a				
\$1-\$95,000	35.5	4.4	87.5	41,302
\$95,001-\$120,000	42.7	1.4	96.8	45,104
\$120,001-\$150,000	29.7	2.1	93.0	37,036
\$150,001-\$180,000	27.0	3.1	88.4	26,781
\$180,001-\$210,000	37.7	1.0	97.4	40,270
\$210,001-\$250,000	26.0	0.7	97.3	29,722
\$250,001-\$300,000	35.7	0.8	97.7	48,245
\$300,001-\$390,000	22.2	2.7	88.0	16,517
\$390,001-\$550,000	30.1	0.0	100.0	34,098
\$550,001 or over	22.6	0.0	100.0	23,728
Age band				
65-69 years	21.2	2.7	87.2	64,260
70-74 years	25.8	2.2	91.4	76,908
75-79 years	31.2	0.6	98.1	79,214
80 years or over	51.3	0.4	99.3	122,420
Income unit type				
Couple	5.4	2.0	63.0	26,714
Single male	41.7	1.4	96.6	68,477
Single female	57.3	1.2	98.0	247,612
State/territory				
New South Wales	35.6	1.6	95.5	133,019
Victoria	27.8	1.3	95.3	82,934
Queensland	35.0	2.8	92.0	65,807
Western Australia	23.1	1.5	93.5	27,411
South Australia	28.5	0.5	98.2	21,573
Tasmania	30.2	0.9	97.0	9,281
Australian Capital Territory	9.0	0.0	100.0	2,379
Northern Territory	24.6	0.0	100.0	400

From this table Ong concludes that reverse mortgages can be a very useful product in reducing poverty among elderly. 95% of the ‘income poor asset rich’ elderly who would live below poverty rate without a reverse mortgage, live due to the reverse mortgage above that poverty level now. In the United Kingdom some comparable researches did not found these same results, according to these studies reverse mortgages have low potential to reduce poverty. An explanation for these very different results can be the different tax and social security systems these countries have. In Australia income from a reverse mortgage is often exempt from tax and people do not lose rights on certain social securities just because they have more capital now. In the United Kingdom this is in fact the case.

If someone does not buy a reverse mortgage but sells the house instead and moves to a rental home then this person can in fact lose the eligibility on the Age Pension, the Australian AOW, since he or she does not

meet the income test anymore. For an reverse mortgage, where you get paid out periodically this is not the case and therefore the reverse mortgage is an attractive option to liquidate home equity.²⁸

§ 3.2.2.3. The issues

The worldwide financial crisis has also been reflected in the reverse mortgage market in Australia. Some providers stopped offering the products. They either were taken over by some other institution (ABN AMRO) or the institution itself stopped with offering the product (Macquarie Bank). Besides that the consumer confidence was affected because the actual value of their portfolio was way lower than before, and this caused a reduction of the value of stocks and other investments. This had a direct impact on the income of a lot of pensioners who for a large part of their income are dependent on income from investments.²⁹ Nevertheless the product kept growing, though the growth is lower than the years before.³⁰

§ 3.2.2.4. Opinions and expectations about the reverse mortgage

In 2007 the Australian Securities and Investments Commission has researched the experiences of consumers of a reverse mortgage and the level of understanding of the product. 14 out of the 29 interviewees did not know what the costs were on the long term and 17 of the 29 interviewees did not know what would happen if they did not held up to the requirements of the reverse mortgage. Most of the interviewees did not know the systematic of a reverse mortgage. Interviewees were very satisfied with the product itself and the contact with the provider.

The expectation about the future for equity release products are very hopeful, due to the fact that care costs are growing and life expectancy is growing as well. Recently the Australian Productivity Commission, part of the Australian government, has written a report "Caring for Older Australians" in which they asked the Australian government to interfere more in the equity release market. The report gave advice to introduce an "Aged Care Home Credit Scheme" backed by the government to make it better possible for people to liquidate their housing wealth and in that way to make them pay more for for instance health costs while they can stay in their own house.³¹

Deloitte also wrote a report, commissioned by SEQUAL, in which they gave three arguments why governments should interfere more in this market. The biggest share of wealth of elderly is stuck in the house, in the future it is inevitable that people should pay more for care themselves given the pressure

²⁸ Zie o.a. Disney, R., Australia: Issues in the Tax Treatment of Pensions and Housing, Melbourne Institute, Australia's Future Tax and Transfer Policy Conference en Sequal Research, "What do retirees really know about retirement finances and reverse mortgages?", Februari 2008

²⁹ Australian Housing and Urban Research Institute, "Reverse mortgages and older people: growth factors and implications for retirement decisions", Final Report No. 146, Mei 2010

³⁰ Zie 32

³¹ Productivity Commission, Inquiry Report, Caring for Older Australians, No.53 28 juni 2011

health care costs already have on government budget and to better enable equality between generations the wealthy babyboom generation should contribute more to ensure their own retirement.³²

The advice of the Productivity Commission, do let the government interfere in the equity release market, was much criticized in Australia. The Combined Pensioners and Superannuants Association declared that a nationwide study showed that two thirds of the Australians do not like the idea of the possibility that they are obliged to release equity out of their house for care costs.³³ The Australian government disregarded the advice of the Productivity Commission and leave to market to private institutions.³⁴

§ 3.2.3. The United Kingdom

§ 3.2.3.1. Products and providers

In the United Kingdom there are three sorts of equity release products, the reverse mortgage, the home reversion and the sale and rent back product.³⁵ The first category is the same product as described at the Australia and US part. The way in which the loan is paid back can differ. People can choose to not pay any interest now or they could pay interest now already, so that at the time the house is sold they only have to pay the loan. Another way to pay off a reverse mortgage in the United Kingdom is if one borrows for instance 25% of the house, the provider eventually has the right to get this loan back plus 75% of the appreciation of the house.³⁶ If the value of the house is 200.000 pounds, one borrows 50.000 pounds and at the moment the consumer leaves the house, the house is sold for 280.000 pounds. The provider gets 50.000 plus $(80.000 * 75\%) = 110.000$ pounds.

The second category is the home reversion product. The consumer sells (part of) the house at the provider and has the right to live in that house for as long as he or she wants. The value the consumer will get out of that house will be below market value dependent on the age and life expectancy of the consumer.³⁷

The third category are the sale and rent back products. In this case people sell their house, again against a lower price than the market value (but higher than in the home reversion case), and in return one has the right to stay in that house for as long as one likes. Difference with the home reversion scheme is that with

³² Zie Deloitte rapport in opdracht van SEQUAL

³³ Verkregen van de website:

http://www.cpsa.org.au/index.php?option=com_content&view=article&id=503:two-thirds-of-australians-reject-reverse-mortgages-for-aged-care&catid=5:aged-care&Itemid=47, op 26 april 2012

³⁴ Verkregen van de website: <http://www.theaustralian.com.au/national-affairs/reverse-mortgages-to-stay-with-private-sector/story-fn59niix-1226334790801>, op 26 april 2012

³⁵ Reifner, U. et al, "Study on Equity Release Schemes in the EU; Part 2: Country reports", Institut für finanzdienstleistungen, Januari 2009

³⁶ King, N. et al, "Rainy days and Silver Linings: Using equity to support the delivery of housing or services for older and disabled people", Housing Learning and Improvement Network, Oktober 2008

³⁷ Zie o.a. Appleton, N., "Ready, steady... but not quite go; Older home owners and equity release: a review", Joseph Rowntree Foundation, 2003

this product the consumer has to pay rent to stay in that house, but he or she will liquidate more in this case than in the home reversion case.³⁸

Till June 2010 there was no regulation for this product by the Financial Service Authority. Because of this there were a lot of products sold to people under wrong circumstances. Research from the Office of Fair Trading states that people could be misled for instance because they were told that they could stay in their house for as long as they want, but in reality they only had a guarantee for 6 to 12 months. Some consumers had to pay a rent that was too high for them and had to leave the house while the provider could have known that before they sold the sale and rent back product.³⁹ In March 2011 the Financial Service Authority (FSA) published a report where they scrutinized 22 providers of sale and rent back products. This report showed that consumers were not well informed about the product they bought, they get too little time to consider the options, providers gave incorrect information and some broke the marketing and promotion rules. All these violations led for the FSA to close this market. The FSA will analyze all products sold during the time they regulated this product to see if the consumers are treated in a fair way and give financial protection to the consumers that were not treated fairly.⁴⁰

This shows that the authority intervenes at the moment the market does not work as well as hoped. The FSA therefore has set some guidelines which every provider should follow. The provider has for example the obligation to give the consumer an information document, where all the costs to the provider are clearly listed. The provider also has to obtain information about the consumer, to know for sure that the product he sells suits the consumer. The benefits of the product should exceed the disadvantages, for instance the loss of certain social securities.⁴¹

The FSA has done research in 2005 already, by using mystery shoppers, to look if providers followed the rules. 67% of the providers did not ask how much savings or investments the client has. 76% did not ask what the monthly expenses of the client were and 55% of the advisers did not mention the fee the client has to pay to the provider to buy a certain product.⁴²

Safe Home Income Plans, who protects consumers for bad equity release products, has made a code of conduct and providers who are members of this association must abide these rules. Examples of these rules are that the consumer has the right to stay in the house as long as he or she wants and all products should have the no negative equity guarantee.

³⁸ Verkregen van de website: <http://www.ship-ltd.org/uploads/06-oct-08.pdf>, op 7 mei 2012

³⁹ "Sale and rent back: An OFT market study", Office of fair trading, Oktober 2008

⁴⁰ Verkregen van de website: <http://www.fsa.gov.uk/library/communication/pr/2012/011.shtml>, op 8 mei 2012

⁴¹ "FSA factsheet for mortgage brokers", FSA, Oktober 2010

⁴² Verkregen van de website: <http://www.fsa.gov.uk/about/media/notes/bn005.shtml>, op 8 mei 2012

§ 3.2.3.2. The development of the market

Within Europe the United Kingdom is the country with the most developed equity release market. In the 60s and 70s the first equity release products were on the market and in the late 80s certain products became very popular. Thousands of retirees were encouraged to get a mortgage to liquidate their home equity and to buy stocks with that money. The interest on the mortgage would always be smaller than the profit people made on the stocks and in the meanwhile the house would appreciate as well. This turned out not to be the case, the appreciation of the house did not meet the expectations and people were not always able to pay the rent on the mortgage. This caused for some households an extra debt on their house and sometimes even a higher debt than the value of the house.⁴³ This created negative publicity and due to this negative publicity around equity release products the market does not grow the way it was expected.⁴⁴ In 2001 Terry and Leather analyzed that the market for equity release products could grow with 4-5 billion a year and the market has the potential to have the size of 50 billion pounds around 2008. These expectations were actually far from the reality in 2008 as shown in the next table:

Table 3.3 Total value of the sold equity release products per year and quarterly

		Total value of lifetime products: £m	Reversion: £m	Total value of lifetime products and reversion £m
Annual				
2003		1,115	125	1,244
2004		1,226	41	1,267
2005		1,114	55	1,168
2006		1,140	74	1,213
2007 ^e		1,177	83	1,260
Quarterly				
2003	Q1	263	58	320
	Q2	262	36	298
	Q3	302	21	322
	Q4	288	15	303
2004	Q1	247	11	259
	Q2	272	8	279
	Q3	351	10	360
	Q4	356	12	369
2005	Q1	252	13	266
	Q2	268	11	279
	Q3	294	17	311
	Q4	300	13	313
2006	Q1	271	19	290
	Q2	264	14	277
	Q3	293	18	311
	Q4	312	23	335
2007	Q1	284	23	306
	Q2	296	17	313
	Q3	317	22	339
	Q4	280	21	301

Source: CML, SHIP

⁴³ Terry, R., Leather, P., "The market for equity release schemes", Council of Mortgage Lenders, Oktober 2001

⁴⁴ Zie o.a. Appleton, N., "Ready, steady... but not quite go; Older home owners and equity release: a review", Joseph Rowntree Foundation, 2003 en Williams, P., "Please release me! A review of the equity release market in the UK, its potential and consumer expectations", Council of Mortgage Lenders, Maart 2008

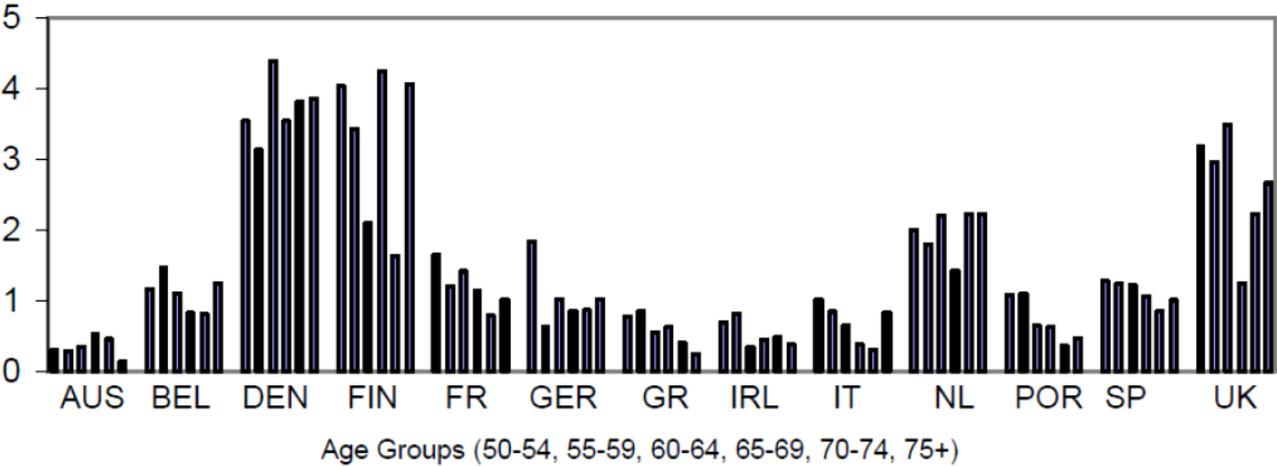
This table shows that from 2003 on the total market contains a value of 1,2 billion a year. Compared to the potential growth of 4-5 billion these numbers are very disappointing. Despite these disappointing numbers the United Kingdom remains the European country with the most developed equity release market based on the number of providers and transactions.

§ 3.2.3.3. The issues

One of the main causes of the disappointing sales is the negative publicity this market still gets and the negative image that comes with it. The trust in the product is harmed and consumers are wary to buy such a product, especially since older consumers, the target group, are very risk averse.⁴⁵ Besides that people are also influenced by the consequences buying this product can have on the eligibility for some social securities.

Another cause could be that the residential mobility for older homeowners is one of the highest of Europe as shown in the next table:⁴⁶

Table 3.4 Residential mobility for older homeowners per age group and country



The alternative of selling the house and to liquidate the home equity in that way is for UK homeowners therefore an attractive option. Cultural barriers, like debt aversion or a bequest motive, are in the UK much less present than in the rest of Europe.⁴⁷

⁴⁵ Williams, P., "Please release me! A review of the equity release market in the UK, its potential and consumer expectations", Council of Mortgage Lenders, Maart 2008

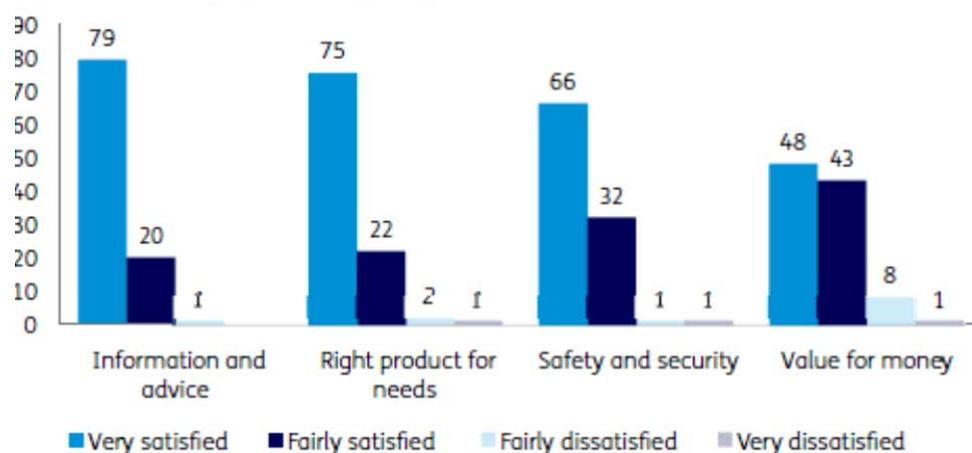
⁴⁶ Tatsiramos, K., "Residential Mobility and Housing Adjustment of Older Households in Europe", November 2006

⁴⁷ Study Equity Release Schemes in the EU, Part II: Country reports, 2007

§ 3.2.3.4. Opinions and expectations about the reverse mortgage

Age UK has researched the satisfaction of consumers of equity release products about the product they bought. The research showed the following results:⁴⁸

Table 3.5 Satisfaction about the different aspects of the equity release product people bought

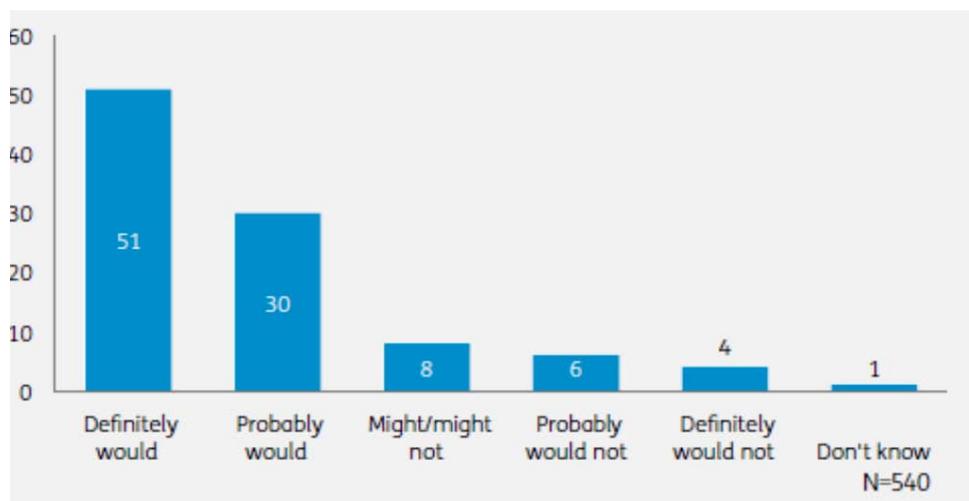


99% of the respondents are (very) satisfied with the information and advice they got from the provider. Another 97% is (very) satisfied that the product they got fits their needs and also a lot of the respondents are very pleased with the safety and security of the product. The question if people are satisfied with the value for money aspect of the product is less popular. Around 8% of the people is fairly dissatisfied with the amount of money they could liquidate, but most people were very to fairly satisfied and could understand the idea behind this amount. One woman said that she did not get an amazing amount of money but that one the other hand the provider has to wait a long time before he can liquidate his investment.

People were also asked if they would buy the same product again with now that they know how it turned out to be. Results were as follows:

⁴⁸ Overton, L., "Housing and Finance in later life: A study of UK equity release customers", Age UK, Juni 2010

Table 3.6 Would you make the same decision about entering into an equity release plan today?



From these results people seem satisfied with the product as well. Somewhat more than half of the respondents would definitely make the same decision and 30% probably would make the same decision. Many of the ones who would not make the same decision gave as a reason the current economic crisis, the decreasing housing prices or dissatisfaction about the amount of interest that is added to the loan. However overall people are very satisfied with the product they bought.

§ 3.2.4. France

§ 3.2.4.1 Products and providers

In France there is a specific way of releasing equity that exists for decades, called le viager. With this type of equity release the home owner sells the bare ownership but this time not to a certain financial provider but to another consumer. The original home owner retains the usufruct and can live in this house for as long as he or she likes. Most of the time the value of the bare ownership is being paid out lump sum, but the seller of the bare ownership can also choose being paid in periods.⁴⁹ Internationally this kind of product exists as well, but the special thing about the viager is that this product is an agreement between two consumers, where one third of the transactions are transactions within the family.⁵⁰

While this kind of liquidation happens between two consumers there are large amounts of money involved it often is the case that for the buyer of the bare ownership this bare ownership is the biggest asset in its portfolio. Financial institutions can spread this risks, while they can create a lot of these assets in their portfolio, but a normal consumer often cannot. This construction therefore moves the risk from one consumer to the other, but there is no risk reduction involved. In the case of financial institutions risks are spread and can be reduced. Problems can occur when a consumer has one major asset in their portfolio. In this case the consumer who buys the bare ownership has to bear the longevity risk himself.

⁴⁹ http://property.vingtparis magazine.com/2006/07/the_viager_syst.html

⁵⁰ Study Equity Release Schemes in the EU, Part II: Country reports, 2007

This risk can be drawn with the following real life example. Jeanne Calment sold her house en viager like described above at the age of 90 to a middle aged guy. Thirty years later this middle aged guy dies and Jeanne becomes 120. The heirs of middle aged guy have to pay the monthly payments and 2 years later at the age of 122 she dies as well, being the oldest woman that has ever lived.⁵¹ The buyer of the bare ownership therefore has never had the benefits of the house but he has paid for it during his life and his heirs after that.

These risks are huge for a consumer who cannot spread this risk with other major assets and with that comes the fact that the buyer 'gambles' on the life of the seller, which can give a weird feeling certainly if this seller is family.

Apart from the viager France does also have a reverse mortgage market. In 2007 the prêt viager hypothécaire was introduced. Before the product was introduced the French government set some ground rules and added a new chapter in the consumers law book especially for the prêt viager.⁵² The product must have the following characteristics:

- The loan can be taken in the form of a monthly annuity or a single lump sum
- Products should have the 'no negative equity' guarantee
- If the house is sold for an amount higher than the debt, this amount goes to the heirs
- Heirs can pay off the debt, to keep the house in their family

At the launch of the product the government was very enthusiastic, however since the introduction there is only one provider of the product, Crédit Foncier. The reverse mortgage they offer has a real interest rate of 10%, a low value for money ratio and the costs of the product are high. One reason why there the interest rate is very high is because of the fact that the risks for the provider are very high as well and there is no competition on the market.

The borrower has to be older than 64 and has a number of obligations. He or she has to take care for the maintenance of the house so that the house maintains its value and cannot make any changes on the house unless he or she has the permission of the provider. According to Crédit Foncier 4000 cases have been implemented with a total value of 340 million euro.⁵³

Per age group Crédit Foncier has made a list of the percentage people can borrow at most. This will be:⁵⁴

⁵¹ <http://online.wsj.com/article/SB123751598610591713.html#articleTabs%3Darticle>

⁵² Erp, J.H.M. van, *Nieuw Frans zekerhedenrecht*, Weekblad voor Privaatrecht, Notariaat en Registratie (WPNR), 2006

⁵³ <http://instantukloans.info/2011/04/the-reverse-mortgage-which-follows-from-the-ordinance/>

⁵⁴ <http://www.latribune.fr/patrimoine/banque-assurance/20090504trib000372503/le-credit-foncier-developpe-son-pret-viager-hypothecaire.html>

Table 3.7 Maximum amount of money people can borrow with a prêt viager of Crédit Foncier per age group

Age	Maximum borrowing percentage
75	15 – 45% of the value of the house
80	20 – 55% of the value of the house
85	30 – 60% of the value of the house
90	40 – 70% of the value of the house
95	50 – 75% of the value of the house

The average buyer of the product has the age of 76, the value of the house is €330.000 and the average borrowing amount is €85.000.⁵⁵

§ 3.2.4.2. The development of the market, the issues and future prospects

With the introduction of the new law demands were made on the providers. They should be authorized and registered. Only banks are allowed to offer a prêt viager hypothécaire. Providers should give consumers 10 days time for reflection, the contract should be notarially certified and there are certain maximum amounts providers can ask for their information.⁵⁶

However the government removed some legal barriers the selling amounts are very disappointing. On the one hand this can be blamed to the supply side where only one provider is present, because of the high risks the provider has to bear.⁵⁷ On the other hand it is not an attractive product for the consumer while they get low value for money, partly due to the high interest rate they have to pay.

Besides that there are different cultural issues. French are extremely debt averse.⁵⁸ The mortgage debt of the French is way below the European average and there are strict rules in France to avoid a high indebtedness. The outstanding mortgage debt is about 32% of the GNP. In comparison for Spain this is 59%, for Ireland 70% and for the Netherlands even 98% (the mortgage interest deduction rules play a huge part in this). Also consumer organizations are very skeptical about equity release products, the consumer is warned by this and is therefore very wary to buy such a product.

From the French who are older than eighty still 71% lives independent, a pro for a product like a reverse mortgage.⁵⁹ The residential mobility is very low and as showed in the graph below they like to live independently as long as possible:

⁵⁵ Zie 59

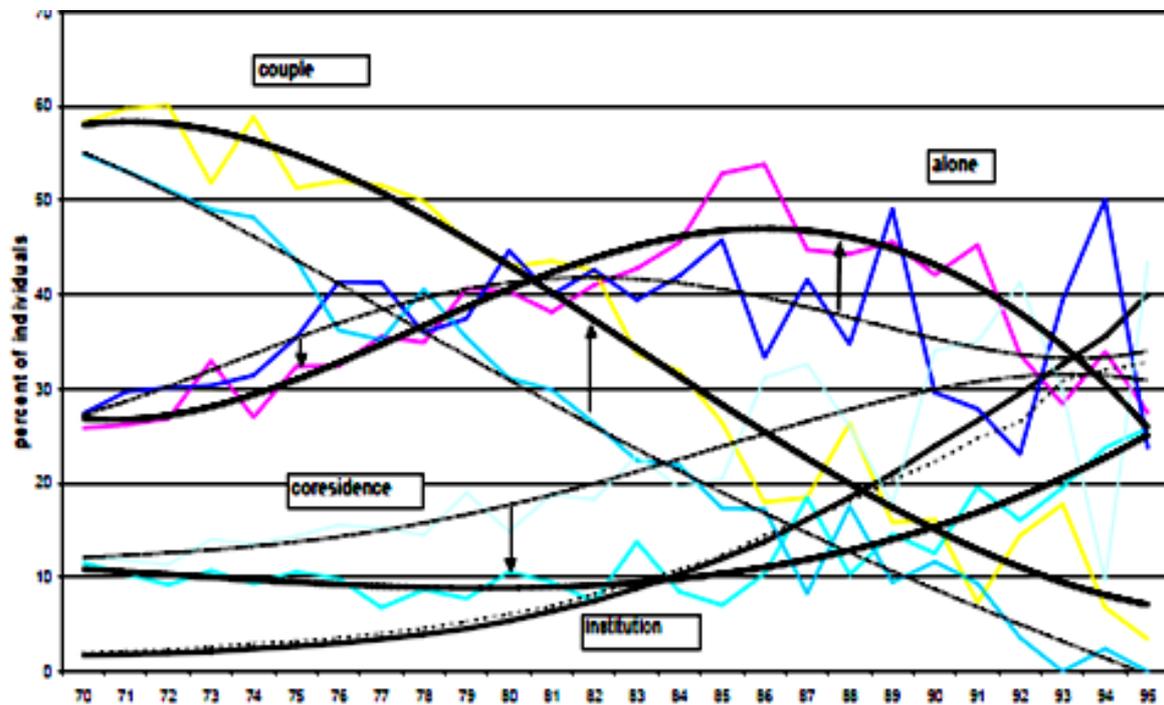
⁵⁶ Zie 55

⁵⁷ Zie 55

⁵⁸ Gotman, *Towards the end of bequests*, 2011

⁵⁹ Geneva Association, *Long-Term care and housing*, Laferrere, 2009

Graph 3.3 In which living situation are the French (together with spouse, alone, coresidence with children) and how does it evolve with age



At the age of 95 still 60% of the elderly lives independently or they live for instance with their children (coresidence). 73% of French households with at least one retired person has full ownership of the house. One of four French has a second home.⁶⁰ A lot of people have full ownership of the house and with that a lot of illiquid equity, while they want to stay in that house as long as they want. The potential market therefore is enormous and even though the product is not a success at all. A possible explanation for this according to the literature is that the French are relatively less 'income poor, house rich'.⁶¹ The income during retirement is sufficient and there is no need to liquidate housing wealth.

⁶⁰ *The housing situation and residential strategies of older people in France, Bonvalet & Ogg, 2008*

⁶¹ Zie bijv. *The housing situation and residential strategies of older people in France, Bonvalet & Ogg, 2008* en *Geneva Association, Long-Term care and housing, Laferrere, 2009* =

§ 3.2.5. Italy

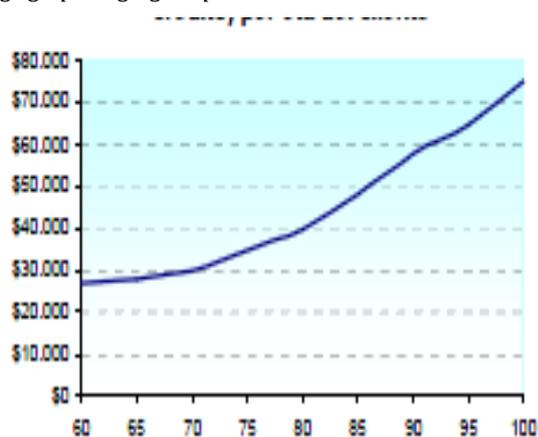
§ 3.2.5.1. Products and providers

In Italy as well as in France there is the well known possibility to sell the bare ownership to another consumer, while retaining the usufruct and it is called *nuda proprieta*. This way of liquidating the house exist for decades now and in Italy the market is still growing. Where in 2000 there were 18.000 transactions like this, in 2007 there were already 50.000 transactions, which is about 6% of the total real estate market.⁶²

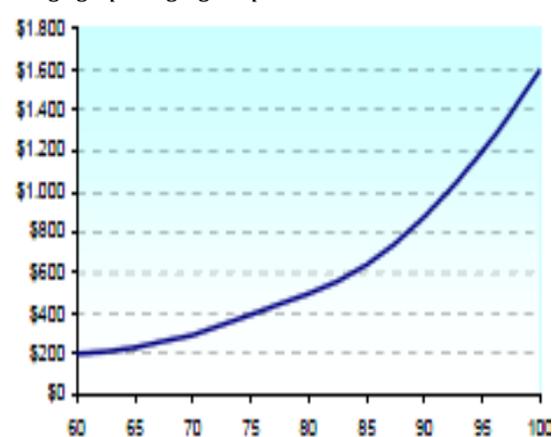
There is no possibility of selling the bare ownership to some financial institution in Italy but they do have their version of reverse mortgage themselves, called the *prestito vitalizio ipotecario*. This product was introduced around 2005 for people older than 65 who own a house which market value was higher dan €70.000. There are three providers on the market, Deutsche Bank, Euvis and Banca monte dei Paschi di Siena. The first two banks only pay out lump sum, while the last bank also pays out in periods. There are special requirements people have to meet to qualify for monthly payments namely, the consumer has to be 70 years or older and the maximum payout period is 20 years.⁶³ The provider gives the no negative equity guarantee, the longevity risk is therefore for the provider, but people cannot get a lifelong payment. To ensure themselves from a certain income as long as they live people should get a lump sum payout and should buy an annuity from that liquidated amount of money.

The graphs below show what amount of money people get lump sum (graph 3.4) or monthly (graph 3.5) when the house has a value of about €100.000 and with an interest rate of 6%.⁶⁴

Graph 3.4 Lump sum payment for a reverse mortgage per age group



Graph 3.5 Monthly payments for a reverse mortgage per age group



⁶² <http://online.wsj.com/article/SB123751598610591713.html#articleTabs%3Darticle>

⁶³ *Explaining why, right or wrong Italian households do not like reverse mortgages, Fornero et al, 2011*

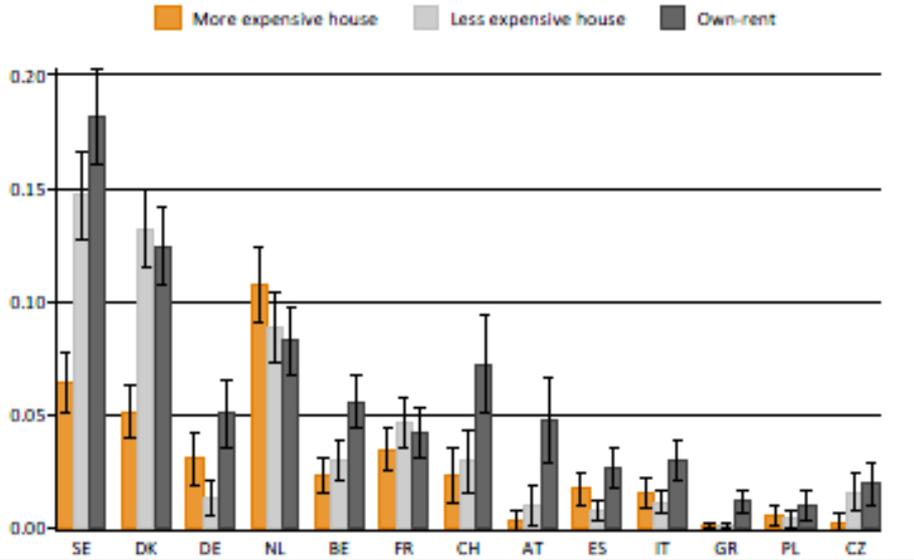
⁶⁴ *Sviluppo del Prestito Ipotecario Vitalizio in Italia, Associazione Bancaria Italiana*

In order to qualify for the product the house and the buyer of the product should satisfy some requirements. The house can for instance not be situated in a place which belongs to the danger zones for earthquakes. The house also has to have a value of more than €70.000 euros and it is only possible for consumers. The borrower should take care of the house and the house cannot be rented or sold during the term of the loan. There are also some requirements to the products. Products should have the no negative equity guarantee and providers should give a clear overview of all the costs and possible fines that come with the product. ⁶⁵

§ 3.2.5.2. *De ontwikkeling van de markt, de barrières en het toekomstperspectief*

Italy scores way above the average OESO level for aging. Expectations are that in 2050 the ratio between people older than 65 and people between the age of 15 to 64 will be 1:1.⁶⁶ With that the aging problem in Italy is the highest of whole Europe. Next to that the percentage of home owners is very high, 78% of the elderly are fully owner of their house⁶⁷ and the residential mobility is compared to other European countries very low, among the lowest of this continent:⁶⁸

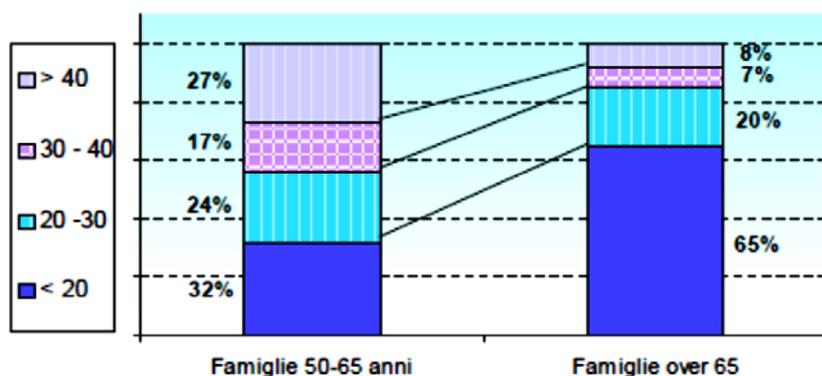
Table 3.8 Residential mobility per country and type



What stands out as well is the fact that the income after retirement is drastically lower in Italy and at the same time the equity does not have the same reduction. In the figure below left the income is shown of households where the head of the family is between 50 and 65 and right the income is shown of households where the head of the family is older than 65.⁶⁹

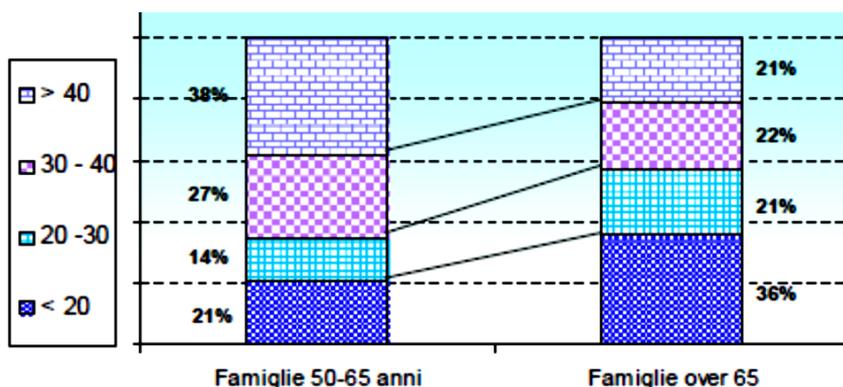
⁶⁵ Study Equity Release Schemes in the EU, Part II: Country reports, 2007
⁶⁶ <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=71445ned&D1=0-4&HD=110628-1451&STB=G2,G1,T>
⁶⁷ Zie 70
⁶⁸ Does downsizing of Housing Equity alleviate financial distress in old age, Angelini et al
⁶⁹ Zie 71

Table 3.9 Share of households in certain income groups where the head of the family is between 50-65 and where the head of the familie is older than 65 (equity x1000)



On the left hand side 32% is in the lowest income class of lower than €20.000 per year and on the right hand side, where the head of the family is older than 65, this is 65%. The number of households in the highest category has reduced from 27% to 8%.

Table 3.10 Share of households in certain equity groups where the head of the family is between 50-65 and where the head of the familie is older than 65 (equity x1000)



This table shows a much less drastically fall in equity. This can be explained while a lot of equity is stuck in the house. When people are in trouble at later age they can therefore liquidate their housing equity to get some extra pension income. All these characteristics of Italy, the extreme aging, the low residential mobility, the high income drop and the high percentage of people who fully own a house the expectations of a product like a reverse mortgage were high. But the numbers of actual products sold are very disappointing here as well. Even according to the most pessimistic forecasts the market for reverse mortgages should be way higher than it is now.⁷⁰

Possible explanations that were given in the literature are the uncertainty about the product. At the time the product is bought people have no idea how long the contract will last, this depends on how long they stay in that house. The prestito vitalizio ipotecario is being regulated and supervised by the Banco d'Italia. For financial products like this reverse mortgage the contract should be signed for medium to long period

⁷⁰ Zie 70

en because there is no specific regulation for the prestito vitalizio ipotecario, consumers as well as providers are unsure if the product meets this requirement and this uncertainty can hinder the development of the product.

Other explanations are the high transaction costs that come with the product and the very low financial literacy in Italy.⁷¹ The possibility to sell the bare ownership and retain the usufruct may be perceived as being a better economic solution.⁷² Also the number of providers is very low and stays low due to the risks they have to take and this causes the products to be expensive. Next to that there are also some cultural issues. Italians are very devoted to their house, it is their biggest asset and it is supposed to go to the heirs. The bequest motive in Italy is so strong that they really see it as a last resort, the extrema ratio, to buy a reverse mortgage.⁷³ In an Italian research about the attractiveness of a reverse mortgage this became clear as well. Only 1,1% of the respondents was very interested, 6,2% was fairly interested, 12,9% was a little interested, 20,1% was hardly interested and 59,4% was not interested at all.⁷⁴

People were also asked how they would pay a hypothetical expenditure of €20.000. 60% would pay it out of saving money, 20% would sell some financial assets to pay for it and 16% would borrow. At the question if people were willing to sell the house for extra pension income 53,1% answered certainly not and 27% probably not. There seems to be little interest at all for a reverse mortgage from the side of the consumer, but it can certainly be the case in the near future that it will become a matter of necessity.

⁷¹ Gibler and Rabianski, zie voor een onderzoek naar financiële geletterdheid bij Italianen *Adequacy of Saving for Old Age in Europe*, Fornero et al, 2009

⁷² Zie 72

⁷³ Zie 72

⁷⁴ Zie 70

§ 4.1. Introduction

This chapter describes the ideas and opinions of the Dutch about living, care and pensions now and in the future. Which needs and expectations do people have about life and the living standard after retirement and what do they think about a reverse mortgage. Ideas and opinions of generations can change in time, for instance because of the time they grew up in or because of recent news. The DNB Household Survey shows this as well. In 2004 they asked their respondents at what age they thought they would retire and the average answer was 62. In 2010 this expectation already increased to 65 years, where the younger respondents expected that they would retire around the age of 67. In this same research people were asked what they thought of the compulsory saving scheme for pensions in the Netherlands, should it be abandoned. Respondents did not think so, a huge majority saw the benefits of a compulsory saving scheme and were not sure if they would save enough if this compulsory saving did not exist. The scheme itself therefore is not pressurized, partly due to this system the risk to live under the poverty line when retired is very low compared to surrounding countries. In Belgium, Germany and the United Kingdom respectively 20%,18% and 31% of the people are at risk to live under the poverty line after retirement, whereas this number for the Netherlands is only 9%.⁷⁵

This chapter will further discuss the individual and the wishes and expectations of these individuals about living, care and life after retirement. These expectations were tested in a survey at PGGM, a Dutch pension administrator. After discussing the design and composition in the next paragraph, paragraph three and four will further focus on the wishes of living and care at later age. After that paragraph five will discuss peoples thoughts and opinions about the reverse mortgage.

§ 4.2. Design and composition of the survey

The research was done at PGGM to a panel of their members. This panel is asked about there opinions on different kind of subjects a couple of times every year. This research was titled ‘Research into your opinions and expectations about living, health care and pensions’. Respondents got the following introduction:

“PGGM is curious to know which preferences people have about living at later age. Do people prefer to live as long as they can in their own house or is moving to a smaller home, adjusted to certain needs that comes with the age, the better option. Is there need for a product that makes it possible to liquidate the equity in the house while staying in that house. PGGM likes to know your opinion about this.”

After this brief introduction the questionnaire started. This questionnaire was built in a certain way. Since this thesis mainly focuses on liquidating equity out of the house, one of the first questions that was asked was how people lived. If people were living in a rented home they do not build up equity in their house

⁷⁵ Toussaint, J., “Housing wealth in retirement strategies; Towards understanding and new hypotheses”, Proefschrift, Delft, juni 2011

and therefore some questions were not relevant to them, for instance questions about the reverse mortgage. People could also give the answer that they lived in a rented house but want to buy in the future, while for them the questions about reverse mortgages can be relevant.

After questions about living, health care and pension preferences the research focused specifically on the reverse mortgage and these questions were only asked to owner-occupiers and to those planning on buying a house in the future. People first got an introduction of the product, the characteristics, the advantages and the disadvantages:

A lot of people do have equity in their home, which cannot be released unless they sell their home. Abroad, there was need to liquidate this equity after retirement while staying in that house. To match these needs the reverse mortgage was introduced.

The reverse mortgage has got the following characteristics:

- *People get a new mortgage on their home*
- *Lump sum or monthly people get a certain amount of money*
- *People have to pay interest on that loan, but do not have to pay it until they leave the house*
- *The complete debt, loan plus all the interest during the years, have to be paid only after leaving the house*
- *With the liquidated money people can do whatever they want, for instance adjust the house for later age or an addition to their pension income*
- *People can stay in their house for as long as they want, without extra monthly costs while living there*

Advantages of a reverse mortgage:

A reverse mortgage makes it possible for people to liquidate their housing wealth without having to move out of that house and without having extra monthly costs because of interest they have to pay. The complete debt has to be paid off within a certain time after the consumer has left the house.

Disadvantages of a reverse mortgage:

This product will cause the inheritance to be smaller. People again take a loan on the house and this loan grows as long as you live in that house, till the house gets sold.

After this brief introduction of the product people were asked to rate the reverse mortgage, to indicate for what causes they would get a reverse mortgage and to indicate what the biggest objections were. In paragraph five of this chapter the results will be shown.

The exact composition of the sample is shown in the next table:

Table 4.1 Composition of the sample of survey living, health care and pensions

Number of invitations 3150

Responses 1084

Characteristics		Frequency
Age	Younger than 25	1
	25 to 34	20
	35 to 44	47
	45 to 55	205
	55 to 64	510
	65 to 74	275
	75 and older	20
	No answer	6
Gender	Man	425
	Woman	613
	No answer	46
Living situation	Alone	233
	Alone with children	44
	With a partner, without children living in the same house	627
	With a partner, with children living in the same house	174
	No answer	6
Children	Yes, wheter or not living at home	821
	No	237
	No answer	26
Work status	Working	555
	Retired	423
	Not working, not retired	106

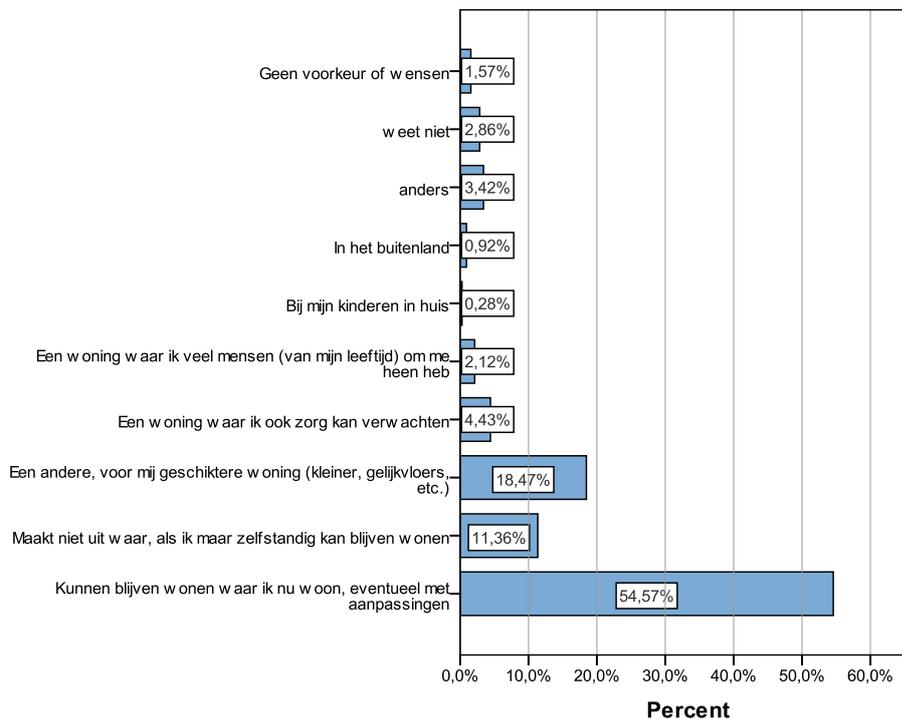
This table shows the characteristics of the respondents. Younger people are somewhat underrepresented, but for this research it is very interesting to hear the opinions of the people who are (almost) at the retirement age, since they are the target group for a product like the reverse mortgage. The table also shows a nice distribution of working and retired people.

§ 4.3. Expectations about the standard of living and residential needs after retirement

Respondents were asked what their most preferable living situation would be after retirement. This question was asked in a PGGM survey of 2010. To compare the results of now and two years ago the question was asked in the exact same way.

The results in 2010 were that about 49% of the respondents wanted to live in their own house for as long as possible, 16% wanted to live in a better adjusted home (all at the same level) and another 16% did not care where exactly as long as it was independent. The results of this survey were as follows:

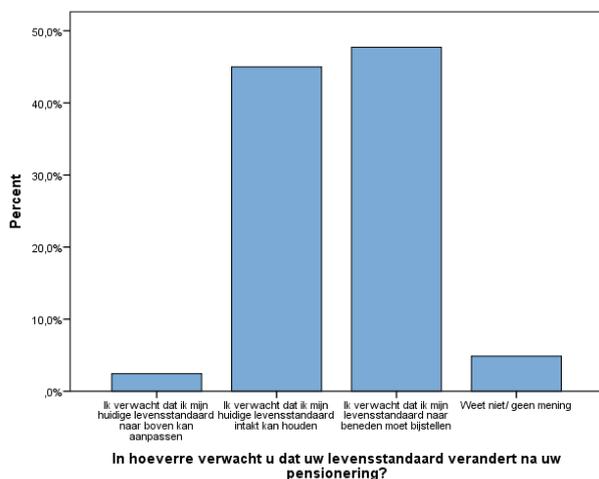
Graph 4.1 What do you consider as the ideal living situation after retirement?



In this survey more than 54% of the respondents prefers to live in their own house for as long as possible. This has been shown in other researches as well, people are very attached to their house and their neighbourhood and they want to stay there. When this is financially not possible anymore a reverse mortgage could be the solution.

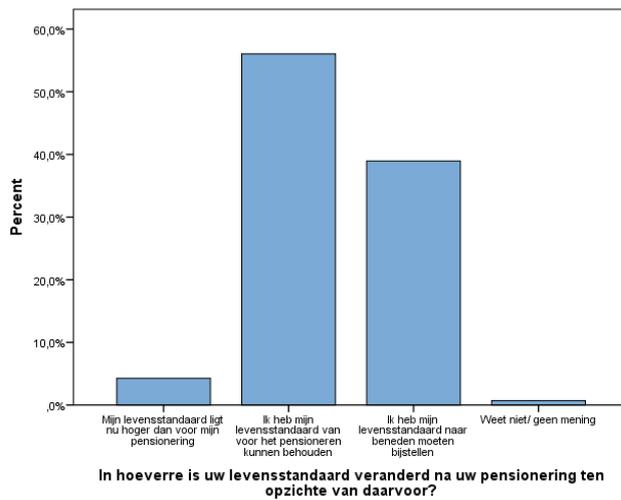
The financial expectations after retirement were also tested among the respondents. The not yet retired were asked what they expected about their living standards after retirement and the yet retired were asked if and how the financial situation was changed after retirement.

Graph 4.2a Expected change of living standard for the not yet retired



The most popular answer, with about 50%, was the answer where people expected a lower living standard at retirement. 45% thinks their living standard will not change at the moment they retire.

Grafiek 4.2b Real changes in living standard people felt after retirement

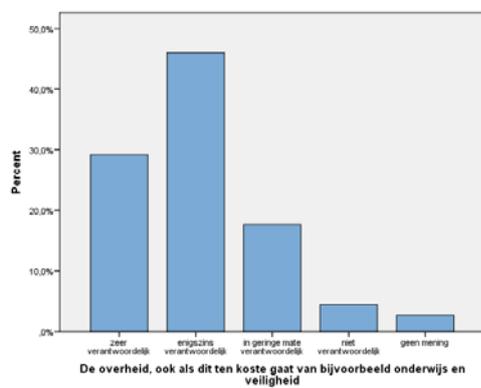


This graph shows that the retired people experience less decrease in living standard than expected by the not yet retired. This can be due to a certain generation effect or a cohort effect. The fact is that 55% of the retirees did not have to adjust their living standard after retirement. About 40% had to downgrade their living standard after retirement.

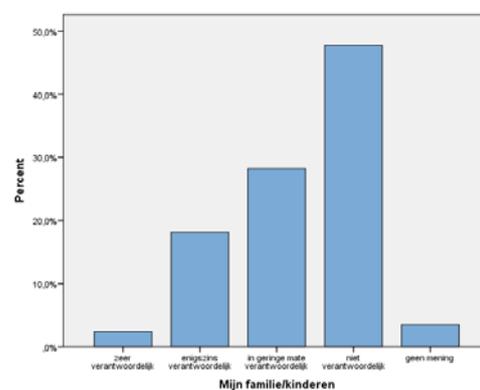
§ 4.4. Willingness to release equity for extra care/ extra income during retirement and desires for care at later age

In this part of the research people first were asked who is responsible for health care and its costs. They were asked to give an answer at a five point scale which goes from very responsible to not responsible at all. They had to rate three parties namely, themselves, their children/other heirs and the government. The question for the government was stated as follows ‘The government, even if this is at the expense of education or safety’, to aware people what the consequences might be if they want the government to pay for everything. The results were as follows:

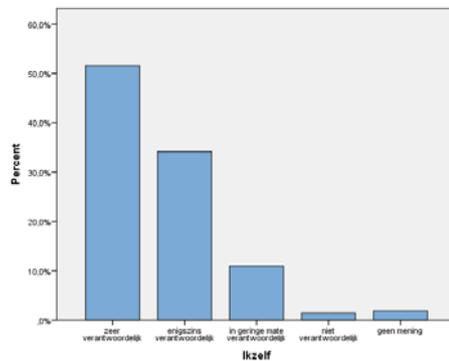
Graph 4.3a The degree of responsibility of the government for your health care costs



Graph 4.3b The degree of responsibility of the children/other heirs for your health care costs



Grafiek 4.3c The degree of responsibility of yourself for your health care costs



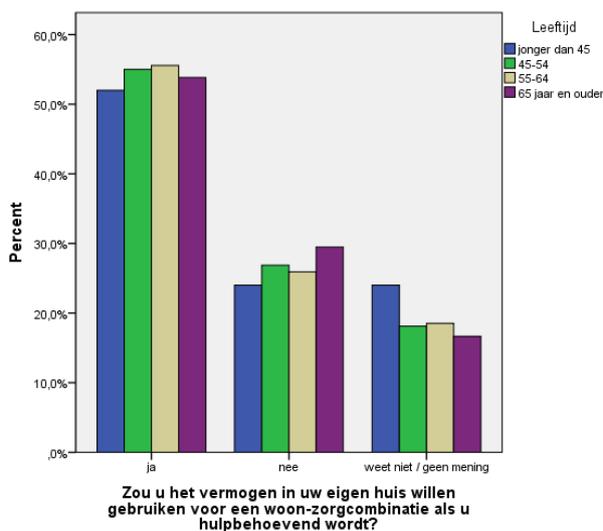
Out of these graphs we see that people think of themselves as being most responsible for their own health care costs. Also the governments is being held responsible, but their scores are lower than the rates at the answer of people themselves. The distribution in the graph of the heirs is completely different. About 50% of the respondents do not hold their heirs not responsible at all for their health care costs.

In the survey people were also asked if they wanted to use the equity in the house to buy/get a live&care combination when they need certain health care. At first the live&care combination was introduced:

A live&care combination is a combination where people can live independently while their living situation is adapted to their needs. This can be the done in their own house or by moving into a house which already is adjusted to these needs.

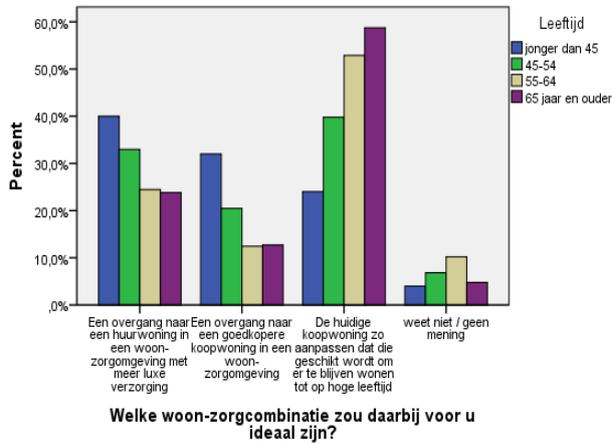
After this people were asked if they were interested to use the equity in their house for a combination like this and which type of live&care combination they would prefer. This question was only asked to respondents who are owner-occupiers.

Graph 4.4a The willingness to use equity in the house for a live&care combination



A majority of the respondents of all age groups are willing to use the equity in the house to buy/create a live&care combination. There are no specific differences in the answers between age categories. Which type of combination people prefer was answered as follows:

Graph 4.4b Which live&care combination would you prefer?

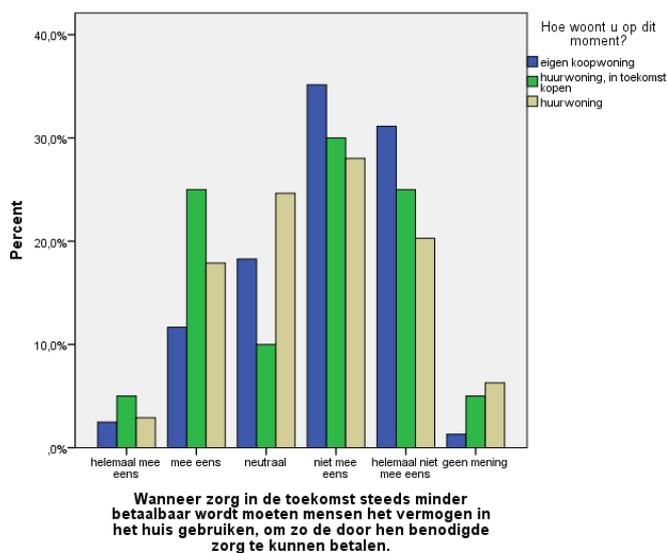


From the respondents younger than 45 40% prefers to move to a rental home in which they can afford somewhat more luxurious care.

From the respondents older than 64 about 60% prefers to adjust their own home to stay there for as long as they can. The regression shows that there is a significant difference in answering this question for the different age categories.

Recently in the media the question popped up if people should be obliged to use their equity in their house when health care becomes less and less affordable in the future. This caused a lot of commotion among homeowners, who thought they were treated unfair compared to people who rent and do not build up any equity in their house. Therefore the question was asked in this survey what people thought of this idea. In the graph the answers are showed for people who rent, people who want to buy in the future and owner-occupiers.

Graph 4.5a People have to use the equity in their house to pay for their own health care costs

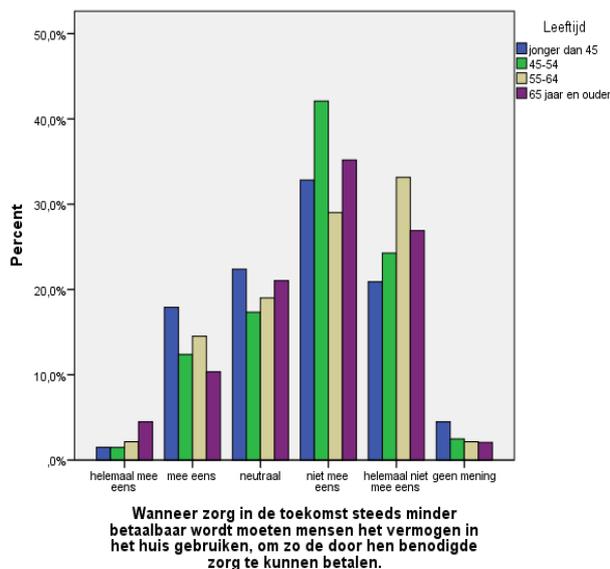


The blue columns are the owner occupiers, the green columns are the future buyers and they grey columns are the tenants. This graph shows that for all categories the majority of the people (completely)

disagree. Only a small amount of people for all the categories completely agree with the statement. There are no significant differences between tenants, future buyers and owner occupiers.

It was also tested if there were significant differences between certain age categories. Do younger people for instance agree more than older people, because they might think that health care might be too costly at the time they need it? The results were as follows:

Graph 4.5b People have to use the equity in their house to pay for their own health care costs, per age categorie

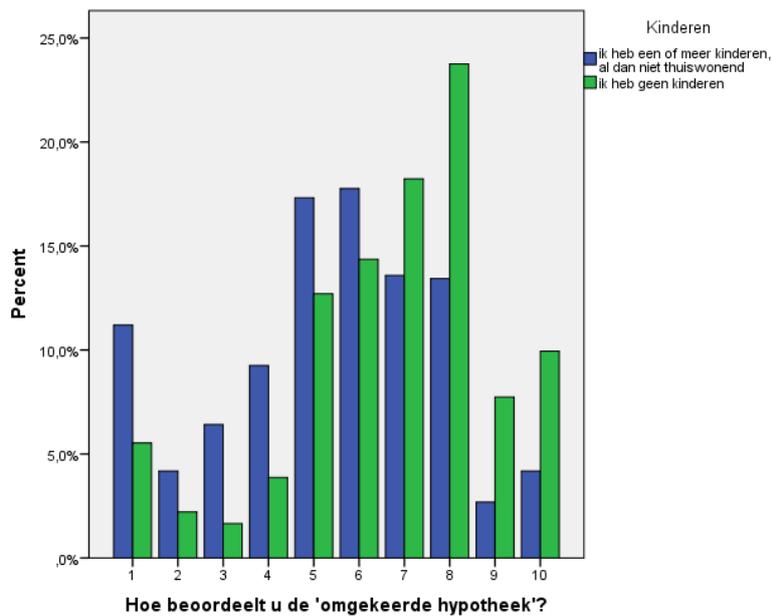


The youngest categorie agrees more than other age categories. Among them there are more tenants but this does not explain the difference. However the differences in age categories are not significant.

§ 4.5. Rating the reverse mortgage, which motives and objections do people have to release the equity in their homes

At this part of the survey respondents were asked what their thoughts are about a reverse mortgage. People got the introduction of the product as described in the second paragraph of this chapter and then they had to rate the product and to indicate if they would be interested in this product themselves. In the analysis there is made a difference between respondents with children and respondents without children. People with children could have a certain bequest motive and they could therefore give a lower grade to the product. People without children could be more willing to give a high grade and could be more interested in the product as well. From the analysis the following results were made:

Graph 4.6 How do you rate the reverse mortgage?



This graph shows that the assumption made above seems to be true. The blue columns are the respondents with children, they grade the reverse mortgage with a 5.3 on average, while the respondents without children, the green columns, give the product a 6.7. The regression results show that the answers for people with and without children is significantly different. Next to that the regression also showed that gender is a significant variable in this question as well.

Table 4.1 Regression results variables on rating the reverse mortgage

Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,257 ^a	,066	,062		2,360

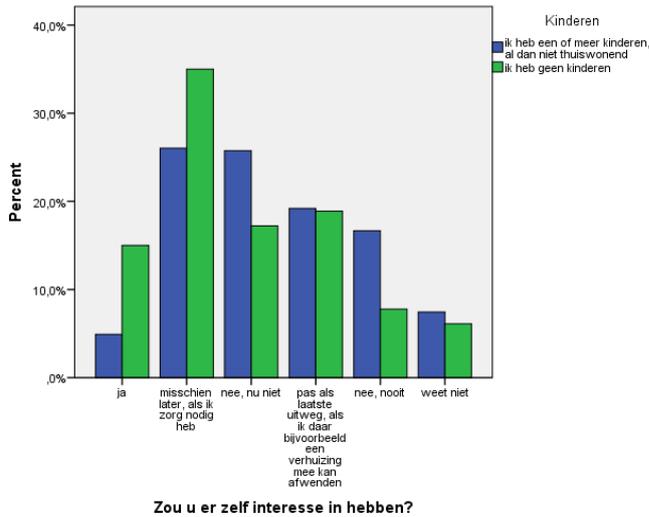
a. Predictors: (Constant), Age, Children, Gender, Living standard

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,437	,856		6,350	,000
	Children	1,336	,220	,226	6,063	,000
	Living standard	-,076	,098	-,030	-,779	,436
	Gender	-,674	,176	-,137	-3,831	,000
	Age	-,023	,096	-,009	-,241	,809

a. Dependent Variable: How do you rate the reverse mortgage?

Graph 4.7 Would you be interested in the reverse mortgage yourself?



From this graph it also follows that people without children are more likely and willing to get a reverse mortgage. About 5% of the people with children stated yes to this question, where for people without children this was 15%. Also around 15% of the people with children indicates they would never buy such a product, for people without children this was about 8%. Again there is a significant difference in answering this question for people with and people without children, as shown in the next regression.

Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,198 ^a	,039	,037		1,361

a. Predictors: (Constant), Gender, Children

Coefficients^a

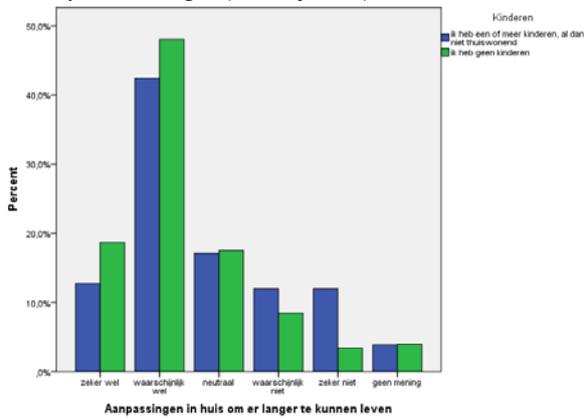
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,320	,200		16,612	,000
	Children	-,540	,117	-,160	-4,612	,000
	Gender	,388	,097	,139	4,018	,000

a. Dependent Variable: *Would you be interested in the reverse mortgage yourself?*

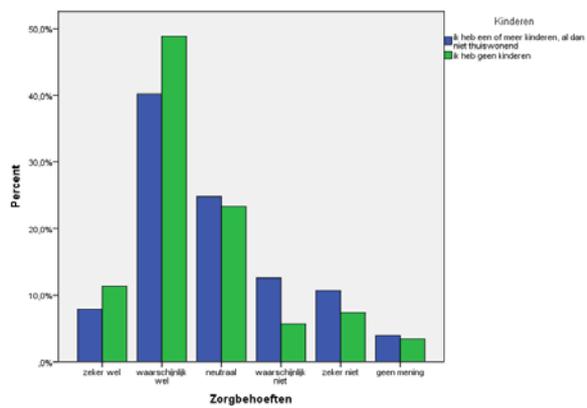
There are a lot of different motives or objections to liquidate or not liquidate the equity in the house. People could get a higher retirement income, pay for extra care or maybe even travel around the world while that income is stuck in the house otherwise. On the other hand people can consider the house as a bequest for their children, or they want to hold on to it as a buffer for possible unforeseen circumstances in the future. Older people in general do not have the same needs as when they were young and therefore they have the habit to save and not to spend and borrow.⁷⁶

Which motives and objections play a role in choosing to liquidate the equity out of the house in the Netherlands? In this survey people got to see certain motives and they had to rate, again on a five point scale, if they were willing to use the equity in the house for this motive. Again in the graphs there was made a difference between people with children and people without children, to see if there were significant differences in how they answered the questions.

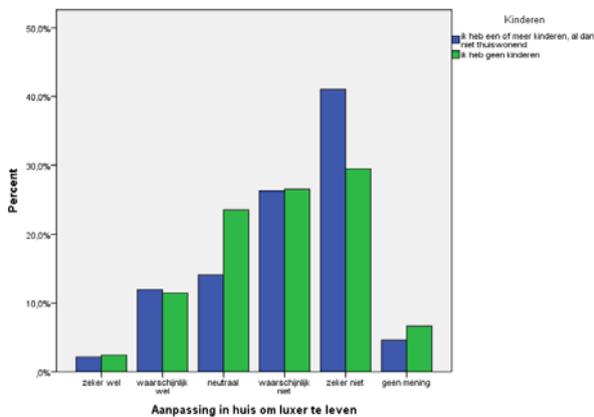
Graph 4.8a Adjustments in the house so you can stay there longer (stair lift etc.)



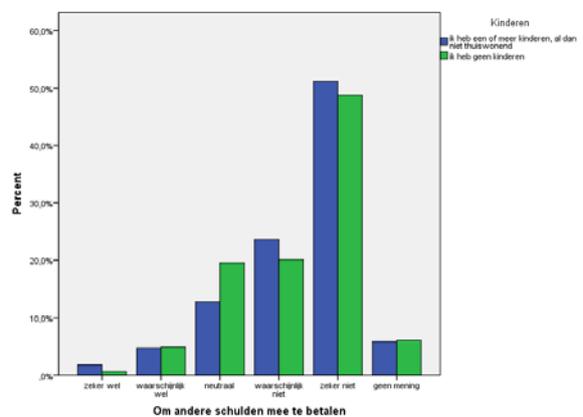
Graph 4.8b Health care needs



Graph 4.8c Adjustments in the house to live a more luxurious lifestyle (bigger tv, new kitchen etc)

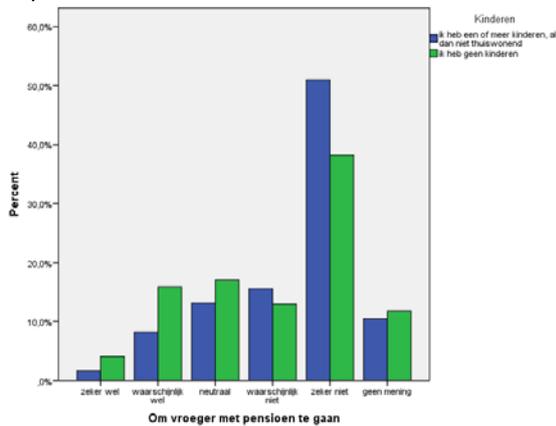


Graph 4.8d To pay off other debts

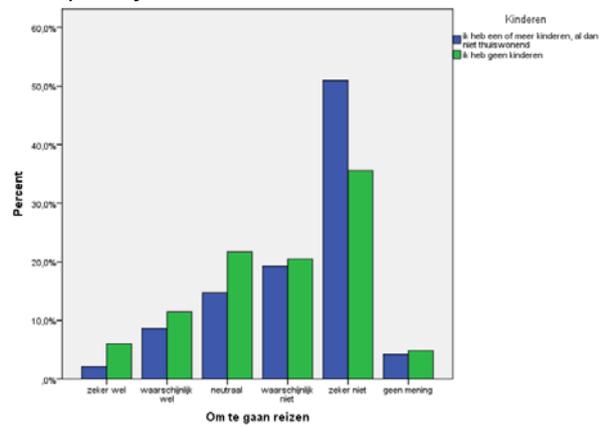


⁷⁶ Elsinga, M., et al., "Households' Perceptions on Old Age and Housing Equity", Juni 2010

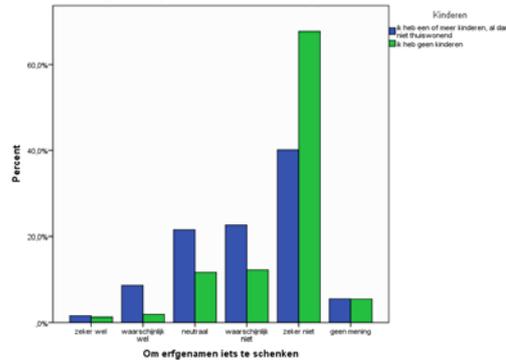
Graph 4.8e To retire earlier



Graph 4.8f To travel



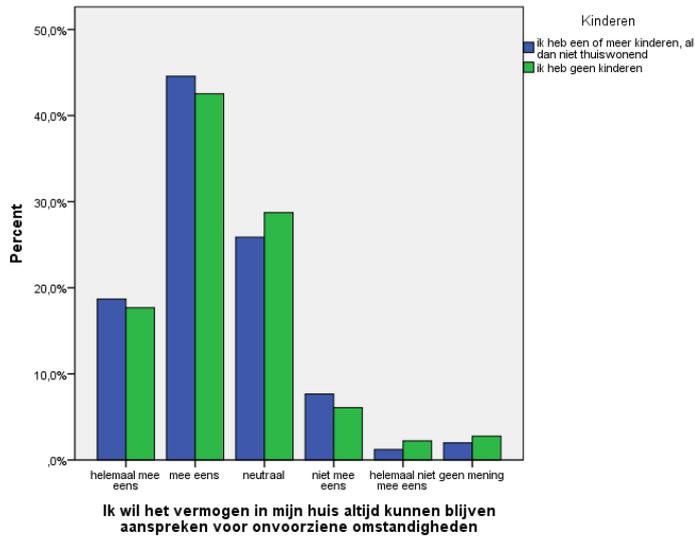
Graph 4.8g To give something to the heirs, while being alive



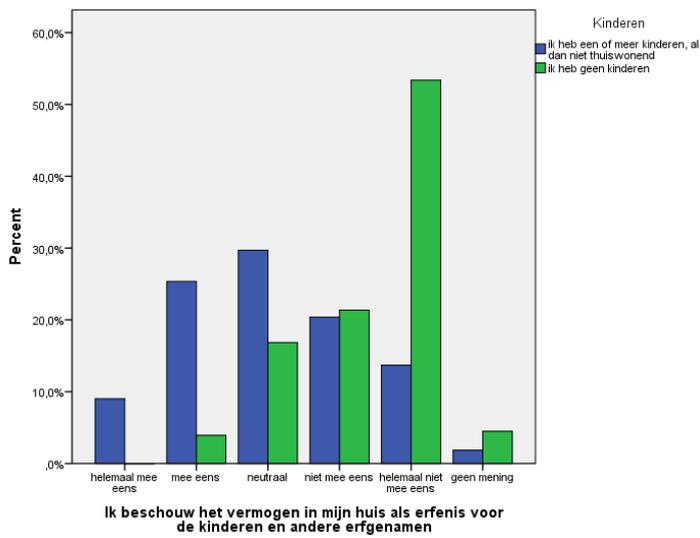
These results show that people are mainly interested in a product like a reverse mortgage if the aim of the money goes to something which creates a better future. The aims “Adjustments in the house so you can stay there longer (stair lift etc.)” and “Health care needs” are scoring way better compared to the other aims. The more ‘luxurious’ aims like “travelling” and “retire earlier” are not popular at all. People seem willing to use the equity in their homes if it helps for the future but do not want to use it to live a more luxurious life. What is also striking is that with these motives as well people with children are less willing to use equity in their houses for the aims “travelling” and “retire earlier”. A higher bequest motive for people with children can be the cause of that.

Three different kinds of objections were also rated on a five point scale. The three objections were “I want to keep a buffer for unforeseen circumstances”, “I consider the equity in my house as bequest for my children/other heirs” and “I do not want to build up a debt again”. The results were as follows:

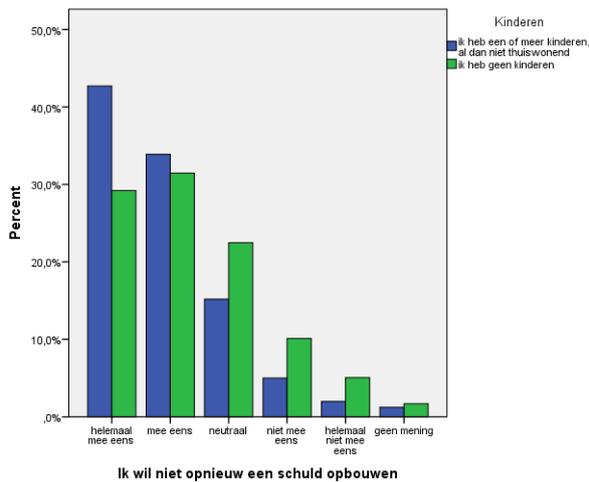
Graph 4.9a I want to keep a buffer for unforeseen circumstances



Graph 4.9b I consider the equity in my house as bequest for my children/other heirs



Graph 4.9c I do not want to build up a debt again

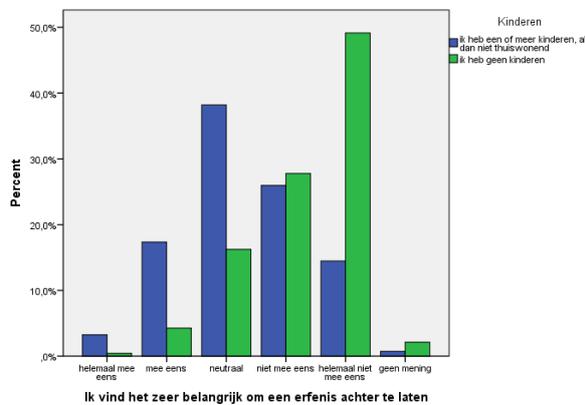


The most agreed objection is the last one, people do not like the feeling of building up a debt again. This can be explained because for instance people can have the feeling they worked years to pay off their mortgage and now that they are finally “free” they do not want to build up a new debt again, which is a debt that becomes bigger and bigger in time, since you do not pay off or pay any interest now. The bequest motive is obviously a lot less popular for people without children, but even for people with children this is by far the least popular objection. Less than 10% of the people with children completely agrees that this is an issue and about 25% agrees. This means that 65% of the people with children are neutral or do not feel hindered by buying a reverse mortgage because of a bequest motive. The bequest motive therefore is not a big issue in buying a reverse mortgage or not. That the bequest motive is not that strong in the Netherlands, compared to other countries, is something the literature endorses.⁷⁷

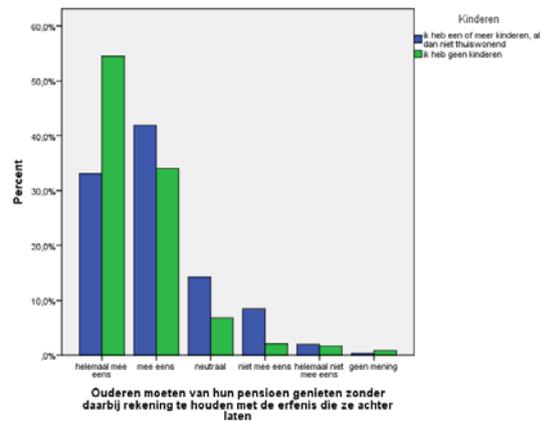
Apart from these objections the bequest motive was tested in two statements namely: 1. *I think it is very important to leave a bequest to my heirs* 2. *Older people should enjoy their retirement without taking the bequest into account*. The results were as follows:

⁷⁷ Toussaint, J., “Housing wealth in retirement strategies; Towards understanding and new hypotheses”, Proefschrift, Delft, juni 2011

Graph 4.10a . I think it is very important to leave a bequest to my heirs



Graph 4.10b Older people should enjoy their retirement without taking the bequest into account



The majority of the people with children as well as people without children agree with the second statement. Older people should not live with the constant feeling that they have to leave a bequest for their children, but they have to enjoy retirement. At the question of the importance of leaving a bequest we see a huge difference between people with and people without children. About 22% of respondents with children feel that it is (very) important to leave a bequest, while not even 5% of the people without children (completely) agrees. Again this shows the unimportance of the bequest motive in the Netherlands.⁷⁸

⁷⁸ This chapter contains the major findings of the survey. The complete results and survey are to be found in the appendix.

§ 5.1. Introduction

Like described in chapter three of this thesis Modigliani and Brumberg developed a life cycle theory where people borrow when they are young, save when middle aged and dissave when they retire. However they assume that at death there is dissaved all your savings, while in reality this is often not the case. Releasing equity for owner occupiers is not a common thing to do, as the next table shows. In this table all the assets and liabilities of Dutch people can be seen per age category.

Table 5.1 Assets and liabilities of households, sorted by the age of the breadwinner, January 2009, CBS⁷⁹

	Vermogen, mediane bedrag ¹⁾						Aandeel van huishoudens met vermogensbestanddeel					
	totaal	0 tot 25 jaar	25 tot 50 jaar	50 tot 65 jaar	65 tot 75 jaar	75 jaar of ouder	totaal	0 tot 25 jaar	25 tot 50 jaar	50 tot 65 jaar	65 tot 75 jaar	75 jaar of ouder
	1 000 euro						%					
Vermogen (bezittingen–schulden)	43	1	24	136	149	45	100	100	100	100	100	100
Bezittingen	188	2	193	245	206	46	100	100	100	100	100	100
bank- en spaartegoeden	15	3	11	21	23	24	88	67	86	91	94	95
effecten	12	2	7	15	25	45	23	6	23	28	25	20
eigen woning	255	164	240	273	279	278	56	10	61	65	54	37
onroerend goed, overig	168	.	181	168	158	116	7	1	6	10	9	6
roerende zaken enz.	26	.	25	30	31	19	4	0	2	5	7	9
ondernemingsvermogen	11	.	10	15	18	.	8	2	11	10	4	1
Schulden	149	158	181	113	70	48	48	10	58	56	37	17
hypotheekschuld eigen woning	148	160	180	111	68	46	46	9	57	54	34	13
schulden, overig	28	.	22	34	35	36	8	1	7	11	9	5

¹⁾ Het mediane bedrag is bepaald voor huishoudens met het betreffende vermogensbestanddeel.

This table shows that the home equity (“eigen woning) for people older than 75 is still very high. The median amount of equity in the house for that age group is €279.000, but on the other hand the median amount of mortgage on the house is still €48.000 as well. Causes why people do not liquidate their housing wealth were researched in the previous chapter, and one of the main objections is that people want to hold on to their housing wealth to have a buffer for possible unforeseen circumstances.

Besides the dissaving phase that does not match the cycle, here in the Netherlands the build up phase does not meet the cycle as well. The cycle for a mortgage in chapter three was convex, in the first half of your life you pay off the mortgage and then you liquidate the equity built up in the house. But the last couple of years the interest only mortgages became more and more popular. With these mortgages people do not pay off their mortgage but only pay off the interest on that mortgage. One reason why these mortgages became so popular was because of the fiscal benefits of this scheme. In 2006 almost 40% of the mortgages sold were interest only mortgages, in 2009 this was 50% already. Next to this 50% also 75% of combined mortgages contained a part that was interest only.⁸⁰ Because of this a lot of people do not pay off their

⁷⁹ CBS, Sociaaleconomische trends, “Vermogensverdeling en vermogenspositie huishoudens”, 2e kwartaal 2010

mortgage and therefore they do not build up any equity in their house. In chapter three it was already mentioned that from 2011 on only 50% of total mortgage can be interest only. For new mortgages sold from January 1, 2013 people can only apply for the interest tax deduction if they have a fully annuity mortgage, a mortgage that they actually do pay off and this makes the interest only mortgage not an attractive option anymore for new buyers.

Table 5.2 Owner occupiers who paid off their whole mortgage, by income and by age group, 2002⁸¹

	55-65 jaar (abs.)	55-65 jaar (%)	65-75 jaar (abs.)	65-75 jaar (%)	75+ (abs.)	75+ (%)	totaal 55+	totaal 55+
tot en met sociaal minimum	10.000	25	6.000	25	6.000	46	22.000	28
aandachtsgroep, boven soc.min.	22.000	26	40.000	53	57.000	79	119.000	51
geen aandachtsgroep, < modaal	19.000	34	43.000	50	39.000	71	101.000	51
tot 2 x modaal	34.000	14	41.000	34	30.000	56	104.000	25
> 2 x modaal	21.000	11	18.000	30	15.000	65	53.000	19
totaal	106.000	17	148.000	40	146.000	68	400.000	33

This table shows that in the Netherlands 106.000 owner occupiers in the age range of 55-65 years are fully owner of their house. This is 17% of all owner occupiers, so 83% of the owner occupiers between 55 and 65 still have a mortgage on their house. Of all the owner occupiers above 55 33% of them has got no mortgage on their house anymore. A lot of owner occupiers are therefore still in debt at a high age. The total mortgage debt of the Netherlands is almost equal to the GDP, highest of all EU countries. The Dutch mortgage debt contains 9,57% of total EU mortgage debt, quite high for a small country like the Netherlands.⁸²

Another reason why people do not use their housing wealth is because they do not feel the necessity to do so. Elsinga et al. show that the percentage of people in the Netherlands that qualify their retirement income as 'bad' is very low, namely about 11%. This percentage is way lower than the rest of the EU, the average for the EU is 49% as shown in the following table.

⁸⁰ Woononderzoek Nederland, "Het wonen overwogen; De resultaten van het WoonOnderzoek Nederland 2009", 2009

⁸¹ SCP, "Ouderen van nu en van de toekomst; Hun financiële spankracht, zorgbehoefte en woonwensen", Werkdocument 113, maart 2005

⁸² Berekend op basis van gegevens pagina 45 EMF Hypostat 2010 "A review of Europe's mortgage and housing markets. Nederlandse hypotheekschuld 2010: 629.153 miljoen en de totale hypotheekschuld van EU27 is 6.414.079 miljoen → Aandeel Nederlandse hypotheekschuld is $629.153/6.414.079 * 100\% = 9.5708\%$

Table 5.3 Percentage of respondents that qualifies their retirement income as 'bad' ⁸³

Belgium	73%
Finland	33%
Germany	46%
Hungary	73%
Netherlands	11%
Portugal	82%
Slovenia	45%
+UK	34%
EU27	49%

Source: TNS Opinion & Social (2010)

The current pensioen scheme in the Netherlands rests on three pillars, the AOW, the occupational benefit plan and the voluntary private pillar. This scheme of three pillars already exists since the early 90s, however in literature the idea has come up to expand this system into a five pillar system, where human capital and housing equity will be the fourth and fifth pillar.⁸⁴

Dietvorst (2010) pleads for this system, since it will create a better balance between the working period and the retirement period. People are living longer and healthier than ever, so the current pensionsystem is not viable in the long way. The scheme is introduced in a time where the life expectancy was way lower than it is now, the retirement period therefore has been extended during the years. Next to that the health care costs are growing as well. Where between 2000 and 2010 the GDP in the Netherlands grew with 16,6% at the same time the costs of the AWBZ, the Exceptional Medical Expenses Act, has grown with 75%.⁸⁵

To finance all this more sources should be involved in the retirement planning. The fourth pillar, human capital, implies that people should continue working in flexible work hours after when they reach their retirement age to earn some extra retirement income. The fifth pillar should contain someone's equity. For owner occupiers a large part of this equity is stuck in the house. Since most people like to stay in their house as long as possible, 90% of the 80-85 year olds still live in their own house, equity release products could be a solution to use this equity while staying in that house. The next paragraph will give an overview of the Dutch products that were or still are on the market. In the third paragraph the health care and pension systems of the countries researched in chapter four will be compared to the Dutch health care and pension system.

⁸³ TNS Opinion & Social, 2010

⁸⁴ Dietvorst, G.J.B., "Van drie naar vijf pensioenpijlers", 2010

⁸⁵ Spoor, L., Bergenhenegouwen, F., van, "Eigenwoningvermogen als vijfde pensioenpijler; Hoe Nederland vergrijzingsklaar maken", Eureko Academy Life & Pensions, november 2010

§ 5.2. Which possibilities of releasing equity are or were offered in the Netherlands

Zoals eerder in hoofdstuk drie beschreven zijn er allerlei vormen van het liquideren van eigen vermogen in het huis. Welke producten er precies op de Nederlandse markt zijn (geweest) zal ik in deze paragraaf beschrijven.

§ 5.2.1. The reverse mortgage in the Netherlands

§ 5.2.1.1. The Florius Verzilver Hypotheek

A pricewinning example of a reverse mortgage product in the Netherlands is the “Florius Verzilver Hypotheek”. This product is the only equity release product still on the market and works the same as the reverse mortgage described before, so people borrow on their house, they do not have higher monthly costs now and the complete loan has to be paid off after you leave the house. The amount people can liquidate out of their house is based on the age of the youngest occupant and on the value of the house. The “Verzilverhypotheek” gives the following guarantees and securities:

- No negative equity guarantee
- Retaining ownership
- No maximum term, people can stay in the house as long as they want
- Fixed interest rate
- No monthly costs because of the mortgage
- An extra option to keep 30% of the value of the house for themselves (for instance as a bequest)

People can get paid out in two ways, either lump sum or in periods. With a lump sum payment you get the whole maximum amount at once. With a periodic payment the consumer can decide for him or herself for how long and how much they want to get paid out, also up to maximum. In case of a reverse mortgage the debt keeps on growing as time continues, while people do not pay any interest and the interest will be summed up to the debt every year. If someone lives longer than expected it can be the case that the loan will be higher than the value of the house. The no negative equity guarantee ensures that the debt for the consumer never will be more than the amount the house can be sold for. Under certain conditions Florius gives this guarantee, but the guarantee becomes invalid if ⁸⁶:

- people do not pay back the loan in time (within 12 months after leaving the house)
- the property significantly decreased in value due to negligence of the borrower or declared uninhabitable
- the property wholly or partially is extinguished or severely damaged
- there has been insufficient or incorrect information provided, such that Florius would not have provided the loan had they knew that.
- Execution of the collateral as referred to in article 3:268 BW(Civil Code)

⁸⁶ Hypotheekwijzer Florius, oktober 2009

To be eligible for a reverse mortgage at Florius consumers have to be at least 60 years old, they have to be owner and occupier of the house and any other mortgage debt should be paid off first with the amount that they get out of the reverse mortgage. Florius has the right to re-appraise the house by an independent appraiser. The costs of this appraisal have to be paid by the consumer. Florius can reduce the maximum limit of liquidation based on this appraisal if they think this is necessary and this can lead to a lower periodic payment or even a total stop of payments. With this measure Florius probably tries to reduce the risk of neglecting the house by consumers.

The option Florius gives to keep up to 30% of the value of the house can be very attractive for people who want to leave a bequest to for instance their children. If the house has a value of €250.000 and the consumer has decided to keep 20% for themselves, they will always have a certain benefit, now worth €50.000 for their heirs. If people choose this extra option, this influences the maximum amount they can get now. If during life people want to stop the loan and want to pay it off they have to pay a fine. The first 10% of the loan will be without a fine but over the other 90% they have to pay a fine of 3%.

The fixed interest rate Florius has now is with its 7,1% quite high, but in return people get a no negative equity guarantee and a fixed interest rate, so they know beforehand on what they are going in to.

As said before this mortgage was an award winning product, it won mortgage product of the year in 2008. However only a couple of hundred products have been sold since the introduction of the product. The expectations were very high when the product was introduced, a lot of money was put into the development of the product and 920 advisors were trained to sell this product. There were therefore more advisors who were allowed to sell the product than there were sales. However Florius decided to keep the product on the market to serve the people who are interested right now and with the hopes that the product will be successful in the future. The willingness of the current elderly to borrowing again at later age is due to their Calvinistic way of thinking, saving is good, borrowing is bad, not that high. The expectation is that this Calvinism is not that alive for the current younger generations and therefore the product could appeal to a larger group of people and could be more successful.⁸⁷

§ 5.2.2. The sale constructions to release equity in the Netherlands

There were two versions of a sale model equity release system in the Netherlands. The first one was Amvest Home Free, which was a sale and rent back product, where you sold your house and could rent it back afterwards. The other product was called 'Torenstad Verzilverd Wonen' which was a product where you sold the bare ownership and kept the usufruct, a version we have seen before in other countries. Both products are not being sold anymore. The exact characteristics, the number of sales and the reasons why they are not for sale anymore will be discussed in this paragraph.

⁸⁷ Interview Florius, Marco Delsing, Manager Productmanagement, 29 augustus 2012

§ 5.2.2.1. Amvest Homefree

The Amvest Homefree product was a classis sale and rent back product. Consumers sold their house for somewhat less than the market value and then they stayed in that house as a tenant. People could choose what percentage of the house they want to have in cash and the rent that has to be paid was depending on this percentage. In a brochure of Amvest from 2004 the next example was given: ⁸⁸

Value of the house €300.000	Pay out rate now 75% → €225.000	Rent → €880,-
	Pay out rate now 85% → €255.000	Rent → €1.249,-

With the amount of money people get, they can do whatever they want, there are no restrictions on what can and cannot be bought from this money. The value of the house will be determined in a certain way, where at first a taxation will be made by a broker affiliated with Amvest, Meeùs. If people are happy with this taxation they have to sign a pre agreement and after that another taxation will be made by an independent appraiser. ⁸⁹ If both taxations are within 3% of each other the agreement has to be signed and people get an amount based on the lowest of the two taxations. When both taxation are not within 3% of each other Amvest and the consumer will negotiate about the eventual deal.

When people want to get paid out a high percentage they are tied to a certain rent term. If they get paid out more than 85%, people are forced to rent the house for three years and if the percentage is between 81% and 85% people have to live for at least 1 year in their house.

In fiscal terms the house is not owned by the consumer anymore and therefore the housing equity will be moved from box 1 to box 3. In this fiscal box the people have to pay a tax on their equity against a tax rate of 30% of a 4% notional return. People therefore have to pay a tax of 1,2% over the liquidated amount of money. Liquidation of housing equity therefore is fiscally not attractive, while at the time the money was stuck in the house they did not have to pay any tax. But on the other hand if liquidation runs in this way, people are no longer home owners and therefore do not have to pay the “eigenwoningforfait” and the property tax. Next to that people are no longer responsible for costs of maintenance, while they are no longer owner of the house. Amvest do reflect these maintenance costs in the house in the amount they pay out, so all in all the consumer actually pays for it.

With the Amvest product the risk of depreciation of the property lies with Amvest and the longevity risk stays with the consumers themselves. The amount of money therefore does not depend on the age of the buyer of the product. Consumers can buy an annuity out of the money they get and with that they can ensure themselves a certain periodic payout for the rest of their lives.

⁸⁸ Amvest Home Free brochure, 2004

⁸⁹ Zie 96

The idea of this concept was originated in 1997. People at Amvest were thinking about alternative types of investment and they came up with the idea that older people preferred to stay in their house but actually wanted to use the equity in that house. Market research showed that there was an enormous potential for this kind of product and next to that Aegon, affiliated with Amvest and 100% owner of the HomeFree product, saw a huge opportunity to sell other products, for instance life annuities etcetera, to these same costumers.

About 250 products were sold and still among 100 products are in the Amvest portfolio. Requests for the product, certainly at the beginning, was very high, certainly a couple of thousand. However during the process a lot of people had second thoughts and eventually did not buy the product. Therefore it was a product that cost a lot of time and effort till the eventual signing was there and during the process a lot of people stopped. The biggest issue for people was that they had to rent again. Most people who were interested did not have any, and if only a small, mortgage debt and therefore they were not used to pay a certain monthly payment for the house. Another reason why people stopped during the process was because children did not agree that their parents closed this deal.

The product did not require to have a certain age, but the biggest group of people were older than 55. Another interesting subgroup were divorced couples. With this product one of the two could buy out the other one and therefore they got the opportunity to stay in the house, something that was especially attractive for divorced couples with children. At the time Amvest almost stopped selling the product there were also a lot of people who wanted to use this product to fill their pension gap. The most important reason why Amvest stopped selling this product is the collapsed housing market. Amvest assumed a certain appreciation in the house when they calculated what amount of money could be liquidated, but the reality is that houses depreciate at the time. It was no longer justified to sell this product, because the rents they have to ask would be so high that Amvest did not want to risk its good reputation.⁹⁰

§ 5.2.2.2. "Torenstad Verzilverd Wonen"

Torenstad Verzilverd Wonen was a product that had a lot of similarities with the Amvest product, but there were some obvious differences as well. With this product people sell their house to a housing association and the amount someone gets depends on his or her age and the value of the property. This amount is lower than in the case of the Amvest product while with this product no rent has to paid after the selling. Therefore this is product looks like the home reversion product of Australia, someone sells the bare ownership and retains the usufruct. The housing association has to maintain the house and the consumer has no extra monthly costs, no rent and no cost of maintenance. In a brochure the different ways of pay outs are described for a couple who are both 70 years old and own a house with a value of €225.000,-. The first option is a lump sum payment of €102.375,- and with that the lifelong usufruct of the house till the last one of the two dies or leaves the house.

The second option is a yearly periodic payment of €10.488,- for 15 years, where as well no rent and no maintenance costs have to be paid by the customer.

⁹⁰ Interview Amvest, Pieter Rigter and Hillena van Kampen, 5 september 2012

The third option is called “Flexible Verzilverd Wonen” and has the same framework as the Amvest product. With this product someone gets 80% of the market value of the property and he or she has to pay rent. To be eligible for this product people have to be 55 years old or older.⁹¹ The first two options therefore are ‘bare ownership’ options, while the last option is a sale and rent back construction.

To be eligible for this product the housing association has to be interested in the property one wants to sell. The property has to be located in a certain area where the housing association is willing to buy and has to have a value between €200.000,- and €600.000,- and with that money someone has to pay off the mortgage debt that might be still on the house.⁹²

There is no risk of having to leave the house while the consumer retains the usufruct and has the right to stay in the house for as long as they want, even if the housing association would go bankrupt, the consumer keeps the right to stay in the house as long as he or she wants. Only the bare ownership can be sold by the housing association.⁹³

The liquidated amount of money will be taxed in box 3, just like with the Amvest product. Fiscally the consumer no longer has the ownership of the property, but since usufruct is retained a tax has to be paid on the value of this usufruct. Based on article 5.22 of the income tax act this usufruct will be marked as a periodic payment. The valuation of this usufruct is described in the implementation chapter of the income tax act. In article 18 section 1 and 2 of this implementation chapter this usufruct will be valued at 4% of the value of the property. This amount will be multiplied with a certain factor depending on someone's age. If the term of the usufruct depends on the life of one male person this factor will be determined as follows:⁹⁴

Table 5.4 Multiplier per age category for the valuation of the usufruct

Factor	Age
22	Younger than 25
21	25 years or older, though younger than 30
20	30 years or older, though younger than 35

⁹¹ Brochure Torenstad Verzilverd Wonen, “Comfortabel in uw eigen woning; met Torenstad Verzilverd Wonen en SHS en Hendrik Hartog van Lotharingen”

⁹² Website www.torenstad-verzilverdwoenen.nl

⁹³ Zutphense Koerier, “Nooit geen huur meer, maar wel ijzersterk woonrecht in verzilverde woning”, 29 september 2002

⁹⁴ Art. 19, Implementation chapter Income Tax Act 2001

19	35 years or older, though younger than 40
18	40 years or older, though younger than 45
16	45 years or older, though younger than 50
15	50 years or older, though younger than 55
13	55 years or older, though younger than 60
11	60 years or older, though younger than 65
9	65 years or older, though younger than 70
8	70 years or older, though younger than 75
6	75 years or older, though younger than 80
4	80 years or older, though younger than 85
3	85 years or older, though younger than 90
2	90 years or older, though younger than 95
1	95 years or older

If the term depends on the life of one female person, the factor will be equal to a male person five years younger than that female person. For example a female person of 81 years will have a multiplier of 6.⁹⁵ If the term depends on the life of the first dying person of two or more persons the factor will be equal to the

⁹⁵ Art. 19 lid 7 Uitvoeringsbesluit IB 2001

age of the oldest person plus five years.⁹⁶ If the term depends on the longest living person of two or more persons the factor depends on the age of the youngest person minus ten years.

Example:

A couple, man 80 years and woman 78 years old, sell the bare ownership of the house and retain the usufruct. The factor in casu depends on the longest living person of the two. In this case the factor depends on the youngest person, the 78 year old woman, minus ten years. The factor therefore will depend on the age of 68, and looking at the previous table this will be 9. Assuming the house has a value of €400.000,- the value of the usufruct will be calculated as follows: €400.000,-*4%*factor 9 = €144.000,-. This amount will be added to the box 3 income and will be taxed against a rate of 30% of 4% notional interest.

If the usufruct depended on the first dying of the two, the factor would depend on the oldest person plus five years. This would be 85 years, with the result that factor 3 would apply. The value of the usufruct would be: €400.000,-*4*factor 3 = €48.000,-

§ 5.2.3. Other possibilities to use the excess value on the house

A characteristic of a reverse mortgage is that there are no extra monthly costs when you liquidated the house while being in that house. People do not have to pay rent and do not have to pay off the mortgage. Several banks offer a version of a reverse mortgage in which people do have to pay interest but do not have to pay off the mortgage while staying in the house. This is more or less an interest only mortgage for older people. Rabobank offers this kind of product which is called the KeuzePlusHypotheek. People can get the money in periods or a combination of a lump sum payment and a periodic payment. The interest rate is floating and people have extra monthly costs namely the interest. The amount of money that can be liquidized will be in general about 75% of the execution value of the house. The execution value of a property normally is about 85% of the market value of the property. If the loan exceeds 75% of the execution value the result could be that the house has to be sold and therefore that the consumer has to leave the house. To avoid this the provider will contact the consumer periodically to discuss the mortgage and how it proceeds. Certain aspects of the mortgage that are floating in time should be kept an eye on, for instance the interest rate, the way money is liquidated (if one starts with a high periodic payment at first, the interest payments will be high as well) and the development of the value of the house.⁹⁷

A similar kind of product is available in Norway, which is called the bank account mortgage. In this version people can get a mortgage on their house. The house will be appraised and they get a credit of at most 75% of the value of the house. They get an extra bank account and they can get money of that bank

⁹⁶ Art 19 lid 8 sub a Uitvoeringsbesluit IB 2001

⁹⁷ Opeetconstructie, Rabobank, Brochure

account to at most 75% of the value of the house. The product excels in simplicity and is a big success in Norway. In 2010 this product had a market share of 25% of the total mortgage market.⁹⁸

Other Dutch banks offer or offered a version of a reverse mortgage as well. ING still offers a product similar to the Rabobank product, but warns consumers for the risk of a remaining debt for the heirs. They therefore do not offer the “no negative equity” guarantee, like the product of Florius does. The product of Rabobank is still in the market as well but mainly on a local level. SNS stopped with their version of the reverse mortgage light, called the Extra Inkomen Hypotheek or Extra Income Mortgage and ABN AMRO stopped as well. The reason why ABN AMRO stopped is because of the objections of the Dutch financial authority AFM to sell mortgages to people who do not fit the income requirement.⁹⁹

This income requirement means that the income of someone has to be sufficient to bear the costs of the mortgage. In the actual reverse mortgage there are no costs to bear as long as the term of the mortgage continues. With the reverse mortgage light however there are extra monthly costs, while the interest rate has to be paid. The product is bought mostly by people who want to have an extra income stream at the time they retire and therefore a lot of these people do not satisfy the income requirement of the AFM. For the actual reverse mortgage, of for instance Florius, this income requirement does not have to be met while there are no extra costs now.

§ 5.3. Comparison of Dutch and foreign backgrounds about pensions and health care and a graphical comparison of all products

§5.3.1. Comparison of pension and care systems, replacement rates etc.

A products’ success partially depends on the rate at which the product match the needs of the consumer. It therefore is important to describe the countries’ background concerning their health care and pension systems. How do people build up their pensions, what are the replacement rates en does the pension income match the needs of the consumer in that phase of their lives or is there a need for extra cash. Besides the pension income it is also valuable to look at the health care costs of the countries and the systems, is there a collective insurance and if yes to which extent. The extent in which people are insured collectively can influence the success of a reverse mortgage product. If the system does not require someone to be insured and an uninsured person has to use health care they might need the reverse mortgage earlier than if there was a collective insurance policy.

The United States

The pension system of the United States stands on three pillars. The social security which is provided by the government to employees. People have to contribute for 10 years to be eligible for this pension

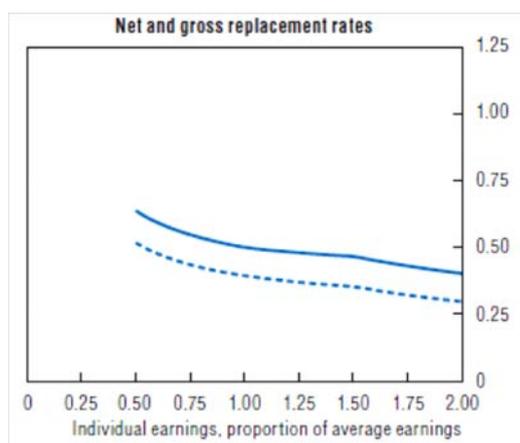
⁹⁸ Graaf, M. de, Rouwendal, J., Mijn pensioen staat als een huis

⁹⁹ Elsevier, “Opeethypotheek minder populair bij banken”, donderdag 26 mei 2011

pillar.¹⁰⁰ The second pillar is the pension scheme of the employer, where at the moment the Defined Contribution schemes are the most popular. With this scheme people will have to pay a fixed premium but the payment at retirement is uncertain, depending on the investments of the pension fund. Before the eighties the defined benefit schemes were more popular. In this scheme the payments at retirement are fixed and most of the financial decisions are made by the employees themselves. With the launch of the 401 (k) schemes the American pension system changed a lot. The decisions concerning participation, amount of the premium, investments done with the premium etc. had to be made by the employees.¹⁰¹ Because there is a lot of freedom if and how much everyone wants to contribute there is no full participation. In 2008 about 61% of the employees in the private sector had a second pillar pension.¹⁰² A lot of employees therefore do not build up a pension via their employer. One explanation for this low participation rate can be procrastination¹⁰³, a term derived from behavioral economics. Procrastination means that people tend to postpone important decisions. In a non compulsory pension system people have to make hard decisions for themselves and while they tend to postpone these hard decisions for as long as they can a lot of people will not make any decision at all and therefore in this case will not save for their pension through their employer. If they are obliged to pay pension premiums the decision is made for them and they do not have to think about it themselves.

The third pillar are private savings for pensions, where people save voluntarily for their pensions. This is a defined contribution scheme and the premium is set at 9%.¹⁰⁴ Partly, maybe mainly, because a large part of the pension system in the US is based on voluntary payments, pension savings are very low and the replacement rate is low as well, as shown in the next graph:¹⁰⁵

Graph 5.1 Net and gross replacement rate per income category US



¹⁰⁰ OECD, Pensions at a glance, 2011

¹⁰¹ ESB 9 februari 2007, Pensioenhervormingen in de VS, A. Munnell en A. Sunden

¹⁰² OECD Private pensions outlook 2008

¹⁰³ Kooreman, Prast, What does behavioral economics mean for policy? Netspar panel paper

¹⁰⁴ Zie 100

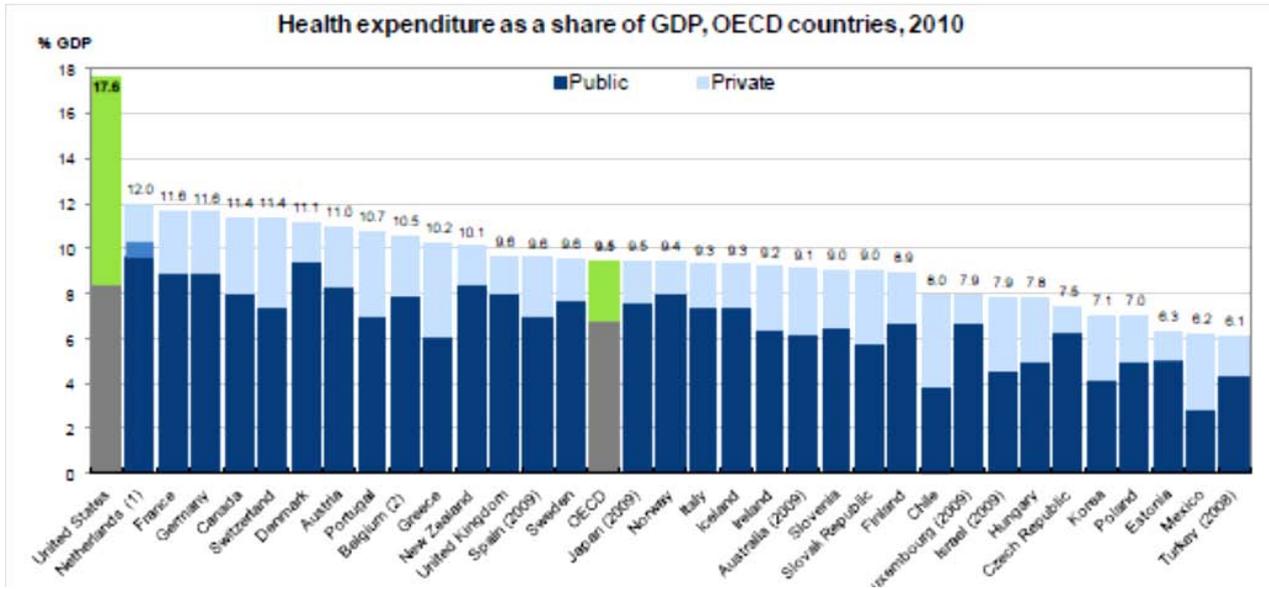
¹⁰⁵ Zie 100

Someone who earns half of the national average has a replacement rate of 51,7%, so after retirement their income will be somewhat like half of the income pre retirement. This replacement rate gets smaller as the earnings are higher to eventually around 29,7% for someone who earns twice the national average.

The health care system of the United States is in transition at the time. A lot of people are not insured for health care but with “Obamacare” this will most certainly change. People are obliged to buy an insurance or otherwise they will be fined.¹⁰⁶

Change seemed necessary, looking at the health expenditures of the US. These health expenditures have a share of 17,6% of GDP, by far the highest of all OECD countries. The Netherlands for instance is second with 12% of GDP and the OECD average is 9,5%. Health care payments per capita are growing and the United States is leader in that list as well, 8233 dollars per capita whereas the OECD average is 3288 dollars.

Table 5.1 Health expenditure as a share of GDP¹⁰⁷



The US for that matter cannot be compared to the other OECD countries. Usually health care costs are largely being paid for by public facilities and private insurances and own contributions are not playing the most important role, in the US this is the other way around. Less than 50% of the health care costs is financed with public facilities.¹⁰⁸

Australia

In Australia the pension system stands on three pillars as well. The first pillar is the public pension system which depends on income. The less equity or income someone has the higher the pension payment. People receive this payment when they reach the retirement date and therefore if people retire early they do not

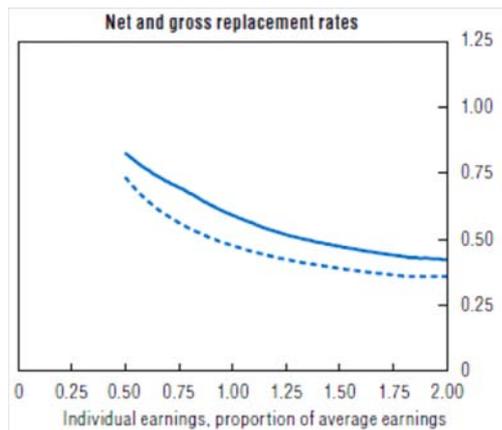
¹⁰⁶ <http://www.economist.com/node/21557946?fsrc=pdk|conquer|editorial>
¹⁰⁷ OECD Health Data 2012, How does the United States compare
¹⁰⁸ zie 115

get this part of pension income until they reach their actual retirement date.¹⁰⁹ This part of pension income is financed by general tax incomes and people do not have to pay a premium in advance, like with the AOW for instance in the Netherlands.

The second pillar is a compulsory private pension people build up through their employer. Every employee between the age of 17 and 70 has to pay a premium and the self employed can participate on a voluntary basis. People have to pay a premium of 9% of their income and these premia can be saved tax free to some extent.¹¹⁰

The third pillar are the voluntary pension savings. This can be done in various ways, for instance paying some extra premiums in the compulsory private part or people can save privately at a life insurance company with certain tax benefits. With all the compulsory savings people could expect the replacement rates to be high in Australia, higher than in for instance the US. This appears to be the case as shown in the next graph:¹¹¹

Graph 5.2 Net and gross replacement rate per income category Australia



Someone who earns half of the national average has a replacement rate of 73,3%, so after retirement their income will be about three quarters as it was before retirement. This replacement rate gets smaller as the earnings are higher to eventually around 35,4% for someone who earns twice the national average. This can be explained with the income-related first pension pillar in Australia.

Australia has a complex health care system in which the public and the private sector play both roles, financier and supplier. The national government mostly plays the role of financier and policy maker and next to that there are the states can make autonomous decisions. Different states therefore can have different policies concerning per capita expenditures, occupancy etcetera. The system pursues three aims,

¹⁰⁹ Zie 100

¹¹⁰ Witte, J., Pensioensystemen en vergrijzing, Erasmus School of Economics

¹¹¹ Zie 100

equality, efficiency and quality. This can be seen for example in the funding of the health care which is primarily done by progressive taxation.¹¹²

Total health expenditures in Australia are less than the OECD average, namely 3670 dollars, which is 9,1% of the GDP and 68,5% of total health care costs are funded by the government.¹¹³

The United Kingdom

In the United Kingdom the public pension part contains a basic pension, like in the Netherlands the AOW, and an income-related additional pension. Next to that there is a large private pension sector as well, where people can save on a voluntary basis.

The basic pension is about 14% of the average income in the United Kingdom and next to that people will also get a additional pension depending on their income. People do not build up pension through their employer. So besides the public pension people have to save for their own pensions on a voluntary basis.

From October 2012 an “auto-enrolment” system was introduced.¹¹⁴ This systems’ default is that employees are saving for their pensions automatically unless they opt out. Employees therefore save for their pensions at the employee, the default is an opt in. If they do not want this they can opt out. Expectations are that with this system more people will build up pension through their employer. This expectation is based on again a behavioral economic term, namely the “default effect”. Several studies have shown that people like to stick to the status quo. Multiple reasons can be found for this, for instance laziness. People are not in the mood to think about it and therefore they leave it the way it is. Another reason can be that people feel that the default can be a recommendation from the policy makers and that therefore it is for the best to follow this recommendation.¹¹⁵ A concrete example of the “default effect” can have on participation rates is shown by the research of Madrian and Shea (2001). In their research they changed a 401 (k) pension schemes default from non automatic participation into automatic participation for 3% of the income for new employees, where people could opt out if they wanted to. Research showed that this had a huge effect on participation: after being employed for a year, still 86% of people participated and from the group who were not automatically a participant only 49% was enrolled.¹¹⁶

This shows the impact of setting a default on in casu pension savings of employees and eventually replacement rates of people. Since the replacement rates in the United Kingdom are very low, a system like this automatic enrolment system can be a useful change.

¹¹² Australian health care, health systems in transition, WHO

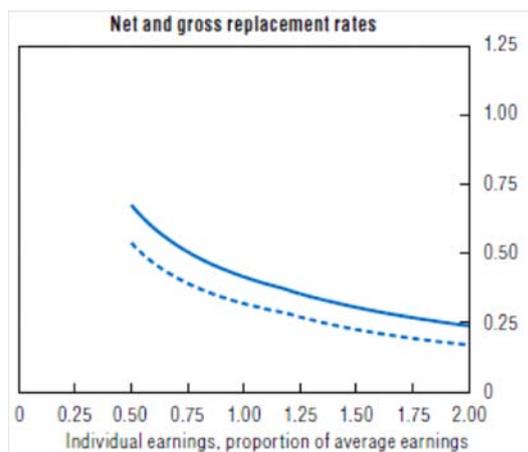
¹¹³ OECD Health data 2012, How does Australia compare

¹¹⁴ Hoe komen Nederland en het Verenigd Koninkrijk de pensioencrisis door?, Dr. L.J.P. van der Meij

¹¹⁵ Johnson and Goldstein, Do defaults save lives?

¹¹⁶ Psychology and Economics: Evidence from the Field, DellaVigna, S., UC Berkeley and NBER

Graph 5.3 Net and gross replacement rate per income category United Kingdom



Someone who earned half of the average gross income before retirement, will have a replacement rate of 53,8% and someone who earns twice the average gross income before retirement has a replacement rate of only 16,9%. His or her income will almost be 6 times lower as during the working period.¹¹⁷

Health care costs in the United Kingdom are primarily funded by the government, mostly out of standard tax revenues. Most care is free at use and people do not have to pay an own contribution. Care that is not (wholly) covered by the government, has to be paid by the consumers themselves.

Total health care costs are just above the OECD average (9,5%), namely 9,6% of GDP, about 3433 dollars per capita. 83,2% of total health care costs are funded by the government.¹¹⁸

France

In France the employees working in private pension sector consist out of two parts, a public and a compulsory private part. The public part is a flat rate pension (*minimum contributif*) plus a certain minimum income for elderly (*minimum vieillesse*). People are eligible for this second part, if the pension income itself does not meet a certain minimum amount, the difference between the minimum pension income and the actual pension income will then be paid by the government.¹¹⁹

Within the private pension sector in France there are different kind of pension schemes for different kind of employees. The AGIRC (Association generale des institutions de retraites des cadres) scheme is a scheme which applies to employees in professional or managerial positions. The ARRCO (Association regimes de retraites complementaires) scheme applies to the rest of the private sector employees.

One difference between these two schemes is for example that for the ARRCO scheme the pension can be at most 3 times larger than the public part of the pension. In the AGIRC scheme there is no such maximum implemented in the scheme.

¹¹⁷ See 100

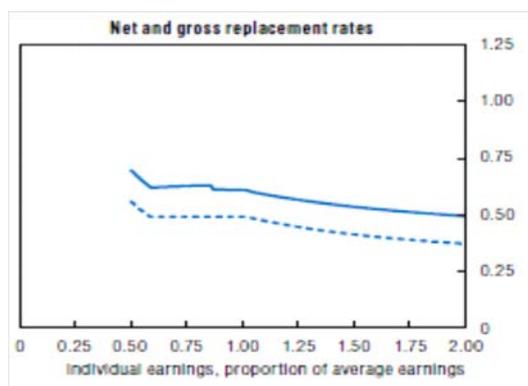
¹¹⁸ OECD Health Data 2012, How does the UK compare

¹¹⁹ See 100

Employees in the public sector have a different kind of scheme, a scheme which is uniform to all public employees and where people eventually will get a replacement rate of 75% of their last salary, if they fulfilled all conditions. Since 2004 employees who started working at the age of 14,15 or 16 can retire at the age of 58 or 59 if they build up pension for 42 or 43 years.¹²⁰

A pension reform was introduced in 2010 in which the retirement age increased, taxes increased and certain social securities were reduced, all with the aim of keeping the system viable. However with the election of president Hollande certain regulations were reversed, the retirement age went back from 62 to 60 in May 2012. The retirement age for people who started working at 19 is 60 again.¹²¹ The replacement rates in France are as follows:

Graph 5.4 Net and gross replacement rate per income category France



Someone who earns half of the average French income has a replacement rate of 55,9%, whereas for someone who earns twice the average French income the replacement rate will be 37,1%.¹²²

The French health care system has been reformed the past decennium to keep the health care costs under control, without damaging the accessibility and the equality of the previous system and to control the increasing demand for long term care in a better way. Decentralization and a different balance of power between the government and the health insurers were the biggest instruments to achieve this goal. At this moment health care insurers cover practically 100% of the population. The provision of care is done by both private and public hospitals and doctors. Total health care costs are way above the OECD average, namely 11,6%, 3947 dollars per capita. About 77% of total health care costs are funded by the government.¹²³

¹²⁰ <http://www.mejudice.nl/artikel/520/fransen-blijven-gefixeerd-op-officiële-pensioenleeftijd>

¹²¹ <http://www.elsevier.nl/web/Nieuws/Buitenland/340136/Franse-president-Hollande-verlaagt-pensioenleeftijd.htm>

¹²² See 100

¹²³ OECD Health Data 2012, How does France compare

Italy

The Italian pension system is based on notional accounts. This is a system in which every retiree gets an individual account and his or her contributions will be credited to this account. These contributions will be incremented with a notional interest rate. The government decides the level of interest and in this way the government has more control to keep the system viable.¹²⁴

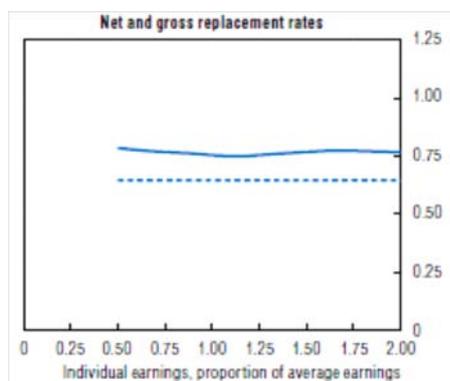
When people eventually retire, the amount of pension will be decided based on the probabilities of death, the probabilities of leaving any widow or widower and the number of years that a survivors benefit will be withdrawn. Because of this people who retire early, automatically will get a lower pension, while benefits are strongly related to retirement age. Every three years the coefficient will be recalculated and they are available for people in the age of 57 to 65. People cannot retire before 65 unless they meet the eligibility requirements stated by the legislation and an amount of pension not less than 1.2 times the old-age allowance.¹²⁵

Besides this compulsory pension saving people can save for their pension voluntarily as well. Very few people applied to this type of pension saving and because of that the government introduced a law in 2007 which contained several fiscal incentives for private pension saving to make this type of pension saving more attractive for people.

For people covered under the new system only the minimum pension is abolished, being the entrants after 1996. Pensioners with incomes below the social assistance level can claim a means-tested benefit from age 65. This benefit is equal to €5.577,- per year in 2012.¹²⁶

The replacement rates for Italy are relatively high. Every income category has the same gross replacement rate, due to the notional scheme, of about 64,5% as can be seen in the following graph:

Graph 5.5 Net and gross replacement rate per income category Italy



¹²⁴ Pacolet, J., Strengs, T., "Pensioenrendement vergeleken; Vergelijking van de performantie van de eerste versus de tweede en derde pensioenpijler", 2010

¹²⁵ See 100

¹²⁶ <http://www.intrage.it/attualita/2012/02/08/notizia18224.shtml>

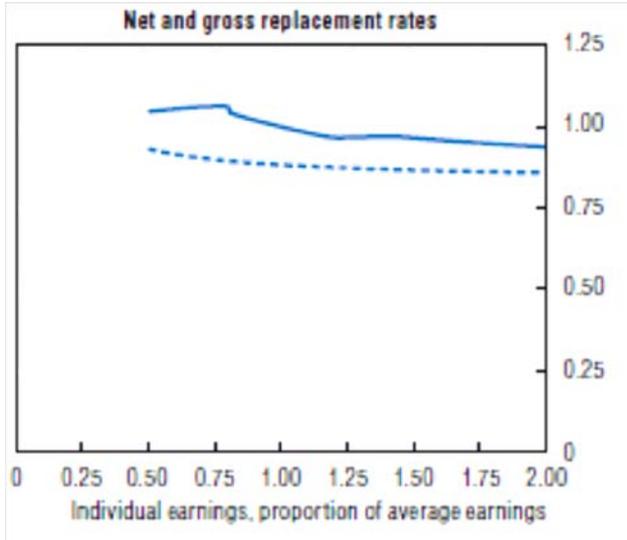
Therefore for every employee, no matter the income category, the replacement rate is 64,5%.¹²⁷

The Italian health care system is a regionally based nationally health service. If people need care they have universal coverage free of charge at the point of service. The national government is responsible for the general objectives and regional governments are responsible for a certain basic package of care. Care is primarily funded by local taxes specifically meant for care.¹²⁸

Comparison with the Dutch figures

The Dutch pension system, already described earlier in this chapter, has to following replacement rates:

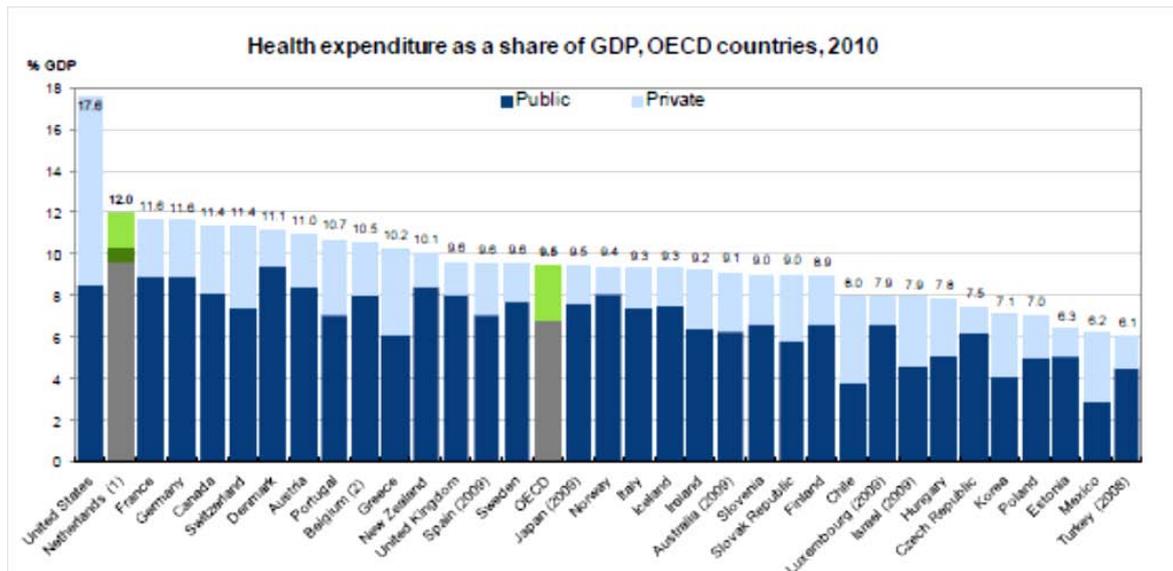
Graph 5.6 Net and gross replacement rate per income category the Netherlands



Out of all the countries described in this chapter the Dutch replacement rate is by far the highest of them all. The gross replacement rate of someone who earns half of the Dutch average income is 93% and 85,7% for someone who earns twice the average Dutch income. The net replacement rates show that low earning individuals are getting an even higher income than before their retirement.

The health care costs however are in the Netherlands, compared to the other countries, very high. After the United States the Netherlands has the highest “health care costs : GDP” ratio as shown in the following table:

¹²⁷ See 100
¹²⁸ OECD Health Data 2012, How does Italy compare

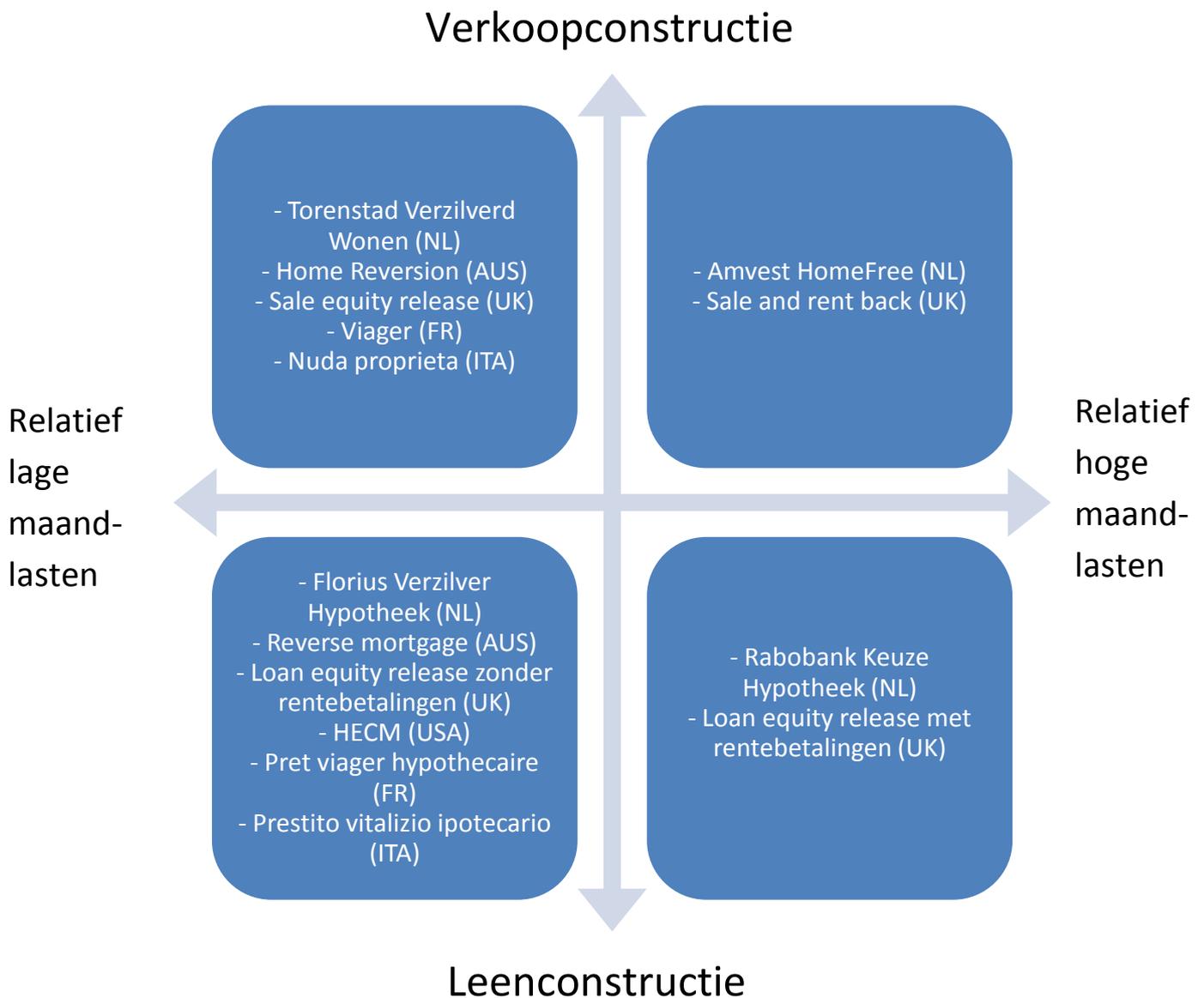


Total health care costs in the Netherlands of 12% are much higher than the OECD average of 9,5%, with a per capita spending of 5056 dollars. 85,7% of total health care costs is funded by the government.¹²⁹

¹²⁹ OECD Health Data 2012, How does the Netherlands compare

§5.3.2. Graphic display of the different product on the domestic and foreign market

To compare every equity release product described in this thesis the graph below has been made. The matrix shows at a glance to which part of the spectrum each product belongs. Differentiations are made between products belonging to the sale model or the loan mode equity release systems on the y axis. On the x axis there has been made a difference between products with high monthly costs and low monthly costs. This can be for example due to paying rent that some sale model equity release products require or paying interest required by some loan model equity release products.



6.1. Introduction

For decades equity release products were on the market in some countries abroad. Also in the Netherlands there have been a couple of these products but only to a limited extent, the market share of equity release products on the whole real estate market is very low. This chapter will look at the issues on why the product is still a niche product. Which underlying barriers do consumers and providers experience? Research shows that a lot of people actually do want to live in the house for as long as possible, and also in this thesis' research the question was asked what the ideal living situation is for people. This resulted in more than half of the respondents answering that they wanted to live in their own house and also another 18% wanted to move to a more suitable house, as showed in chapter five.

The wish of half of the people to stay in the house as long as possible implies that the residential mobility of the Dutch will be low as well. This is confirmed in a research of the SCP, the Dutch institute for Social Research.¹³⁰

Table 6.1 Residential mobility per age and physical limitations, 2002

	beslist niet %	misschien* %	beslist wel* %	beslist niet	misschien*	beslist wel*
18-54 jaar, geen of lichte beperkingen	72	15	13	2.870.000	614.000	502.000
18-54 jaar, matige of ernstige beperkingen	67	17	16	154.000	40.000	37.000
55-74 jaar, geen of lichte beperkingen	88	8	4	1.307.000	122.000	62.000
55-74 jaar, matige of ernstige beperkingen	78	12	10	265.000	41.000	34.000
≥ 75 jaar, geen of lichte beperkingen	90	6	4	329.000	22.000	13.000
≥ 75 jaar, matige of ernstige beperkingen	84	8	8	271.000	26.000	26.000

* Beslist wel: 'beslist', 'heb reeds andere huisvesting gevonden', 'denk binnen 2 jaar te moeten verhuizen'.
Misschien verhuizen: 'eventueel wel, misschien', 'zou wel willen, kan niets vinden'.
Bron: WBO 2002, SCP-bewerking

This figure states that residential mobility reduces with age. About 90% of the people that are 75 years or older and have no or slight physical limitations do not want to move at all and also for other limitations and ages we can see that the category "beslist niet" or "definitely not" is by far the most given answer. This could be nice for a product like a reverse mortgage, where people can stay in their house for as long as they want and at the same time liquidate the equity stuck in that house.

Despite these positive characteristics the product never was successful. This chapter will look at the major issues that could arise in buying or selling an equity release product. It will therefore look specifically at possible issues for the consumer and for the provider for both the sale model equity release products and the loan model equity release products. Possible legal issues are also described in this chapter.

¹³⁰ Sociaal Cultureel Planbureau, 'Met zorg gekozen? Woningvoorkeuren en woningmarktgedrag van ouderen en mensen met lichamelijke beperkingen', 2004

§ 6.2. Issues for the loan model equity release products

§ 6.2.1. Issues for the consumers

From the results of this thesis' research, described in chapter five, the major issue for a loan model equity release product for consumers is the fact that they had again had to start a loan. People could have the feeling that after years of paying off debt, they finally have paid off (most of) the mortgage and therefore they do not feel like building up debt again. For a reverse mortgage this debt will become bigger and bigger in time. This is a specific problem for the loan model equity release products.

Next to that the house can be a "safe haven" for people, equity they want to hold onto for possible unforeseen circumstances in the future. The bequest motive seems not that of an important factor in the Netherlands according to several studies.¹³¹ What seems to be an issue as well is that the product is an unknown phenomenon and with that people can distrust or do not understand the product. Financial literacy of the Dutch is very weak and for a complex product like a reverse mortgage this could imply that the product is misunderstood or distrusted by people, which makes them not interested in the product.¹³²

Not all products in the Netherlands and abroad had the no negative equity guarantee. This guarantee ensures people to stay in the house for as long as they want without having a remaining debt after the house is sold. If the debt is bigger than the value of the house this will be covered by the provider (or the government in the United States). If a certain product does not have this guarantee and people are staying in the house longer as expected the debt will be higher than the value of the house and this could imply that people, who in this case are probably very old, have to leave the house or the heirs will be left with a remaining debt. The fear that this can happen can withhold people to buy a product like this, the longevity risk stays with the consumer.

Another feeling people can get with buying this product is that they get "low value for money". In foreign literature this was seen as a weakness of the product. While people do not have to pay any rent as long as they stay in the house this, the rent is credited to the loan itself, which implies a compound interest effect, the loan gets bigger every year and therefore the absolute interest becomes higher every year and this will be credited to the loan. With calculating the amount of money this compound interest effect is taken into account and therefore the amount one gets now can be felt as "low value for money", but it is the actuarially fair price. By selling the house people can get a much higher amount of money but in that case people do not have the advantage of staying in the house without having to pay extra monthly costs or staying the owner of the property.

Another issue of this product compared to a sale model equity release product is that with the sale product the percentage that belongs to the provider stays the same in time. If someone sells 80% of the

¹³¹ PGGM Iedenenquête 2012 en Toussaint, J., "Housing wealth in retirement strategies; Towards understanding and new hypotheses", Proefschrift, Delft, juni 2011

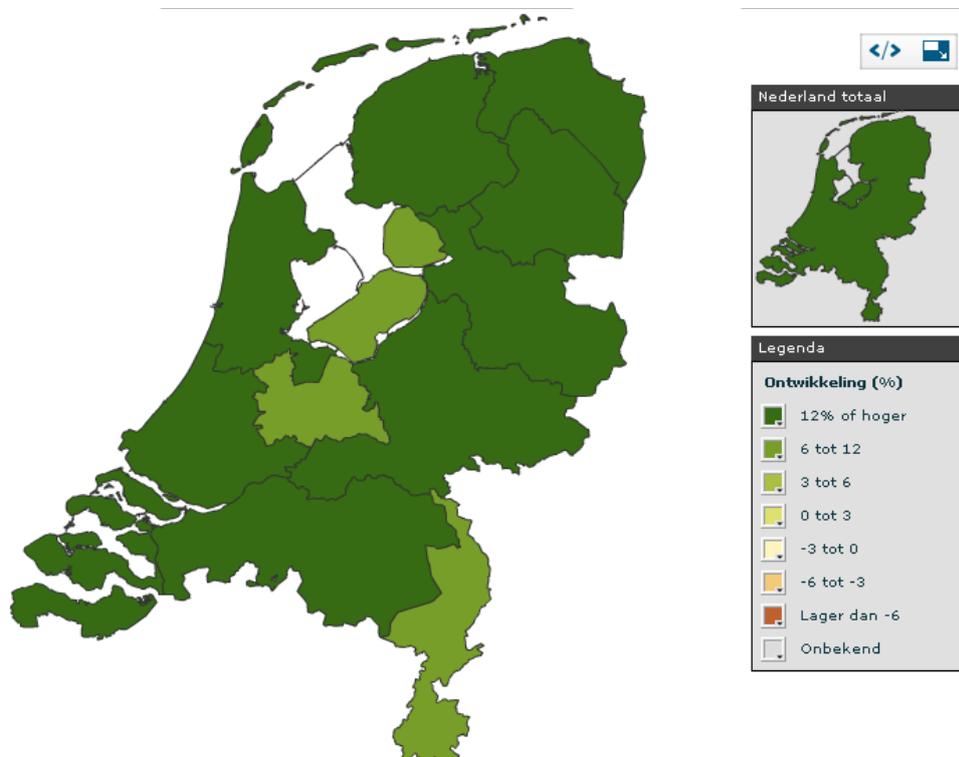
¹³² De Roon, et al., *Housing with a silver lining*,

house, in n years if the house is sold the provider has the right to this 80%, nothing more nothing less. People therefore know in advance where they stand. With buying for example a reverse mortgage this is not the case. The mortgage will be bigger and bigger in time and although people stay owner of the house the loan will take up more and more of the house. The longer one lives, the less remains for the heirs. However if people do not have a bequest motive, for instance because they do not have any children, this can be seen as a non-issue.

§ 6.2.2. Issues for the provider

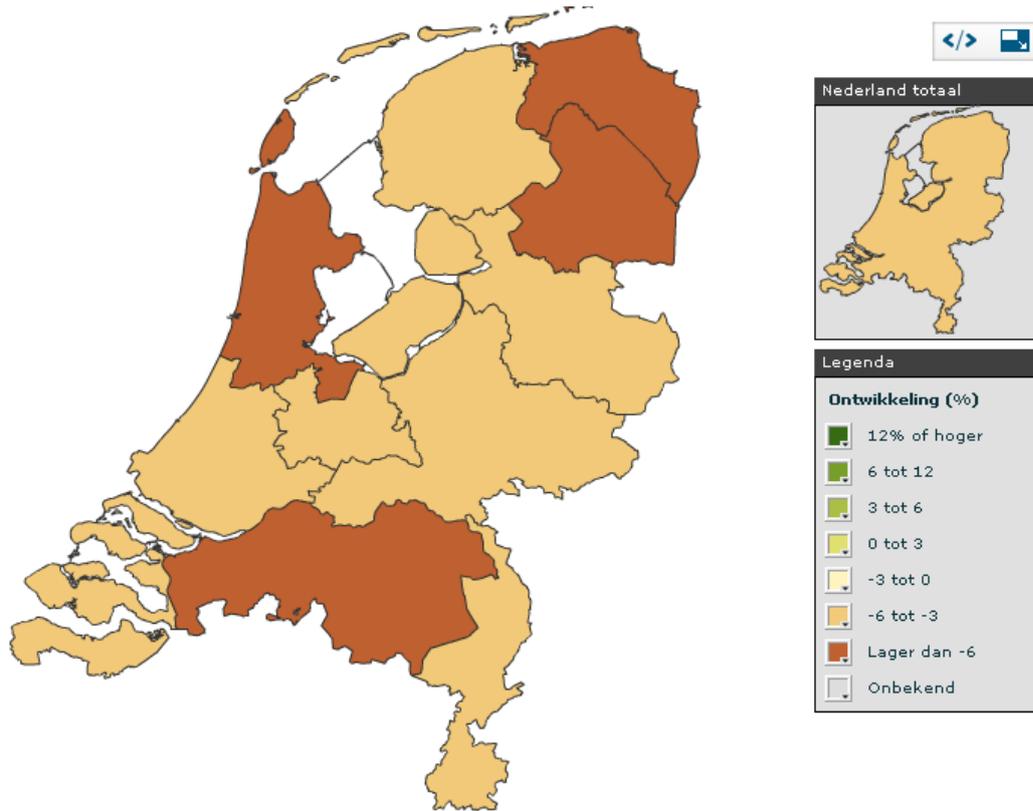
Also for the providers there are different issues to tackle. Nationally and internationally there are only a few providers who sell a reverse mortgage product. Where in the United States at first there were a lot of providers, this has gradually declined and in 2011 the three biggest providers stopped selling the product. In the current housing market there is much more uncertainty as at the time the product was introduced in the United States and this causes a barrier to sell the product for the provider. As time continues the loan becomes bigger and bigger and if the value of the property is uncertain in the meantime, this causes an extra risk for the provider. In the Netherlands the housing market is very uncertain. At the beginning of this millennium housing prices were rising, however the last couple of years housing prices are declining as shown in the figures below.¹³³

Figure 6.1a Development of the housing prices may 2001



¹³³ Verkregen van website: <http://www.cbs.nl/nl-NL/menu/themas/bouwen-wonen/cijfers/extra/huizenprijzen-visualisatie.htm>

Figure 6.1 b Development housing prices may 2012



The drop in the value of houses causes an issue for providers to start selling a product like a reverse mortgage now. If the provider sells more and more of these products and therefore has more and more reverse mortgage products in its portfolio, risk will not decline but will rise.¹³⁴

Besides the uncertain value of the house, the provider also has to bear the longevity risk. If a provider wants to sell the consumer a reliable and stable product, the product should contain the no negative equity guarantee for the consumer, and therefore the longevity risk. In the UK reverse mortgage products were sold without this guarantee and this caused reputation damage for the whole market and partly because of this the market has not lived up to its full potential. The no negative equity guarantee is therefore a necessity to make the reverse mortgage market successful. If the provider is legally obliged to contain this guarantee in its product, this causes him an extra risk, the longevity risk. As the provider has more of these products in his portfolio the micro longevity risk will be hedged. One consumer lives longer than expected and another one lives shorter than expected and eventually the expected life expectancy of all customers in the portfolio will converge to the actual life expectancy. The macro longevity risk actually cannot be hedged.¹³⁵ This macro longevity risk is the risk that the anticipated trend in life expectancy is lower than the actual trend in life expectancy, people in general live longer than expected.

This longevity risk also gives the provider an extra uncertainty in when he can liquidate his investment. As long as the consumer of the product lives and stays in the house, the provider cannot cash his investment.

¹³⁴ Rouwendal en de Graaf, *Mijn pensioen staat als een huis*, NEA paper, 2012

¹³⁵ Zie 144

This double risk for the provider makes it less attractive for the provider to sell the product, since there are a lot of products available to offer in which they know the term and the return in advance.

Experiences abroad also showed that the transaction costs of a reverse mortgage can be really high. For the provider this is an extra issue as well, since the high transaction costs are a necessity. The product is relatively new and can be experienced as a complex product and therefore the average time the provider needs to explain the product and answer the questions that arise with the consumers is very high compared to other financial products. Next to that appraisers should value the house and all these circumstances puts additional costs on the product. Providers feel that the transaction costs are relatively high and this could be an extra issue for them, since it could cause some reputation damage.¹³⁶

Caplin describes the problem of moral hazard that can cause another issue. In general people who buy a reverse mortgage product are often older than 65, income poor and living in a house that they cannot afford anymore. During the life of the loan they may be expected to suffer significant health problems. All these characteristics makes them prime candidates to let their homes into serious disrepair and this can cause damage to the value of the house. To prevent this risk from happening contracts often contain a reappraisal every n years. If the value of the house reduces due to disrepair by the consumer this reduction will be charged to the customer (by increasing the debt for instance).

§ 6.3. Issues for releasing equity by selling your house

§ 6.3.1. Issues for consumers

In a sale model equity release system where people sell for instance the bare ownership of their house and keep the usufruct there are a couple of issues that can arise for the consumer. The longevity risk in this version is covered, people can stay in their house as long as they want without having to pay any rent, but in the meanwhile the money they get back for selling that house is lower than the market value. The following case can occur: *Madam A. (70 years old) owns a house with a value of €300.000,- in which she lives on her own. She sells the bare ownership of this house for an amount of €150.000,- to a financial institution. A month after she made the deal she dies. The financial institution now has full ownership over the property and the heirs of the madam do not have any right at the housing equity.*

In this case the consumer has sold the house for a very low, but actuarially fair, price and the heirs will lose out on this. In case of a loan model equity release system this is not the case. People will retain full ownership and if the consumer dies earlier than expected the loan that has been built up will be low as well. Heirs can pay off this loan and keep the house in the family, or sell the house, pay off the loan and keep the rest to themselves. The risk of selling the house for a price that can be way too low, can be felt as a risk for certain, probably risk averse, consumers. On the other hand this product ensures that if someone

¹³⁶ Gibson Terry, *Obstacles to equity release*

lives longer than expected there will be no extra kind of debt, like it can be the case in a loan model equity release system.

With these products the issue of keeping the equity in the house for unforeseen circumstances can be an issue as well. Often people do not want to use housing equity unless it is absolutely necessary and there is no other way out. Liquidating housing equity to travel around the world or to live a more luxurious life is not popular at all, as showed in chapter five of this thesis. While the pension income in the Netherlands is really high, replacement rates are a lot higher than the OECD average, the necessity to buy an equity release product cannot be felt by people. While it is a relatively new product and market and people can find it a complex product, there is lack of understanding and confidence in the product and therefore the willingness to buy this product can reduce. If the product or the provider of the product is not trusted by the consumer this can be a major issue for the development and eventual success of a product. The worldwide financial crisis caused people to distrust some financial institutions, so to introduce a new product like this at this time will not be ideal.

Another issue that comes with this sale equity release model is the fact that the provider has to be interested in the house and the location of it. The Home Reversion product in Australia for instance is only being offered in cities like Sydney and Melbourne. In the Netherlands the “Randstad” could be an interesting area, but a house in a small village in the up north or south could not be interesting at all. Therefore the product will not be available for every consumer who is willing to buy the product.

§ 6.3.2. Issues for providers

The provider buys the economic and legal ownership of the house in this construction, while the consumer has the right to stay in the house for as long as he or she wants. A big risk for the provider of this construction is the longevity risk. The provider can liquidate his investment only at the moment the consumer leaves the house, but only in case he can sell the property after the consumer has left the house. The risk that the value of the house depreciated in time lies with the provider as well. The combination of these risks, longevity and depreciation of the house, certainly in these economic circumstances, can make it a product that is not interesting for providers to offer.

In the Netherlands Torenstad Verzilverd Wonen was a provider of this product, but at the moment they do not offer the product anymore. Their site states that in the current housing market it is too risky for investors as well as housing associations to offer these kind of products. The risk of depreciating housing prices is not being reduced the more products you sell, it only gets bigger. Recent developments in housing prices, see for instance figure 5.1b, does not give providers any reason to offer this products in the near future.

While the providers buy the ownership of the house, it is important for them to know that the house they buy can eventually be sold easily as well. An issue for a provider therefore is that this product cannot be promoted and offered all over the Netherlands, since some areas are not interesting for providers. This product therefore probably can only be offered in limited areas, where providers have more certainty that

they eventually can sell the house as well and areas where depreciation of housing prices is less likely, for instance areas around Amsterdam, Rotterdam, The Hague etcetera.

Moral hazard can be an issue for providers as well. By selling the product, the provider gets the ownership of the house and this can cause a behavioral change in the mind of the consumer. They do not own the house anymore and therefore they do not have to maintain it. The obligation to maintain the house often lies with the provider with these kind of products. This can create extra costs for the provider and while they have this knowledge beforehand the amount of money people get can be calculated in a more conservative way, to capture these possible extra costs in the future. In many contracts people are obliged to ask permission of the provider if they want to change something to the house. If the consumer changes the house and with that reduce the value of the house, this damage will be paid by the consumer. With these kind of regulations providers try to protect themselves from this moral hazard issue, but with that the product can become less attractive for consumers.

In summary the risks of longevity, depreciating house prices, and maintenance all lie with the provider. It therefore seems logical that not a lot of providers are willing to offer this product and if they do so only in areas where the risks are not too high.

§ 6.4. Possible legislative issues

The importance of a reverse mortgage has increased recently. The target group, the “income poor, equity rich”, often cannot apply for a general mortgage, since they do not meet the income requirements of the financial market authority in the Netherlands, the AFM. This income test has become stricter with the Gedragscode Hypothecaire Financieringen, or the Code of Conduct of Mortgage Financing, in 2011. Before 2011 there were a lot of possibilities, which were used a lot, to deviate from the income requirements. With the new Code of Conduct limitations were set to this deviation.¹³⁷ A lot of “income poor, equity rich”, do not meet the requirement since there only income is the Dutch AOW with sometimes a small extra pension besides that and therefore they cannot buy a general mortgage on their house. With that the importance of the reverse mortgage rises, since the income requirements does not apply for this product while there are no extra monthly costs now that come with the reverse mortgage. The income test therefore is not a limitation for the reverse mortgage.¹³⁸

In another area the income and or equity test can cause some problems. From January 1 2013 to qualify for care allowance partly depends on someones equity. If someones equity is higher than the tax free equity in box 3¹³⁹ plus €80.000,- this person does not qualify for care allowance. Normally housing equity is in box 1, the equity in this house therefore does not count for this equity test.¹⁴⁰ If however someone

¹³⁷ Ministerie van Financiën, Beantwoording Kamervragen over het bericht ‘bank zet trouwe klant in de kou’, mei 2012

¹³⁸ Rapport Vereniging Eigen Huis, *Mijn pensioen staat als een huis*,

¹³⁹ In 2012 is dit €21.139,-

¹⁴⁰ Verkregen van website <http://www.rijksoverheid.nl/onderwerpen/zorgtoeslag/vermogenstoets-zorgtoeslag>

liquidates the money out of the house, this equity moves to box 3 and with that people could lose their right on care allowance. This causes a disincentive to release equity in the house.

Besides this the own contribution to the AWBZ and the WMO will depend on equity as well from January 1 2013 on. This regulation states that 4% of the box 3 equity is added to the box 1 income and the own contribution will be based on this income. The higher the equity of a person the higher the own contribution.¹⁴¹ This again makes it less attractive to liquidate housing equity, since the equity if it is stuck in the house does not count in this income test. These disincentives will only count for people who get the amount paid off lump sum, since for them the box 3 equity will grow a lot at once.

If someone gets paid out periodically, this payment will be designated as an annuity. An periodic payment like this meets the fiscal description of an annuity of article 1.7 of the Income Tax Act, which says:

“een aanspraak volgens overeenkomst van levensverzekering op vaste en gelijkmatige periodieke uitkeringen die eindigen uiterlijk bij overlijden, welke aanspraak niet kan worden afgekocht, vervreemd, prijsgegeven, of formeel of feitelijk tot voorwerp van zekerheid kan dienen”.

To qualify as an annuity the product has to be paid out in fixed and equal periodic payments, which end no later than the death of the person. The claim cannot be commuted, alienated, abandoned or formally or actually be used as collateral.

From January 1 2009 the law concerning annuities changed. From this time on all annuities were considered to be taxed in box 1. Before 2009 this was not the case, the annuity was only taxed in box 1 if the premiums paid by the consumer beforehand were subtracted from the box 1 income as well. If the consumer did not subtract the premiums from his or her box 1 income, the annuity would be taxed in box 3. People therefore could choose how they wanted to be taxed, they could for instance choose the annuity to be (partly) taxed in box 3 by not subtracting (part of) the premiums he or she had to pay.

From January 1, 2009 the law changed. The description of article art. 3.133 section 1 changed from “premiums subtracted as expenditures for income facilities in box 1” in to “premiums paid for income facilities”.¹⁴² With this the complete annuity will be taxed in box 1, also if the premiums could be subtracted but were not subtracted.

If someone releases the equity out of the house and buys an annuity with that equity there was never the chance to subtract any “premiums”. In this case the annuity will be taxed in box 3, since there was never the chance to subtract any premiums. This annuity will be valued based on article 19 of the implementation chapter of the income tax act and this amount will be added to the box 3 income.

¹⁴¹ Verkregen van website <http://www.rijksoverheid.nl/onderwerpen/algemene-wet-bijzondere-ziektekosten-awbz/eigen-bijdrage-hulp-awbz>

¹⁴² Wet van 18 december 2008, houdende wijziging van enkele belastingwetten en enige andere wetten, Belastingplan 2009

The mortgage interest deduction can cause an issue as well. If someone liquidates the equity in the house by buying a reverse mortgage, the mortgage debt that is possibly still on the house should be paid off first. The interest paid on this loan can be subtracted from the box 1 income. If now this debt has to be paid off, people no longer have the advantage of subtracting the interest from their income. Since with the reverse mortgage no interest has to be paid now, there is no longer any interest to subtract from the box 1 income. This can cause a disincentive in getting an equity release product, if someone still has the right and the possibility to deduct mortgage interest from their box 1 income.

At this moment there is no specific legislation for equity release products. Therefore there is no minimum age, or an obligated no negative equity guarantee for the provider, like it is the case in France. A financial product in general has to meet certain rules, like for instance the provider has to give all the required information about the product etcetera. To create a clear framework for this product a specific legislation could be helpful, as experiences in France have shown. This takes away some uncertainties that may exist for both consumer and provider. On the other hand it can also create too much certainty for one side and this can cause the other party to stay away from the market.

§ 7.1. Overview of all covered products and their characteristics

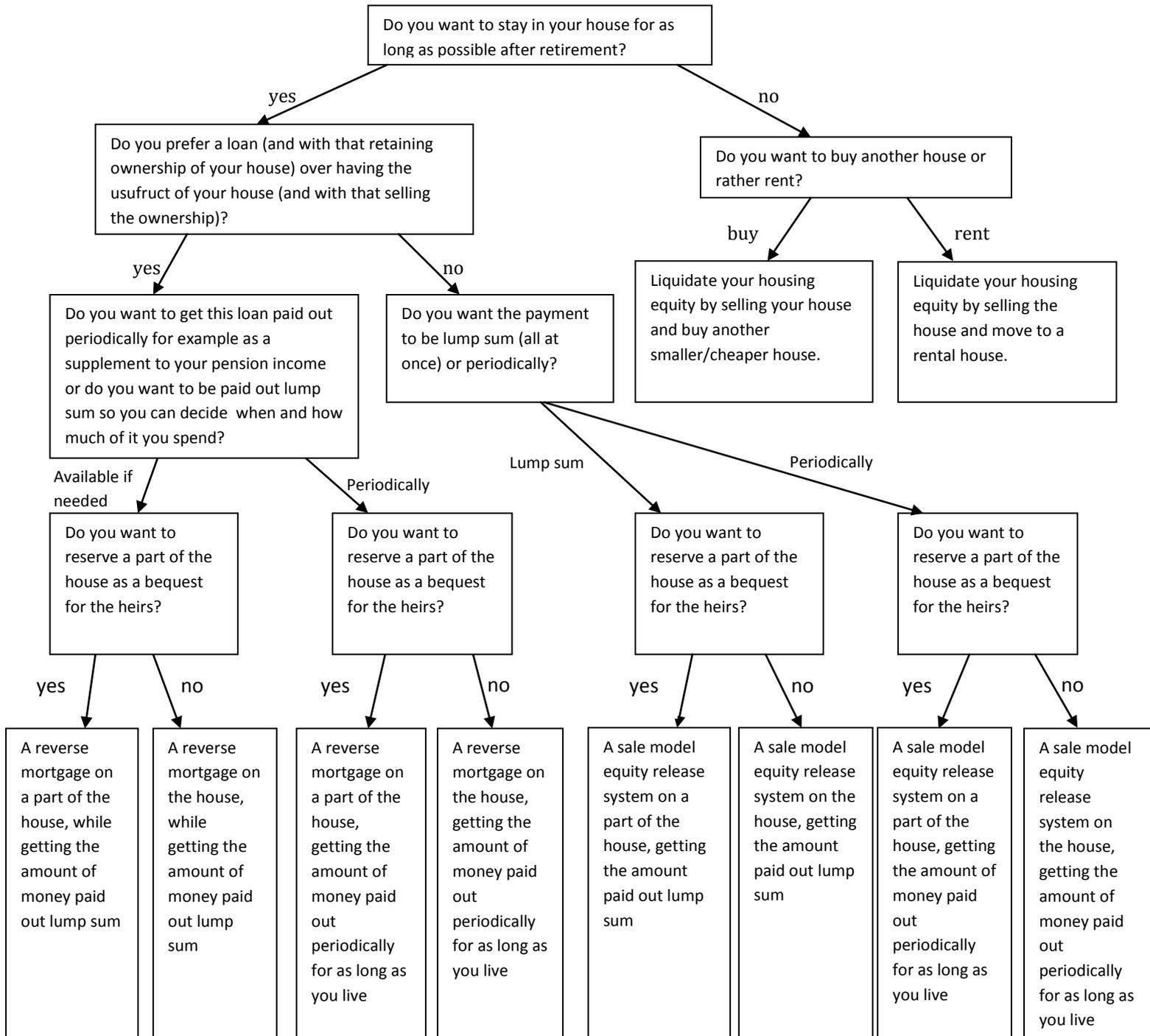
<i>Product</i>	<i>Equity release model</i>	<i>Ownership of the property lies with</i>	<i>Longevity risk lies with</i>	<i>Maintenance obligation lies with</i>	<i>Residential value risk lies with</i>	<i>If consumer dies earlier than expected, the remainder of the equity goes to</i>	<i>Extra monthly payments due to buying the product</i>
Florius verzilver hypotheek	Loan model	Consumer	Provider by giving the “no negative equity” guarantee	Consumer, if maintenance is necessary, the consumer is obliged to invest in it, otherwise Florius will fix at the expense of the consumer	Provider in case of longevity, he only gets the amount of money the house is sold for. If the house has been neglected the consumer loses the no negative equity guarantee → residential value risk lies with consumer	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	None, loan plus interest has to be paid off after the term (after consumer leaves the house due to for example death/moving to an institution)
Amvest Homefree	Sale model	Provider	Provider	Deferred maintenance is taken into account in the calculation of the rent. After that maintenance costs are reimbursed by the provider	Provider, owner of the property	Lump sum payment → consumer has sold the house for less than market value → provider owns the house for a relatively very low price	Monthly rent
Torenstad Verzilverd wonen	Sale model	Provider	Provider	Provider	Provider, owner of the property	Lump sum payment → consumer has sold the bare ownership for less than market value → provider owns the complete house (bare ownership plus usufruct) for a relatively very low price Periodic payments → Residual goes to heirs	None

Product	Equity release model	Ownership of the property lies with	Longevity risk lies with	Maintenance obligation lies with	Residential value risk lies with	If consumer dies earlier than expected, the remainder of the equity goes to	Extra monthly payments due to buying the product
Rabobank KeuzePlus hypotheek	Loan model	Consumer	Consumer	Consumer	Consumer, bank has the right to reappraise the property every 5 years. If this shows it is necessary, the consumer has to pay off the mortgage in amounts the bank determines	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	Interest
HECM (VS)	Loan model	Consumer	Government, by covering for the no negative equity guarantee	Consumer	Government	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	None, loan plus interest has to be paid off after the term (after consumer leaves the house due to for example death/moving to an institution)
Reverse Mortgage (AUS)	Loan model	Consumer	Providers, by covering for the no negative equity guarantee (this only applies for providers affiliated with SEQUAL; For non SEQUAL providers it differs per contract	Differs per contract, often a requirement for the consumer	Provider	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	None, loan plus interest has to be paid off after the term (after consumer leaves the house due to for example death/moving to an institution)
Home Reversion (AUS)	Sale model	Provider/ Shared (if only a part of the house is sold)	Provider	Provider	Provider/ Shared (if only a part of the house is sold)	Early sale rebate guarantee → if consumer dies within a certain period of time, the heirs get a part of the value of the house back.	None
Loan Equity Release (UK)	Loan model	Consumer	Provider	Consumer	Provider	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	Contracts with or without having to pay interest during the term are possible

Product	Equity release model	Ownership of the property lies with	Longevity risk lies with	Maintenance obligation lies with	Residential value risk lies with	If consumer dies earlier than expected, the remainder of the equity goes to	Extra monthly payments due to buying the product
Sale Equity Release (UK)	Sale model	Provider/ Shared (if only a part of the house is sold)	Provider	Provider	Provider/ Shared (if only a part of the house is sold)	Lump sum payment → consumer has sold the bare ownership for less than market value → provider owns the complete house (bare ownership plus usufruct) for a relatively very low price	None
Sale and rent back (UK)	Sale model	Provider	Consumer	Provider	Provider, owner of the property	Lump sum payment → Provider gets full ownership of the house for a relatively low price	Monthly rent
Viager (FR)	Sale model	Provider (in this case often another consumer)	Provider (in this case often another consumer)	Provider	Provider, owner of the bare ownership of the property	Provider, in this case often another consumer, gets full ownership of the house for a relatively low price	None
Pret viager hypothecaire (FR)	Loan model	Consumer	Provider, by covering for the no negative equity guarantee	Consumer	Provider in case of longevity, he only gets the amount of money the house is sold for.	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	None, loan plus interest has to be paid off after the term (after consumer leaves the house due to for example death/moving to an institution)
Nuda proprieta (IT)	Sale model	Provider (in this case often another consumer)	Provider (in this case often another consumer)	Provider	Provider, owner of the bare ownership of the property	Provider, in this case often another consumer, gets full ownership of the house for a relatively low price	None
Prestito vitalizio ipotecario (IT)	Loan model	Consumer	Provider, by covering for the no negative equity guarantee	Consumer	Provider in case of longevity, he only gets the amount of money the house is sold for.	Heirs can sell the house and pay off the loan, the remainder belongs to them. Or they can pay off the loan themselves and keep the house in the family	None, loan plus interest has to be paid off after the term (after consumer leaves the house due to for example death/moving to an institution)

§ 7.2. Decision tree where people get to their ideal product by answering a number of questions

By answering a number of questions people can see what their ideal Equity Release product will be, according to their needs and wishes.

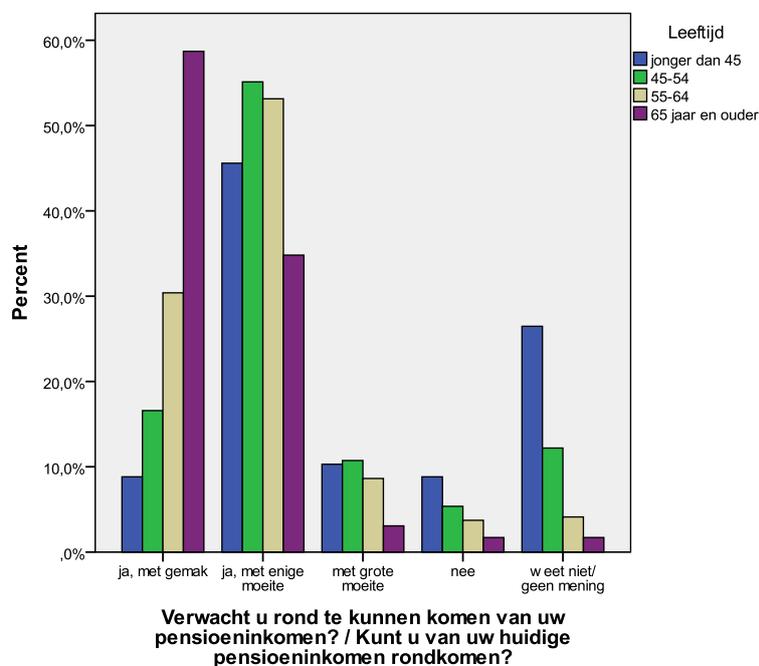


§ 8.1. Introduction

Liquidating housing wealth was possible in several ways in the Netherlands and still there are some ways to do so. People therefore have the possibility, but only a few are actually using this possibility. There are a lot of underlying reasons for this, not only from consumers' side, but also from producers side. The target group, the retired, does not feel the necessity to liquidize their housing wealth. Overall they can perfectly live life with their pension income. The following graph, from the PGGM Member Panel, shows this. 60% of the oldest age group indicates that they can or expect to easily live on their pension income.

Next to that also table 5.3 shows that a relatively low amount of Dutch people states their pension income is low.

Graph 8.1 Expectations/experiences about living life on pension income, per age category



Next to that the current elderly are Calvinist, they do not see their house as an financial object, but something to which they are emotionally attached. Expectations are that the next generation elderly are more likely to liquidate their housing wealth. They approach buying a house in a more financial way, as an investment, and therefore they are more willing to liquidate it in a later stage. Next to that they are also more used to buying financial products and mortgages. ¹⁴³

¹⁴³ Toussaint, J., "Housing wealth in retirement strategies; Towards understanding and new hypotheses", Proefschrift, Delft, juni 2011

Another reason people stay away from these products is because they are relatively complex. These kind of complex financial products have a bad reputation, especially in the Netherlands with the 'woekerpolissen' in our minds. It is therefore necessary that these products are as simple and transparent as possible.

From the producers side the barriers of providing equity release products are that these products come with huge risks. For instance the Florius product, described in chapter six, the longevity risk and the residential value risk lies with the provider. These risks are being discounted in the value the consumer gets and therefore the amount people can actually release is very small. Next to that people have to pay a fixed rate of 7,3% per year of the debt which is added to the debt itself, while people do not have to pay any rent while being alive and staying in the house. If people still have some debt on their house they first have to pay off that debt with the equity release amount. For a house with a value of 200.000 euro, people get paid about 50.000 euro. This means that after 20 years the debt is as high as the value of the house and there is no equity in the house any more, *ceteris paribus* the value of the house.¹⁴⁴

These risks result in the fact that people can liquidate only a relatively low amount and also the providers rather stay away from the product. This applies to the reverse mortgage as well as the sale and rent back products. While the providers stay away there is no competition on the equity release markets and therefore the product will remain expensive. For the sale and rent back product there were two providers in the Netherlands but both stopped to provide it, mainly because of the bad circumstances on the housing market.

To reduce these barriers the government could help out, to promote the equity release market like the government did in the United States. In the United States the equity release market was as good as not existing until the government took over the longevity risk.

From the PGGM member survey we can conclude that people are only interested in liquidating housing wealth for care or to adjust the home to make it better livable at a higher age. Aims as travelling, retire earlier et cetera were not popular at all. With the current government policy

The current government policy tends to a policy that people have to pay more and more health care costs themselves. The government therefore benefits if people stay in their house for as long as they can and do not use hospital care. The government can give the equity release market a boost by guaranteeing the no negative equity guarantee or by fiscally stimulating to pay off a mortgage, instead of the previous fiscal policy that stimulates not paying off a mortgage.

This chapter describes the various ways in which a mortgage can be paid off, as well as various ways in which people can release the equity in their house. Paragraph two describes the mortgage phase, to chart

¹⁴⁴ Zie Appendix A voor berekening

the (fiscal) effects of choosing a certain way of paying off a mortgage. Three different kinds of paying off a mortgage are looked at, paying off in annuity, do not pay off but save and the so called 'spaarhypotheek 2.0'. Which effects do these options have economically and fiscally.

Paragraph three draws the equity release phase and the effects the different options have. The options described here are the reverse mortgage, sale the bare ownership while keeping the usufruct, sale and rent back and again the 'spaarhypotheek 2.0'. Paragraph four then gives a comparison of all the options, which option is fiscally favored and is there a way in which we can make a fiscally neutral system, while keeping all the options open. Paragraph five looks at possibilities for tenants and paragraph six looks at the roles different parties can play.

§ 8.2. The "paying off mortgage" phase

There are several ways of paying off a mortgage. People can choose to actually pay off the mortgage during the term, or they do not pay off the mortgage but save instead. This saving can take place in more ways, fiscally facilitated, which is called a 'spaarhypotheek'¹⁴⁵ or not. Three options of paying off a mortgage are being described in this paragraph.

§ 8.2.1 Different ways of paying off a mortgage

§ 8.2.1.1 Paying off with an annuity scheme

With this type of paying off a mortgage the yearly payments stay the same during the term. These payments are partly interest payments and partly real repayments. As you pay off more, the absolute amount of interest will be lower, so as the term for the mortgage expires, the interest component of the yearly payment will be smaller and smaller. The yearly annuity payment is calculated by using the term, the interest and the initial debt. To calculate the yearly payment we use the following formula:

$$H = A * \frac{1 - (1+r)^{-n}}{r}$$
, in which H is the initial debt, A the annuity payment, r the interest rate and n the term.

The annuity A remains the same during the term and while a part of the first payment has a repayment component already, the debt is reduced. The second payment therefore will contain a relatively smaller amount of interest payments and a relatively bigger amount of repayments. In the Netherlands the interest payments can be deducted from the income. While this option has the effect that this interest component is smaller and smaller, the benefit of deducting interest payments will be smaller as well. The effect of this system is that with an annuity mortgage the net charges increase every year.

Furthermore, in general it is true that people are going to earn more at a later stage in life. Therefore the interest can be deducted at a higher rate at later age. If then already most of the debt has been paid off you do not profit as much as you can from the mortgage interest deduction possibility. The fiscal regime before 1 January 2013 therefore had the effect that an annuity mortgage has a huge disadvantage

¹⁴⁵ From 1 January 2013 the 'spaarhypotheek' is no longer fiscally facilitated. People only have the right to deduct their mortgage interest if they actually pay off their mortgage by an annuity scheme. A 'spaarhypotheek' therefore is no longer interesting for people buying a house and getting a mortgage now.

compared to not paying off a mortgage and save instead. With this last option you keep the mortgage interest high during the term and therefore you profit optimally from the tax regime.

In the coalition agreement 'Building Bridges'¹⁴⁶ of the Dutch political parties VVD (liberal) and PvdA (Dutch Labour party) there are new conditions made for new mortgages. People only get mortgage interest deduction if they pay off their mortgage by an annuity. From January 1, 2013, this requirement for new mortgages is in effect. The described disadvantage of annuity mortgages is now not there anymore and has actually become an advantage, while you do not get any mortgage interest deduction anymore if you do not pay off with an annuity. Article 3.119a of the Income Tax Act 2001 states that the mortgage should be paid off fully by an annuity scheme in up to 30 years. If people do not pay off their mortgage by an annuity scheme, they no longer can deduct the mortgage interest.

§ 8.2.1.2 Not repaying the debt, save in fiscal box 3

Under the current tax regime, this type of mortgage repayment will be taxed differently than under the tax regime before 1 January 2013. The difference between these two regimes will be described in this subparagraph.

§ 8.2.1.2.1 Tax regime until 1-1-2013

From January 1 2013 it is no longer interesting to buy an interest only mortgage. Before this change people could deduct their mortgage interest for a maximum period of 30 years in tax box 1, according to article 3.120 paragraph 3 Income Tax Act 2001. If people did not pay off their mortgage but saved instead, they could optimally profit from the mortgage interest deduction, with a maximum rate of 52%. The savings are being taxed in box 3 against a rate of 30% of a notional return of 4%, according to article 2.13 jo. article 5.3 Wet IB 2001.

With this option people can enjoy maximum advantage of the mortgage interest deduction compared to the annuity scheme described in the previous paragraph. The tax regime before January 1, 2013, therefore encourages people to not pay off the mortgage, but to save instead and optimally profit from the mortgage interest deduction possibility.

§ 8.2.1.2.2 Tax regime from 1-1-2013

On the 29th October 2012, the government presented their coalition agreement. With this coalition agreement the law about mortgage interest deduction was renewed. From January 1, 2013, people are only allowed to deduct mortgage interest if the initial debt will be paid off by an annuity scheme and in a

¹⁴⁶ Coalition agreement 'Building Bridges', 29-10-2012.

maximum of 30 years.¹⁴⁷ This rule only applies to new mortgages, existing (partly) only interest mortgages are not covered by this new law.¹⁴⁸

If one does not repay by an annuity scheme and instead saves one can no longer deduct the interest paid on the mortgage. This makes this kind of paying off scheme no longer an attractive option. If someone now buys a house and does not pay off the mortgage but saves instead, this person will pay a large amount of interest during the term and this interest cannot be deducted from their income. It therefore seems no longer logical that these kind of interest only mortgages will be sold now and in the future, under these circumstances.

§ 8.2.1.3 Spaarhypothek 2.0

The 'spaarhypothek' was kind of an interest only mortgage in which it was fiscally stimulated to not pay off mortgage but save. This saving, other than in the box 3 saving variant, is fiscally facilitated as well. People did not pay off their mortgage, therefore benefited maximally from the interest deduction and on the other hand they saved fiscally facilitated in box 1 using a 'kapitaalverzekering eigen woning'.¹⁴⁹ People had to pay interest on the mortgage debt, which could be deducted, and at the same time they got the same interest rate on the savings they made. So people could deduct more interest than they actually paid (actual paid interest = paid interest on the mortgage - given interest on savings).

The large tax advantages this system had was being criticized by several economist, including Arnoud Boot calling it legalized theft.¹⁵⁰

To encourage people to pay off mortgage debt in the future and to make releasing equity a better possibility in the future, a renewed version of the spaarhypothek could be introduced, the spaarhypothek 2.0. With this type of mortgage people do not pay off mortgage as well, they save instead, but they only get to deduct the actual paid interest. People will pay interest on the debt during the term, they get interest on their savings and they only can deduct the difference between these two. With the original spaarhypothek people could deduct the complete interest paid, for this spaarhypothek 2.0 people can only deduct the netto interest paid.

Normally savings are being taxed in tax box 3, income from savings and investments. But with this spaarhypothek the savings will be placed in tax box 1, income from work and housing, under certain conditions. During the term people do not have to pay tax on these savings. To get this fiscal advantage the savings should be labeled as being a 'kapitaalverzekering eigen woning'. To be labeled like this the savings

¹⁴⁷ Coalition agreement 'Building bridges', 29-10-2012, article 3.119a paragraph 1 sub b Income Tax Act 2001

¹⁴⁸ <http://www.elsevierfiscaal.nl/fiscaal-actueel/nieuws/nieuws/2463/steun-voor-rapport-commissie-van-dijkhuizen>

¹⁴⁹ The tax effect of this option is discussed in the paragraph 'tax treatment spaarhypothek 1.0'

¹⁵⁰ O.a. verkregen via de website: <http://www.bnr.nl/topic/beurs/897799-1203/spaarhypotheken-gelegaliseerde-diefstal>

should meet certain conditions, described in article 3.116 Income Tax Act 2001. Paragraph 1 of this article stated: *The advantage of a 'kapitaalverzekering eigen woning' is the interest rate charged on the endowment, which is intended to **repay** the mortgage.*

The purpose of these savings therefore have to be that at the end of the term the savings are used to repay the mortgage completely. With the spaarhypotheek 2.0 this is not the intention; the intention is that these savings can be used to pay for health care costs et cetera. Because there are savings instead of a paid off mortgage, people can easier release equity.

From January 1, 2013, the article quoted above is no longer in the law anymore. It could be an idea to introduce the spaarhypotheek 2.0 and to make saving described in the spaarhypotheek 2.0 way possible again. People do not 'overprofit' from not paying off a mortgage, since they only get mortgage interest deduction for the net paid interest. The legislator could include a requirement that people should save by an annuity scheme, because then the deduction will be exactly equal to an actual annuity mortgage.

For the equity release phase the exemptions that were stated in article 3.118 Income Tax Act 2001 can be revoked. This article determined that if people used the savings to pay off the mortgage, under certain conditions and to a certain extent, these savings were being exempted. This article is no longer included in the law as well, from January 1, 2013, on.

The conditions that were required to get an exemption of the savings for the part the savings did not exceed €154.000,- were:

- a. the benefit has served as repayment of the mortgage debt
- b. annual premiums have been paid
- c. the highest premium does not exceed ten times the lowest

If people met these conditions, they can save fiscally facilitated in tax box 1, without having to pay any tax on these payments, as happens with normal savings in tax box 3. At the time of payment, the interest component of the payment is taxed, but this component is exempted for a maximum of €154.000,- if conditions as described above are met.

For the spaarhypotheek 2.0 the legislator can for instance outline a framework for which aims the savings can be used to get the fiscal advantage, like for instance health care costs. The exempt of article 3.118 Income Tax Act 2001, can be reintroduced and only apply if the savings are used for medical expenses, or making modifications in the house to make it better possible to live in that house. If people use the savings for a trip around the world or a new car etcetera, people do not get the exempt of article 3.118.

§ 8.2.2. Economic intuition of various options and their effects in the mortgage phase

In this section the economic intuition of the different options and their consequences will be described.

Appendix D will show the fundamental economic analysis of these consequences.

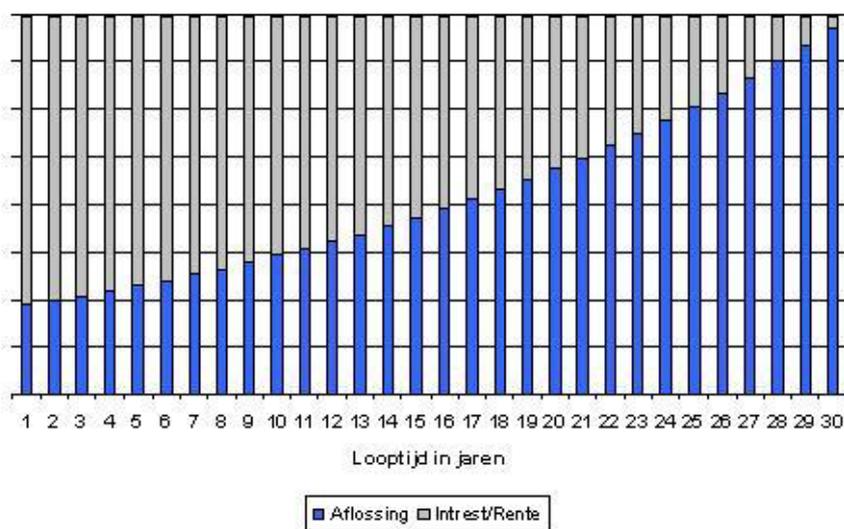
Economic intuition behind the different options in the mortgage phase and their fiscal consequences

When purchasing a mortgage people can pay off this mortgage in several ways. In this chapter we look at some options, the impact of the loan during the term and the fiscal consequences they entail. The effects during the loan, for example the share of equity that one builds up during the term, has implications for taxation. This share of equity is the share one gets by paying off the debt, if someone pays off the mortgage partly, the part of the house financed with equity will be larger.

Annuity mortgage

At first we analyze the annuity mortgage. With this mortgage people pay the same amount of yearly payments during the term. This constant amount of payments will, as time continues, comprise a larger proportion of repayments on the debt than interest payments. The initial debt is large and therefore so are the interest payments relatively to the repayments on the debt. The interest part will be smaller and smaller as time continues, while repayments have been made in the past years. Eventually the repayment part will be larger than the interest part.

Table 8.1 Proceedings interest and repayment parts of an annuity during the term



Because repayments on the debt are made, the equity part in the house is increasing during the term. In the appendix formulas are shown in which this equity part can be calculated after any given year. This is important for the tax treatment of the loan, since only the interest you pay on the debt part of the loan is deductible.

Fiscal consequences for an annuity mortgage

With the purchase of a home you are legally and economically a homeowner. The investment in that house will therefore be treated in tax box 1, according to section 3.6 of the Income Tax Act 2001. The taxable benefits from home ownership are being calculated on the basis of article 3.110 Income Tax Act 2001. Deductible expenses on the house can be deducted from these benefits.

These deductible expenses are described in article 3.120 Income Tax Act 2001 en these are ‘ (...)the interest on debts belonging to the mortgage, the costs of loans belonging to the mortgage (...)’. In other words the interest paid on the outstanding mortgage is deductible in box 1.

From January 1, 2013, new regulation went into effect about this mortgage interest deduction. The mortgage interest is only deductible if people pay off their mortgage by an annuity scheme. This law only applies to newly concluded mortgages, the deductibility for people with an existing mortgage will not be in danger. In casu, an annuity mortgage, there is no risk as well for new cases since the deductibility will only apply for this kind of mortgages.

The interest that can be deducted is the interest people have to pay on the debt part of the mortgage. The total deductible interest (discounted to the period in which the loan is subtracted) is therefore equal to the discounted value of all interest payments times the tax box 1 tax rate at which the interest payments can be deducted.

In addition home owners in the Netherlands have to pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. Based on the property value and a corresponding rate this notional rental value has to be paid. The total of this tax paid during the term, is calculated by using the statutory rate of the total rental value that is enjoyed during the term of the loan. This is the *fiscal* rental value of the house.

The actual rental value of the house is equal to the discounted value of the rental value, which is equal to all interest payments if the mortgage is not paid off, if there is no inflation. We assume that the actual rental value is thus equal to the interest rate on a mortgage times the value of the house. The total discounted value of the interest that can be deducted can be calculated by reducing the actual rental value as described here with the total discounted value of the interest on the savings on the equity part during the term. During the term this equity part becomes bigger, while the debt has been more and more paid off. The deductible interest therefore becomes smaller if time continues and to calculate the total deductible interest, you reduce the discounted value of all interest payments if there were no repayments with the discounted value of all interest payments someone gets because repayments have been made and equity has been become bigger (and therefore deducts less).

The total amount of money that is taxable in box 1 are the total amount of mortgage interest deduction, based on article 3.120 Income Tax Act 2001, plus the notional rental value for owner occupiers, based on article 3.112 Income Tax Act 2001. If this balance is positive, for example because people have a small mortgage debt and the notional rental value exceeds the interest payments on the debt, article 3.123a applies. This article states that if this balance is positive people get an extra deduction with the value of that positive balance, because of the fact that there is no or slight mortgage debt.

Do not repay mortgage, but save via Box 3

If people do not repay their mortgage, but save instead the mortgage will have the following outlines. During the term the mortgage will not be repaid and therefore the interest people should pay remains equal during the term. The rent people pay is less than the amount with an annuity mortgage, due to the fact that there is an repayment part with an annuity mortgage. If the annuity payment is equal to z then the payment in this version is an amount of x to pay the interest and an amount of y will be saved. $x+y$ is then equal to z . At the end of the term, the savings will be high enough to pay off the full loan, assuming that the interest on the loan is equal to the interest one gets on the savings.

The total amount that one pays every year is equal to the annual amount of an annuity mortgage, however the tax treatment is different. This will be explained in the tax treatment part of this chapter.

One calculates the present value of all interest payments by summing all of the interest payments and discounting with interest rates. In this case, interest payments will be calculated by multiplying debt with the interest rate and the duration, while one the debt stays the same during the term. If we discounted these interest payments we get the discounted value of the interest payments as part of the outstanding loan. These are obviously higher than with an annuity mortgage, in which someone repays the mortgage and the interest will be lower during the term. The difference between the interest payments between these two options is exactly equal to the discounted value of all interest received on the savings.

Why?

With an annuity mortgage, you pay a certain amount each year, which partly contains interest payments and partly repayments on the mortgage. As the term continues the equity part one has in the house will be bigger, whereas the debt part will be smaller. Together these two parts are the value of the house \rightarrow at $n=0$ Equity + Debt = 1.

With the not repaying but saving option people pay the same amount of interest during the term.

Economically you do not have any equity in the house. The debt part on the value of the house will be equal to one during the term \rightarrow Debt = 1 (Equity = 0)

The discounted value of the interest payments on the not repaying but saving option is calculated on the debt part, equal to 1. The discounted value of the interest payment on an annuity mortgage is also calculated on the debt part, but in this option the debt part is 1-equity.

The difference between these two is therefor equal to the equity part of the annuity mortgage, or the discounted value of the received interest on the equity part.

As of January 1, 2013, a change was made for these type of construction. People do no longer get a taks rebate on mortgage interest if they do not repay their mortgage at least by an annuity. This only concerns new mortgages. With these new regulation the option of not repaying but saving is no longer interesting

for new house buyers, since they do not get the tax reduction anymore, where before they got more than with an annuity mortgage.

Fiscal consequences for not repaying the mortgage, but save instead

Here, as well as with an annuity mortgage, one becomes owner of a house and therefore the investment will be taxed in box 1. Section 3.6 of the Income Tax Act describes how to treat this homeownership. As of January 1, 2013, new regulation concerning the deductibility of mortgage interest was introduced and this has a huge tax effect on new interest only mortgages.

One reason why interest-only mortgages in recent years have become increasingly popular is partly because of the Dutch tax treatment of these type of mortgages. If someone does not repay but save (tax treatment in box 3) one can deduct the interest paid on the mortgage from their income in box 1, due to article 3.120 Income Tax Act 2001. This interest will be, as explained earlier, equally high during the term, since one does not pay off the debt. Therefore one will profit optimally from the interest deduction. According to act 3.120 sub 2 Income Tax Act 2001. This only holds for mortgages bought before the first of January 2013.

If one also saves in box 3, this savings part will be taxed. Income from savings and investments is taxed in this box, according to article 5.1 Income Tax Act 2001. This box contains a tax-free allowance of €21.139,-, according to article 5.5 Income Tax Act 2001.

Since the difference in interest payments between the annuity mortgage and this mortgage is exactly equal to the savings portion of this mortgage the tax treatment could still be neutral, but only if the tax treatment of the two boxes would be the same. With this option one enjoys a higher mortgage interest deduction, but on the other hand one must also pay taxes on the savings part. However, savings are not taxed in box 1 but in box 3. The tax treatment in box 3 differs from the treatment in box 1 and is actually more interesting for the consumer. Relative to an annuity mortgage this option has a tax benefit and that benefit is equal to the difference between the tax rates of box 1 and box 3 times the discounted value of all interest payments.

With the new requirements by 1 January 2013 this advantage is, however, no longer existing due to art. 3.119a. To be eligible for deductibility of interest one must repay the debt according to at least an annuity scheme. If someone does not do this, as in this case, they will no longer get the deductibility of mortgage interest and this is exactly the main reason why people chose for this type of mortgage. For all existing mortgages the conditions remain the same. One obtains full deduction for the duration of the entire debt.

For this option as well people have to pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. Based on the property value and a corresponding

rate this notional rental value has to be paid. The total of this tax paid during the term, is calculated by using the statutory rate of the total rental value that is enjoyed during the term of the loan. This is the *fiscal* rental value of the house. One benefits from the fact that the tax rental value is lower than the actual rental value, which one can deduct in box 1. The reason for this benefit are on the one hand the fact that one can deduct against the nominal interest rate, while on the other hand the income will be taxed in real terms. This is also the case for an annuity mortgage, but there is a tax difference. In this case the interest on the savings will be taxed with a lower amount in box 3 and will get a deduction against a higher rate in box 1.

“Spaarhypotheek 1.0 en 2.0”

A “spaarhypotheek” is another type of interest only mortgage and over the years it has become the most popular mortgage in the Netherlands. Again, one does not repay the mortgage in this case and therefore one profits optimally from the interest tax deduction.

The loan is not repaid during the term and therefore remains the same during the term. The discounted value of the interest payments are equal to the discounted value of all interest payments of the option "Do not repay, save in box 3", in which one does not repay the loan during the term. The difference with the “not repay, save in box 3 option” is that the savings portion of this loan will under certain conditions be fiscally treated in Box 1.

The annual savings part will be the same as in the previous option, namely the annuity payment minus the interest that has to be paid. However in this case there will be saved more than with the "not repay, but save in Box 3" option because in that case the savings are taxed in box 3 and in this case the savings will be tax free. However, eventually the savings will be taxed in box 1 after the term, which can be partly tax free if it meets the conditions of Article 3.118 Income Tax Act 2001.

The ‘spaarhypotheek’ is not an attractive option for new mortgages anymore since January 1, 2013. To encourage people to repay the mortgage and in the same time to make it possible to release equity at later age, the ‘spaarhypotheek 2.0’ can be introduced. With this mortgage one will only get tax deduction for the difference between the interest paid and the interest received. There will no longer be a double benefit. It will therefore have the same tax treatment as an annuity mortgage. The tax consequences of the 2.0 version of this mortgage will also extensively discussed.

Fiscal consequences for ‘Spaarhypotheek 1.0’

As with the previous options we present here first that there is economic and legal ownership of the house with the result that tax regime of being a homeowner comes into effect. The new rules on deductibility also affects the tax treatment of a ‘spaarhypotheek 1.0’. Before I describe these effects I will describe the tax treatment of a closed ‘spaarhypotheek 1.0’ before to January 1, 2013 first.

The tax treatment of a spaarhypotheek 1.0 is extremely beneficial to consumers. People do not repay the mortgage during the term, but save at the same interest rate as the interest rate on the mortgage. The mortgage actually actually contains two components, the mortgage loan and the savings. With the spaarhypotheek 1.0 the savings will be, under certain requirements, tax free during the term. These requirements are being described in the articles 3.116 and 3.118 Income Tax Act 2001.

The advantage over an annuity mortgage is as follows. With an annuity mortgage one repays the mortgage during the term. The interest you pay on the loan will become smaller during the term and therefore the deduction of this interest on the income will be smaller. With a spaarhypotheek 1.0 the debt remains the same during the term, thus one gets full interest deduction mortgage during the term and one gets interest on the savings part which is taxed only at the end of the term, whereas then a part of this can be tax free as well.

As of January 1, 2013, this benefit shall not apply and new rules were introduced on this mortgage. One gets, as previously described, the mortgage interest deduction only if you pay off a mortgage under at least an annuity scheme. This kind of mortgage is therefore not attractive anymore, but for all existing mortgages the advantage described above remains the same.

For this option as well people have to pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. Based on the property value and a corresponding rate this notional rental value has to be paid. The total of this tax paid during the term, is calculated by using the statutory rate of the total rental value that is enjoyed during the term of the loan.

Fiscal consequences for 'Spaarhypotheek 2.0'

With the purchase of a spaarhypotheek 2.0 one owns a house and the tax rules of section 3.6 of the Income Tax Act 2001 will apply. The spaarhypotheek 2.0 wants to smaller down the excessive benefits of the spaarhypotheek 1.0 and at the same time be future-proof. Future-proof in the sense of allowing people to release their equity at a higher age.

The difference between a spaarhypotheek 1.0 and a spaarhypotheek 2.0 lies in the tax treatment. The mortgage interest deduction will no longer be full during the term, but one will get a deduction for the difference between the interest paid on the mortgage, which remains the same during the term, and the interest received on the savings, which is built annuity during the term. This balance is equal to the mortgage interest on an annuity repayment. In this spaarhypotheek 2.0 one does not repay by an annuity scheme, but one does have the tax treatment of an annuity scheme and therefore does not profit from higher tax deductions or whatsoever.

For this option as well people have to pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. Based on the property value and a corresponding rate this notional rental value has to be paid. The total of this tax paid during the term, is calculated by using the statutory rate of the total rental value that is enjoyed during the term of the loan.

The total amount of money that is taxable in box 1 are the total amount of mortgage interest deduction, based on article 3.120 Income Tax Act 2001, plus the notional rental value for owner occupiers, based on article 3.112 Income Tax Act 2001. If this balance is positive, for example because people have a small mortgage debt and the notional rental value exceeds the interest payments on the debt, article 3.123a applies. This article states that if this balance is positive people get an extra deduction with the value of that positive balance, because of the fact that there is no or slight mortgage debt.

Rent and save

This option assumes that the rent you pay is subject to annual changes and rises with inflation. Furthermore, we assume that the tenant saves as much as a buyer, including the appreciation of the property the buyer owns. The cash flows of buyers and tenants are equal to the amount one pays with an annuity mortgage. The rent payable is calculated by multiplying the real interest rate with the value of the house. The savings of the tenant are equal to the annuity of a buyer plus the appreciation of the home minus the rent one has to pay. With rising house prices, the savings portion of an annuity are larger, since it increases the nominal interest rate and this will result in greater savings. The rent increases with a higher inflation, but at the same time the savings part of the annuity also increased, resulting in greater savings. This mechanism follows the line of the calculation of the savings part of an annuity. At the end of the term, the discounted savings therefore exactly equalize the total discounted wealth created in the house with an annuity repayment.

Fiscal consequences for rent and save

A tenant does not own property, as the property is not in the hands of the tenant. This means that you have to pay the notional rental tax, but that one does not enjoy the benefit of the mortgage.

In this case, the monthly payments are equal to the payment of an annuity. Here, however, the payment contains two parts, namely a rental payment and a savings part. This savings part will be taxed in box 3 according to 5.1 Income Tax Act 2001. Total tax, as a percentage of the value of the home, will come down to the discounted value of all rent payments box 3 times the rate.

§ 8.3. "Equity release" phase

§ 8.3.1. Different ways of releasing equity

§ 8.3.1.1 The reverse mortgage

The reverse mortgage is already extensively discussed in this thesis. With this product one again closes a loan on the house. People get a part of the value of the house paid out and people can use this liquidized housing wealth for whatever they want. Normally someone pays a certain interest on a mortgage. This is also the case for a reverse mortgage, however the actual rent is not paid directly, but will be credited to the loan. During the term people therefore do not have higher monthly costs. The mortgage plus interest will be paid off the moment the consumer leaves the house, for instance due to relocation or death. This can be done by selling the house, or for instance by family who want to keep the house.

The liquidized housing wealth can be paid off in different ways. One can cash the full amount at once, but people can also choose for an annuity. In such an annuity people get paid a certain amount periodically, mostly for the rest of their lives. This amount can be used, for example, as a supplement to retirement income. With this annuity people can cover their longevity. There is also the option to release only a part of the equity in the house, whereas the part that remains will be set for heirs.

The payout on a reverse mortgage depends on multiple factors. When we assume an annuity payment for 100% of the value of the house, the payment still depends on certain risks, such as longevity and the residential value risk. These risks will be discounted in the payout to the consumer.

Pros and cons

With a reverse mortgage people remain owner of the house and as a result, when one does leave the house early, people only have to pay back the loan at that time. One can immediately release equity without additional monthly costs, while the interest will be credited to the debt. This can be experienced as a huge advantage, since the target group for this product are the "income poor, house rich". These are the people who have a retirement income consisting of an AOW and possibly a small extra pension income and they wish to complement it. A reverse mortgage combined with an annuity payment can provide this.

In addition, it is also an advantage that people can continue to live in their own house for as long as they want to. Most of these reverse mortgage products contain a certain guarantee, called the 'no negative equity guarantee'. With this guarantee, the consumer has the certainty that if they live longer than expected and the debt exceeds the value of the house, they can continue to live in that house. This risk, the longevity risk, lies with the seller of the product. When people eventually leave the house, the house will be sold and with that the debt will be paid off. If the proceeds are less than the value of the accrued debt this risk will be on behalf of the provider.

This last pro for the consumer is obviously a con for the provider of the product. For them the reverse mortgage is not that attractive in a financial way since the maturity is uncertain. A provider does not know when and if he can cash, while this depends on the life of the consumer. In addition, there is also the residential value risk for the provider. Especially with the current economic crisis it is unknown how house prices will develop in the future. This causes additional uncertainties for the provider and these will be discounted in the amount that the consumer gets.

This is one of the reasons why the product is not that popular. For the provider the risks are very high and therefore there are only a few providers who want to sell it. With that the product keeps being expensive, while there are a few to no competitors in the market. To make the product interesting for providers, the government could cover part of the risks. In the US this happened with the reverse mortgages, where the government covered the 'no negative equity' guarantee. The government can justify this guarantee, while with this product people can take care of themselves in a better way. They can pay for their own health care costs et cetera.

§ 8.3.1.2 Sell the bare equity, keep the usufruct

The product

This construction was sold in the Netherlands as "Torenstad Verzilverd Wonen", as discussed earlier in this thesis. With this product one sells the bare ownership of the house, but retains the usufruct. As long as people can or want to they can stay in that house, without having to pay any rent. Since only the bare ownership part of the house is sold, people only liquidize this part of the house.

People can do whatever they want with the liquidized money, they can for instance travel but they also can use it as a supplement to their pension income. People can get the payout also in an annuity. This could be ideal for the target group of this product 'the income poor, house rich'.

The longevity risk, and therefore the fact that people stay in the house longer than expected, lies with the provider of the product, while the consumer can stay in the house for free for as long as he or she wants. Next to that also the residential value risk and the cost of maintenance are with the provider, while he is the owner of the house. These risks will be calculated into the amount the consumer can get with this type of releasing equity.

The consumer has the risk of dying early. If someone for instance sells the bare ownership of a house worth €300.000,- and he gets for the bare ownership part somewhat like €150.000,- and if that person then dies the day after selling the bare ownership, he sold his house for a relatively low amount.

The value of the bare ownership is calculated by reducing the value of the usufruct with the total value of the house. The fiscal value of the usufruct is calculated by article 19 “Uitvoeringsbesluit” Income Tax Act.

Pros and cons

With this product people sell a part of their house but they do not have to pay any rent, so the monthly costs will not be influenced. A huge pro is therefore that people do not have to have any cares about the housing aspect in their lives, now and in the future. Also the maintenance costs are taken away from them.

From the survey we see that one of the biggest disadvantages of a reverse mortgage is the fact that people feel that they are building up a new debt on the house. This disadvantage does not come with this product, since one does not borrow against the house but sells it.

Another disadvantage people can have when they release their equity is the feeling that there will be less left for the children. This disadvantage is bigger with this product than with the reverse mortgage, since the risk of dying early lies with the consumer in this case.

A provider of this product has to take huge risks. Not only the longevity risk lies with them, but also the residential value risk and the maintenance costs. If the consumer has sold the house, moral hazard can be the case.¹⁵¹ People do no longer own the house and with that they can get the feeling that they do not have to maintain it at all. The value of the house can reduce by this and therefore the providers will take this into account when they value the bare ownership.

The government can play a role as well to make it more attractive for providers to sell these kind of products.

§ 8.3.1.3 Sale and rent back

The product

The sale and rent back construction has been described earlier in chapter three of this thesis. The owner of the house sells the house to a provider of this product and then he or she rents back this house. The longevity risk lies with the consumer, since he has to pay rent while living in the house. Previous equity release products took this risk away from the consumers, but on the other hand with this product the amount someone can liquidize is higher than with the other products.

With this product someone is not bound by the house they previously owned. They liquidized the house and if someone gets an annuity from the liquidized wealth one can moves and still get the money. If

¹⁵¹ Moral hazard houdt in dat mensen zich anders gaan gedragen naarmate men zelf niet de risico's loopt, in casu het onderhoudsrisico.

someone dies on day after selling the house, they sold the house for the market price and therefore this risk of dying early and with that lose a lot on the house is not there.

Pros and cons

Pros of this type of releasing equity are for instance that the annuity is not stuck on the house. People can therefore move to another house without any financial consequences. The housing market is therefore more flexible than with the other products, where people have to stay in the house to profit optimally. Financially it is the most optimal way of releasing equity as well, if the bequest motive is not that important, while people liquidize more than with the other two products described before. With a reverse mortgage for instance the debt of someone who dies early is really low and therefore most of the value of the house will belong to the family of that person. With this product you sell the house and if you buy an annuity from it and die early there is nothing left for the heirs.

If the bequest motive of someone is very high, he or she can also decide to keep a part of the released equity apart from the annuity and therefore there will be something left for the heirs if that person dies. Consequence will be that the annuity payment now will be lower.

A disadvantage of this product is the fact that providers should be interested in the house of the consumer. Therefore the product is not available for everyone, while the housing value of houses in some parts of the country are not as certain to stay the same or grow as houses in other parts of the country. For the Amvest product discussed before houses located in certain parts of Limburg, Drenthe and Zeeland were ruled out.

§ 8.3.1.4 Spaarhypotheek 2.0

The product

With the original spaarhypotheek, fiscally people were not paying off their mortgage. The mortgage interest, and therefore also the deduction of it, stayed high during the term. In the meanwhile people saved on a savings account primarily to pay off the mortgage after the term, against the same interest rate. These savings would not be treated fiscally in box 3, but in box 1 instead, where the interest on the savings was exempted from tax, till the savings were used. The savings were used after the term and normally this capital would be taxed in box 1, but with this spaarhypotheek a part of it was exempted as well. Per January 1, 2013, this version of the spaarhypotheek is no longer attractive anymore due to new regulation.

As described in the paying off mortgage phase, the idea exists to introduce a new kind of spaarhypotheek, the spaarhypotheek 2.0. The characteristics in the paying off mortgage phase were described earlier, whereas we will describe the characteristics of the equity release phase here.

In the equity release phase the saved amount will be used for for instance retirement income. This can for instance be done by buying a reverse mortgage out of it. People can also get the money out of the account

on a lump sum basis. If people get money from this account, this amount will be taxed in box 1. People saved on a tax free basis in the paying off mortgage phase and will now pay tax when they use it.

Pros and cons

With this construction someone builds up equity by saving on an account and this wealth can be used in a later stage, in the equity release phase. Someone then buys for instance a reverse mortgage with this money and therefore has the advantages and disadvantages of the reverse mortgage.

§ 8.3.2 Economic intuition in the equity release phase

In this part of the thesis I will describe the economic intuition and the fiscal consequences of the different ways equity can be released. In appendix B the formulas are described.

§ 8.3.2.1 Economic intuition behind the different options in the mortgage phase and their fiscal consequences

Calculating the bare ownership and the usufruct

The value of the house increases with the house inflation. We assume that the equity release phase is fixed and contains m years. The value of the house at the end of the equity release phase is therefore equal to the value of the house at $t=0$ multiplied with the house inflation to the power $t=m$. This amount should then be discounted by dividing it by the nominal interest rate to the power m . This is exactly the value of the house at the end of the equity release phase, or, to put it differently, the value of the bare equity during the equity release phase.

At the beginning of the equity release phase the value of the house has two components. On the one hand the residual value of the house and on the other hand the rental value of the house. The bare ownership is the residual value as a percentage of the value of the house at the beginning of the equity release phase. To calculate this we should calculate the value of the house at the end of the equity release phase first. This can be done by multiplying the value of the house at the beginning of the equity release phase with the housing inflation to the power m . To discount this we should divide this amount by the nominal interest rate to the power m . With this we get the discounted value of the bare ownership, equal to the residual value of the house at the beginning of the equity release phase.¹⁵²

The usufruct is the total rental value of the house, which is used during the equity release phase. This amount is calculated by multiplying the value of the house at the beginning of the equity release phase with the housing appreciation during the years of the equity release phase. This then should be discounted to get the value at the beginning of the equity release phase.

Since these two components together represent the total value of the house, we can also calculate the percentage of one part in the house by calculating 1 minus the percentage of the other part in the house.

Reverse mortgage

With the reverse mortgage people can release equity out of the bare ownership of the house. Again we assume a fixed period of m years. A second assumption is that the payout is done by annuity and not lump sum. The released amount will therefore be equal to the discounted value of the sum of all paid annuities

¹⁵² To calculate the value of the bare ownership we should multiply the value of the house with the housing inflation to the power m ($W_0 * (1 + \pi)^m$). This amount should then be divided by the interest rate to the power m (or $(W_0 * (1 + \pi)^m) * (1 + r)^{-m}$). This calculation is equal to the value of the house divided by the real interest rate to the power m ($W_0 * (1 + \pi)^m * (1 + r)^{-m} = W_0 * (1 + \hat{r})^{-m}$).

from the beginning till the end of the equity release phase. With this we can calculate the yearly payment.

People will be paid by an annuity. If this annuity was taxed in an economic fair way, we should know how many equity is left in the annuity after t years. The economic value of the remaining annuity should then be taxed every year. In time this will be lower and lower, since the value of the remaining annuity will be lower as well. In fact the equity part in the house will become smaller and smaller. In the paying off mortgage phase exactly the opposite is the case. There the equity part becomes bigger and the debt part becomes smaller in time. This is exactly the reversed characteristic of a reverse mortgage.

However, in Dutch taxation we use a fiscal fiction to determine the economic value of the remaining annuity, as we will discuss in the following part.

Fiscal consequences for a reverse mortgage

With buying a reverse mortgage one stays owner of the house, according to article 3.111 Income Tax Act 2001.

The mortgage interest deduction does not apply for the rent paid on the debt, since we assumed a previous phase of 30 years. Since this deduction is only possible for 30 years, according to art. 10 bis sub 1 jo. Art 10 bis sub 10 Income Tax Act, people cannot use this deduction anymore in the equity release phase. The debt therefore should be taken into account in box 3.

In addition home owners in the Netherlands have to pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. But since people do not have any housing debt in box 1 anymore article 3.123a Income Tax Act will apply. People will get a tax deduction for the notional rental value they have to pay.

The annuity one gets by releasing equity with a reverse mortgage will be classified as being a 'periodieke uitkering' (a periodic benefit), and therefor will be taxed in box 3. To classify as such, this payment should meet a few characteristics,¹⁵³ which is the case here.

In box 3 these periodic payments are valued based on what article 5.23 Income Tax Act jo. Article 19 'Uitvoeringsbesluit' Income Tax Act state. Their value will be calculated by multiplying the yearly income out of these periodic payments with a certain age-dependent factor. This will then be taxed by the tax rate of box 3 being 30% of a fixed return of 4%.

¹⁵³ HR 23 juni 1954, nr. 11600, BNB 1954/344.

As described here, the value of the annuity is determined by a fiction in the fiscal system, based on the rules of article 19 'Uitvoeringsbesluit' Income Tax Act 2001.

Selling the bare ownership, keep the usufruct

With this option of releasing equity, only the bare ownership will be liquidized as well as with a reverse mortgage. People liquidize the value of the bare ownership and with that they buy an annuity. The annuity payments here are equal to those with a reverse mortgage, since in that case also only the bare ownership will be sold.

The difference between these two products is that in this case people do no longer have the ownership of the house. People do have the right to stay in the house for as long as they want or can. This right will be valued and taxed in box 3, also using a fiscal fiction to calculate the value of this right.

Fiscal consequences for selling the bare ownership, while keeping the usufruct

As described above people are no longer owner of the house if they release equity with this kind of product, according to article 3.111 paragraph 1 sub b Income Tax Act. As a result people do not have to pay a notional rental value for owner-occupiers, since they are no longer owner-occupiers.

The right to live in the house for as long as people want, or the housing right, will be taxed in box 3 according to article 5.22 Income Tax Act 2001. The valuation of this right is described in the 'Uitvoeringsbesluit' of this act. Article 18 paragraph 1 and 2 state that the value of this housing right will be 4% of the value of the house. Next to that this amount will be multiplied with an age-dependent factor. This factor also depends on the gender of someone and if the housing right depends only on the life of one person or on the life of more than one person.

Next to the housing right people will also be taxed for the value of the annuity they bought with the money liquidized by selling the bare ownership. The annuity will be valued in exactly the same way as the reverse mortgage.

Total taxation therefore consist of two parts, on the one hand the value of the annuity and on the other hand the value of the housing right. Both of these parts will be taxed in box 3 with a certain fiscal fiction and not in an economically fair way.

Sale and rent back& renting

With a sale and rent back construction people sell their whole house and rent it back immediately after. In this case the bare ownership as well as the usufruct is sold and with that people buy an annuity and with that pay the rent. The situation of these people is equal to tenants who saved in the "paying off mortgage" phase.

The annuity people can buy with this type of releasing equity is higher than the previous options, since now they liquidize a higher part of the house. This annuity will be taxed in box 3, just as the situations before, only now the annuity is higher and therefore the absolute tax paid is higher as well.

With the annuity one can pay the rent, but this rent will be indexed with the inflation rate every year. The purchasing power of someone therefore will be the annuity minus the rent. This purchasing power will be the same to the options described before, only if inflation is zero. The rent will in that case be as large as the difference between the annuity payments. However if there is inflation, the rent will become higher and the purchasing power of this option will be lower than the purchasing power of the previous options.

Fiscal consequences for the sale and rent back construction

As described above people are no longer owner of the house if they release equity with this kind of product, according to article 3.111 paragraph 1 sub b Income Tax Act. As a result people do not have to pay a notional rental value for owner-occupiers, since they are no longer owner-occupiers.

The annuity payment one gets will be taxed in the same way as with a reverse mortgage and selling the bare ownership options. The annuity will be valued under a certain fiscal fiction and will be taxed in box 3. However the value of this annuity will be higher in this case, since now the complete house is liquidized and with that money an annuity has been bought. In the previous options the annuity was bought with only the value of the bare ownership. Therefore in this case the absolute amount of tax on the annuity will be higher than with the previous options.

Since one does not have a housing right, but have to pay rent instead, there is no taxation on a housing right and there will be no taxation besides the taxation on the annuity.

Spaarhypotheek 2.0

Releasing equity with a spaarhypotheek will happen in the same way as a reverse mortgage, since we have assumed that people will buy a reverse mortgage out of the savings at the beginning of the equity release phase. For the economic intuition I therefore refer to the paragraph about the reverse mortgage.

Fiscal consequences for the Spaarhypotheek 2.0

The idea of introducing a new kind of spaarhypotheek will have the following fiscal consequences.

In the equity release phase, if someone liquidizes the money out of the saving account, tax has to be paid on the interest part of the liquidized part in box 1.

Since the housing debt is not paid off with this kind of spaarhypotheek 2.0, people will have to pay interest on the debt if they liquidize some amount out of the saving account. The saving account is then no longer as large as the debt, and therefore the interest someone has to pay on the debt is higher than the interest

someone gets on the saving account. This interest cannot be deducted from the income, since the 30 years term of article 3.120 paragraph 3 Income Tax Act is already past. As someone gets older and will get more and more money from the saving account, the interest costs will be higher and higher.

There are different options possible, for instance the option described above where people can get money out of the bank account whenever they want. With this option it is way easier and more efficient to release equity, but the longevity risk is not covered. If someone becomes very old, the money on the saving account could be fully spent, while the debt on the house is still there. In that case people should move out of their house to pay off the debt.

One can also choose for a more certain option in which people do pay off the debt at the end of the “paying off mortgage phase” and then buy a reverse mortgage at the beginning of the releasing equity phase. In that case the releasing equity phase will have the same characteristics as the releasing equity phase of the reverse mortgage.

People should therefore weigh the options, for instance on which guarantees they absolutely want to have. One can choose for a higher amount of money, but it implies taking more risks, or one can choose to live with a lower amount of money but in that case they have the longevity risk covered. This depends on individual characteristics, for instance is someone risk averse or not.

Since with the spaarhypotheek 2.0 one stays owner of the house, he or she should pay a notional rental value for owner-occupiers. This tax will be calculated based on article 3.112 Income Tax Act 2001. But since people do not have any housing debt in box 1 anymore article 3.123a Income Tax Act will apply. People will get a tax deduction for the notional rental value they have to pay.

§ 8.4 The different options compared fiscally and fiscally neutral options in the future

§ 8.4.1. The different options compared fiscally

In the previous paragraphs the different options were described not only on their characteristics but also on how they are treated fiscally. All these different options will be compared in this part, by an numeric example based on the formulas in the mathematical appendix. We can then show which consequences the fiscal system has and if the system makes one option attractive and another option unattractive.

First we discuss the paying off mortgage phase without tax, to compare it with tax after that. The options discussed for the equity release phase will be compared as well. We can see exactly which effects the tax law has on the different options. In the comparison we look at the situation without inflation, but also with inflation, with that we can show the effects of inflation as well.

The results are based on a few assumptions: inflation is either 0% or 3%, housing value at t=0 is €300.000,-, nominal interest rate is 5%, real interest rate then is either 5% or 1,94%, term in paying off mortgage phase is 30 years and the term in the releasing equity phase is 20 years. Finally, the tax rates for box 1 and box 2 are 42% and 4% of 30% respectively.

Fiscal comparison paying off mortgage phase

Inflation 0%

Product Calculation	Discounted value paid interest (as a part of the housing value)	Discounted value received interest (as a part of the housing value)	Balance	Discounted value of deductible interest payments plus potential received interest payments (as a part of the housing value)	Discounted value of tax on the rental value (as a part of the housing value)	Discounted value balance of the tax that has to be paid (as a part of the housing value)
Pay off by annuity	54,85%	0%	54,85%	-23,04%	3,83%	-19,21%
Do not pay off but save in box 3 before 1-1-2013	76,86%	22,01%	54,85%	-27,00%	3,87%	-23,13%
Do not pay off but save in box 3 after 1-1-2013	76,86%	22,01%	54,85%	0%	3,87%	3,87%
Spaarhypotheek 1.0 before 1-1-2013	76,86%	22,01%	54,85%	-32,28%	3,87%	-28,41%

Spaarhypotheek 1.0 after 1-1- 2013	76,86%	22,01%	54,85%	0%	3,87%	3,87%
Spaarhypotheek 2.0	76,86%	22,01%	54,85%	-23,04%	3,83%	-19,21%

Product	Discounted value savings	Discounted value of tax that has to be paid (as a part of the housing value)
Rent and save	23,13%	0,28%

From these calculations we can see that before tax the different options do not show any differences in the balance of paid and received interest. With the new regulation per 1 January 2013, we see that not paying off the mortgage with an annuity will be very unattractive. Interest only mortgages closed before this date are still very attractive and have a huge advantage compared to the annuity mortgage. Also we can see that the rent option is not that attractive at all. Where with the buying options people can deduct paid interest, a tenant cannot deduct his paid rent and therefore the tax system treats tenants way worse than buyers. Or to put it differently, buying a house is subsidized.

Using the same assumptions as above, but now with an inflation of 3% the different product will be treated as follows:

Product	Discounted value paid interest (as a part of the housing value)	Discounted value received interest (as a part of the housing value)	Balance	Discounted value of deductible interest payments plus potential received interest payments (as a part of the housing value)	Discounted value of tax on the rental value (as a part of the housing value)	Discounted value balance of the tax that has to be paid (as a part of the housing value)
Calculation						
Pay off by annuity	54,85%	0%	54,85%	-8,95%	5,52%	-3,426%
Do not pay off but save in box 3 before 1-1-2013	76,86%	22,01%	54,85%	-12,91%	5,69%	-7,22%

Do not pay off but save in box 3 after 1-1-2013	76,86%	22,01%	54,85%	0%	5,69%	5,69%
Spaarhypotheek 1.0 before 1-1-2013	76,86%	22,01%	54,85%	-18,41%	5,69%	-12,723%
Spaarhypotheek 1.0 after 1-1-2013	76,86%	22,01%	54,85%	0%	5,69%	5,69%
Spaarhypotheek 2.0	76,86%	22,01%	54,85%	-8,95%	5,52%	-3,426%

Product	Discounted value savings	Discounted value of tax that has to be paid (as a part of the housing value)
Rent and save	56,16%	0,6739%

As we can see in the table above the balance of the various options before tax are all the same. However the options differ after tax, therefore the tax system can certainly influence the choice people make.

If someone pays off by annuity the discounted value of the interest payments is lower than with the other options. We can explain that while with this option someone actually pays off the mortgage and therefore the absolute interest payments are being reduced during the term. The mortgage interest someone pays is deductible and as we can see people with an annuity mortgage profit less from this deductibility, also because they pay less interest in an absolute way while they pay off the mortgage during the term. The notional rental tax is lower for an annuity mortgage, since someone can eventually get a deduction if the deductible interest is lower than the notional rental tax. In that case someone gets a subsidy for the notional rental tax that has to be paid, according to 3.123a Income Tax Act 2001, on account of having no or low housing debt. With the assumptions made this will be the case for the last 4 years of the term.¹⁵⁴

If someone does not pay off the mortgage but saves in box 3, he or she can profit optimally from the deductible mortgage interest. One does not pay off, the mortgage therefore stays at the same high value and the rent paid, which therefore stays high as well, is deductible from the income. On the other hand people will pay tax on the savings. These savings are taxed in, the fiscally more attractive, box 3. The notional rental tax is higher than with the annuity mortgage, since art. 3.123a Income Tax Act will not apply here and therefore someone will not get a subsidy by having no or low housing debt. The

¹⁵⁴For underlying calculations an excel file is available.

spaarhypotheek 1.0 has fiscally the most beneficial tax regulation. This can be explained as follows, people do not pay off the mortgage, therefore they profit optimally from the interest deduction and next to that the savings they make will be treated in box 1. During the term the consumer does not have to pay any tax on the savings part and therefore the optimal profit on the one hand and the non taxed savings on the other hand cause a huge advantage. For the spaarhypotheek 1.0 the article 3.123a Income Tax Act will not apply as well, since the debt is not paid off.

The spaarhypotheek 2.0 is treated in the same way as an annuity mortgage. However one will not pay off the mortgage, but one will save instead, also in box 1. The difference with the spaarhypotheek 1.0 is, that for this case the deductibility of the mortgage interest only counts for the balance between the paid interest on the one hand and the received interest on the savings on the other hand. Article 3.123a Income Tax Act will apply here, since at the end of the term the deductible interest will be lower than the notional rental tax. One will get a subsidy for the paid notional rental tax.

For mortgages closed after 1-1-2013 the deductible mortgage interest only applies if someone will pay off the mortgage at least by an annuity. To give people a better chance to release equity in their house at later age the spaarhypotheek 2.0 could be introduced. Compared with the annuity mortgage there is no fiscal advantage, but it will be easier in the equity release phase to liquidize the money.

For someone who rents a house and saves the taxation is very disadvantageous. There is no chance on deducting the rent for instance and on the other hand one should pay taxes on the savings in box 3.

Fiscal comparison equity release phase

In this part we will compare the different options of the equity release phase, being the reverse mortgage, the selling bare ownership, the sale and rent back and the two spaarhypotheeken.

Again we first consider the options without taxes and after that we will look at the options after tax. Also we look at the effects of inflation, considering one calculation with an interest rate of 0% and one calculation with an interest rate of 3%. The assumptions made in the paying off mortgage phase will have the following effects for the assumptions in the equity release phase: Housing value at the beginning of this phase will be €300.000,- in case of no inflation and €728.178,74¹⁵⁵ in case of an inflation of 3%, the nominal interest rate will be 5%, the real interest rate will therefore be either 5% (no inflation) or 1,94% (3% inflation) and the term of the equity release phase will be 20 years. The tax rates of box 1 is 42% and for box 3 4% of 30%.

¹⁵⁵ This is the value of the house if in the paying off mortgage phase the inflation rate was 3%, calculated by :
$$W_n = W_0 * (1 + \pi)^n$$

Inflation = 0%

Product Calculation	Annuity payment every year	Rental payments	Purchasing power	Tax on the annuity payment (as part of the housing value)	Tax on the housing right (as part of the housing value)	Total amount of tax paid (as part of the housing value)
Reverse mortgage ¹⁵⁶	€ 9072,77	€ 0,-	€ 9072,77	0,026	0	0,026
Selling bare ownership, while retaining the usufruct	€ 9072,77	€ 0,-	€ 9072,77	0,026	0,055	0,081
Sale and rent back ¹⁵⁷	€24072,77	€15.000,-	€ 9072,77	0,095	0	0,095

If the inflation is 0 we can see that the purchasing power of every option before tax is the same. We assume that with the spaarhypotheken of the paying off mortgage phase a reverse mortgage will be bought.

The tax treatment of a reverse mortgage will be purely on the annuity payment the consumer gets. One will stay owner of the house and therefore only the part that will be liquidized, in case the bare ownership, will be taxed. One is owner of the house and does not have to pay any tax on having the usufruct, since the housing right lies in their own hands. This also counts for both of the spaarhypotheken.

While the consumer stays the owner of the house he will have to pay a notional rental tax, based on 3.112 Income Tax Act. However the earlier discussed article 3.123a Income Tax Act 2001 applies here as well, since there is no mortgage debt anymore and therefore one will get a subsidy for the paid notional rental tax.

¹⁵⁶ The tax treatment for this option is the same for the spaarhypotheek 1.0 as well as the spaarhypotheek 2.0. In the equity release phase a reversed mortgage will be bought from the saving account

¹⁵⁷ The tax treatment of the renting option is the same as this option.

By selling the bare ownership of the house one is no longer owner of the house, economically and fiscally. Therefore one has to pay a tax on having the housing right (usufruct) of the house. The value of this housing right will be calculated by the rules of article 5.22 Income Tax Act 2001 jo. article 18 paragraph 1 and 2 Uitvoeringsbesluit Income Tax Act 2001. The calculated value will then be taxed in box 3. Next to that also the value of the annuity payment will be taxed, in the same way as for a reverse mortgage. Therefore with this option the bare ownership part (by taxing the annuity payment) as well as the usufruct part (by taxing the housing right) is taxed. This is disadvantageous compared to the reverse mortgage as we can see in the table above.

With the sale and rent back option one will sell the complete house, so bare ownership plus usufruct, and then rent it back. The annuity will lie on a higher level than the previous options, since the whole house will be liquidized. With the annuity one gets, one has to pay a rent on the house. With this option one will be taxed on the annuity payment before paying the rent, which, as said before, lies higher in this case. The absolute tax payment on this annuity will therefore be higher as well. The tax system again ensures disruptions between the different options. As we can see in the table, the sale and rent back option is taxed most heavily. In this case also the bare ownership and the usufruct are being taxed, whereas with the reverse mortgage only the bare ownership is taxed. The difference between this option and selling the bare ownership while retaining the usufruct lies in the different taxations of the usufruct part. In this case the usufruct part is taxed with the annuity payment tax, whereas with the other option the usufruct part is taxed with a taxation on the housing right. Obviously the annuity payment tax is higher than the housing right tax and therefore there are differences between these two options after tax.

Using the same assumptions as above, but now with an inflation of 3% the different product will be treated as follows:

Product	Annuity payment every year	Rental payments	Purchasing power	Tax on the annuity payment (as part of the housing value)	Tax on the housing right (as part of the housing value)	Total amount of tax paid (as part of the housing value)
Calculation						
Reverse mortgage ¹⁵⁸	€39.774,20	€0,-	€39.774,20	0,047	0	0,047

¹⁵⁸ The tax treatment for this option is the same for the spaarhypotheek 1.0 as well as the spaarhypotheek 2.0. In the equity release phase a reversed mortgage will be bought from the saving account

Selling bare ownership, while retaining the usufruct	€39.774,20	€0,-	€39.774,20	0,047	0,055	0,102
Sale and rent back ¹⁵⁹	€58.430,95	€19.566,44	€38.764,51	0,0948	0	0,095

In case of inflation we see some small differences in the purchasing power of the options. The reason why this difference applies, is that with positive inflation the rent of the sale and rent back option goes up and therefore the purchasing power of this option goes down.

The objects that will be taxed with the different options are staying the same, however the amount of taxation changes. The bare ownership with a reverse mortgage, as well as with the spaarhypotheken, will still be taxed with a taxation on the annuity payment. For the selling bare ownership, while retaining the usufruct, the bare ownership will be taxed with the taxation on the annuity payment and the usufruct will be taxed with the taxation on the housing right. Finally the sale and rent back option the bare ownership as well as the usufruct will be taxed by a taxation on the annuity payment. The renting option will be taxed in the same way as the sale and rent back option.

An general conclusion we can draw from all these calculations is that homeownership is subsidized in the Netherlands. In the paying off mortgage phase we see that all the options where you buy a house are fiscally advantageous compared to the renting option. In the equity release phase we can see that the reverse mortgage option, in which people stay owner of the house, is taxed in a more advantageous way than the other options where you sell the ownership of the house. With a reverse mortgage only the bare ownership will be taxed, whereas with the other options the usufruct will be taxed as well. Therefore with the current legislation home ownership is fiscally subsidized compared to non home ownership.

§ 8.4.2. Fiscally neutral options

With the implementation of the new regulation per January 1, 2013 people will only get the mortgage interest deduction if they pay off the mortgage during the term at least on an annuity basis. This only applies for mortgages closed after this date, existing (interest only) mortgages are not influenced. Next to his new regulation also the rate at which people can deduct their mortgage interest paid will be reduced every year with 0,5%, till it reaches 38%.

Some options we compared above are therefore no longer attractive anymore, since the mortgage interest cannot be deducted. For mortgages closed in the future there is actually no choice anymore, people have

¹⁵⁹ The tax treatment of the renting option is the same as this option.

to pay off with an annuity. This paragraph will describe three different kinds of fiscal systems on taxing housing equity that are fiscally neutral and still leave some choices for the people on how to pay off their mortgage.

Housing equity treated completely in box 3

One way to realise fiscal neutrality among the different options of building up and releasing equity is to replace the housing equity to tax box 3. With this replacement taxes and deductions that come with owning a house stay the same, but the box in which this happens differs. If housing equity was treated in box 3, the net equity in that house (WOZ value minus mortgage debt) will be taxed against a notional return of 4%, on which someone has to pay tax at a rate of 30%.

Next to that the interest on the saving accounts are taxed in box 3 as well, against the same tax rate. In that way we create fiscal neutrality. With the annuity mortgage, someone pays off the mortgage and does not save. The net equity in the house grows in time, while the debt reduces. If someone does not pay off but save, one will on the one hand have a large debt but on the other hand one will have a growing saving account. The balance between the two at a certain moment is as large as the balance between the debt and housing equity at that same time for an annuity. The tax treatment for these two options are then exactly the same and therefore the tax neutrality is a fact.

In the equity release phase the tax treatment will work as follows. Over the entire term one will liquidize the bare ownership by the options of the reverse mortgage and selling the bare ownership while retaining the usufruct. The sale and rent back option liquidizes both the bare ownership and the usufruct, but this usufruct will then be paid back by paying a rent. Overall in this case as well only the bare ownership is liquidized. We assume that there is no longevity risk or risk to die early, but that the releasing equity phase lasts as long as 20 years. In that case the tax paid after 20 years, is exactly the same for all options.

Under the current fiscal regulation home equity is taxed in box 1. In the fiscal literature a replacement to box 3 is a heavily discussed subject. In box 3 the equity that is not related to business or labor is taxed, but what is taxed is the capital one has. Since home equity is not business or labor income, some of the authors think that box 3 would be a better fit for home equity. By replacing home equity to box 3, one prevents the use of home equity as a tool for tax arbitrage, where one can deduct against high progressive tax rates in box 1 and invest equity against a low tax rate in box 3. By putting the whole home equity in box 3, this can no longer be the case, but at the same time the income effects will be incalculable.

According to Vording et al.¹⁶⁰ a change as described above is not realistic for three reasons. There would be extensive negative income effects, for years the spending aspect of buying a house was taken into account and that is why a lower tax rate on housing is justified and the government has certain goals with regard to the housing market (they want to encourage home ownership). Therefore if a replacement to

¹⁶⁰ Vording, H., Goudswaard, K.P., Caminada, C.L.J., 'De eigen woning naar box 3', 1999

box 3 will be the case, then there should be some rules to soften these effects. They propose a mortgage interest deduction against 30% and next to that a notional interest of 1,25% for the return on the housing equity.

Stevens¹⁶¹ also advocates for a replacement of home equity to box 3, while this option provides fiscal neutrality. To still encourage home ownership Stevens proposes a differentiated notional tax on the rental value, in which for instance the first €300.000,- value of the house are exempted from tax.

Tax all capital gains in box 1

A second option to retrieve fiscal neutrality is by taxing all capital gains in box 1. Current fiscal regulation taxes these capital gains mainly in box 3. So if one does not pay off the mortgage but saves instead, before the first of January of this year this someone would have a huge advantage compared to someone who pays off the mortgage. If everything will be replaced to box 1 this would no longer be the case. The deduction of paid interest would then only count for the balance between the paid interest and the received interest. This has the effect that in the paying off mortgage phase all possibilities will be taxed in the same way, it no longer pays to not repay the mortgage and at the same time we keep more options open than under the new regulation where paying off with an annuity scheme looks like the only option.

In the equity release phase the housing equity will be taxed in box 1 as well and it can get the same structure as described at the box 3 option. All capital gains are taxed, not only the housing equity but also the saving accounts. To create full neutrality the notional rental tax should be higher, to equalize not only the buying options but also the renting option.

In literature the renovation of treating housing equity still in box 1 has been defended. Van Arendonk for example says that housing equity has other characteristics than other capital in box 3, and therefore it is justified to keep it in box 1. A house provides a primary need and therefore it is justified to get a special fiscal treatment.¹⁶² However renovation of the current legislation is a necessity, whereas an increase in the notional rental tax is a must. Stevens claims that an increase of this tax will promote equality.¹⁶³ Jacobs as well describes that a higher rate of this notional rental tax is needed, he says it should be 5,7% of the WOZ value of the house. This rate is calculated by the Central Bureau for Economic Policy Analysis (CPB) as being the rental value of the house.¹⁶⁴

To create fiscal neutrality within box 1 we should tax all capital gains in box 1, as described above and next to that the notional rental tax should be higher, to create equality between buying and renting a house.

¹⁶¹ Stevens, L.G.M., *Fiscale Fascinatie*, 2006

¹⁶² Arendonk, H.P.A.M., van, 'Belastingheffing van de eigen woning: nieuwbouw of toch maar renovatie', MBB 2005/09

¹⁶³ Stevens, L.G.M., *Belasting: weggegooid geld?*, 2002

¹⁶⁴ Centraal Planbureau, *Hervorming van het Nederlandse woonbeleid*, 2010

Defiscaliseren en consumptiebelasting invoeren

A third option in which we can reach fiscal neutrality is by defiscalising home equity and other capital and by introducing consumption tax, instead of an income and capital tax. In this case the capital no longer will be taxed, but only the purchasing power that is actually spent.

For the paying off mortgage phase the effects will be as follows. All yearly payments are the same, as we saw before, if there is no inflation. With an annuity mortgage one pays off the mortgage and pays this every year. This amount cannot be spent on something else. With the not paying off mortgage but save instead option and the spaarhypotheek options, people will not pay off the mortgage as with an annuity, but they will save that same amount that someone pays for an annuity mortgage. This amount also cannot be spent on something else. For a tenant the payment consists of two parts, paying the rent on the one hand and saving on the other hand.

For all these options there will be an equal annual payment that goes to either the mortgage, the saving account or the landlord. The way someone pays off their mortgage therefore does not have any influence on the purchasing power and therefore on the taxation. This results in a fiscally neutral system.

In the equity release phase housing equity will no longer be taxed as well, this is the effect of defiscalising this equity. Since the net purchasing power in case of no inflation is the same for every option, fiscal neutrality will be a fact. People will only be taxed if they actually use their purchasing power and buy something from it.

In literature there has been written a lot about defiscalising home equity. Boot¹⁶⁵ says that current legislation no longer serves the foal of the regulation, the total fiscal benefits of owning a house are huge and especially the people with high incomes benefit from it. Since living in a house is no source of income, but consumption the house should be defiscalised. The house is not a source of income from which your real income increases. You cannot immediately buy something from it and therefore it should not be taxed.

Rijkers and van Vijfeijken¹⁶⁶ also state that housing equity should be defiscalized. Housing equity is not an object which creates purchasing power. Since the current concept of income is based on purchasing power and housing equity does not immediately increases this purchasing power the housing equity should not be taxed.

¹⁶⁵ Boot, A.W.A., Heilige huisjes, Economisch Statistische Berichten 1997/4090, p.63

¹⁶⁶ Rijkers, A.C., Vijfeijken, I.J.F.A., van, Fiscaliteit en vermogensvorming in de inkomstenbelasting, In: Continuïteit en vernieuwing: Een visie op het belastingstelsel, Ministerie van Financiën, 2011, p. 251

Personal view

To achieve my personal view it is important to first look at the purpose of the current tax system and to then examine whether the current regulation fits, and if not how the regulation should be changed. One of the principles on which the current income tax is based is the ability to pay principle. In the parliamentary history this principle has been called the foundation of our current income tax system. When we look at housing equity from an ability to pay kind of way, we should consider whether income results out of owning a home. This is the fundamental question that needs to be answered in order to look at the way home equity should be taxed.

The deliberation that should be made here is whether the investment aspect or the spending aspect prevails when buying a house. The investment aspect implies that, if someone buys a house, this is the same as investing in a property. The buyer will in this case be equal to a landlord of a property. Where a landlord receives rent from his investment, a homeowner receives rent in kind, namely by enjoying living in it. If the investment aspect prevails, this means that home equity can be considered as a source of income and therefore it can be included in the income tax. The spending aspect implies that, if one buys a house, it is the same as investing in goods. Possessing such goods is not included in the taxation, since the use of it does not generate a return. Therefore if the spending aspect prevails, home equity should not be considered as a source of income and therefore it should not be taxed.

In my opinion the spending aspect prevails over the investment aspect. The purchase of a first house is primarily meant to provide in of the most essential requirements in life, having a roof over your head. The provision of housing, however, does not generate income. This is different when you buy a second house, from this second house you can actually generate income, for instance by renting this house. It is therefore justified that this second house is taxed in box 3 along with other equity that can gain capital. In that case the comparison with a landlord can be justified.

Under current legislation housing equity is placed in box 1, income out of labor. However from this housing equity there is no direct income generated and with that the ability to pay did not increase as well. The comparison with a landlord for the first house is therefore not justified. A landlord can get capital out of the house directly if he rents the house, while still having a roof above his own head as well. For a home owner of only one house this is not the case. Only at the time the house is sold and a possible gain has come out of it the ability to pay of this person has increased. That is the time tax can come along, and not before in my opinion. It would therefore be the right decision to defiscalize home equity.

Such a defiscalisation will have huge income and wealth effects. Therefore it is essential that this process of defiscalisation will happen gradually. The potential negative effects on the purchasing power, de financial markets and the housing market can then be moderated.

§ 8.5 Possibilities for tenants

A reverse mortgage or a sale and rent back can help homeowners to have some extra pension income at later age. The target group of these products are the people with a low pension income but high equity on the house. Research shows that homeowners have on average more equity besides the house than tenants have. The table below shows the equity of an average tenant and the equity of an average homeowner for several income groups.

Table 8.2 Average equity besides housing equity, by age, by income group and by being a tenant or a homeowner, 2002

	55-65 jaar huurders	65-75 jaar huurders	75+ huurders	totaal 55-plus huur	55-65 eigenaren	65-75 eigenaren	75+ eigenaren	totaal 55-plus koop
tot en met sociaal minimum	6.000	11.000	10.000	9.000	6.000	17.000	21.000	13.000
aandachtsgroep, boven soc.min. geen aandachts- groep, < modaal	16.000	15.000	14.000	15.000	6.000	31.000	34.000	23.000
tot 2 x modaal	33.000	53.000	44.000	42.000	20.000	48.000	54.000	42.000
> 2 x modaal	71.000	87.000	457.000 ^a	146.000	83.000	225.000	226.000	126.000
totaal	24.000	27.000	28.000	26.000	40.000	90.000	78.000	62.000

a Betreft 72 cases in WBO

Bron: WBO 2002, SCP-bewerking

To also take care of the group of tenants who do not have builded up equity in their house there are several constructions we can think of. There are for example some lease constructions, in which a tenant slowly buys the house and becomes a home owner after a certain time. In this case the advantages of buying a house, be sure to have a house, extend or refurniture the house, profit from appreciation and the mortgage interest deduction,¹⁶⁷ are combined with the motives to rent. A motive to rent is for instance having insufficient financial resources to actually buy a house. The monthly costs in such a lease construction are partly the rent and partly a payment on the house. Tenants build up housing equity in this construction and this equity can be released at later age.

A second possibility in which tenants will save more is called the SMarT program. Benartzi and Thaler¹⁶⁸ have created this program and their research showed that with some knowledge of behavioral economics you can tend to let people save more. In this program people will save a part of their salary increase automatically. People do not get used to their new salary and at the same time save more. The behavioural economics term 'procrastination' is tackled in this way. Procrastination means that people tend to delay

¹⁶⁷ A condition for the interest deduction is that the economic risks are with the consumer, otherwise you are not considered a homeowner in tax law, art. 3.111 paragraph 1 Income Tax Act 2001

¹⁶⁸ Thaler, R.H., Benartzi, S., *Save more tomorrow: Using behavioral economics to increase employee saving*, 2004

these kind of choices and say ‘with the next raise I will start to save some extra money every month’ and then eventually they do not save at all. The SMarT program was a great succes and even after the fourth pay raise 80% of the participants were still in the program. ¹⁶⁹

The saving rates of the participants were almost quadrupled and people are therefore better able to take care of themselves at later age.

The table below shows the replacement rates of participants and non participants per age people started the program and per income group. Benartzi and Thaler assume that before the SMarT program people would save 4% of their income and after the SMarT program they will save about 14%, also they assume a portfolio mix of 60% shares and 40% bonds and a pension age of 65. The differences in replacement rates are huge and this emphasizes the efficiency of the program.

Table 8.2 Replacement rates before and after the SMarT program based on some assumptions¹⁷⁰

TABLE 6 MEDIAN INCOME REPLACEMENT RATIOS (%)				
INCOME	AGE			
	25	35	45	55
A. Pre-SMarT				
\$25,000	57	57	56	55
\$50,000	51	51	51	54
\$75,000	48	49	46	43
B. Post-SMarT				
\$25,000	108	90	75	63
\$50,000	98	83	70	62
\$75,000	90	77	63	50

NOTE.—The table displays the median income replacement ratios for different age and income profiles, using investment advice software by Financial Engines. The projections are based on the following assumptions: no defined-benefit pension, statutory social security benefits, employee saving rate of 4 percent before SMarT and 14 percent thereafter, employer match of 50 cents on the dollar up to 6 percent, portfolio mix of 60 percent stocks and 40 percent bonds, and retirement age of 65.

Next to that there we can also create a possibility for tenants to cover the longevity risk. Tenants tend to have high monthly costs also at later age, while they have to keep paying rent, whereas a homeowner who has paid off the mortgage does not have any housing costs anymore. An idea to tackle this longevity risk can be to let tenants pay a somewhat higher rent from 65 years on and keep doing that for 20 years long. With this higher rent the longevity risk after 85 can be covered and after 85 the tenant can stay in the house and does not have to pay any rent anymore. If he dies earlier than 85 the profit stays with the landlord, if the consumer lives longer than 85 the longevity risk lies with that same landlord as well.

¹⁶⁹ See 168

¹⁷⁰ See 168

§ 8.6. Which role can the government and pension funds play in making equity release a more common and attractive possibility

§ 8.6.1. Government

The growth of health care costs are worrying and it looks like the consumer should finance care more privately in the near future. Oftenly there are newsflashes that public health care costs are rising and the Social and Economic Counsel has advised that elderly who need long term care have to pay themselves for housing costs, welfare and food. Also the AWBZ, the Exceptional Medical Expenses Act, should be limited to the cost of care that people cannot pay themselves and tools like rollators can be financed by people themselves easily. All these messages tend to higher private payments for care in the future.

At this time, the equity in the house is not used that much for financing costs at old age, but in the near future there could be a greater need to do this. With the rising costs of health care and the increasing private payment that probably will be associated with these rising costs, it is important that people have builded up some equity at later age, so they can take care of themselves in a better way. One way to build up this equity is by buying a house and pay off the mortgage. Fiscal regulation of before 1 January 2013 made people not want to pay off the mortgage, since by not paying off they got a huge interest deduction from their income. The interest only mortgages were therefore very popular in the Netherlands. From this year on it is fiscally not attractive anymore to not payoff the mortgage. This is a good thing, while people now are encouraged to pay off the mortgage and with that building up equity in the house.

But in order to use this kind of equity at later age, a proper equity release market should be there, otherwise people can have a whole lot of equity in the house but they cannot use it to pay for health care for instance. From the panel research we learned that most people are willing to get their equity released, but only for purposes as health care and adjustments in the house to make it better possible to stay there longer. Since health care costs will probably be paid more privately in the future, the need for a equity release market can grow as well. The government can help to develop such a market, by bringing certain parties together and develop with them some good and reliable product, by fiscally stimulating paying off mortgage and by fiscally stimulating these products.

§ 8.6.2 The pension sector

From the panel research we learned that people think of a pension fund as being the most trustable provider of a reverse mortgage compared with banks, government and insurers. Other research shows that pension funds compared to other parties are a reliable partner to the consumer.¹⁷¹

The current housing market is down and from various angles, people say the Dutch pension funds should invest in Dutch mortgages in order to help this market. A pension fund of course has a huge

¹⁷¹ Zie bijvoorbeeld tabel 2.1

investmentpower, but always needs to prioritize the needs of their members. If there are other investments with the same risk and against higher returns, an investment in the Dutch housing market will jeopardize the pension income of the members of that pension fund.

By not investing in Dutch mortgages because of lower returns pension funds will serve the macro interest of its members. The micro interests of these members can be completely different. For younger members who want to buy a house it is very difficult in the current market to get a mortgage now. For older members who have huge equity in their house and who want to liquidize it by selling it, it is very difficult in the current market to get a buyer for the house. Therefore with the huge investment power of pension funds the micro needs of their members can be served.

In the future people will have to finance more privately, due to the rising health care costs, the rising life expectancy and aging population, in order to keep certain provisions at their current levels. The necessity of releasing equity can therefore be increasing in the near future, people will need this equity. It is important that at time there are products on the market that meet the needs of the consumer and at the same time do not chase away providers, to keep the product viable in the long term.

There might be a role there for pension funds and according to the panel research consumers trust pension funds to be a provider of such a product, more than other parties like the government or banks. Pension funds can also play a role as investor. The two largest pension providers in the Netherlands, ABP and PGGM, have recently called for a National Mortgage Bank, in which the pension funds are willing to invest.¹⁷²

Next to that we can also look for different options of building up pension. For instance instead of paying a certain premium every month to the pension fund, consumers can use this premium to pay off their mortgages. The pension sector can search for solutions cross domain to eventually get a reliable, transparent and easy equity release product in the future, who matches the needs of the consumer.

¹⁷² Open letter ABP PGGM, 'Financieringsproblemen woningmarkt vraagt om Nationale Hypotheekbank', 23-11-2012.

This thesis has shown different components of releasing equity. It has described the several ways in which equity can be released, the equity release market of other countries, the Dutch equity release market and it showed the needs of the consumer on this subject by a panel survey. Next to that this thesis also showed the barriers of the products and it made a economical and fiscal comparison between all possible ways to build up equity in the house and to release equity in the house.

From the experiences abroad we can conclude that the equity release market has never really been a success. The United States had, in absolute and relative terms, the largest market, but the market only grew so hard because of the government that took the longevity risk. If the government does not cover this risk, like in the United Kingdom or France, we see that the equity release market does not even start at all. If providers need to take all these risks, they will discount it in the amount they pay to the consumer. The amount paid could then be that low that consumers are not interested anymore to buy the product, while they lose their house with it and they feel that they get low value for money.

Another reason why the equity release market was not that popular in the United Kingdom, was because of the bad reputation of these products. In the eighties 'bad' products were sold. People were promised golden mountains, but the providers could not live up to these promises and this caused real big problems, even to the point that people had to leave their house. These images were brought back in publicity over and over again and this caused a huge downfall of equity release products in the UK. The current equity release market still suffers from these bad products sold in the eighties. Next to that the non popularity in the UK was also caused because it was not always rewarding to buy such a product, since with that you could lose certain social securities. This held back consumers from buying an equity release product.

The lessons we learn from the experiences abroad are huge. We can say that the reputation of the products should be guarded. This is only possible if the conditions of the product are explained clearly to the consumer and if the possibility of harrowing situations should be reduced as much as possible. In my opinion this is can only be the case if equity release options in which people borrow, like the reverse mortgage, do have the negative equity guarantee. This guarantee covers the longevity risk and therefore people can stay in their house for as long as they live or can, even if the debt becomes larger than the value of the house.

Next to that it is also very important to have clear regulation specifically for equity release products, that each provider should follow and that looks after the needs of the consumer. This also contains a periodic review to check if the providers respect the regulation. We can draw this conclusion from the experiences in the UK and we know that if the market starts of with a bad reputation it is really hard to win back that trust again, as the UK market has shown as well.

At the same time we should guard for over-regulation, as was the case in France. At the start of the market there was made a specific regulation in which providers were tied down to all sorts of rules and which eventually caused that only one provider was willing to offer an equity release product.

The panel review, held among members of PGGM in June 2012, showed the needs of people regarding housing, care and retirement. There were a few striking things that came out of it, for instance the wish of a large majority to live on their own for as long as they can, where more than 50% of the people want to live in their own house. The willingness to use the housing equity is alive, about 80% of the respondents is willing to release equity out of the house. However the majority is only willing to do so as a last resort, to avoid moving to another house.

These results show that equity release products fulfill certain needs of people. More than half of the respondents want to stay in their house for as long as possible and is willing to use the equity in that house to make it possible. An equity release product, like for instance a reverse mortgage, fulfills these needs. With the increasing costs of health care and the lower pension incomes in the future, this need can come sooner than expected. It is important that at that time there is a financial market who offers these kind of products, so the needs can be fulfilled.

The economic model described in chapter eight of this thesis the fact that since January 1, 2013 people do not have any choice on how they want to pay off their mortgage. Only one option is viable, paying off by an annuity, because otherwise people do not get the benefits of having a mortgage interest deduction. Regulation before this date did give people a choice, but it encouraged people not to pay off the mortgage during the term. To give people a choice and at the same time to not let tax formalities influence the choice people make, the spaarhypotheek 2.0 can be introduced. With this 2.0 version people only get mortgage interest deduction for the balance between the paid interest and the received interest. In thirty years one will build up a saving account as high as the mortgage debt and in the equity release phase it will become very easy to use the money on these saving accounts for for instance health care costs.

Next to that this thesis recommends to defiscalise housing equity of the first home, to create a fiscally neutral system. Current law places the house in box 1, the income box for labor. However the house does not directly generate income and therefore it will not increase the ability to pay for something. A comparison with a landlord is therefore in my opinion not justified. The comparison that has to be made is that buying a house is like buying a good. Possessing such a good is not included in taxation, as the use of it does not bring any returns. This also counts for a house. Only if and when the house is sold and with that a profit is made, someone should be taxed on this profit, since it directly increases the ability to pay.

With designing the equity release market it is very important to combine a proper regulation with a good check up if the rules are followed by the providers. Next to that products should be simple, transparent and reliable, this increases confidence in such products. Therefore it is important that the initiative of

developing these products come from reliable institutions. Pension funds can play a role in this development. Next to the role as a provider, we can also think of a role as investor.

The provider role might not be ideal for a pension fund itself. Of course there are some benefits to selling such a product themselves; they are seen as being a reliable player, they have experience with longevity risks, they keep control over what they are selling and which characteristics the products they sell have and they fulfill their role in society to meet the needs of the society. On the other hand there are a lot of disadvantages as well; a pension fund does not sell financial products, it can harm the needs of their members (can be at the expense of their pension income) and if something goes wrong, like people have to leave their houses, it can harm their reputation, while these cases will be directly linked to the pension fund. But it can not only harm the reputation afterwards, also on beforehand. As described earlier the pension benefits are under pressure, at the moment a lot of pension funds reduce the payments to the retired. If a pension fund offers a product where you as a consumer have to use equity out of your own house to refund your pension income, this can do harm to the reputation of the fund. Next to that if the equity release product a pension fund wants to offer is for instance a sale and rent back product, the pension fund will get an own real estate portfolio with private real estate, this is an area in which pension funds do not have any experience and probably are not interested in it as well.

A role as investor in a equity release project is perhaps more obvious. A pension fund has long term funds and can serve the macro needs of the Netherlands in that way. The reputation risk is now lower, since they are not directly involved in the products, as is the case if they offer the products themselves.

The need is already alive, as described earlier, and will probably only become bigger in the future. As a pension fund, and the societal role that comes with it, it is important to play a role in the development, to help people achieving a valuable future.

Finally, for future research it would be nice to look at the possibility that people use the pension premium they pay and now goes to the pension fund, can be used in the future to pay off their mortgage, for instance by using the spaarhypotheek 2.0.

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Appendix A

Calculation Florius product

Value of the house	200.000
Reverse mortgage	50.000
Fixed interest rate	7,30%
Mortgage not repaid yet	20.000
Released equity	30.000

Development debt	
year 1	50.000
year 2	53650
year 3	57566,45
year 4	61768,80085
year 5	66277,92331
year 6	71116,21171
year 7	76307,69517
year 8	81878,15692
year 9	87855,26237
year 10	94268,69652
year 11	101150,3114
year 12	108534,2841
year 13	116457,2868
year 14	124958,6688
year 15	134080,6516
year 16	143868,5392
year 17	154370,9425
year 18	165640,0213
year 19	177731,7429
year 20	190706,1601
year 21	204627,7098

Appendix B Mathematical Appendix

Paying off mortgage phase

Paying off by annuity

The annuity payment is determined by using the formula:

$$H_0 = \sum_{i=1}^n \frac{A}{(1+r)^i} = A \frac{(1+r) - (1+r)^{-(n+1)}}{1 - \frac{1}{(1+r)}} = A \frac{1 - (1+r)^{-n}}{r} \quad (1)$$

where H_t is the outstanding debt at time t, A is the annuity, r is nominal interest rate and n is de time to maturity.

The outstanding loan at time t is:

$$H_t = \sum_{i=1}^{n-t} \frac{A}{(1+r)^i} = A \frac{1 - (1+r)^{-n+t}}{r} \quad (2)$$

so that applies (use (1) to eliminate A (2):

$$\frac{H_t}{H_0} = \frac{1 - (1+r)^{-n+t}}{1 - (1+r)^{-n}} \quad (3)$$

$$\frac{H_t}{H_0(1+r)^t} = \frac{(1+r)^{-t} - (1+r)^{-n}}{1 - (1+r)^{-n}} \quad (4)$$

$$\frac{(H_0 - H_t)}{H_0(1+r)^t} = (1+r)^{-n} \frac{1 - (1+r)^{-t}}{1 - (1+r)^{-n}} \quad (5)$$

The debt part

The discounted value of all interest payments (as part of the value of the loan/property) is (value second equality follows from the substitution of (4) to eliminate H_i)

$$Y_0^{rb} \equiv r \sum_{i=1}^n \frac{H_i/H_0}{(1+r)^i} = r \sum_{i=1}^n \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} = 1 - \frac{rn(1+r)^{-n}}{1 - (1+r)^{-n}} \quad (6)$$

We can also determine the real interest payments on the debt

$$\hat{Y}_0^{rb} = \sum_{i=1}^n \frac{\hat{r} \left(\frac{H_i}{H_0} \right)}{(1+r)^i} = \frac{\hat{r} H_0}{1 - (1+r)^{-n}} \sum_{i=1}^n [(1+r)^{-i} - (1+r)^{-n}] = \hat{r} \left(\frac{1}{r} - \frac{n}{1 - (1+r)^{-n}} (1+r)^{-n} \right)$$

We interpret \hat{Y}^{rb} as the residential value financed with debt (as part of residential value). After all, there is the nominal return r on the property consisting out of the rental value h (where h is the rental value relative to the value of the property) and the (residential) inflation π (the annual increase in house prices) which implies

$$(1+h)(1+\pi) = (1+r)$$

$$h = \frac{(1+r)}{1+\pi} - 1 = \frac{r-\pi}{1+\pi} = \hat{r}$$

where \hat{r} is the real interest rate, or

$$1 + \hat{r} \equiv \frac{(1+r)}{1+\pi}$$

If by inflation, the nominal interest rate rises, it implies that \hat{Y}^{rb} decreases because the discounted value of the remaining debt after t periods:

$$\frac{H_t/H_0}{(1+r)^t} = \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} = \frac{(1+\hat{r})^{-i}(1+\pi)^{-i} - (1+\hat{r})^{-n}(1+\pi)^{-n}}{1 - (1+\hat{r})^{-n}(1+\pi)^{-n}}$$

Decreases with the nominal interest rate and thus the inflation π . Due to the higher nominal interest rates one saves in fact more in the beginning because the nominal annuity does not increase with inflation. Due to the extra savings one will pay off more. If housing inflation is higher than the price inflation it is likely that the rental value \hat{r} decreases with the housing inflation. In that case \hat{Y}^{rb} decreases as well while $\frac{\hat{r}}{r}$ decreases (Y_0^{rb} stays the same).

Rental value part

The total rental value that is enjoyed during the term of the loan is

$$Y_0^h \equiv \sum_{i=1}^n \frac{\hat{r}(1+\pi)^i(H_0/H_0)}{(1+r)^i} = \sum_{i=1}^n \frac{\hat{r}}{(1+r)^i} = 1 - (1+\hat{r})^{-n}$$

At a constant real interest rate the rental value will be constant. The price inflation therefore does not affect Y_0^h . The housing inflation (ceteris paribus price inflation), however, reduces Y_0^h while the housing inflation reduces the rental value \hat{r} , a greater part of the return on homeownership in the first one year comes in the form of capital gains.

The rental value enjoyed after the term of the loan is

$$Y_0^S = \sum_{i=1}^{\infty} \frac{\hat{r}(1+\pi)^i(H_0/H_0)}{(1+r)^i} = (1+\hat{r})^{-n} = 1 - Y_0^h$$

We can interpret this share Y_0^S as the investment part of the house and the other part Y_0^h as the consumption part. Housing equity therefore has characteristics of both being an investment as being a consumption good.

Equity share in the first n years

We calculate the total capital formation in the house if repayment happens with an annuity mortgage

$$Q_t = H_0(1+\pi)^t - H_t$$

then,

$$\frac{Q_t/H_0}{(1+r)^t} = \frac{1}{(1+\hat{r})^t} - \frac{(1+r)^{-t} - (1+r)^{-n}}{1 - (1+r)^{-n}} \quad (7)$$

This capital formation consists of two parts, namely the capital gains on the property and the repayments of the loan

$$\frac{Q_t/H_0}{(1+r)^t} = \left(\frac{1}{(1+\hat{r})^t} - \frac{1}{(1+r)^t} \right) + \frac{P_t/H_0}{(1+r)^t}$$

where the first term in parentheses to the right of this formula for the discounted capital gains on

the house is $\frac{H_0(1+\pi)^t - H_0}{(1+r)^t}$. In the second term $P_t \equiv H_0 - H_t$ so $\frac{P_t/H_0}{(1+r)^t} = \frac{H_0 - H_t}{H_0(1+r)^t} = (1 + r)^{-n} \frac{1 - (1+r)^{-t}}{1 - (1+r)^{-n}}$ where the last equation follows from (5). We therefore get

$$Q_t = H_0(1 + \pi)^t - H_0 + P_t$$

We can find this as well by finding the savings of a tenant at time i,

$$S_i = A - \hat{r}H_0(1 + \pi)^i$$

and

$$\frac{Q_t/H_0}{(1+r)^t} = \sum_{i=1}^t \frac{(S_i/H_0)}{(1+r)^i}$$

During the first n years living in the house is financed with equity with the following part:

$$\hat{Y}_0^{rs} = \hat{r} \sum_{i=1}^n \frac{(Q_i/H_0)}{(1+r)^i} = 1 - (1+\hat{r})^{-n} \hat{r} - \left(\frac{1}{r} - \frac{n}{1 - (1+r)^{-n}} (1+r)^{-n} \right) = \hat{Y}_0^h - \hat{Y}^{rb}$$

We know \hat{Y}^{rb} falls with a higher price inflation while \hat{Y}_0^h is constant. \hat{Y}^{rs} therefore rises with price inflation. The underlying intuition is that in real terms there will be paid off more if there is a higher inflation. The reason behind this is that the nominal annuity is constant, while the real annuity falls. That's why there should be saved more at the beginning.

Total equity is

$$\hat{Y}_0^{rs} + Y_0^S = 1 - \hat{Y}_0^{rb}$$

While after n years the complete house is financed with equity:

$$\hat{Y}_0^{rs} + Y_0^S = \hat{r} \sum_{i=1}^n \frac{(Q_i/H_0)}{(1+r)^i} + \hat{r} \sum_{i=1}^n \frac{(1+\pi)^t}{(1+r)^i}$$

Do not pay off mortgage, but save in box 3

The loan will not be repaid during the term. Therefore the loan will stay at H_0 during the term. The discounted value of the paid interest for an interest only mortgage is

$$Y_0^u = \sum_{i=1}^t \frac{\frac{rH_0}{(1+r)^i}}{H_0} = 1 - (1+r)^{-n} \quad (8)$$

The difference in interest payments between paying off or not paying off mortgage debt is

$$Y_0^u - Y_0^{rb} = (1+r)^{-n} \left[\frac{nr}{1-(1+r)^{-n}} - 1 \right] \quad (9)$$

$(1+r)^{-n} \frac{nr}{1-(1+r)^{-n}}$ en $(1+r)^{-n}$ both lie between 0 and 1.

If we do not pay off mortgage and save instead, then the saving we accumulate are

$$P_t = H_0 - H_t = H_0 \frac{(1+r)^{-n} - (1+r)^{-n+t}}{1-(1+r)^{-n}} = H_0 \frac{(1+r)^{-n}}{1-(1+r)^{-n}} [(1+r)^{-t} - 1] \quad (10)$$

In fact P_t is equal to the repayments with an annuity. If we do not repay, we should save these amounts.

P_t can therefore also be found by accumulating the repayments for an annuity mortgage.

If we do not repay the mortgage, the amount we can save is

$$S^p = A - rH_0 = rH_0 \frac{(1+r)^{-n}}{1-(1+r)^{-n}} \quad (11)$$

This results after t periods in the following equity

$$P_t = S^p \sum_{i=1}^t (1+r)^{t-i} = H_0 \frac{(1+r)^{-n}}{1-(1+r)^{-n}} [(1+r)^t - 1]$$

We find the discounted value of received interest on these savings by

$$Y_0^{rs} = \frac{\sum_{i=1}^n \frac{rP_i}{(1+r)^i}}{H_0} = \frac{r(1+r)^{-n}}{1-(1+r)^{-n}} \sum_{i=1}^n [1 - (1+r)^{-i}] = (1+r)^{-n} \left[\frac{nr}{1-(1+r)^{-n}} - 1 \right] \quad (12)$$

Vergelijk (9) met (12) en zie dat

$$Y_0^{rs} = Y_0^u - Y_0^{rb}$$

For the part that we save instead of repaying the mortgage we get

$$Y_0^{1-u} = \frac{\sum_{i=1}^n \frac{S^p}{(1+r)^i}}{H_0} = (1+r)^{-n} = 1 - Y_0^u \quad (13)$$

Spaarhypotheek 1.0 en Spaarhypotheek 2.0

The loan will not be repaid during the term. Therefore the loan will stay at H_0 during the term. The discounted value of the paid interest for this interest only mortgage is

$$Y_0^u = \sum_{i=1}^t \frac{\frac{rH_0}{(1+r)^i}}{H_0} = 1 - (1+r)^{-n}$$

Assuming the savings here are equal to the repayments with an annuity mortgage we can state that the equity will be build up in the same way as the “not paying off mortgage, save in box 3” option. The savings will therefore be built up as follows:

$$P_t = H_0 - H_t = H_0 \frac{(1+r)^{-n} - (1+r)^{-n+t}}{1-(1+r)^{-n}} = H_0 \frac{(1+r)^{-n}}{1-(1+r)^{-n}} [(1+r)^{-t} - 1]$$

The equity will be built up in the same way as the previous option, however in this option the saving will be built up without having to pay any taxes during the first n years.¹⁷³

Renting

We assume arbitrage between the rental and buying sector and therefore the tenant will pay $\hat{r}H_0(1 + \pi)t$ rent at time t. We assume the savings will be as high as the buyer, the cash flows are therefore equal.

The savings at time i are therefore:

$$S^i = A - \hat{r}H_0(1 + \pi)^i = H_0 \left(\frac{r}{1 - (1+r)^{-n}} - \hat{r}(1 + \pi)^i \right)$$

The savings are not constant in time, since the price inflation causes the rent to go up and therefore the savings of the tenant will go down in time.

The discounted savings are:

$$\frac{\left(\frac{S_i}{H_0}\right)}{(1+r)^i} = \frac{r}{1 - (1+r)^{-n}} (1+r)^{-i} - \hat{r}(1 + \pi)^{-i}$$

This implies

$$\frac{\left(\frac{Q_t}{H_0}\right)}{(1+r)^t} \sum_{i=1}^t \frac{\left(\frac{S_i}{H_0}\right)}{(1+r)^i} = \frac{r}{1 - (1+r)^{-n}} \sum_{i=1}^t (1+r)^{-i} - \hat{r} \sum_{i=1}^t (1 + \pi)^{-i} = (1 + \pi)^{-t} - \frac{(1+r)^{-t} - (1+r)^{-n}}{1 - (1+r)^{-n}}.$$

This is equal to (7).

§8.2.2.3. Fiscal treatment

Buying a house

Annuity mortgage

Total tax on debt is (use 6))

$$\tau^a \equiv \frac{T^a}{H_0} = -t_1 \left[1 - \frac{nr}{1 - (1+r)^{-n}} (1+r)^{-n} \right] = -t_1 Y_0^{rb} = -t_1 (Y_0^u - Y_0^{rs}), \quad (14)$$

where t_1 is the Box 1 rate. The rental value is deductible for the part this rental value is financed with debt.

Tax paid on the rental value:

$$\tau^k \equiv \frac{T^k}{H_0} = t_1 \frac{h^f}{\hat{r}} Y_0^h \quad (15)$$

where h^f is the fiscal rental value (as a percentage of the value of the house).

If the rental value tax paid is higher than the deductible mortgage interest, people get a subsidy for the rental value tax. The following formula will then count: $h^f(1 + \pi)^t \approx \frac{rH_t}{H_0} = r \frac{(1+r)^{-t} - (1+r)^{-n}}{1 - (1+r)^{-n}}$:

¹⁷³ Dit geldt onder zekere voorwaarden en tot op bepaalde hoogte.

The actual paid rental value tax will therefore not be the formula of (15), but:

$$\begin{aligned}\tau^k &\equiv \frac{T^k}{H_0} = t_1 \frac{h^f}{\hat{r}} \sum_{i=1}^n \frac{\hat{r}}{(1+\hat{r})^i} - t_1 \left(\frac{h^f}{\hat{r}} \sum_{i=t}^n \frac{\hat{r}}{(1+\hat{r})^i} - \sum_{i=t}^n \frac{\hat{r}H_i}{H_0(1+\hat{r})^i} \right) \\ &= t_1 \frac{h^f}{\hat{r}} Y_0^h - t_1 \left(\sum_{i=t}^n \frac{h^f}{(1+\hat{r})^i} - r \sum_{i=t}^n \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} \right)\end{aligned}$$

or the tax paid on the rental value of the house minus the subsidy one gets if this tax is higher than the deductible mortgage interest.

Total tax to pay is therefore

$$\tau^{ka} = \tau^a + \tau^k = t_1 Y_0^{rs} - t_1 \left(Y_0^u - \frac{h^f}{\hat{r}} Y_0^h \right) - t_1 \left(\sum_{i=t}^n \frac{h^f}{(1+\hat{r})^i} - r \sum_{i=t}^n \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} \right)$$

Do not repay mortgage, but save in box 3

We use (8) for the deductible mortgage interest and (12) for the taxed received interest

$$\tau^u \equiv \frac{T^u}{H_0} = t_1 [1 - (1+r)^{-n}] + t_3 \left\{ (1+r)^{-n} \left[\frac{nr}{1 - (1+r)^{-n}} - 1 \right] \right\} = \tau^a - (t_1 - t_3) Y_0^{rs}$$

where t_3 is the Box 3 rate, $t_3 = \frac{0,012}{r}$

Compared to an annuity mortgage we profit from the different tax rates of box 1 and box 3. Total tax to pay can therefore be written as:

$$\tau^{ku} = \tau^k + \tau^u = \tau^k + \tau^a - (t_1 - t_3) Y_0^{rs} = t_3 Y_0^{rs} - t_1 \left(Y_0^u - \frac{h^f}{\hat{r}} Y_0^h \right)$$

Spaarhypotheek 1.0

A spaarhypotheek looks fiscally like the previous option, but in this option the received interest will not be taxed:

$$\tau^s = -t_1 [1 - (1+r)^{-n}] = \tau^a - t_1 Y_0^{rs}$$

Total tax to pay will be:

$$\tau^{ks} = \tau^s + \tau^k = -t_1 \left(Y_0^u - \frac{h^f}{\hat{r}} Y_0^h \right)$$

Spaarhypotheek 2.0

A spaarhypotheek 2.0 differs from the spaarhypotheek 1.0 in deductible mortgage interest. With this option you can only deduct mortgage interest for the balance between paid interest and received interest.

This is equal to the deductible interest of an annuity mortgage

$$\tau^{s2} = \tau^a \equiv \frac{T^a}{H_0} = -t_1 \left[1 - \frac{nr}{1 - (1+r)^{-n}} (1+r)^{-n} \right] = -t_1 Y_0^{rb} = -t_1 (Y_0^u - Y_0^{rs})$$

Also one has to pay rental value tax. If this tax is higher than the deductible interest, people get a subsidy for this part. The following formula takes this into account:

$$\begin{aligned}\tau^k &\equiv \frac{T^k}{H_0} = t_1 \frac{h^f}{\hat{r}} \sum_{i=1}^n \frac{\hat{r}}{(1+\hat{r})^i} - t_1 \left(\frac{h^f}{\hat{r}} \sum_{i=t}^n \frac{\hat{r}}{(1+\hat{r})^i} - \sum_{i=t}^n \frac{\hat{r}H_i}{H_0(1+\hat{r})^i} \right) \\ &= t_1 \frac{h^f}{\hat{r}} Y_0^h - t_1 \left(\sum_{i=t}^n \frac{h^f}{(1+\hat{r})^i} - r \sum_{i=t}^n \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} \right)\end{aligned}$$

Total tax to pay is:

$$\tau^{s2k} = \tau^{ka} = \tau^a + \tau^k = t_1 Y_0^{rs} - t_1 (Y_0^u - \frac{h^f}{\hat{r}} Y_0^h) - t_1 \left(\sum_{i=t}^n \frac{h^f}{(1+\hat{r})^i} - r \sum_{i=t}^n \frac{(1+r)^{-i} - (1+r)^{-n}}{1 - (1+r)^{-n}} \right)$$

Equity release phase

Economic distinction of the bare ownership and the usufruct of a house during the equity release phase

We assume the house appreciates with housing inflation π . At the end of the equity release phase the value of the house will be $W_n(1 + \pi)^m$ where W_n is the value of the house at the end of the paying off mortgage phase.

The residual value of the house at the end of the equity release phase will be

$$\bar{Y}^S = (1+r)^{-m} W_n(1 + \pi)^m = (1 + \hat{r})^{-m} W_n$$

where \hat{r} is the real interest rate:

$$1 + \hat{r} \equiv \frac{1 + r}{1 + \pi}$$

so

$$\hat{r} \equiv \frac{r - \pi}{1 + \pi} \quad (1)$$

The residual value as percentage of the value of the house at the beginning of the equity release phase will be (or the bare ownership)

$$Y_n^S \equiv \frac{\bar{Y}^S}{W_n} = (1 + \hat{r})^{-m} \quad (2)$$

The rental value of the house at time i is

$$hW_n(1 + \pi)^i$$

where h is the rental value compared to the value of the house. The following arbitrage is alive between return on housing value and an alternative investment

$$(1+h)(1 + \pi) = (1+r)$$

this implies,

$$h = \frac{1+r}{1+\pi} - 1 = \frac{r - \pi}{1 + \pi} = \hat{r} \quad (3)$$

The rental value of the house is therefore the real interest rate. Total rental value enjoyed during the equity release phase (or the value of the usufruct) is

$$Y_n^h \equiv \hat{r} \sum_{i=1}^m \frac{(1+\pi)^i \left(\frac{W_n}{1+\pi}\right)}{(1+r)^i} = \sum_{i=1}^m \frac{\hat{r}}{(1+\hat{r})^i} = 1 - (1 + \hat{r})^{-m} \quad (4)$$

Y_n^h is equal to the value of a rental obligation who gives someone the right on the renting income during the equity release phase.

$$Y_n^h + Y_n^S = 1$$

Reverse mortgage, Spaarhypotheek 1.0 and Spaarhypotheek 2.0

Within this option someone can liquidate the bare ownership part of the house.¹⁷⁴ A homeowner can buy the following annuity from this liquidation:

$$(1 + \hat{r})^{-m} W_n = \sum_{i=1}^m \frac{A^{OH}}{(1+r)^i} = A^{OH} \frac{(1+r) - (1+r)^{m-1}}{1 - \frac{1}{1+r}} = A^{OH} \frac{1 - (1+r)^{-m}}{r}$$

so,

$$A^{OH} = r W_n \frac{(1+\hat{r})^{-m}}{1 - (1+r)^{-m}} \quad (5)$$

The value of the equity V_t in the annuity after $1 \leq t \leq m$ years in the equity release phase is equal to

$$\frac{V_t}{(1+r)^t} = \sum_{i=1}^m \frac{A^{OH}}{(1+r)^i} = A^{OH} \left(\frac{(1+r)^{-t} - (1+r)^{-m}}{r} \right) = (1 + \hat{r})^{-m} W_n \left(\frac{(1+r)^{-t} - (1+r)^{-m}}{1 - (1+r)^{-m}} \right) \quad (6)$$

V_t will be used as tax basis for a taxation on the value of the annuity in box 3, if this tax would be calculated in an economic fair way.

Total discounted value of this tax base equity at the beginning of the equity release phase will be

$$\begin{aligned} Y_n^v &\equiv \sum_{i=1}^m \frac{\left(\frac{V_i}{W_n}\right)}{(1+r)^i} = \frac{(1+\hat{r})^{-m}}{1 - (1+r)^{-m}} \left(-m(1 + \hat{r})^{-m} + \sum_{i=1}^m \frac{1}{(1+r)^i} \right) = \frac{(1+\hat{r})^{-m}}{1 - (1+r)^{-m}} \left(\frac{1 - (1+r)^{-m}}{r} - m(1 + r)^{-m} \right) \\ &= \frac{(1+\hat{r})^{-m}}{r} Y_n^{re} = \frac{Y_n^S Y_n^{re}}{r} \end{aligned} \quad (7)$$

where Y_n^S is defined in (2) and

$$Y_n^{re} \equiv \left(1 - \frac{mr}{1 - (1+r)^{-m}} (1 + r)^{-m} \right)$$

Y_n^{re} can be defined as the equity part in the nominal annuity.

The fiscal fiction used by taxing the annuity differs from the actual economic value and will be equal to

$$\hat{V}_t = A^{OH} a_t \quad (8)$$

where \hat{V}_t is the fiscal value of the remaining annuity and a_t the fiscal factor used to value the annuity, depending for instance on age.

Total discounted value of the tax base at the beginning of the equity release phase is therefore

$$\hat{Y}_n^v \equiv \sum_{i=1}^m \frac{\left(\frac{\hat{V}_i}{W_n}\right)}{(1+r)^i} = \frac{A^{OH}}{W_n} \sum_{i=1}^m \frac{a_i}{(1+r)^i} = \frac{r(1+\hat{r})^{-m}}{1 - (1+r)^{-m}} \sum_{i=1}^m \frac{a_i}{(1+r)^i} = Y_n^S \frac{r}{1 - (1+r)^{-m}} \sum_{i=1}^m \frac{a_i}{(1+r)^i} \quad (9)$$

Sell bare ownership, retain usufruct

People will liquidate the bare ownership part. From this residual value one will buy an annuity and this annuity will be exactly the same as the annuity for a reverse mortgage. For both options you only liquidate the bare ownership.

¹⁷⁴ We assume there is no longevity risk, the length of this equity release phase is fixed and equal to m .

For tax reasons the value of the housing right is important, since this will be taxed. If this housing right would be taxed in an economic fair way, the value of this housing right would be calculated with the following formula:

$$\frac{G_t}{(1+r)^t} = \sum_{i=t+1}^m \frac{hW_n(1+\pi)^i}{(1+r)^i} = W_n \sum_{i=t+1}^m \frac{\hat{r}}{(1+\hat{r})^i} = W_n ((1 + \hat{r})^{-t} - (1 + \hat{r})^{-m}) \quad (10)$$

Total discounted value of the tax base at the beginning of the equity release phase will be:

$$Y_n^G \equiv \sum_{i=1}^m \frac{G_i/W_n}{(1+r)^i} = -m(1 + \hat{r})^{-m} + \sum_{i=1}^m \frac{1}{(1+\hat{r})^i} = \frac{1-(1+\hat{r})^{-m}}{\hat{r}} - m(1 + \hat{r})^{-m} = \frac{1-(1+\hat{r})^{-m}}{\hat{r}} Y_n^{\hat{r}e} = \frac{Y_n^h Y_n^{\hat{r}e}}{\hat{r}} \quad (11)$$

where Y_n^h is defined in (4) and

$$Y_n^{\hat{r}e} \equiv (1 - \frac{m\hat{r}}{1-(1+\hat{r})^{-m}}) (1 + \hat{r})^{-m}$$

$$Y_n^{\hat{r}e} \text{ can be defined as being the equity part of a real annuity.} \quad (12)$$

The fiscal fiction of the housing right will be calculated by:

$$\hat{G}_t = W_n (1 + \pi)^t g_t \quad (13)$$

where \hat{G}_t is the fiscal value of the housing right during the equity release phase and g_t the fiscal factor that is used to value the housing right, depending on for instance age.

Total discounted value of the tax base at the beginning of the equity release phase is therefore:

$$\hat{Y}_n^G \equiv \sum_{i=1}^m \frac{\hat{G}_i/W_n}{(1+r)^i} = \sum_{i=1}^m \frac{g_i}{(1+\hat{r})^i}$$

Sale & rent back and rent

With this construction you liquidate the complete value of the house, bare ownership plus usufruct, but one will eventually pay back the usufruct by paying rent.

The annuity will be calculated as follows:

$$W_n = \sum_{i=1}^n \frac{A^h}{(1+r)^i} \quad (14)$$

so

$$A^h = \frac{rW_n}{1-(1+r)^{-n}} \quad (15)$$

The value of the annuity can be calculated in the same way as the previous option, but here the complete value of the house will be liquidated. This results in the following tax base for a box 3 tax on the value of the annuity (see 7)

$$Y_n^{vh} = \frac{Y_n^{re}}{r} \quad (16)$$

The rent one has to pay at time t of the equity release phase will be:

$$\hat{r}W_n(1 + \pi)^t$$

so the purchasing power of this option will be

$$X_t^h = \frac{A^h - \hat{r}W_n(1+\pi)^t}{(1+\pi)^t} = W_n \left(\frac{r(1+\pi)^{-t}}{1-(1+r)^{-n}} - \hat{r} \right)$$

We see that the purchasing power of the individual is equal to the previous options only if there is no inflation.

Without inflation the following formula applies

$$\frac{X^h}{W_n} = rW_n \frac{(1+r)^{-m}}{1-(1+r)^{-m}} = A^{OH}$$

Fiscal treatment

Reverse mortgage

Discounted value of total tax paid as a percentage of the value of the house at the end of the paying off mortgage phase will be

$$\tau^{OH} = 0,012 \frac{Y_n^S Y_n^{re}}{r} \quad (17)$$

The box 3 rate can be expressed as follows $t_3 = \frac{0,012}{r}$ and with that

$$\tau^{OH} = t_3 Y_n^S Y_n^{re}$$

We assume that the fiscal value of the annuity is determined in an economic correct way. In reality the tax is determined by a fiscal fiction and the following formula occurs:

$$\tau^{OH} = t_3 Y_n^S \frac{r^2}{1-(1+r)^{-m}} \sum_{i=1}^m \frac{a_t}{(1+r)^t}$$

This is the total tax paid in case of a reverse mortgage.

Selling bare ownership, retain usufruct

The housing right and value of the annuity will be taxed as follows:

$$\tau^{WB} = 0,012 * \frac{Y_n^h Y_n^{re}}{\hat{r}} + 0,012 * \frac{Y_n^S Y_n^{re}}{r} = t_3 (Y_n^h \frac{r}{\hat{r}} Y_n^{re} + (1 - Y_n^h) Y_n^{re}) \quad (18)$$

We assumed an economic fair taxation in the above formula. Actual taxation happens with a fiscal fiction. The formula that we get from this is:

$$\tau^{WB} = t_3 (r \sum_{i=1}^m \frac{g_i}{(1+\hat{r})^i} + Y_n^S \frac{r^2}{1-(1+r)^{-m}} \sum_{i=1}^m \frac{a_t}{(1+r)^t})$$

Sale and rent back en renting

With this option you liquidate the full value of the house and put it in an annuity. The tax on this annuity will be:

$$\tau^h \equiv t_3 * Y_n^{re} \quad (19)$$

(12) implies that $\tau^{wb} > \tau^h$ if $\pi > 0$.

Fiscal neutrality formulas

Housing equity completely in box 3

Paying off mortgage phase

Annuity mortgage

$$\tau^a \equiv \frac{\tau^a}{H_0} = -t_3 * Y_0^{rb} + t_3 \frac{hf}{\hat{r}} Y_0^h = -t_3 * (Y_0^u - Y_0^{rs}) + t_3 \frac{hf}{\hat{r}} Y_0^h = t_3 * Y_0^{rs}$$

Do not repay mortgage, but save in box 3

$$\tau^u \equiv \frac{\tau^u}{H_0} = -t_3 * Y_0^u + t_3 * Y_0^{rs} + t_3 \frac{hf}{\hat{r}} Y_0^h = -t_3 * (Y_0^u - Y_0^{rs}) + t_3 \frac{hf}{\hat{r}} Y_0^h = t_3 * Y_0^{rs}$$

Spaarhypotheek

$$\tau^s \equiv \frac{\tau^s}{H_0} = -t_3 * Y_0^u + t_3 * Y_0^{rs} + t_3 \frac{hf}{\hat{r}} Y_0^h = -t_3 * (Y_0^u - Y_0^{rs}) + t_3 \frac{hf}{\hat{r}} Y_0^h = t_3 * Y_0^{rs} = \tau^a = \tau^u$$

Rent and save

$$\tau^h = t_3(Y_0^{rs})$$

Equity release phase

Reverse mortgage

$$\tau^{OH} = t_3(Y_n^s + Y_n^h)$$

Selling the bare ownership, retain usufruct

$$\tau^{WB} = t_3(Y_n^s + Y_n^h) = \tau^{OH}$$

Sale and rent back

$$\tau^h = t_3(Y_n^s + Y_n^h) = \tau^{WB} = \tau^{OH}$$

Tax all capital gains in box 1

Repaying mortgage phase

Annuity mortgage

$$\tau^a \equiv \frac{T^a}{H_0} = -t_1 * Y_0^{rb} + t_1 \frac{h^f}{\hat{r}} Y_0^h = -t_1 * (Y_0^u - Y_0^{rs}) + t_1 \frac{h^f}{\hat{r}} Y_0^h = t_1 * Y_0^{rs}$$

Do not repay mortgage, but save in box 3

$$\tau^u \equiv \frac{T^u}{H_0} = -t_1 * Y_0^u + t_1 * Y_0^{rs} + t_1 \frac{h^f}{\hat{r}} Y_0^h = -t_1 * (Y_0^u - Y_0^{rs}) + t_1 \frac{h^f}{\hat{r}} Y_0^h = t_1 * (Y_0^{rs}) = \tau^a$$

Spaarhypotheek

$$\tau^s \equiv \frac{T^s}{H_0} = -t_1 * Y_0^u + t_1 * Y_0^{rs} + t_1 \frac{h^f}{\hat{r}} Y_0^h = -t_1 * (Y_0^u - Y_0^{rs}) + t_1 \frac{h^f}{\hat{r}} Y_0^h = t_1 * Y_0^{rs} = \tau^a = \tau^u$$

Rent and save

$$\tau^h = t_1(Y_0^{rs}) = \tau^a = \tau^u = \tau^s$$

Verzilverfase

Reverse mortgage

$$\tau^{OH} = t_1(Y_n^s + Y_n^h)$$

Selling the bare ownership, retain usufruct

$$\tau^{WB} = t_1(Y_n^s + Y_n^h) = \tau^{OH}$$

Sale and rent back

$$\tau^h = t_1(Y_n^s + Y_n^h) = \tau^{WB} = \tau^{OH}$$

Defiscalising

Building up mortgage phase

$$\tau^a = \tau^u = \tau^s = \tau^h = 0 * Y_0^{rs}$$

Equity release phase

$$\tau^{OH} = \tau^{WB} = \tau^h = 0 * Y_n^s$$