Downloaded from UvA-DARE, the institutional repository of the University of Amsterdam (UvA)
http://dare.uva.nl/document/353187

File ID	353187
Filename	Chapter 1: A short introduction to the Dutch housing market

SOURCE (OR PART OF THE FOLLOWING SOURCE):

Type	Dissertation
Title	Essays on the economics of housing subsidies
Author	F.P.W. Schilder
Faculty	Faculty of Economics and Business
Year	2012
Pages	123
ISBN	978 90 361 0282 7

FULL BIBLIOGRAPHIC DETAILS:
http://dare.uva.nl/record/408488

Copyright

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other then for strictly personal, individual use.

UvA-DARE is a service provided by the library of the University of Amsterdam (http://dare.uva.nl)

Chapter 1: A short introduction to the Dutch housing market

1 Introduction

The title of this thesis is "Essays on the economics of housing subsidies.". In this thesis we will study the impact of housing subsidies on the functioning of the housing market. Obviously, the institutional set-up of the housing market differs in each country. The Dutch housing market contains some features that are unique in the world and have an impact on the functioning of the market that is not easily comprehended. In order to prepare the reader somewhat for this different playing field that constitutes the Dutch housing market we shall present a short introduction. In this introduction we shall present the various subsidies and policies that are in play. We will furthermore address the, by international standards, unusual large share of social housing (e.g. Scanlon & Whitehead, 2007) and the, from an international viewpoint unfamiliar, key players in this social sector. The focus of this introductory chapter and the following empirical chapters, however, is the Dutch housing market.

This thesis consists of four bundled papers; each paper representing a chapter. Each paper deals with a topic on the Dutch housing market, the red thread throughout the thesis being the impact of subsidization on the functioning of the housing market. Since this thesis consists of four bundled papers that were written to be published in an academic journal, none of the chapters contains a somewhat complete review of the most important housing policies and subsidization instruments in the Dutch housing market. This introductory chapter will therefore contain some overlap with each of the following chapters, however, shall contain a brief, but still more in depth, review of all policies, instruments and actors than any of those following chapters. In line with the papers that make up the core of the thesis we shall focus on “normal” residential dwellings only; we thus exclude institutional dwellings (e.g. within a nursery), students’ housing and dwellings with exceptionally high or low values from our Figures and Tables. We do not update or add to the Figures of other authors; the use of other authors’ materials is solely for indication of main developments in the Dutch housing market.

This first chapter is further structured as follows: first we shall review the main institutions that make up the Dutch owner-occupied housing sector. This section will focus primarily on the subsidies and taxes on home ownership and provide little information on the players in the market. This is done since ownership is dispersed and each of the individual players can not affect the functioning of the market. The opposite holds in the rented sector: this sector is owned by a relatively small number of very large landlords with high market power. The third section therefore starts with a description of the owners of rented property. The third section then reviews the main subsidies that are granted to consumers in the rented sector. The fourth section of the paper will shortly describe some of the main consequences of the institutional set-up and describe how this set-up contributes to the recent developments in the housing market. The final section of this chapter shall contain the traditional look forward onto the upcoming four chapters that form the core of this thesis.

2 The owner-occupied sector

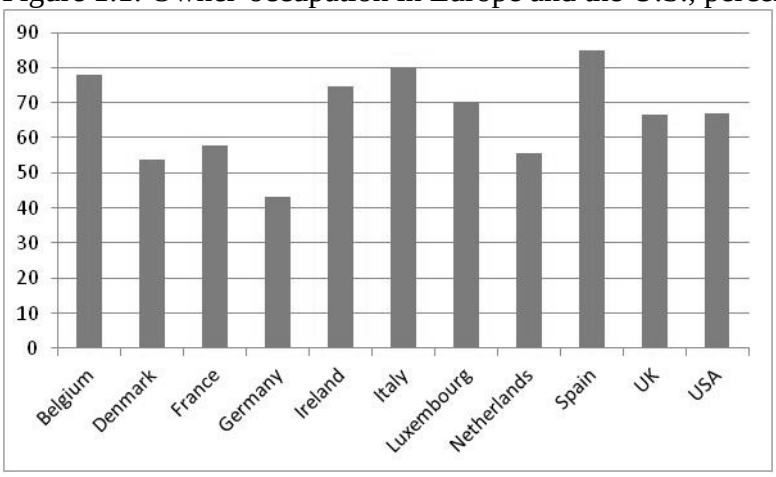
A discussion of the Dutch owner-occupied sector inevitably covers the fiscal subsidization of owner-occupied property. The fiscal system in the Netherlands belongs to the most generous in the world with respect to the treatment of owner-occupied housing and includes, among other things, (almost) unlimited interest deductibility of mortgage interest from income tax. There are, however, also other factors, both institutional and non-institutional, that are of importance for understanding the functioning of the owner-occupied market.

In the following section we shall discuss some of the key details in understanding the Dutch owner-occupied sector. The remainder of this paragraph is organized as follows: first we will present some statistics on the owner-occupied sector and its development in size and price over time. Then we will present a few economic fundamentals that are generally believed to relate to house price dynamics (see e.g. De Wit *et al.* (2010) and Tsatsaronis & Zhu (2004)). Thereafter we discuss some recent policy changes that, in line with the results of Fisher and Jaffe (2003), help explain the development of the owner-occupied sector. After that, we will describe two important non-fiscal housing finance issues: mortgage supply and home equity and some recent regulatory changes. We shall conclude this paragraph with a description of the fiscal treatment of owner-occupied housing.

2.1 Size and development over time

The Dutch owner-occupied sector is of average size from an international perspective (Scanlon & Whitehead, 2007). In 2009 roughly 55% of all housing in the Netherlands is owner-occupied. This can be seen in Figure 1.1, which has been taken from the European Mortgage Federation.

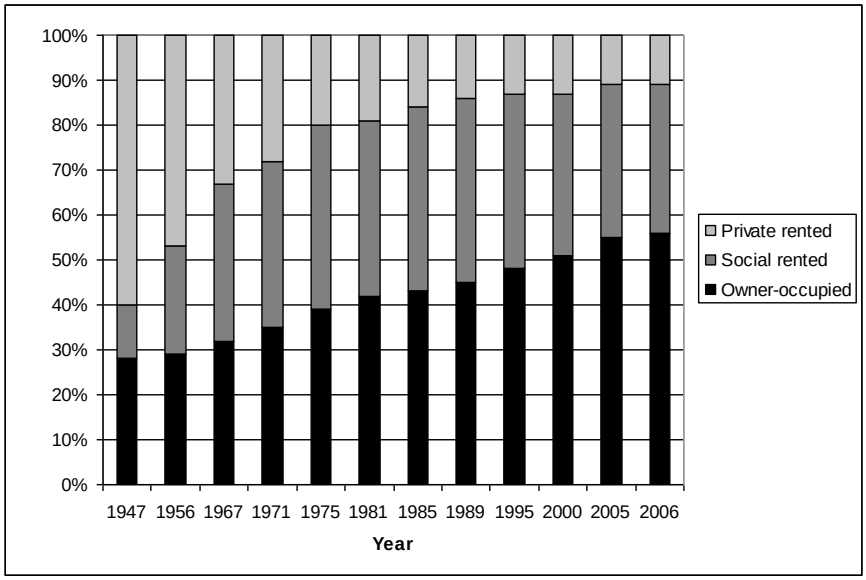
Figure 1.1: Owner-occupation in Europe and the U.S., percentage of housing stock



Note: Year of presented figures differs per country and ranges from 2007 to 2010
Source: Hypostat, European Mortgage Federation, 2011

The relatively average size of the owner-occupied sector is, however, the result of a steady development that has been going on for decades, as can be seen in Figure 1.2.

Figure 1.2: Development housing sectors over time, 1947 - 2006

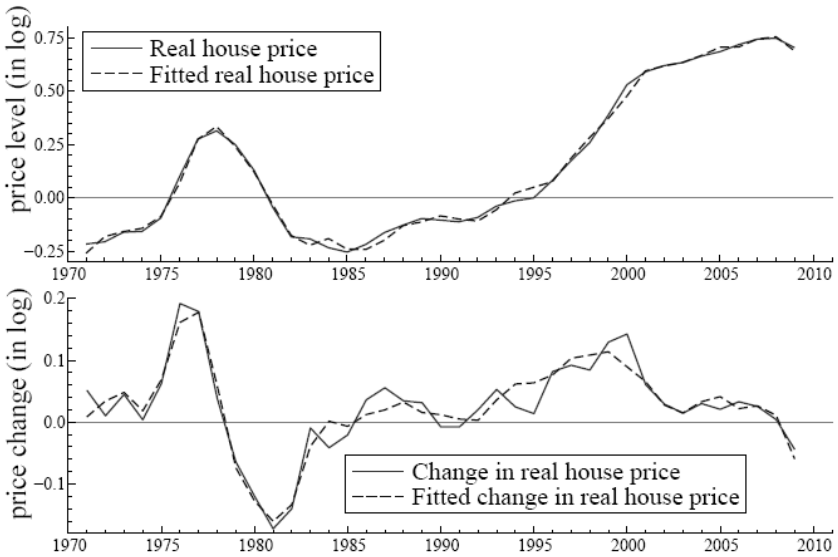


Source: Haffner *et al.* (2009)

Figure 1.2 shows that the rented sector dominated the Dutch housing market after World War II, and the owner-occupied sector played a minor role. Until the late 1990's, around the turn of the millennium, the rented sector continued being the largest housing sector in the Netherlands. The private rented sector represented some 60% of the rented sector right after World War II; its market share after the turn of the millennium diminished to just over 10%. Although the absolute size of the rented sector continued to increase until the turn of the millennium (it has slightly decreased since), its relative size has been decreasing for decades. This is obviously the result of the owner-occupied sector growing at a faster pace than the rented sector. The relative size of the owner-occupied sector increased over time for several reasons we shall discuss further on in this chapter, including favorable economic conditions for owner-occupancy combined with unfavorable conditions for private landlords.

The price of owner-occupied housing in the Netherlands has known a remarkably long period of continuous price increases from the mid-1980's until roughly 2007. Before the mid-1980's the prices had dropped strongly after a peak in the late 1970's. After the global credit crisis prices of owner-occupied housing have started to drop again, albeit at a much slower pace than in the late 1970's:

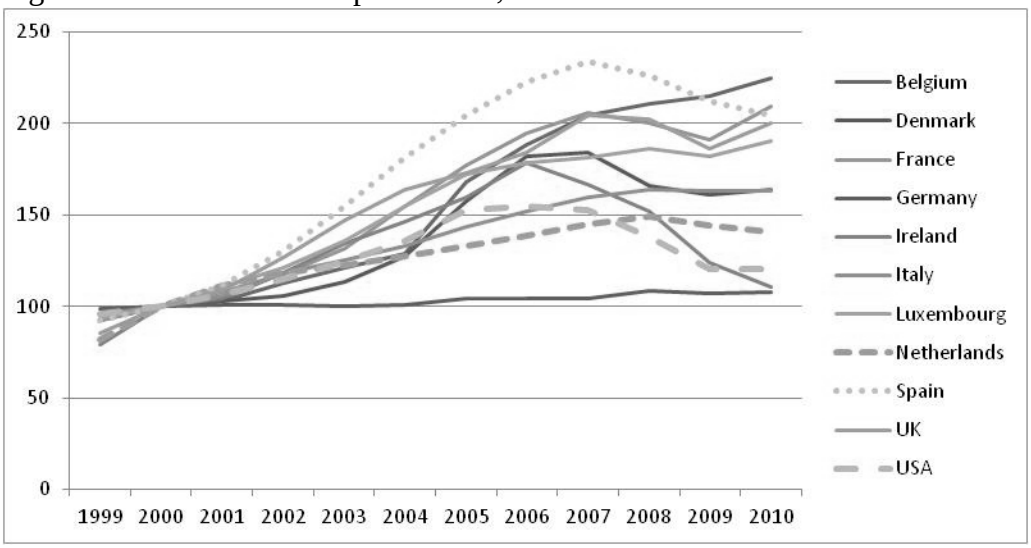
Figure 1.3: House price development in the Netherlands, 1970 - 2010



Source: Francke (2010)

The data from the European Mortgage Federation do not show decreases in house prices throughout the entire European Union. In fact, for some countries such as Poland and Sweden price increases are reported. There are also countries where significant price decreases have been reported, of which Spain and the United States are the best known examples:

Figure 1.4: Nominal house price index, 1999 - 2010



Source: Hypostat, European Mortgage Federation, 2011

In Table 1.1 some descriptive statistics are summarized for owner-occupied housing in The Netherlands to present a picture of what the sector looks like. These statistics are for the year 2008. A similar overview, but over the rented sector, may be found in Table 1.5. Comparing both tables will show the reader that the average quality of housing in the owner-occupied sector is much higher than in the rented sector.

Table 1.1: Descriptive statistics owner-occupied housing, 2008

	Single-family	Multi-family	
Type of dwelling			
Detached	25%	8%	Maisonette
Semi-detached	23%	14%	Split-level (ground)
Corner	16%	78%	Other appartment
Row / back-to-back	33%		
Other house	2%		
Value (*1.000, €)	295	216	
Floor size (m^2)	152	96	
Rooms	5	3	
Construction year	1968	1969	
Number of dwellings (*1.000)	3.235	542	
Market share	86%	14%	

Source: WoON 2009

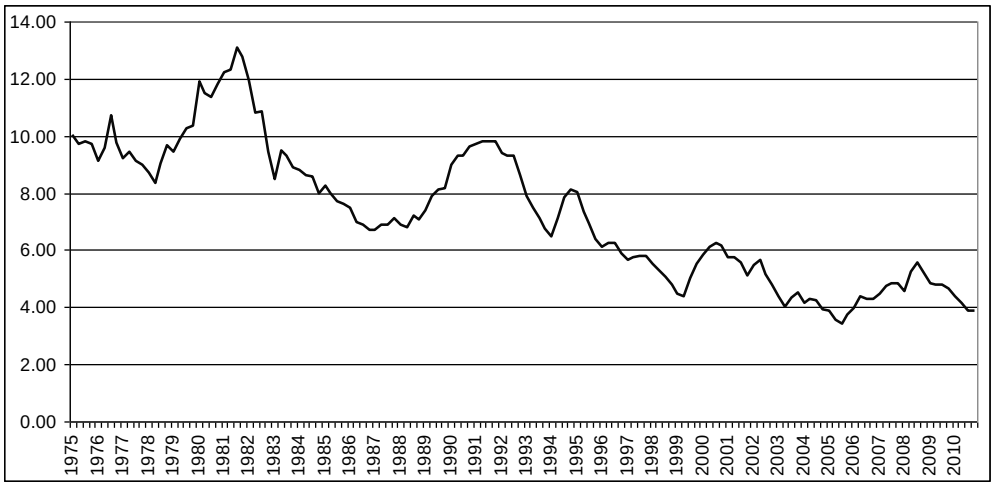
It follows from Table 1.1 that the majority of housing in the owner-occupied sector is single-family: 86% of all owner-occupied housing, 3.2 million units, is a single-family dwelling. The share of multi-family units in the owner-occupied sector has increased over time and is still increasing. In total the owner-occupied sector comprises almost 3.8 million dwellings. The single-family dwellings are on average not older than the multi-family dwellings; they are, however, importantly larger. Single-family dwellings are more expensive then multi-family housing; the square meter price of multi-family dwellings is higher, though. Owner-occupied housing in The Netherlands are most often single-family units in a row. None of these statistics show anything out of the ordinary. Multi-family units are often found in areas where the land prices are high (e.g. city centers) and are therefore relatively expensive. Single-family dwellings are more often found outside of the city center and are generally larger and, given their size, more expensive.

2.2 Factors stimulating development over time

Figure 1.2 shows the continuously increasing share of the owner-occupied sector in the Dutch housing market. There are several reasons for the rapid increase of owner-occupancy: these reasons include factors that stimulate owner-occupancy as well as reasons that give landlords a disincentive to invest. In this section we will only deal with the factors that have stimulated owner-occupancy. These factors include a general increase in welfare, decreasing mortgage interest rates, improved employment, and financial innovation.

The mortgage rates in the Netherlands have declined considerably over the period 1975 – 2010, as can be seen in Figure 1.5. Decreasing mortgage interest rates result in lower user cost of owning and are thus a stimulating factor for owner-occupancy.

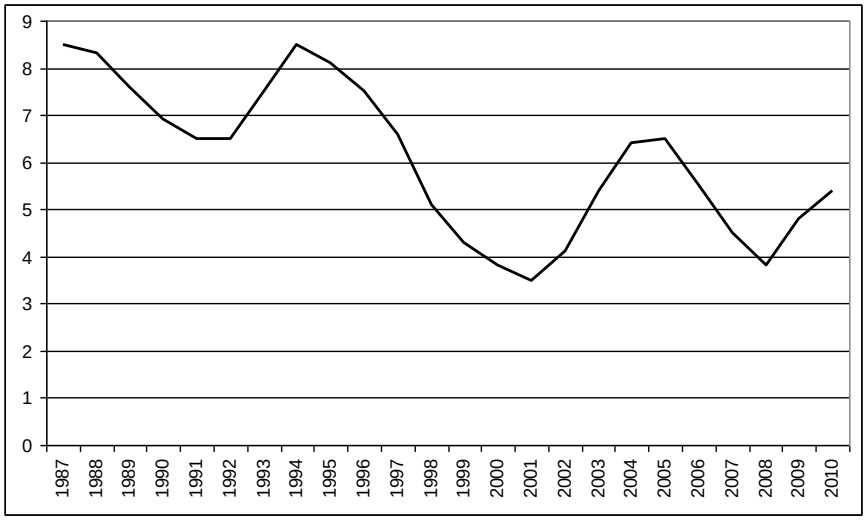
Figure 1.5: Nominal mortgage interest rate, 1975 - 2010



Source: De Hypotheekshop

Demand for owner-occupied housing also depends on employment. Decreasing unemployment is therefore good for the owner-occupied sector. Figure 1.6 displays the change in unemployment over the period 1987 – 2010:

Figure 1.6: Unemployment in the Netherlands, percentage of work force, 1987 - 2010



Source: Statistics Netherlands

Finally, owner-occupied housing in the Netherlands has benefitted from significant financial innovation and changes in mortgage lending criteria in the 1990's (e.g. De Wit & Van der Klaauw, 2010). One important driver for the demand for owner-occupied housing has been the change in mortgage lending criteria that occurred in 1990. Before the change, mortgage lending was restricted to the main income in the household. The change entailed that households were allowed to use a share of other household members' income as a basis for obtaining mortgage credit. In essence this change in regulation increased debt capacity. Another major change that increased debt capacity was the introduction of new mortgage products during the 1990's which

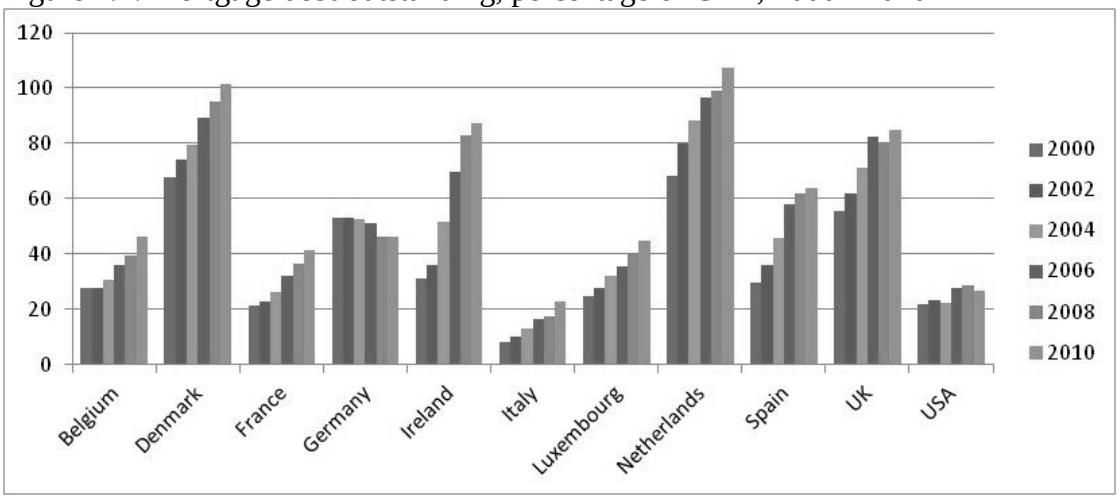
were aimed at reducing the monthly repayment of the mortgage principle. Non-amortizing loans in various forms (e.g. conjoined with savings or investment accounts) reduced the payments that form the basis of credit lending criteria. The reduction of monthly payments thus increased debt capacity and stimulated demand. Increased demand through financial innovation has also lead to increased household leverage, as can be seen in Chapter 3. In recent years changes to lending criteria have been introduced to prevent excess credit lending to households and reduce the increasing outstanding mortgage debt. Lending criteria include a strict loan-to-income ratio and a maximum loan-to-value ratio of new mortgages. In 2011 these criteria have been set stricter and a new restriction has been added to lending criteria to further decrease debt capacity of households. A maximum share of 50% of newly issued mortgages may be issued in non-amortizing mortgages.

2.3 Housing finance: mortgages and home equity

Next to the fiscal treatment of owner-occupied housing there are other important factors on the Dutch housing market that have been subject to recent regulatory changes. In this section we will discuss two of these factors: mortgage supply and home equity.

The Netherlands is internationally famous for its high levels of outstanding mortgage debt. In 2010 the level of outstanding mortgage debt in the Netherlands surpassed GDP. Figure 1.7, taken from the European Mortgage Federation's Hypostat, illustrates the extraordinarily position of the Netherlands clearly. Only Denmark also has a mortage debt outstanding of roughly 100% GDP. Other western countries with well developed credit markets, such as the United Kingdom and the United States, have much lower mortgage debt-to-GDP ratios. Compared to other countries the increase of mortgage debt in the Netherlands is also relatively high.

Figure 1.7: Mortgage debt outstanding, percentage of GDP, 2000 - 2010

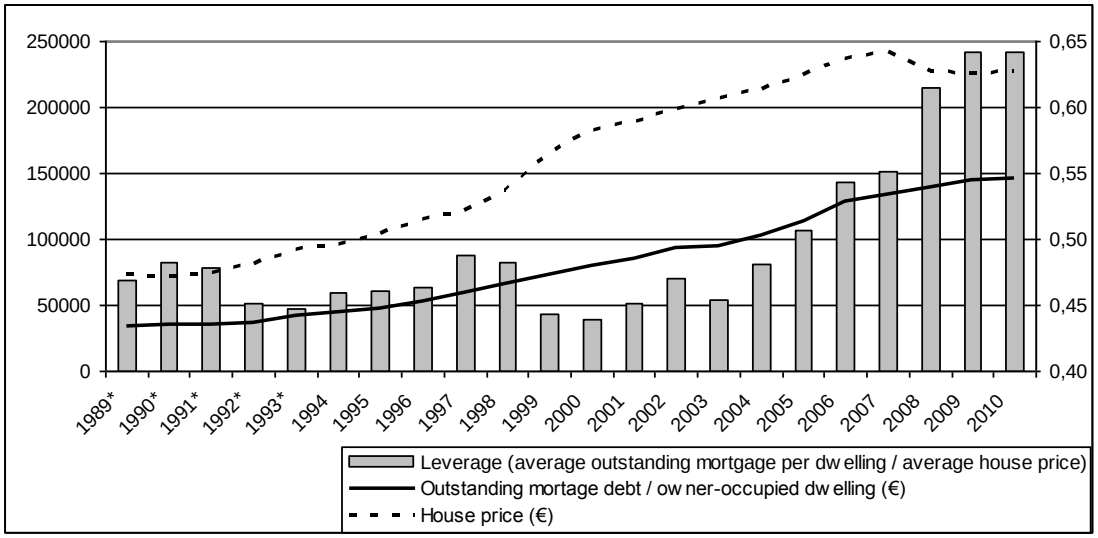


Source: Hypostat, European Mortgage Federation, 2011

The extensive increase of mortgage debt occurred gradually over 1989 – 2010, with a clear acceleration after the mid 1990's, as can be seen in Figure 1.8. The strong increase in average mortgage debt outstanding per owner-occupied dwelling stopped around 2006, when the Dutch housing market started to cool off. After the global

credit crunch the average mortgage debt outstanding did not increase significantly anymore. Due to the increase of the size of the owner-occupied sector, the total amount of outstanding mortgage debt did increase, however.

Figure 1.8: Outstanding mortgage debt per owner-occupied dwelling (€), inflation adjusted, 1989 - 2010



Note: 1989-1993 = ultimo year, 1994 – 2010 = Q4
Sources: Mortgage debt: CBS (1989 – 2002) DNB (2003 – 2010), Inflation: CBS, Owner-occupied dwellings, total number: Syswov, prices: NVM.

Households have clearly increased their mortgage debt over the period 1989 – 2010. Since the house price in some years within this period increased very strongly, average leverage decreased at the end of the 1990's. Ever since, however, house prices have increased less rapidly and after 2006 even started to slightly decrease. Combined with the increasing mortgage debt this implies that households have become, on average, more leveraged over time. Especially younger households, many of whom had not been active on the housing market during the price boom in the late 1990's, have experienced a strong increase in leverage, as can be seen in Table 1.2, which is in slightly altered form also in Chapter 3.

Table 1.2: Average share of home equity in owner-occupied housing, 2001 - 2008

Age	2002	2006	2009
<=25	11%	6%	3%
26 - 35	22%	16%	7%
36 - 45	42%	39%	28%
46 - 60	58%	57%	51%
>60	83%	80%	78%

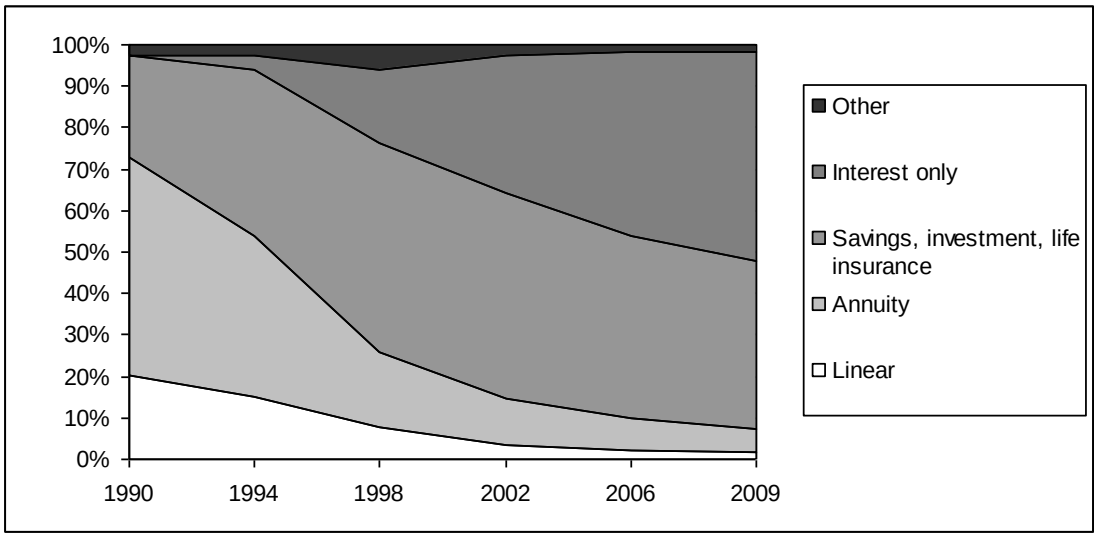
Note: Presented years refer to waves of housing needs survey
Source: WBO 2002, WoON 2006, WoON 2009

It is especially remarkable how high young households are leveraged. In fact, most young households are even overleveraged compared to house value; i.e. these households have negative home equity. Schilder and Conijn (2012) estimate the total number of households "underwater" at around 500.000 in 2011. The high occurrence of negative equity is the result of an important characteristic of the Dutch mortgage lending system: the absence of a down payment requirement. Since households are

not required to bring in any equity into the home upon purchase, owner-occupied housing is accessible to more households. Moreover, credit lenders are allowed to lend more than 100% of the value of the house, thus enabling households to finance purchasing costs with the mortgage.

Another factor that has lead to the increasing leverage of households in the Netherlands is the introduction of new mortgage products. Non-amortizing loans result in larger fiscal benefits from interest deductions and have gotten very popular over time. Generally, non-amortizing loans are combined with other financial products, such as investment or savings accounts or insurance products. The return on capital of financial accounts tied to the mortgage of the primary residential dwelling is untaxed. Households thus started to buy different mortgage products given the fiscal incentive from the interest deductibility. This is graphically shown in Figure 1.9.

Figure 1.9: Market shares of mortgage types, percentage, 1990 - 2009



Source: WBO1990, WBO1994, WBO1998, WBO2002, WoON2006, WoON2009

Over time the share of non-amortizing mortgages increased strongly. Households not only increased leverage this way, but also took increasing levels of risk. Where in the late 1990's and the first few years after the turn of the millennium, a period of prolonged house price increases, the risk involved in housing seemed small, that perception changed with the global financial crisis. As a result new regulation has been proposed to reduce the share of non-amortizing mortgages in the total mortgage holdings of a household.

Many households have also built up considerable amounts of home equity. Especially households that have been on the housing market before the enormous price increases in the late 1990's have seen their home equity increase considerably. The sudden increase in household wealth in combination with financial innovation spurred the use of home equity withdrawal. A survey by the Dutch National Bank reported that the majority of all withdrawn equity was used for home improvement or household portfolio rebalancing; just a minor share was used for consumption (DNB, 2003). Despite this fact restrictions were imposed on home equity withdrawal. These restrictions made home equity withdrawal fiscally less attractive.

There are two main restrictions on the deductibility of mortgage interest. First, the period over which mortgage interest is deductible from income taxes was reduced to 30 years. Second, restrictions were imposed on the eligibility of mortgages for interest deductibility. Only those loans that were used to extract equity from the dwelling for home improvement were left eligible for interest deductibility. Households as of that moment were still able to withdraw home equity for consumption or rebalancing purposes, however, not with the fiscal benefit for regular mortgages. Moreover, when households move house, they are expected to roll over all built-up home equity. Mortgage interest is only deductible over the difference between the price of the new house minus the built-up home equity from previous dwelling(s). Mortgage interest over the surplus debt is not eligible for deductibility.

2.4 Subsidies

In this paragraph we will discuss the main subsidies for owner-occupiers in the Netherlands. This paragraph shall therefore include a review on main points of the interest deductibility, imputed rent, transfer taxes and the fiscal treatment of home equity.

The Netherlands is one of the few countries in the world with full interest deductibility (Rouwendal, 2007). The current fiscal treatment dates back to the first part of the 20th century when all costs incurred to generate income were deductible: housing was seen as an investment to generate income in kind to the owner. Later the deductibility was used as an instrument to stimulate home ownership. Currently the deductibility is subject to discussion again as a result of, among other things, the increasing burden on the governmental budget (e.g. Boelhouwer & Hoekstra, 2009).

Income in the Netherlands is taxed in three “boxes”: box 1 contains all income from labor and the primary residence, box 2 contains all income from the ownership of shares of a private limited company, and box 3 contains all income from savings and investments. Important to note here is that the investment of the owner-occupied dwellings is not situated in box 3, as other investments are, but in box 1. The consequence of the position of the owner-occupied dwelling in box 1 is that the costs associated with ownership (i.e. the mortgage interest) may be deducted as expenses for generating income. Income from ownership of the dwelling (i.e. imputed rent) is added to the income in box 1; the imputed rent in the Netherlands, however, is very low. The imputed rent, 0.55% for all housing up to € 1 million[1], is the result of netting all revenues and costs associated with ownership in the past.

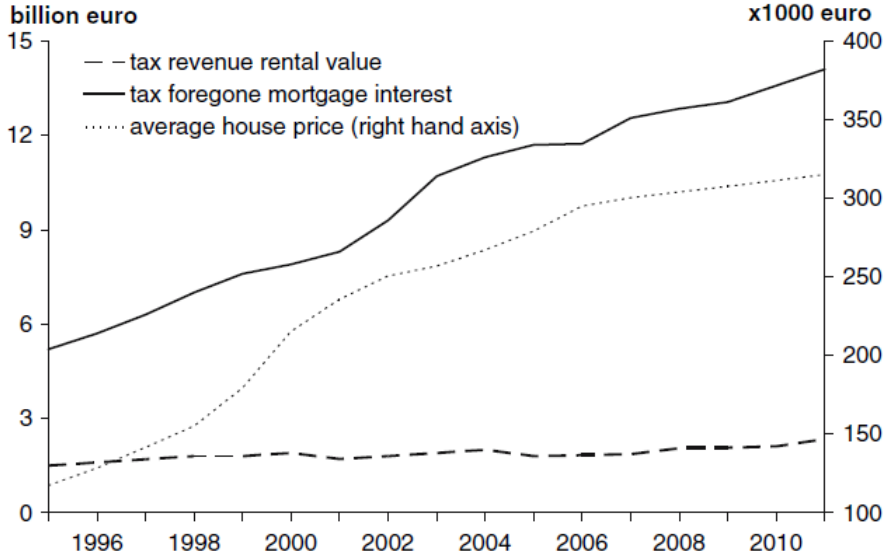
The tax rate in box 1 is progressive; i.e. higher tax rates with higher levels of income. There are roughly three rates: the lowest rate of 34%, a middle rate of 42% and a high rate of 52%[2]. The progression of the tax rates results in larger benefits from box 1 costs, such as mortgage interest. Households with a high income therefore benefit more from the option of mortgage interest deductibility than low income households;

[1] For dwellings over € 1,02 million the rate is 1.05% for the value over € 1,02 million; 0,55% for all value below.

[2] For elderly households, aged over 65, there are four rates: low 16%, middle low 24%, middle high 42%, and high 52%.

since lower income households generally benefit more from subsidies in the rented sector (of which we present more evidence later). The result of this process, however, is that owner-occupation has become the dominant tenure for high income households (this can also be seen in Figure 1.14 in paragraph 4). The increasing concentration of high income households in the owner-occupied sector combined with the increasing levels of mortgage debt results in increasing levels of mortgage interest deductions from income tax:

Figure 1.10: Government expenditures on mortgage interest deductions after imputed rent (in € * billion), 1996 - 2010



Source: Van Ewijk *et al.* (2007)

Another source of subsidization to owner-occupiers is the fiscal treatment of home equity. The return on capital gains on home equity is, unlike the return on other equity, tax exempt. This is the result of the placement of the owner-occupied dwelling in box 1. Other equity, which is placed in box 3, is taxed at 30% over an attributed return of 4%: effectively this results in a tax of 1.2% over the total equity amount. In the beginning of 2008 the average dwelling in the owner-occupied sector had a value of € 285,000 and the average owner had roughly 45% home equity. This implies an average annual tax benefit of € 1,540 compared to the treatment of other equity. This benefit grows with house value and decreases with leverage; therefore, older and wealthier households benefit more than younger and less wealthy households. At the same time, under decreasing house prices this benefit decreases in value. The breakdown of total subsidization in the owner-occupied sector is given in Table 1.3:

Table 1.3: Breakdown of subsidization of home ownership, billion € / yr, 2010

Mortgage interest deductions	11.4
Deferred taxes on equity returns	7.7
Deferred taxes on investment products	0.7
Imputed rents	-2.2
Transfer taxes	-2.4
Net subsidization	15.2

Source: Ministry of Finance (Rapport Brede Heroverwegingen)

Table 1.3 shows that the mortgage interest deductions make up the largest share of subsidization to owner-occupiers. Tax exemptions on home equity also form a large share of total subsidization with 7.7 billion euro in 2010. A final subsidy to owner-occupiers is given through tax exemption of savings and investment products held for closing out the mortgage at maturity: returns on these financial products are tax exempt and this generates another 0.7 billion euro of subsidy. Owner-occupiers are taxed via imputed rents (2.2 billion euro per year) and transfer taxes upon the purchase of a house (2.4 billion euro in 2010). This fiscal set-up gives households the incentive to hold high levels of debt in the dwelling.

We estimate the user cost of ownership in several of the papers in this thesis; in the following chapters the net user cost are used for input in applied econometric models for the housing market. In order to show the impact of subsidization of home ownership we estimate the gross user cost in this chapter. For this we use the same procedure as for estimating the net user cost described in the later chapters, however, we do not deduct the subsidies. The subsidization of owner-occupiers is given in Table 1.4. The specification of user cost can be found in appendix A to Chapter 4 of this thesis.

Table 1.4: Subsidization in of user cost in the owner-occupied sector, 2008

Income decile	Gross user cost	Net user cost	Subsidization (% of gross user cost)
1	6.2%	4.8%	23%
2	6.3%	4.7%	25%
3	6.3%	4.7%	25%
4	6.3%	4.7%	26%
5	6.3%	4.6%	26%
6	6.3%	4.6%	27%
7	6.3%	4.5%	28%
8	6.3%	4.5%	29%
9	6.3%	4.4%	30%
10	6.4%	4.5%	30%
Age			
<=25	6.6%	4.8%	27%
26 - 35	6.5%	4.6%	29%
36 - 45	6.4%	4.6%	29%
46 - 60	6.3%	4.6%	27%
>60	6.1%	4.7%	24%
Overall	6.3%	4.6%	27%

Source: WoON 2009

The gross user cost increase with income. This is caused for an important extent by a higher interest rate that households in the higher income deciles pay on their mortgage: this is simply an empirical issue, there is no economic reason for higher income households to pay higher interest rates. In terms of net user cost the pattern over income is the exact opposite: higher income households have lower net user costs than low income households. Subsidization thus favors high income households, or more precisely: households with higher marginal income tax rates. In the age groups we see a different pattern: younger households both have higher gross user costs and, marginally, higher net user costs. Since required return on equity is lower than the cost of debt, gross user cost increases with leverage. Younger households

therefore have higher gross user cost than older households on average. Overall subsidization in the owner-occupied appears to be of strong economic significance: user cost is on average decreased by 1.7 percentage point. Despite the important subsidization of user cost of owner-occupation, the cost of owning are still higher than in the rented sector. This is shown in Chapter 5 of this thesis: the average user cost for renters is about 3%. The growth of the owner-occupied sector can therefore not be explained by the relative cost. A combination of the institutional set-up of the rented sector, discussed in the next paragraph, and the differences between both sectors in terms of supply as shown in Tables 1.1 and 1.5 give a more likely explanation. This apparent discrepancy in tenure choice is further explored in Chapter 4.

Subsidization of housing in the owner-occupied sector does not only affect the owners, it also affects landlords. This is one of the main consequences of the low price elasticity of supply of housing (Vermeulen & Rouwendal, 2007). The mortgage interest deductions increase demand for housing services; supply of housing services, however, is very inelastic. As a consequence, house prices are higher than they would have been in the absence of subsidies. The increased price level in the owner-occupied sector has consequently driven up the price level in the rented sector as well. This has far reaching consequences for both landlords and renters as will be discussed in paragraph 4. First, however, we will discuss the subsidization of the rented sector.

3 The rented sector

The subsidization in the rented sector is rather straightforward: it comprises a housing allowance which is income tested and supplied by the government to eligible households, and it comprises an implicit subsidy to all renters that exists of a below-market level rent. Understanding why and how these subsidies got to exist in the first place and remain to exist today, however, is far from straightforward. There have been several publications on the organization of (parts of) the Dutch rented sector; we shall give a relatively short introduction in this paragraph.

The remainder of this section is structured as follows: first we will discuss the size and development of the rented sector over time. Then we give a description of the main players in the rented market, with special attention to housing associations. We will then describe the typical dwellings rented out in the rented sector. This section is concluded with a brief description of the key housing policies and subsidies in the Dutch rented sector.

3.1 Size and development over time

The total rented sector in the Netherlands has decreased significantly as we have shown in Figure 1.2, especially in relative terms. The share of the private rented sector has decreased even more. Moreover, this development continues today and will, as we will discuss in section 4, continue even further in the future. The main driver for the decreasing private rented sector is the low returns on investment landlords can realize. Despite the relative decrease of the rented sector, the social sector has remained a large sector in the Dutch housing market comprising 2.3 million dwellings in 2008. The rented sector in the Netherlands in 2008 can be described as follows:

Table 1.5: Housing characteristics per type of landlord, 2008

Private rented sector				Social rented sector				Overall			
	Single-family	Multi-family			Single-family	Multi-family			Single-family	Multi-family	
Type of dwelling				Type of dwelling				Type of dwelling			
Detached	19%	4%	Maisonette	Detached	1%	5%	Maisonette	Detached	26%	5%	Maisonette
Semi-detached	15%	21%	Split-level	Semi-detached	7%	15%	Split-level	Semi-detached	23%	8%	Split-level
Corner	18%	75%	Other apartment	Corner	29%	80%	Other apartment	Corner	16%	87%	Other apartment
Row / back-to-back	46%			Row / back-to-back	62%			Row / back-to-back	33%		
Other house	3%			Other house	1%			Other house	2%		
Value (vacant possession, *1.000, €)	252	192		Value (vacant possession, *1.000, €)	182	149		Value (vacant possession, *1.000, €)	192	157	
Rent level (€ / jaar)	6900	6250		Rent level (€ / jaar)	5150	4680		Rent level (€ / jaar)	5410	4990	
Floor size (m^2)	122	76		Floor size (m^2)	96	69		Floor size (m^2)	99	71	
Rooms	4	3		Rooms	4	3		Rooms	4	3	
Construction year	1956	1950		Construction year	1968	1970		Construction year	1966	1966	
Number of dwellings (*1.000)	183	316		Number of dwellings (*1.000)	1.063	1.295		Number of dwellings (*1.000)	1.246	1.611	
Share of market	37%	63%		Share of market	45%	55%		Share of market	44%	56%	

Source: WoON 2009

The larger share of housing in the rented sector consists of multi-family housing; 1.6 million dwellings. However, it is not at all the case that there are no single-family units in the rented sector; about 1.25 million rented dwellings are single-family dwellings. In fact, other than the class of "other apartments", the most common type of dwelling available in the rented sector is a row house. The difference in value between the single-family and multi-family units is significant. It is therefore, from a standard economic point of view, surprising that the average rent level hardly differs. The "inefficient" pricing of housing by landlords is a red thread through the thesis and studied in Chapter 2, but also plays an important role in e.g. Chapter 5. The average value of rented housing is significantly lower than in the owner-occupied sector. Housing, especially single-family units are notably smaller than the single-family units in the owner-occupied sector.

The results in Table 1.5 in reference to those presented earlier in Table 1.1 make clear that there is an important difference in housing quality between the owner-occupied and the rented sector. The difference between both sectors plays an important role in several chapters in this thesis: because of the significant difference between the owner-occupied and the rented sector one may not simply assume that households are randomly distributed over both sectors. Moreover, the different characteristics of both sectors may seriously affect households' housing careers (see Chapter 4). The summary statistics in Table 1.5 also make clear the difference between the private and social rented sector. The difference between the private and social rented sector will be further discussed in the next section.

3.2 Description of key players: housing associations and institutional investors

The Dutch rented sector knows three key players: individual private landlords (individuals owning a small number of dwellings), institutional investors and housing associations. Housing associations are the most important social landlords, institutional investors are the larger private landlords in the Netherlands. There are important differences, but also important similarities between both types of landlords. In the following paragraphs we will describe each type of landlord shortly. We will give some more attention to the housing associations because of their internationally unique position in the housing market.

The social rented sector in the Netherlands is quite different from its equivalents in other European countries: e.g. the Dutch social rented sector is unusually large, as can be seen in Table 1.6 taken from Scanlon & Whitehead (2007).

Table 1.6: Size of social rented sector in Europe

	Owner-occupation	Private rented	Social rented	Number of social units
Netherlands	54	11	35	2.400.000
Austria	55	20	25	800.000
Denmark	52	17	21	530.000
Sweden	59*	21	20	780.000
England	70	11	18	3.983.000
France**	56	20	17	4.230.000
Ireland	80	11	8	124.000
Germany	46***	49	6	1.800.000
Hungary	92	4	4	167.000

Note: *Sweden: owner-occupation includes cooperatives, **France: does not include 6,1% other, ***Germany: owner occupation includes shared ownership/equity 'Genossenschaften'
Source: Scanlon & Whitehead (2007)

Besides being very large from an international viewpoint, the average quality of housing in the social rented sector is also quite high (Ouwehand & Van Daalen, 2002). In the Netherlands social rented housing has traditionally not just been the only housing option for deprived households, but also a genuine alternative to owning for middle income households. Partly because of the wide scope of the social sector, the private rented sector has been unable to compete with the social rented sector and investors chose to benefit from the arbitrage opportunities that occurred (and are described in paragraph 4 and Chapter 2 of this thesis).

Within the private rented sector there are several types of landlords, the largest being the institutional investors and private persons. The market shares per type of landlord are given in Table 1.7. Given the large size of the social rented sector, the total market shares of the larger private landlords are still small.

Table 1.7: Market shares of landlords, 2008

	Private	Social	Overall
Housing association	-	99.8%	82.4%
Government	-	0.2%	0.2%
Pension fund, investor or broker	37.7%	-	6.6%
Private person	43.2%	-	7.5%
Relative	7.8%	-	1.4%
Other	11.3%	-	2.0%

Source: WoON 2009

The overall characteristics of the rented sector have been presented and discussed earlier in Table 1.5. A first look at Table 1.5 shows that social landlords have a large number of single-family dwellings; almost half of the total social housing stock is single-family. Private landlords own slightly more apartments. The most common dwellings of social landlords are single-family row houses and “regular” apartments. In terms of average floor size or number of rooms the dwellings of both types of landlords also differ little.

In Table 1.7 we can compare the different types of landlords. Social landlords are the dominant type of landlord in the housing market. More than 2.3 million, i.e. 82.4% of all rented dwellings are owned by housing associations. A major difference between

social and private landlords is the value of the housing stock: private landlords own importantly more valuable housing than do social landlords. This translates in a significantly higher rent level. However, if we would compare the rent levels as percentages of the house value we observe no difference in the rent setting of either type of landlord: the rent level as a percent of vacant possession value is 2.74% and 3.26% for private landlords and 2.83% and 3.14% for social landlords (single family and multi-family dwellings respectively).The higher rent level is therefore purely the result of much higher quality of housing.

The cost of capital expresses the cost of a company's funds, including both debt and equity, and reflects the minimal return on investments required by investors. Social landlords have a low required return on their equity since they do not have shareholders' value to maximize. The weighted average cost of capital (WACC) of social landlords is therefore lower than the WACC of private, profit driven landlords who need to satisfy a required return for their investors. Moreover, the Dutch rented sector is overmaturated (Conijn, 2011). This means that, in terms of the theory of Kemeny, the social rented sector cannot only compete with the private landlords, but in fact is dominating the market. Because of the dominant position of social landlords private landlords cannot realize a market return on their investment. The situation of overmaturation has been one the main characteristics of the rented sector for a significant period of time. The lack of market returns on rented housing has caused profit driven landlords to exit the market for a prolonged period of time as could already be seen in Figure 1.2. This is further discussed in section 4 of this chapter and studied in detail in Chapter 2. We will discuss the organization of these landlords in more detail in the following paragraph.

Institutional context of housing associations

There are a few key aspects of housing associations that help explain their dominant position in the rented sector. In this paragraph we shortly describe the most important regulation housing associations are confronted with (e.g. restricted use of social capital) as well as the major benefits they enjoy (cheaper external capital).

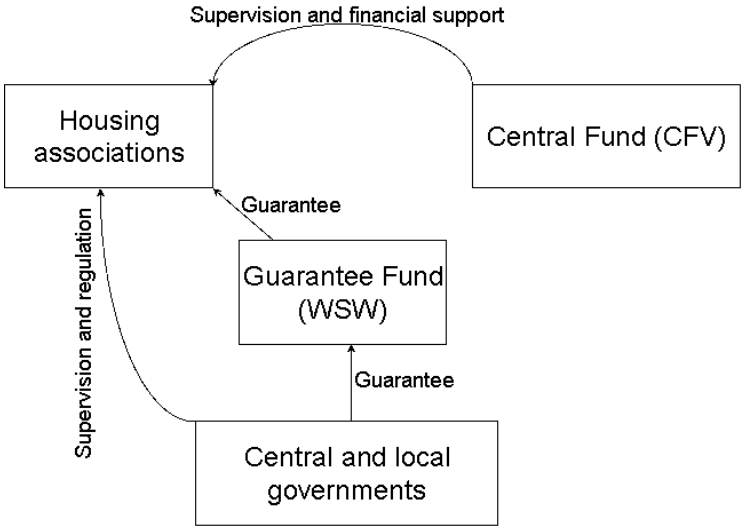
Housing associations are a special type of landlord in the Dutch rented sector. The focus of these landlords is generally the lower income classes; housing associations have a governmentally enforced task to provide good and affordable housing for the lower income households. At the same time, housing associations are independent organizations on which the government exerts mostly regulatory influence. This is the result of a long history of social housing in the Netherlands that started with the Housing Act of 1901, and really spurred into a rapid development after the Second World War. The Housing Act was designed to increase and improve housing for lower income households. The factor in this act that attributed to the spur of housing associations was the fact that it enabled the government to recognize associations that were created in the interest of social housing only. The associations which sole purpose was to provide social housing became so-called "authorized institutions". Once an authorized institution, housing associations could apply for governmental subsidies. Authorized institutions are regulated to be non-profit organizations (i.e. profits need to be used for social interests). Moreover, institutions that have become authorized institutions cannot exit the system to become a private landlord.

Until the mid 1990's both private landlords and housing associations have received large amounts of subsidy to construct new housing. Housing associations hardly sell their property in the owner-occupied sector and have thus built up a large sum of equity in residential dwellings. Since the vacant possession value of dwellings moves with the value of owner-occupied dwellings, the value of housing associations' dwellings increased strongly since the mid 1980's (see the previous section on owner-occupied sector). In Chapter 2 we estimate the vacant possession value of the total stock of all housing associations to be 340 billion euro (price of 2007).

In 1995 the government settled all outstanding debt of housing associations and future subsidy payments to housing associations in one large transaction ("brutering"). This officially ended the direct connection between the government and housing associations. Nonetheless, today the government still exerts influence on housing associations via law. One of the most important decrees, already effective before the settlement, is the Decree on Management of the Social Rental Sector (BBSH). This decree originally stated six main tasks that any housing association should realize that include the supply of decent quality housing to the main target group of households and to guarantee the financial continuity of the housing association.

Supply subsidies have been one of the main subsidies to housing associations until around 1980, after when the government's focus of subsidization shifted more towards demand subsidization. Retrenchment of the government from the housing market has become a policy objective since then. Subsidizing construction, however, has not been the only subsidy of (local) governments to subsidize housing associations. Municipalities have also subsidized housing associations by supplying land at reduced prices. A final, and very important, indirect subsidy of the government exists of providing guarantees to credit lenders. As a result of state-backed guarantees Dutch housing associations can obtain credit at below market rates. Guarantees for credit of associations are organized through a private non-profit organization: Guarantee Fund for Social Housing (WSW). Participation in the fund implies an entry fee and a liability of a percentage of the loan. Because of the security structure the fund has a triple-A status with S&P and Moody's; the security structure is displayed in Figure 1.11:

Figure 1.11: Security structure for authorized institutions



Source: Guarantee Fund for Social Housing

Figure 1.11 displays housing associations receiving financial guarantees from the Guarantee Fund for Social Housing (WSW). In their turn, the solvency of the WSW is guaranteed for by the central and local governments. Credit lenders thus have three levels of security for their loans: first, the solvency of the housing associations obtaining the loans (i.e. their assets and equity). The solvency of housing associations is strongly supervised by the Central Fund for Social Housing (CFV). In case of potential insolvency the CFV intervenes with the management of the housing association and forces reorganizations to prevent insolvency. Second, if any housing association should still default, the WSW finances the guaranteed for debt. Third, in the very end, the central and local governments have agreed to supply interest-free loans to cover potential defaults. Housing associations can therefore technically go bankrupt; however, the credit lender will not loose his investment to the extent that the credit had been guaranteed by the WSW.

The financial guarantees are available only to housing associations. The supervision is provided by the Central Fund for Social Housing (CFV) which is an independent governmental organization. The CFV supervises the housing associations to prevent defaults and in case of need might provide financial support. In cases of intervention of the CFV the management of the housing association becomes very strongly controlled or even taken over completely. So far, none of the housing associations had to make use of the guarantees provided by the WSW (second security layer) as a result of the effective supervision by the CFV and good housing market conditions.

Summarizing we have shown that the social rented sector is dominated by housing associations. These housing associations have built up capital in dwellings worth more than 240 billion euro (CFV, 2010; p.113, table 10.1). Given the status of housing associations and the way this capital has been built up housing associations' capital is considered social capital. Legally, however, these housing associations are independent entities; the government cannot take e.g. profits away from housing associations. The government can influence housing associations via law (e.g. BBSH) and strict supervision (via CFV). The institutional set-up of the rented sector as well as the non-profit foundation of housing associations have, especially from an international perspective, lead to a large and stable sector with, on average, high quality housing available to a wide target group that includes lower and middle income groups.

3.3 Rent regulation and tenant protection

The rented sector in the Netherlands is strongly regulated. Regulation can be described by addressing two instruments: the regulation of rent on the one hand, and tenant protection on the other. In this paragraph we shortly describe both instruments.

Regulation of rent levels and development

In principle, rents in the Netherlands are regulated when the rent level in the contract is below a threshold (€ 631.73 monthly in 2008, adjusted to € 652.52 as of January 1st 2011). Thus, regardless of the characteristics of the dwelling or of the household occupying it, if the agreed rent level is below the threshold, the rent is regulated for the entire occupation period of the household. The majority of rented dwellings are

regulated, even when owned by a private landlord, as can be seen in Table 1.8 (also in Chapter 5):

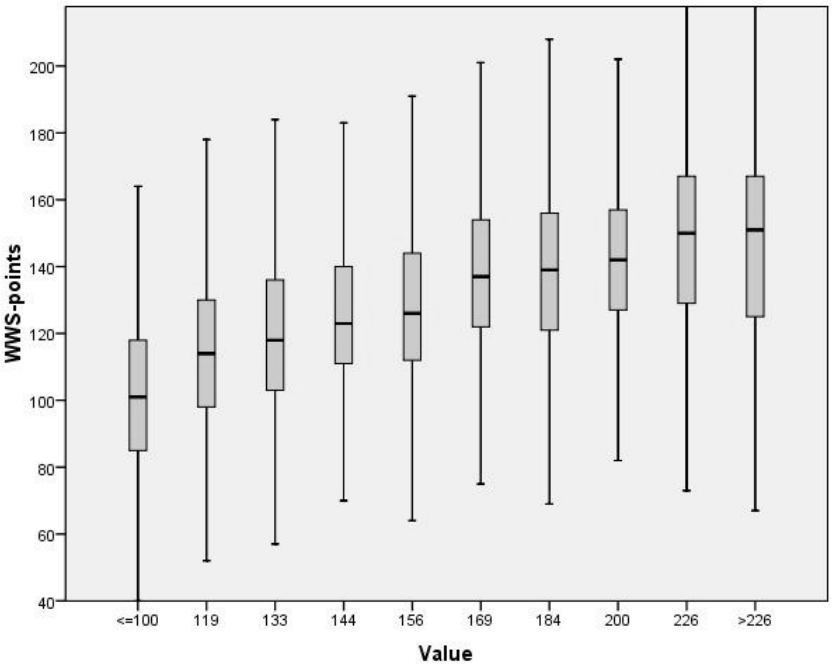
Table 1.8: Regulated dwellings in the Netherlands, 2008

	Landlord		
	Social	Private	Total
Regulated	2,2 (97%)	0,3 (73%)	2,5 (93%)
Liberalized	0,1 (3%)	0,1 (27%)	0,2 (7%)
Total	2,3 (100%)	0,4 (100%)	2,7 (100%)

Note: Figures in millions; percentages calculated over type of landlord
Source: WoON 2009

Regulation of rents can be either mandatory or voluntary. Mandatory regulation occurs with dwellings that have less than or equal to 142 WWS-points. WWS-points are administrative quality points that are attributed to a dwelling based on its dwelling characteristics such as (but not limited to) floor surface, type of dwelling, and type of heating. Market characteristics never were part of the assessment for WWS-points: an identical dwelling in a high-demand area as the city center of Amsterdam scores the same number of points as when it had been situated on the outskirts of a low-demand area as Heerlen. Recently attempts have been made to make adjustments towards a more market oriented points-system: in ten geographical regions with scarcity the number of WWS-points is increased with 15 or 25 points based on the vacant possession value per square meter of housing surface. As of yet the quality points are still fairly independent of value:

Figure 1.12: Relationship WWS-points and vacant possession value, 2008, chapter 5
Low-end of box = 25th percentile, intersection = median, upper-end of box = 75th percentile



Source: WoON 2009

The relative independence of WWS-points and value is one of two important drivers behind the development of the rented sector as displayed in Figure 1.2. After all, as studied in Chapter 2, landlords not being able to realize market rents have, especially

when profit driven, an incentive to sell vacant rented dwellings in the owner-occupied sector. The other driver is the "voluntary" rent regulation: landlords may rent their dwellings at below-market level rents, or even below the regulation boundary, without a regulatory requirement. For social landlords this is generally in line with their social mission statement; for private landlords this is often influenced by the overmaturated rented sector causing the rent levels to be competed downwards by social landlords.

A second instrument to regulate rents is the maximum annual rent increase; landlords may not increase rents beyond a governmentally prescribed percentage. That percentage has been set at or around inflation in recent years. This instrument only affects regulated rents; renters in liberalized dwellings may be confronted with higher annual rent increases.

Tenant protection
Tenants in the Netherlands are well protected against expropriation by landlords. Protection comes in several forms including rent level protection, prescribed rent adjustments, and regulation with respect to (adjustments of) contracts.

Rent regulation is in itself an instrument to protect tenants from expropriation by landlords. We described earlier how rents can be prescribed if the dwelling does not surpass a certain administrative level of quality. This is not only an instrument to control rents, it furthermore protects tenants in the lesser quality housing from expropriation as the rent level of lawfully regulated dwellings is enforceable. Moreover, liberalized rent contracts can, even after signing, be adjusted if the administrative quality system does not allow a liberalized rent level based on the number of WWS-points of the dwelling.

Other instruments that protect tenants are the fact that rental contracts are in principle contracts without a fixed end date and that landlords are not allowed to alter the contract during the occupation. Landlords may not liberalize regulated contracts during as long as the tenant does not make the property vacant. This implies that if households would want to stay in their regulated dwelling for several decades, this dwelling will remain regulated for decades. This regulation also applies to private rented dwellings.

3.4 Subsidies in the rented sector

In the paragraph on owner-occupied housing we have shown that housing, at least in the owner-occupied sector, in the Netherlands is strongly subsidized. In the rented sector we can distinguish two different subsidies: on the one hand renters pay a lower rent than they would given a free market, on the other hand needy households are given a housing allowance. These subsidies and their economic consequences are the subject of Chapter 5. In this chapter we shortly discuss these subsidies and provide some key statistics to give an overview of subsidization in the rented sector.

In Chapter 2 we estimate the market rent in the Netherlands to be around 4.5% of the vacant possession value of the dwelling. Francke (2010) reports similar values for market rents using different methods to arrive at these figures. Conijn and Schilder (2011) furthermore report that the average rent in the liberalized rented sector is also around 4.5%. The average actual rent level in the Netherlands is much lower than

that: roughly 3%. The difference between the market rent and the actual rent charged can be considered a subsidy to the renter. This subsidy, however, is independent of the characteristics of the household. We therefore compare this subsidy to a supply subsidy in Chapter 5; in other literature on the Dutch housing market this subsidy is also referred to as implicit subsidy (e.g. Schilder & Conijn, 2009). The implicit subsidy is large for private and social landlords. The main difference is that in case of social landlords the subsidy is granted resulting the policy of the landlord. Private landlords have such limited market power that they need to follow social landlords in below market level rents. This phenomenon is also described in Conijn (2011) and referred to, in terms of Kemeny theory, as a result of overmaturation of the Dutch rented sector.

The share of subsidization a household receives in supply and demand subsidies differs by income. High income households receive all of their subsidization via lower rents; lower income households receive a significant share of their subsidies in housing allowances. The distribution of subsidies over households is summarized per income decile in Table 1.9, taken from Chapter 5:

Table 1.9: Rental subsidies per income decile, 2008

	Hybrid subsidization of housing services in rented sector			
Income decile	Demand subsidy (€/yr)	Supply subsidy (€/yr)	Total (€/yr)	Total (overall; bln € /yr)
1	1316	2663	3979	1.16
2	1451	2657	4108	1.17
3	1063	2355	3418	0.97
4	779	2396	3174	0.90
5	758	2428	3187	0.91
6	614	2438	3052	0.87
7	391	2653	3044	0.87
8	132	2570	2702	0.77
9	39	2695	2735	0.78
10	29	3144	3173	0.90
Total	549	2601	3150	9.31

Source: WoON 2009

Table 1.9 shows that lower income households receive a larger share of their subsidization in demand subsidies (i.e. in housing allowances). In the higher income deciles households receive very little housing allowance[3], yet they receive large amounts of supply subsidies. In fact, since households with higher income live in more expensive dwellings, they even receive larger amounts of supply subsidization than low and middle income households. In total, the subsidization of housing services in the rented sector adds up to 9 billion euro annually.

[3] We observe housing allowances in the higher income deciles. This is the result of the fact that the income deciles are based on disposable income, not on taxable income. In the data there is some discrepancy between taxable and disposable income; this, however, does not affect the (interpretation) of the results.

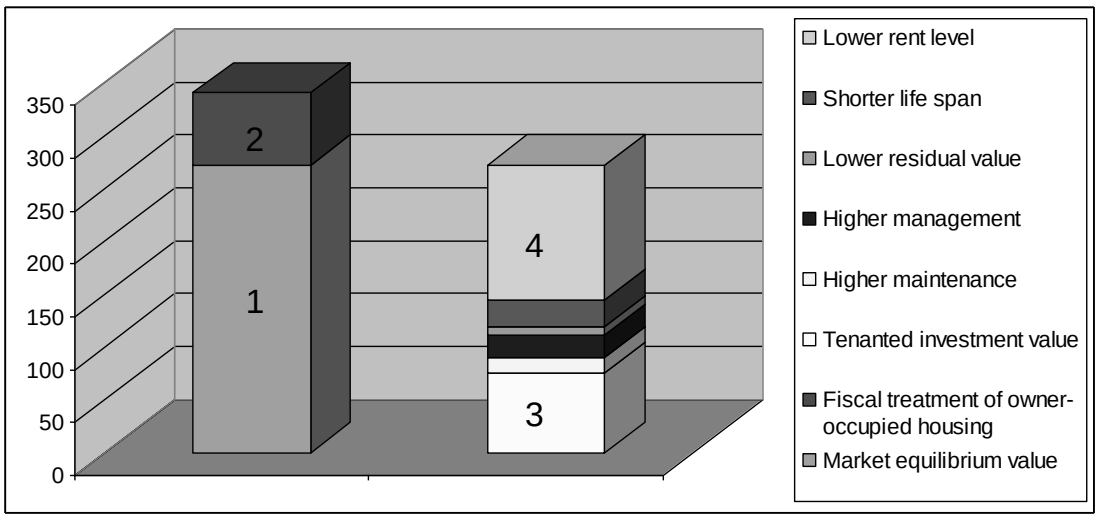
4 Main consequences

We have seen in the previous sections of this chapter that the owner-occupied sector developed strongly over time, mainly at the expense of the private rented sector. This is the result of on the one hand the increased demand for owner-occupied housing as described earlier, and of the disincentive to invest in rented housing as a result of the low return. Apart from the large shift in market shares, the sectors have grown apart in other terms as well. Schilder and Conijn (2009) describe this as the double gap between owning and renting: a gap between the owner-occupied sector and the rented sector in terms of the user cost, from the perspective of the user, and a gap in terms of value, from the perspective of the owner. There is a large gap between the price of the consumption good in both sectors: renters pay on average roughly 3% while owner-occupiers pay about double. Moreover, the gap in value of the dwellings, the value gap as described in Conijn and Schilder (2011), is also large.

So far we focused on one side of the coin at the time; in this section we will put both sectors into one perspective and show how the institutional set-up of the Dutch housing market (re)enforces the coming into existence and widening of the gap between owning and renting.

Value gap: investment incentives
The value of a rented dwelling is equal to the net discounted cash flows of the dwelling. In Chapter 2 we show that the value of rented dwellings in the social rented sector is far below the value it would generate in the owner-occupied sector. This creates an arbitrage opportunity for landlords; instead of renting housing out, they can sell housing, because of the higher value in the owner-occupied sector. In fact, that is as we have seen exactly what private landlords have been doing over the last few decades. Figure 1.13 displays the large difference in value of the rented dwelling (right bar) and the same dwelling had it been sold in the owner-occupied sector (left bar). Figure 1.13 is based on data from all Dutch housing associations only.

Figure 1.13: Value gap from investment perspective, 2008

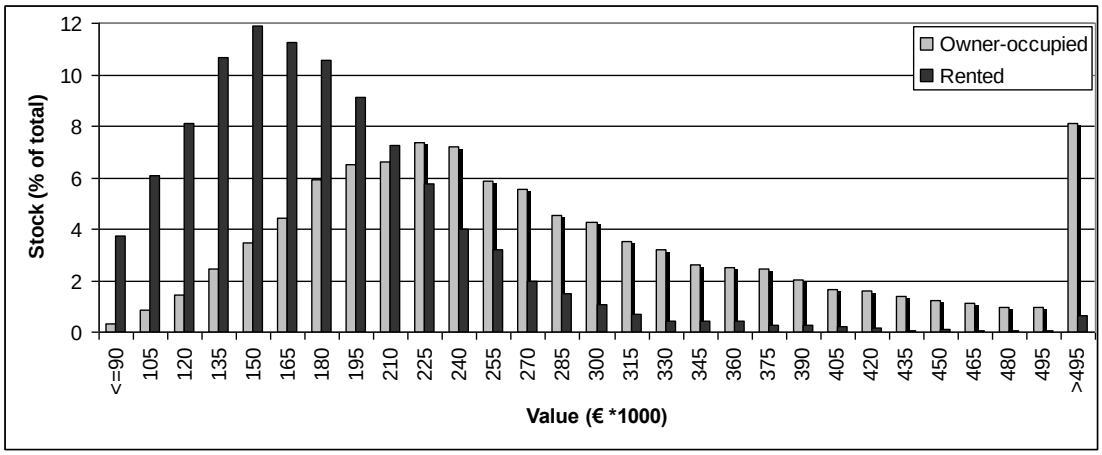


Source: CFV (2008), own calculations.

The bars with the numbers 1 and 2 in the left-hand are the total vacant possession value of the rented stock in billions of euro: this is the value of the rented sector had the properties been sold in the owner-occupied sector. Prices in the owner-occupied sector, however, have been forced up by the mortgage interest deductibility and very low price elasticity of supply; several authors estimate the price increase to be around 20% of the value (see Schilder & Conijn, 2009). The bar with the number 1 thus represents the market equilibrium value of the total social rented stock. This equals the value had the rented property been sold in an owner-occupied market without fiscal subsidization of ownership. On the right-hand side the bar has been divided in several smaller bars, the total of which add up to the market equilibrium value. The box with the number 3 represents the value of the rented stock under the current regime. The other boxes represent the value lost resulting from each of the landlord's rent policy decisions. Figure 1.13 is based on housing associations only; the benchmark for e.g. maintenance and management costs are the costs as made by private landlords. For private landlords these bars therefore, on average, do not exist. The largest of these items is the bar with number 4 representing the value lost from the below-market level rents; this also applies to private landlords. The difference between the market equilibrium value (bar "1") and the actual tenanted investment value ("3") is the value gap. The value gap is, as stated earlier, the result of the policy (e.g. rent setting, maintenance *et cetera*) of the housing associations. The derivation and exact numbers from Figure 1.13 can be found in Chapter 2.

The presented value gap does not only result in an arbitrage opportunity, but also in a disincentive to invest in new rented dwellings. Construction of new dwellings happens mostly in the owner-occupied sector; in the rented sector the largest share of new additions to the stock are done by social landlords. Since it has mainly been the social landlords, with a strong focus on the lower end of the market, that have added new dwellings to the housing stock, there has grown a difference in the average value of the housing stock in the owner-occupied and the rented sector. In 2008 the gap is of such magnitude that a household aspiring a somewhat larger housing consumption is practically forced to buy a dwelling. The distribution of housing in the rented sector is very strongly skewed with the vast majority of dwellings in the lower end of the market. The distribution of housing in the owner-occupied sector is much more evenly distributed as can be seen in Figure 1.14:

Figure 1.14: Distribution of dwellings according to value by sector, 2008



Source: WoON 2009

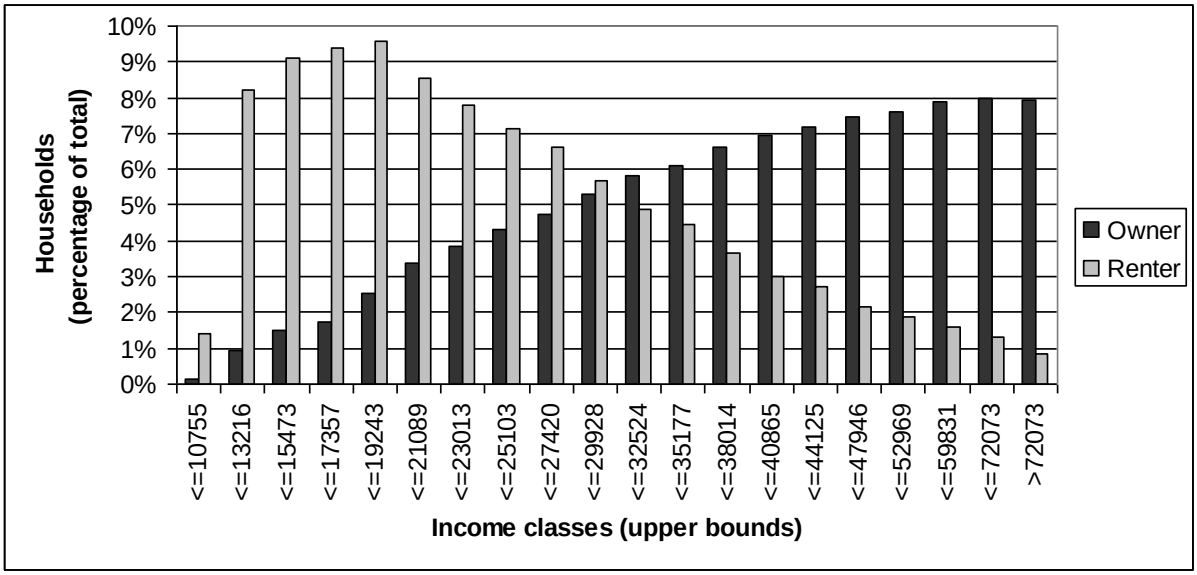
The owner-occupied and the rented sector thus seem to have adjusted in terms of composition according to the incentives from the gap between owning and renting. Since it are mainly the private landlords taking advantage of the arbitrage opportunity, i.e. selling the more expensive dwellings in the rented sector, and the social landlords who are investing in the rented sector, i.e. adding on average cheaper dwellings to the sector, it is most likely that the distribution of rented housing will become even more skewed in the future.

Double gap: consumption incentives

The price of the consumption good housing is referred to in literature as the user cost of housing. In case of rented housing the user cost is equal to the net rent payments. In the owner-occupied sector user cost are not observed: user cost is then often estimated using formulas as presented in e.g. Conijn and Elsinga (1998) or in Chapter 3.

In equilibrium the price of housing services is equal in the rented and the owner-occupied sector. The institutional arrangements for subsidization of housing services in the Netherlands are such that the price of housing services is not the same in the rented and owner-occupied sector. On average, the price of housing services in the owner-occupied sector is higher than in the rented sector. Dwellings providing higher quantities of housing services are not available in the rented sector as can be seen in Figure 1.14. Meanwhile, the subsidization in the rented sector decreases with income, while in the owner-occupied sector subsidization increases with income; this can be seen in Tables 1.4 and 1.9. Households with higher incomes and a higher demand for housing are virtually forced to choose for owner-occupied housing. This issue is further investigated in Chapter 4. Figure 1.15, taken from Chapter 5, gives a quick descriptive overview of the outcome:

Figure 1.15: Distribution of households over sectors by income, 2008



Source: WoON 2009

Several other authors mention other behavioral consequences of the double gap. Romijn and Besseling (2008) claim that the supply subsidy in the rented sector functions as a tax on moving house: households in the rented sector, especially those that have limited access to renewed supply subsidies, would therefore be less inclined

to move house. Schilder and Conijn (2009) find empirical evidence suggesting that indeed the supply subsidy decreases residential mobility among renter households. Apart from mobility, tenure choice is likely to be influenced as well by the institutional arrangement of subsidization. The interplay between the value gap, adjusting supply and households tenure decisions is studied in Chapter 4 of this thesis.

5 Concluding remarks

In the past sections we have shown that the interplay between institutions and consumers in the Dutch housing market lead to a malfunctioning market. Earlier, in the second section of this chapter, we shortly described the development of the owner-occupied housing sector. The focus in this section lies on the development, as it is the interplay of economic conditions and financial deregulation that have shaped this part of the housing market in the past few decades. In the rented sector, described in the third section of this chapter, the focus was more on the institutional arrangement. After all, it has been the subsidization and regulation from the government that have had the most important impact on the development in the rented sector. Special attention has been given to housing associations for the large impact that they have on the rented sector. Finally, we put everything into one perspective and show very briefly how all institutions, subsidies and governmental regulations relate to one another.

This chapter is meant to give an introductory reading for the following chapters. Each of the chapters, as mentioned earlier, contains brief descriptions of relevant issues and institutions. In this chapter we have brought together the key elements of these issues and gave some additional descriptives. All of the following chapters therefore relate to this first chapter: a short description of each chapter concludes this first chapter.

<u>Chapter 2</u>
How housing associations lose their value: the value gap in the Netherlands

This chapter is based on a published article in Property Management. In this paper we explore why the value gap is a structural phenomenon in The Netherlands and why it is an important factor contributing to the malfunctioning of the housing market. Using the well-known concept of user costs and using market equilibrium as a reference, the model quantifies the influence of six factors that cause the value gap. This is done for The Netherlands in total and for each of the 452 housing associations separately.

Chapter 2 provides the reader with insight into why the private rented sector developed from the largest sector to an almost marginal sector in the housing market. The value gap described and explained in chapter 2 summarizes the key issue that underlies all other problems experienced in the housing market: the fact that user costs are subsidized out of balance.

Chapter 3
Home equity, fiscal policy and the demand for housing

Standard economic theory predicts households to accumulate wealth over time and divest it near the end of life to spread consumption equally over the life cycle. Well-known empirical work suggests that common practice is different. We test some implications of economic theory that relate to home equity: do households divest it towards the end of their lives? And also: does the fiscal regime give households the incentive to maximize housing consumption?

Chapter 4
Time-varying state dependency in tenure choice

Households' tenure choice decision is generally expected to reflect the outcome of a utility maximization of the expected future benefits of owning or renting a dwelling. Within such a framework current tenure can not be an important predictor for future tenure decisions. Empirical results in international literature indicate that, given market frictions from e.g. institutions, past tenure may indeed be a good predictor for tenure decisions. Despite a highly regulated market with institutions that do *not* necessarily lead to such a pattern we report significant state dependency that, moreover, increases over time. We make plausible that home equity is an important driver in creating time-varying state dependency.

The value gap between owning and renting affects residential mobility and other housing related decisions of households. Tenure choice is one of those choices that (might) be affected by the value gap. After all, low income households are often better off renting; high income households often cannot enter the rented sector, and if they can, would be better off buying. In the section describing the value gap we have seen that households are divided over the owner-occupied and the rented sector almost based on income. Schilder and Conijn (2009) furthermore show that this has been going on for quite some time. Does the value gap steer people in their tenure decisions? We find evidence supporting this idea.

Chapter 5
Allocative efficiency of housing subsidy systems

Rented housing is strongly subsidized in the Netherlands. Subsidizing housing may be well argued for given e.g. equity and market failure arguments. Literature, however, does suggest that some forms of subsidization are more efficient than others; in particular, demand subsidies are generally more efficient than supply subsidies. The Dutch rented sector is dominated by supply subsidies. Keeping housing affordability constant we test whether there is room for welfare improvements following more efficient allocation of housing subsidies.

The value gap between owning and renting suggests that dwellings are rented out (well) below their market value. At the same time Conijn and Schilder (2011) show that introducing market rents would result in tremendous affordability issues for the majority of renting households: the gap between owning and renting has thus grown

too large to just quit subsidizing. In addition to the need of subsidization, our results in chapter 5 indicate that switching to a more efficient way of subsidizing leads only to minor gains in economic efficiency.