Essays on the economics of housing subsidies

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Chapter 2: How housing associations lose their value: the value gap in The Netherlands

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1. Introduction

The value gap is a concept well known in the literature about gentrification. This concept refers to the difference in value between that of a house under owner-occupation relative to the value of the same house when rented. Hamnett and Randolph (1988) described these values as "vacant possession value" and "tenanted investment value" respectively and noted the existence of a gap between both values. There is also literature on the rent gap (e.g. Smith, 1987). In this case "rent" has the meaning of "Ricardian rent" and can be seen as related to the value gap. The reason behind the value gap lies in part in government policy that generates different values in both sectors. A consequence of this value gap may be that landlords convert rented housing into owner-occupied property in order to cash the difference in value. Such a conversion can be seen as a form of arbitrage between two markets that are not in balance with each other. As a result of this arbitrage this value gap may diminish and ultimately disappear. Hamnett and Randolph view this conversion caused by the value gap as a significant factor triggering the start of the gentrification process. After conversion these houses are occupied specifically by higher income groups. There has been widespread debate about the role played by the value gap in the process of gentrification (e.g. Millard-Ball, 2000). Until now there has been a lack of quantitative analysis about the size of the gap itself and the factors that are contributing to it. Such a quantitative analysis is of great importance in understanding the possible consequences of the value gap. In this paper a quantitative analysis of the value gap of the housing stock of the Dutch housing associations is given. The possible significance that the value gap may have on the process of gentrification is not reviewed.

In The Netherlands the value gap is an inbuilt characteristic of a not properly functioning housing market. In the owner-occupied sector the owner-occupier enjoys a favourable tax treatment that is largely or entirely capitalised in the value of the house. In the rental sector there is rent control as a result of which the value of a rented house is depressed. The non-profit behaviour of the housing associations, who own a major share of the total Dutch housing stock, contributes further to the depth of the value gap. The rental policy adopted by the housing associations results in a rental level that is on average, below that allowed by rent control. Furthermore the costs for management and maintenance which the housing associations make are, in general, above those of commercial landlords. Both factors further lower the value of the association-owned housing and so increase the value gap. Housing associations sell relatively few rented houses as a result of which arbitrage on the Dutch housing market only takes place at a small scale. The value gap is thus an inbuilt characteristic of the housing market.

This chapter will focus on the size of the value gap in the housing stock of housing associations. An equilibrium model is used to make a quantitative analysis of the value gap. Six factors will be distinguished that are jointly responsible for the value gap. The paper will close with a few considerations about the significance the value gap has for the functioning of the housing market and for housing policy. A brief sketch of the Dutch housing market will first be given.

2. Dutch housing market: a brief sketch

If the reasons behind the existence of the value gap are properly to be understood, it is important to understand how the Dutch housing market operates, or, more accurately, how it fails to operate. Significant characteristics of the Dutch housing market are (Conijn, 2006, 2008):

- a substantial level of subsidy in both the owner-occupied and rental sector;
- an inelastic supply in the housing construction market; and
- a relatively large share of the housing stock held by non-profit housing associations.

Recent reports issued by the Netherlands Bureau for Economic Policy Analysis (CPB) have established that the extent of the subsidies in both ownership sectors is considerable (Koning et al., 2006; Romijn and Besseling (2008). Tax subsidies operate in the owner-occupied sector. Mortgage interest payments are 100 per cent deductible from income tax for a 30-year period. Alongside that the net imputed rental value assigned to an owner-occupied house is taxed as part of income. However, the net taxable rental value is relatively low and amounts to only 0.6 per cent of the value of the house. Further, home equity is exempt from taxation. The net value of other assets is taxed at the rate of 30 per cent on a notional 4 per cent yield. The combination of these tax measures favours the owner-occupier. This has also resulted in a very high level of mortgage debt on the owner-occupied housing stock when compared with other developed countries (Yelten, 2006). The CPB concluded that the price of housing services was thus lowered by an average of 20 per cent (Koning et al., 2006).

Subsidy policy in the rental sector operates in two ways. Rent control covers 95 per cent of all rented houses whether those of housing associations or those of commercial landlords. The consequence of rent control is that rents are in general below the market rent level. Actual rents are considerably lower. The difference between the market rent and the actual rent can be seen as an implicit subsidy paid by the landlord. In addition the lower income groups may receive a housing allowance that is paid by the government. Compared with the effect that rent control has in lowering prices, the effect of subsidy policy via housing allowances is relatively limited. Altogether, CPB research shows that rental sector subsidies, both implicit and explicit, have led to an average 50 per cent cut in net rentals compared to market rentals (Romijn and Besseling, 2008).

It is of importance to examine the price elasticity of housing supply so as to understand the effect of tax subsidy policy on the owner-occupied sector and subsequently on the rental sector. Various studies have pointed to rigidity in the Dutch housing construction market. The price elasticity of housing supply in The

Netherlands is exceptionally low (Swank et al., 2002; Vermeulen and Rouwendal, 2007). One of the reasons lies in a stringent spatial planning policy and very long drawn-out planning procedures governing new residential construction. Given this rigidity of supply, the favourable tax treatment leads to an increase in the value of owner occupied houses. The tax subsidy is capitalised in the price level of the house. This causes much of the reduction in the price of housing services in the owner-occupied sector to be undone. The higher price level in the owner-occupied sector has also consequences for the rental sector as well. Tax subsidy policy operates to increase the vacant possession value of rented houses to no less a degree. If the rental level were based on the vacant possession value, the favourable tax treatment would result in higher rental levels, higher than would be the case in a market equilibrium without tax subsidy (White and White, 1977). This is the case in the CPB study, as a result of which the reported implicit subsidy in the rental sector is higher. Rent control can also be seen as a means whereby the favourable tax treatment afforded to the owner-occupied sector is prevented from harming tenants by pushing up prices (Romijn and Besseling, 2008).

The third significant characteristic of the Dutch housing market is the major share of the housing associations. Their share in the total housing stock is 33 per cent and they own 75 per cent of all rented housing. This, in comparison with other developed countries, is a high share. Taking the net present value of the cash flows derived from their assets less those of their liabilities, net equity on the balance sheets of Dutch housing associations stands at 30 per cent on average. This strong equity position is exceptional in an international perspective. Housing associations are thus in a position to realise new rented houses on their own even if market rates of returns are unobtainable. Despite rent control and the downwards pressure on rents that results, new rented houses are thus added to the stock. Partly enabled by their equity situation, rents charged for association-owned housing are lower than what is permissible under rent control. Management and maintenance costs of housing associations are higher than those in the commercial rental sector. Data will be presented later in this paper. This higher level of costs comes in part from a better service provided to tenants and in part from the value gap inefficiencies. This then creates the paradoxical situation whereby the strong net equity situation of housing associations leads to a policy in which the tenanted investment value of the houses and thus of their net equity position is depressed. In conclusion it is important to note that housing associations only make limited sales of rented houses to owner-occupiers. In general, sales are only made to finance new investments. In general, housing associations do not view the possibility of realising a profit on the sale that would arise from the difference between the vacant possession value and the tenanted investment value as being a sufficient reason to sell rented houses. On average housing associations sell only 0.6 per cent of their houses each year (CFV, 2008).

This only constitutes a brief sketch of the Dutch housing market and above all points to the factors that have led to an enormous value gap. The fiscal subsidy in the owner-occupied sector together with the inelastic supply increases the vacant possession value. The low rent level depresses the tenanted investment value. In principle this applies to all rented housing, but is the greatest in the case of association-owned housing. The non-profit behaviour of the housing associations deepens the value gap present in association-owned housing.

3. *The value gap in association-owned houses*

As a consequence of the various factors at play in the Dutch housing market there is in particular amongst the houses owned by the housing associations an inbuilt difference between vacant possession and tenanted investment value: the value gap. The size of the gap can be determined with the aid of data from the Central Fund for Social Housing (CFV), the national regulator for the housing associations. The average value in use of the rented houses is available for each association. This value is equal to the net present value of the future cash flows, for which the policy intentions of the housing associations forms the basis. Taking the different housing policies of the individual association into account, this value in use corresponds to the tenanted investment value. The average taxable value, the valuation under the Valuation of Property Act, of rented houses is also available for each housing association. This taxable value constitutes a good approximation of vacant possession value. In both cases the valuation date is 1 January 2007. At that time there were 455 housing associations in operation. Three small housing associations have been excluded from the analysis because of their lack of data. The remaining housing associations own 2.2 million rented houses.

Table 2.1 provides details of vacant possession and tenanted investment values for association-owned housing. The value gap is the difference between the two values. The average vacant possession value stands at €151,591 per rented house, the tenanted investment value at "only" € 33,512 per rented house. The value gap amounts therefore to an average of € 118,079 per rented house. This means that the major proportion of the vacant possession value is not realised by the housing associations over the rental period and is lost. The vacant possession value can of course be realized by selling the rented house. But housing associations only sell a small portion of their houses. Besides that, the focus of this paper is that it is of great importance to understand the factors causing so great a loss in value, amongst others by the housing policy of the housing association.

Table 2.1: Vacant possession value, tenanted investment value and the value gap present in association-owned houses, in Euros, 2007

	n	Minimum	Maximum	Mean	SD
Vacant possession value	2,242,830	61,916	334,479	151,591	27,320
Tenanted investment value	2,242,830	427	104,170	33,512	7,355
Value gap	2,242,830	11,460	296,734	118,079	27,508

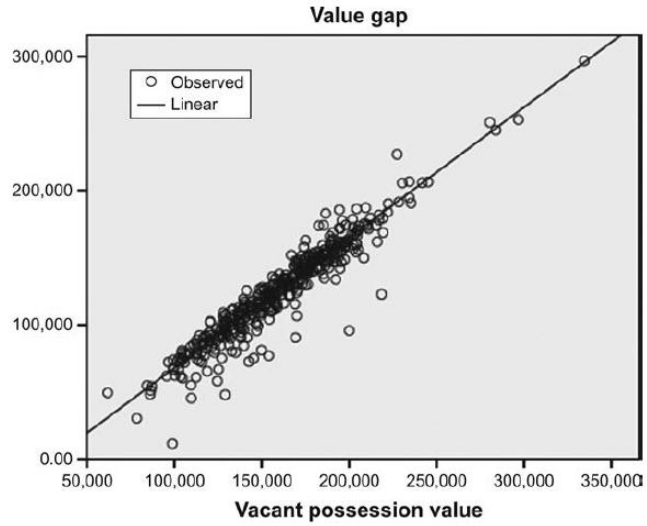
Source: CFV, own calculations

There is no statistical correlation between the level of the vacant possession and the tenanted investment value (R^2 = 0.01). The tenanted investment value is primarily determined by the actual rent level. This implies that also the actual rent has no statistical correlation with the vacant possession value (R^2 = 0.05). This is remarkable. It shows that the rent levels set by the housing associations, partly as a consequence of rent control, are out of line with the vacant possession value. In regions where the vacant possession value is relatively high, rental levels are no higher than elsewhere. A consequence of this is the lack of migration from the rental to the owner-occupied sector in these regions because there owner-occupation is more expensive than renting. Because there is no statistical correlation between vacant possession and

tenanted investment values there is indeed a strong correlation between the vacant possession value and the value gap (R^2 = 0.93). Figure 2.1 illustrates this correlation. Housing associations with a relatively high vacant possession value also have a relatively high value gap and vice versa.

The vacant possession value shows a clear regional differentiation while the tenanted investment value shows only a very limited regional differentiation. Figure 2.2 features the average of these two values as well as the average gap per Dutch province.

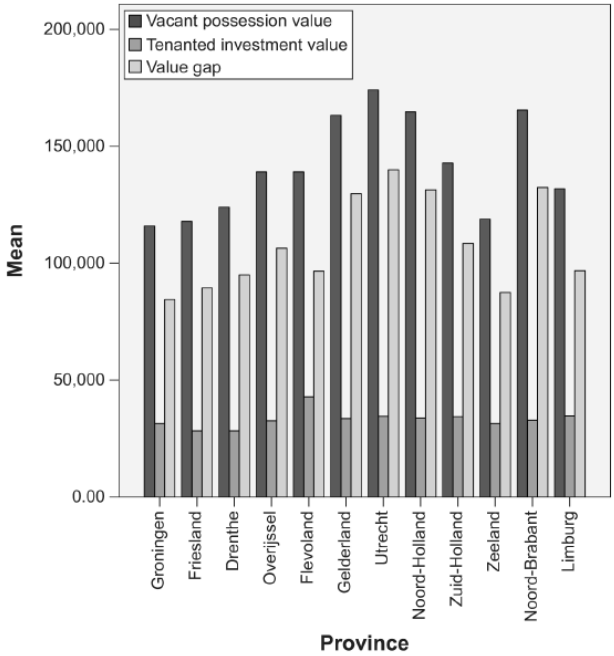
Figure 2.1: Vacant possession value and the value gap present in association-owned houses, in Euros, 2007



Note: Cases weighted by number of houses

Source: CFV, own calculations

Figure 2.2: Vacant possession value, tenanted investment value and the value gap by province, in Euros, 2007



Source: CFV, own calculations

As a partial consequence of scarcity the vacant possession value in the west of The Netherlands is relatively high but is relatively low in the peripheral provinces such as Zeeland, Groningen and Friesland. Tenanted investment values vary little between the provinces, the province of Flevoland being an exception. The fact that the tenanted investment value is higher here than in other provinces is attributable to the fact that this province, consisting of recently drained polder land, is relatively young as are the houses there. The differentiation by province in the average value gap follows that of vacant possession value.

4. The model

An equilibrium model is used to explain the difference between the vacant possession value and the tenanted investment value in association-owned housing. Where the housing market is in equilibrium and where there is no government policy influencing the value of houses, there is in principle no value gap. In that case the vacant possession value and the tenanted investment value are equal. In terms of determining the value of a house, it is of no consequence whether the house is owner-occupied or rented out. In the current situation a value gap has arisen. On the one hand this is because the favorable tax treatment is capitalized in the value of the owner occupied houses. On the other hand this is because the tenanted investment value has been depressed by, amongst other things, rent control in the rental sector.

The basis of the model used to explain the value gap is the relationship between the value of the house on the one hand and that of the future cash flows on the other. Where the market is in equilibrium the value of the house is equal to the present value of the future cash flows. The cash flows that are distinguished are rental revenues, maintenance costs, the other management costs, including insurance and taxes, and the residual value at the end the lifespan of the house. The following formula sets out the relationship:

$$MV_{t=0}^{eq} = R_{t=1}^{eq} \sum_{t=1}^{t=n^{eq}} \frac{(1+r)^{t-1}}{(1+d)^{t-1}} - MT_{t=1}^{eq} \sum_{t=1}^{t=n^{eq}} \frac{(1+mt)^{t-1}}{(1+d)^{t-1}} - MA_{t=1}^{eq} \sum_{t=1}^{t=n^{eq}} \frac{(1+ma)^{t-1}}{(1+d)^{t-1}} + RV_{t=1}^{eq} \frac{(1+rv)^{n^{eq}-1}}{(1+d)^{n^{eq}-1}} \quad (1)$$

where:

MV^{eq} = market equilibrium value of the house;
R^{eq} = rent level, market equilibrium;
MT^{eq} = maintenance costs, market equilibrium;
MA^{eq} = management costs, market equilibrium;
RV^{eq} = residual value of the house, market equilibrium;
r = yearly increase of the rent level;
mt = yearly increase of the maintenance costs;
ma = yearly increase of the management costs;
rv = yearly increase of the residual value;
d = discount factor/desired total rate of return.

The level of the cash flows that determine the market value of the house is in line with market equilibrium. How these levels are set is examined later in this paper. Depreciation is not present in formula (1). Depreciation is indeed a cost for the landlord but is not a cash flow. Depreciation does play a part later on. The conventional definition for depreciation is used here:

$$DP_t^{eq} = (1+p)MV_{t-1}^{eq} - MV_t^{eq} \qquad (2)$$

where:

DP^{eq} = depreciation, market equilibrium;
p = inflationary price increase of the value of the house.

The formula expresses that there is in principle an inflationary price increase resulting in an increase in the value of the house. To the extent that the value is lower, there is depreciation.

These two formulae can be used to derive the level of a market equilibrium rent. An equilibrium rent is equal to the user costs, a concept that is well- known in housing economics:

$$R_t^{eq} = dMV_{t-1}^{eq} + MV_t^{eq} + MA_t^{eq} + DP_t^{eq} - pMV_{t-1}^{eq} \qquad [4] \qquad (3)$$

The formula shows that the equilibrium rent level is equal to the desired total rate of return for the landlord multiplied by the market value of the house, being the invested capital, plus maintenance costs, management costs and depreciation. The inflationary increase in the value of a house, the indirect rate of return from housing operation, is deducted.

In the current situation the favorable tax treatment increases the vacant possession value. Because this paper does not further review the manner in which this increase comes into being, the following simple formula is used:

$$MV_t^{eq} = (1-f)TV_t \qquad (4)$$

where:

TV = the taxable value;
f = a factor by which the taxable value is decreased.

The equilibrium value of the house is determined by lowering the current vacant possession value by this factor f. Where market equilibrium obtains in the absence of government influence, this value applies in principle to both ownership sectors. Regional differences in the effect of the favorable tax treatment on the vacant possession value have been left out of consideration.

[4] In this formula the present value of the cash flows is prenumerando calculated. In order to derive formula (3) this should be postnumerando. When this is done the outcome of the model is slightly different.

The tenanted investment value reported by the housing association is the value which the housing association, based on rent control and its own policy, expects to realize during the remaining lifespan of the house. It is also calculated as the net present value of the future cash flows and the same classification of cash flows is applied. So the formula for the tenanted investment value resembles very much formula (1) for the market equilibrium value:

$$TIV_{t=0}^{ha} = R_{t=1}^{ha} \sum_{t=1}^{t=n^{ha}} \frac{(1+r)^{t-1}}{(1+d)^{t-1}} - MT_{t=1}^{ha} \sum_{t=1}^{t=n^{ha}} \frac{(1+mt)^{t-1}}{(1+d)^{t-1}} - MA_{t=1}^{ha} \sum_{t=1}^{t=n^{ha}} \frac{(1+ma)^{t-1}}{(1+d)^{t-1}} + RV_{t=1}^{ha} \frac{(1+rv)^{n^{ha}-1}}{(1+d)^{n^{ha}-1}} \quad (5)$$

where TIV^{ha} is tenanted investment value as reported by the housing association.

Although this formula appears very similar to formula (1), there are major differences behind that similarity. In principle the level of all cash flows realized by the housing associations can vary from what may be expected in a market equilibrium. This is indicated by the suffix ha. Also the remaining lifespan of the house differs.

5. The decomposition of the value gap

This model makes it possible to break down the value gap into six components which jointly explain the difference:

(1) the favorable tax treatment in the owner-occupied sector;
(2) a difference in the remaining lifespan;
(3) a difference in rent level;
(4) a difference in maintenance costs;
(5) a difference in management costs; and
(6) a difference in residual value at the end of the remaining lifespan.

Except for the first component, the other components are a result of the intended future housing policy of the housing association. Every component quantifies the effect compared with market equilibrium values.

The assumptions

The effect of the favorable tax treatment in the owner-occupied sector on the value gap is based on research in which an estimate is made of the decline in value when the favorable tax treatment is terminated. The estimates vary between 30 per cent and 15 per cent (Boelhouwer et al., 2001; Briene et al., Koning et al., 2006). The basic variant is based on a decline in value of 20 per cent (f = 0.20). Components 2 to 6 inclusive are all concerned with the value effect of the difference between a market equilibrium level versus the level applied by the housing association. Table 2.2 shows the average levels for housing associations as well as the market equilibrium values. The model is calculated for each housing association separately and the specific figures are used instead of the here presented averages.

Table 2.2: The average value taken by housing associations and the market equilibrium value of various factors in their housing operations, 2007

	Average values taken by housing associations	Market equilibrium values
Rent level 2007	€4,383	Endogenous, determined within the model
Maintenance costs 2007	€1,125	€875
Management costs 2007	€1,089	€730
Residual value (2007 prices)	€5,000	15 per cent of the market equilibrium value of the house
Remaining lifespan (years)	23	23 + 25

On average, housing associations assume a remaining lifespan of 23 years. This is partly based on a total 50-year operating period at the time when operations begin. The assumption often taken in the literature is that of an economic lifespan of 100 years whereby no distinction is made between owner-occupied and rented housing (CBS, 1954). Given that owner-occupied houses have on average a higher initial level of quality relative to rented houses, differentiating the lifespan is justified. An average lifespan of 125 years is assumed to apply to owner-occupied housing and one of 75 years to rented housing. Based on this the remaining lifespan of the houses of the housing associations has been raised by 25 years.

The rent level charged by the housing associations is relatively low as a consequence of rent control, but is also downward influenced by their own non-profit rent policy. The rent level that is used by the housing associations to determine their tenanted investment value is on average € 4,383 per year. The level of the equilibrium market rent is determined by the model. Results from the model will be shown later.

Housing associations have on average higher maintenance costs than those applicable under the VEX market standard. The VEX market standard gives the cost level of commercial landlords and is used as the market equilibrium cost level (FGH, 2008). The VEX market standard for maintenance amounts to an average of € 875 per rented house; housing associations spend an average of € 1,125 per house on maintenance. There is no reliable information of the reasons behind this difference. It is partly the result of the policy of housing associations to deliver more services and partly the result of inefficiencies. Housing associations' management costs, including expenses such as insurance and taxes, are also higher. The VEX market standard for management and other costs amounts to an average of € 730 per rented house; housing associations spend an average of €1,089 per house on management and other costs. Reliable indications of the reasons for the management costs are lacking as well. The residual value of association-owned houses is relatively low if it is assumed that the land made available at the end of the lifespan will be used for the construction of new association-owned houses. On the basis of this assumption the regulator retains as residual value the figure of € 5,000 for association-owned housing. A market residual value has been taken as being 15 per cent of the market equilibrium value of the house.

The following long-term assumptions have been made in the basic variant that allow for inflation, other parameters and the desired total rate of return/discount rate. General inflation (CPI) has been set at 2 per cent. Because the price increases of houses, maintenance and management in practice exceed the CPI, price increases of 3 per cent have been retained for each of these three items. Also the residual value of the house is supposed to increase yearly with 3 per cent. The annual inflationary rent increase has been set at 2.25 per cent; this equals the 3 per cent price increase of houses minus an annual obsolescence rate of 0.75 per cent. Finally the desired total rate of return/discount rate has been calculated by taking a 4 per cent risk-free rate of return plus a 2 per cent risk premium, taking the total to 6 per cent.

Results of the basic variant

The results of the model consist of two components: the quantitative decomposition of the value gap and the level of the market equilibrium rent plus the factors from which the rent level are built up. Table 2.3 shows how the model explains the value gap totaling € 264.8 billion.

Table 2.3: The breakdown in the value gap of 2.2 million association-owned houses by the different factors, in billions of Euros, 2007

Vacant possession value	*340.0*
Effect of tax policy	−68.0
Market equilibrium value	*272.0*
Effect of lower rent level[a]	−127.8
Effect of higher maintenance costs[a]	−14.9
Effect of higher management costs[a]	−21.3
Effect of lower residual value[a]	−7.6
Effect of shorter lifespan	−25.2
Tenanted investment value	*75.2*

Note: [a]This effect has been calculated on the assumption of a remaining lifespan in line with market equilibrium

Source: CFV, own calculations

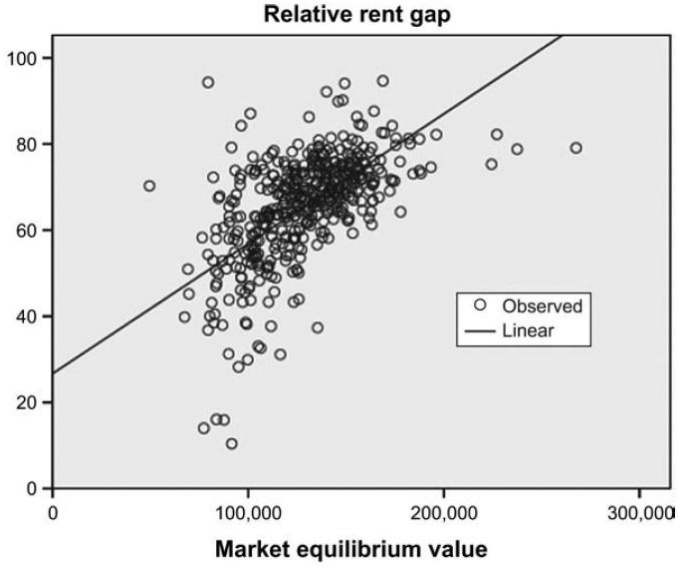
As stated above, six factors are distinguished, each of which are responsible for a part of the loss in value. The reduction in vacant possession value due to the effect of the tax policy amounts to € 68.0 billion. The market equilibrium value of the 2.2 million association-owned houses, without the distorting influence of the tax policy, thus comes out at € 272.0 billion. Housing associations "only" realize € 75.2 billion of this value. Rent policy, combined with rent control, causes the greatest loss of value, which amounts to €127.8 billion. This corresponds to the capitalized value of the difference between the market equilibrium and actual rent levels. Additionally the higher maintenance and management costs contribute € 14.9 billion and € 21.3 billion respectively to the loss in value. The fact that housing associations take housing units out of operation relatively quickly results in a loss of value of € 25.2 billion. Lastly the lower residual value of association-owned housing further depresses the tenanted investment value by € 7.6 billion.

There are major differences between housing associations, not merely in terms of the size of the value gap as has been shown above. The effect of each differentiating factor also varies sharply. This concerns specifically the effect of the five factors that comes from the housing associations' operating policy. These five factors are

responsible for the difference between the market equilibrium value and the tenanted investment value, the adjusted value gap, amounting to € 197 billion in total. In the model the effect of tax policy is always an identical percentage of the vacant possession value for each housing association and therefore has been omitted in the adjusted value gap.

On average 65 per cent of the adjusted value gap is caused by the lower rent level. The size of the rent gap, the part of the value gap which is caused by the difference between the market rent level and the actual rent level, as a percentage of the adjusted value gap is primarily determined by the level of the market equilibrium value of the house. The higher this value, the greater the rent gap is. In addition, the actual rent level is also of importance for the rent gap. The lower the actual rent level, the higher the rent gap. The combination of these two variables explains the size of the rent gap to a large degree (R^2 = 0.80). Figure 2.3 shows the correlation between the relative rent gap and the market equilibrium value per rented house.

Figure 2.3: The size of the relative rent gap as a percentage of the market equilibrium value and the market equilibrium value per rented house, 2007



Note: Cases weighted by number of houses

Source: CFV, own calculations

Maintenance and management costs are responsible for 18 per cent of the adjusted value gap. The relative gap due to the difference in costs is primarily determined by the size of the actual costs per house and also by the level of the market equilibrium value of the house (in aggregate R^2 = 0.81).

Sensitivity analysis

The breakdown of the value gap shown depends on the assumptions made, so it is relevant to make a sensitivity analysis for some important assumptions. The analysis is made concerning the following assumptions:

- The size of the value effect of the favorable tax treatment in the owner-occupied sector. In the basic variant a 20 per cent effect is assumed. Variants with a 17 per cent and 23 per cent effect have been calculated.
- The residual value level at the end of the operating period. In the basic variant the calculation allowed for 15 per cent of the market equilibrium value of the house. Alternative assumptions are 10 per cent and 20 per cent of the market equilibrium value.
- The duration of the remaining lifespan of the houses. In the basic variant 25 years were added to the remaining lifespan stated by the housing association. This additional lifespan has also been set at ten and 40 years.

Table 2.4 features the results of these six variants. In all variants the effect of a lower rent level is the greatest by far. The variants show only limited change from the other effects. The results of the basic variant are thus relatively robust.

Table 2.4: The breakdown in the value gap of all association-owned housing in the case of different variants, in billions of Euros, 2007

		Tax effect		Residual value		Remaining service life	
	Basic variant	17 per cent reduction in the vacant possession value	23 per cent reduction in the vacant possession value	10 per cent of the market operating value	20 per cent of the market operating value	10 years extra	40 years extra
Vacant possession value	*340.0*	*340.0*	*340.0*	*340.0*	*340.0*	*340.0*	*340.0*
Effect of tax policy	−68.0	−56.7	−78.5	−68.0	−68.0	−68.0	−68.0
Market operating value	*272.0*	*283.3*	*261.5*	*272.0*	*272.0*	*272.0*	*272.0*
Effect of lower rent level[a]	−127.8	−139.2	−117.4	−131.4	−124.3	−140.1	−122.3
Effect of higher maintenance costs[a]	−14.9	−14.9	−14.9	−14.9	−14.9	−12.2	−16.6
Effect of higher management costs[a]	−21.3	−21.3	−21.3	−21.3	−21.3	−17.4	−23.8
Effect of lower residual value[a]	−7.6	−7.6	−7.6	−4.1	−11.1	−11.7	−5.0
Effect of shorter lifespan	−25.2	−25.2	−25.2	−25.2	−25.2	−15.3	−29.2
Tenanted investment value	*75.2*	*75.2*	*75.2*	*75.2*	*75.2*	*75.2*	*75.2*

Note: [a]This effect has been calculated on the assumption of a remaining lifespan in line with the market

Source: CFV, own calculations

Market equilibrium rent level

The value gap is what is lost during the lifespan of the house if the intended future housing policy of the housing associations is actually put into practice. It is the loss capitalized over the remaining lifespan. The total loss is built up from the yearly losses relative to the market equilibrium benchmark. This yearly loss may be quantified using the market equilibrium rent level and the components from which it is built up. Table 2.5 shows the result given by the model for the market equilibrium rent level.

Table 2.5: The market equilibrium rent level and how it is built up under the basic variant, 2007

R	=	i*MV − 1	+ MT	+ MA	+ dp*MV − 1	P*MV − 1
€6,836	=	6%*€121,273	€875	€730	1,32%*€121,273	3%*€121,273

Source: CFV, own calculations

The average market equilibrium rent level is € 6,836 on an annual basis. Related to the market equilibrium value of the house which is on an average € 121,273 (80 per cent of the vacant possession value), the equilibrium rent level is 5.6 per cent. As shown in Table 2.2 the actual rent level amounts to an average of € 4,383 per year. There is thus a rent discount of 36 per cent. This rent discount is the consequence of rent control and the rent policy pursued by the housing associations. The difference of € 2,453 can be seen as an implicit subsidy. The total size of the implicit subsidies across the 2.2 million rented houses owned by the housing associations amounts to € 5.5 billion.

A recent study by the CPB also derived the market equilibrium rent level (Romijn and Besseling, 2008). According to the CPB this amounts to an average of € 8,620 per year for an association-owned house. The difference between both results is to a large degree explained by the fact that the CPB calculates the market rent on the basis of the vacant possession value without adjusting for the value boost coming from the favorable tax treatment afforded to owner-occupiers. The favorable tax treatment in the owner-occupied sector does indeed exert an upward push on prices in the rental sector. That effect does not exist in a situation of market equilibrium in which prices in both the rental and the owner-occupied sector are not influenced by government policy and this is the reason requiring an adjustment to the vacant possession value. If the model makes use of the unadjusted vacant possession value to calculate the market rent the average market rent comes to € 8,139 per year.

There are two other differences with the CPB analysis that cancel each other out to a large degree. The model features an average depreciation percentage (dp) of 1.32. Depending on the individual housing association, this figure varies between 0.91 per cent and 1.77 per cent. The CPB bases itself on a figure of 0.4 per cent (Koning *et al.*, 2006). A depreciation percentage of 0.4 is exceptionally low and does not accord with the expected remaining lifespan of association-owned houses. The result given by the model is to be preferred. On top of the risk-free rate of return, the CPB also retains a relatively high risk premium of 3 per cent, as a result of which the desired rate of return amounts to 7 per cent. In this analysis the risk premium has been set at 2 per cent for investments in rented housing.

Loss of direct return

The housing associations forgo return by virtue of their lower rent levels and higher operating costs. This specifically concerns direct rate of return. The scale of the loss of direct return can be determined by comparing the equilibrium values in the case of a market rent level with the actual values set out in Table 2.2. In 2007 the housing associations forewent an average of € 2,453 in rental revenues and average operating costs were € 609 higher. Table 2.6 provides some data about the key figures for loss of direct return.

Table 2.6: Market equilibrium direct rate of return, actual direct rate of return, and loss in direct return, as a percent of market equilibrium value of the house, 2007

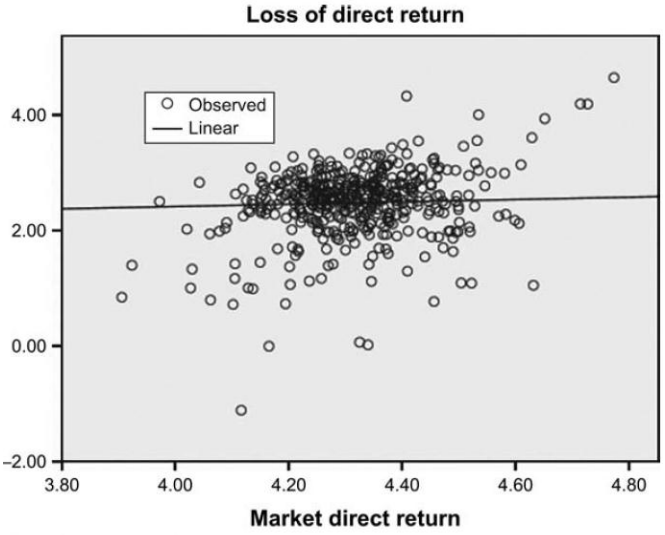
	n	Minimum	Maximum	Average	SD
Market direct rate of return	2,242,830	3.91	4.77	4.32	0.09
Actual direct rate of return	2,242,830	0.08	5.23	1.84	0.44
Loss in direct return	2,242,830	−1.11	4.65	2.48	0.43

Source: CFV, own calculations

Direct returns under market conditions amount to an average of 4.3 per cent, and the spread is limited. The actual direct return is only 1.8 per cent. The loss in direct return therefore amounts to an average of 2.5 per cent, calculated on the market equilibrium value of the house. There are two very small housing associations where the data shows that their actual direct yields exceed that of the market.

It might be assumed that the loss of direct return incurred by housing associations increases in line with an increase in the market direct return. Where a market direct return is high, more return can be sacrificed without this leading to financial problems. However, that correlation is entirely absent (R^2 = 0.00). Figure 2.4 gives the loss of return for each housing association compared to the market direct return and illustrates this point.

Figure 2.4: Market direct return and loss of return by housing associations, as a per cent of market equilibrium value, 2007



Note: Cases weighted by number of houses

Source: CFV, own calculations

The average 2.5 per cent loss of return can also be expressed in Euros. Relative to the market benchmark, the housing associations have lost a total of € 6,736 million on their operations in 2007. This is a substantial sum. That housing associations do not behave as a commercial landlord and as a result do not achieve a market return is inherent to their non-profit policy goals. The central question is indeed whether, given the scale of the loss of return, this is performed in an efficient manner.

6. Discussion

The value gap in association-owned houses and with commercial landlords as well, is an inbuilt characteristic of the Dutch housing market. The persistence of this value gap is made possible in part by the limited transfers between rent and owner-occupied houses. This implies at the same time that the simple fact of the existence of the value gap does not necessarily lead to gentrification. While this factor may promote gentrification, it is not a sufficient condition.

The existence of the value gap, and certainly on the scale that is the case in The Netherlands, shows that the housing market is not in equilibrium. The total value gap amounts to € 265 billion. The analysis has shown that this gap, in order of importance, is caused by the:

(1) relatively low rent level (48 per cent);
(2) effect of tax policy (26 per cent);
(3) effect of a shorter lifespan (10 per cent);
(4) effect of higher management costs (8 per cent);
(5) effect of higher maintenance costs (6 per cent); and
(6) effect of lower residual value (3 per cent).
The relative low rent level is by far the most important factor causing the value gap, on a distance followed by the effect of the tax policy in the owner-occupied sector.

The value gap has a number of consequences for the functioning of the housing market. The owner-occupied and the rental segments are separate housing markets between which migration is at a level that becomes lower and lower. New construction of rented housing by commercial landlords hardly ever takes place primarily because no market rate of return is possible in a rental market which is dominated by housing associations. The fact that housing associations indeed realize new rental housing comes from the fact that their required rate of return on the invested value can be very low. With the price level of owner-occupied housing is driven upwards by favorable tax treatment, potential first time buyers find it hard to access the owner-occupied sector. The functioning of the housing market may be improved when the value gap declines steadily. This calls for the favorable tax treatment to disappear from the owner-occupied sector over time and for rent levels in the rental sector to be raised to market level. Because of the major financial consequences for the owners' occupiers, the landlords and the tenants involved, a recovery of the housing market will take many years.

The manner in which the objectives of housing policy are realized forms a separate point in the discussion. An important objective is housing affordability for lower

income groups. In addition to housing allowances, Dutch housing associations play a significant part in renting houses out at a relatively low rent. This paper has shown that, as a result, a loss in value for the housing associations arises worth € 128 billion. This loss in value comes at the expense of the housing associations' capacity to invest. Furthermore, this relatively low rent level is a mechanism for providing a wide-ranging, generic subsidy to housing consumption. The key point here is that there is no guarantee that this subsidy policy and the value loss so created constitute an efficient use of resources. Higher income groups also live in association-owned houses, in which case there is no need for a housing consumption subsidy. Housing affordability may well be achieved more efficiently by transforming the generic subsidy policy into a targeted form of subsidizing by increasing the rent level to a market level and at the same time expanding the system of housing allowances. Since 2008 housing associations are carrying out experiments under the title of "Customized Rentals" in which these options are being explored (Vos, 2008). Welfare is expected to increase when this experiment is implemented to all houses of housing associations.