Social housing on the move

_A transition between a unitary and a dual rental market with the help of a system dynamics analysis_

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_January 2016_

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**Abstract**

Both the public and the European Commission have criticized the past actions of Dutch housing associations. A new housing act has become applicable, which would force housing associations to change their conduct on the rental housing market. Important developments include the allocation of households with a low income to social dwellings, a distinction between the social and commercial rental market, and lastly, a landlord levy. A system dynamics model was developed to identify whether the rental housing market would become a more dual rental market in the future. The model was made for one specific housing association: Havensteder, a large housing association in the region of Rotterdam. The position of Havensteder and some objectives are taken into consideration for the system dynamics model. The outcomes of the system dynamics model show that the structure of the social housing market tends towards a more dual rental market, although not all indicators point to this result. Therefore, it cannot be concluded that the social housing market is in fact transitioning to a dual rental housing market.

**Keywords:** social housing – housing systems – housing associations – dual and unitary rental housing market – the Netherlands – system dynamics

**Number of words:** 3531

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1. **Introduction**

Over the last years, the activities of housing associations have frequently been discussed in public. The European Commission has objected to the structure of the Dutch housing market, as the social housing market contains too many aspects that disrupt the housing market, and furthermore, implies state aid. According to the EC, the maximum rent levels for the target group should be regulated in the revised housing act (Priemus & Gruis, 2011). In 2015, the maximum rent level for social housing is determined to be €710 per month (BZK, 2014). The social housing market’s primary objective is to provide housing for those households that cannot afford a dwelling on the commercial housing market. This group of households is defined by the height of their annual income. In 2015, the maximum annual income for the target group is €34,911 (BZK, 2014). Housing associations have the obligation to allocate 90% of the property to this target group. When the
housing association rents more than 10% of their dwellings to households with an annual income above the maximum income, the demand for households within the target group is considered to be too low. The EC argues that in a market in which too many dwellings are rented to households with an income above the allowed income, the size of the social housing market is too large, and therefore, it disrupts competition in the housing market (Priemus & Gruis, 2011). The housing agreement presents another regulation in the social housing market, which is known as the landlord levy (BZK, 2013). The landlord levy is based on the value of the property on the social housing market. The purpose of the landlord levy is to compensate the costs for the housing allowance for the Dutch government.

The new legislation places the social housing market in a new perspective and demands that housing associations adapt to the new circumstances. As Housing associations must adapt their policy, a different structure in the social housing market is likely to result. This work uses the structure of unitary and dual rental market to describe the development of the social housing market. This article’s research question is as follows:

*Will the social housing market make a transition to a dual rental housing market?*

The question is answered through the help of a system dynamics analysis, which is used to describe the developments of the social housing market, based on the new legislation and the housing association’s policy. The scope of the research includes one housing association in order to make the research specific and to be able to use a policy of a housing association. This research follows the housing association Havensteder.

First, this research explains the literature about dual and unitary rental markets, with an emphasis on the measurement of the dual or unitary rental market. Section 3 discusses Havensteder’s position in the social housing market and then next, the paper presents the research methodology and conceptualisation. Section 5 discusses the results of the system dynamics model. Finally, the work ends with the presentation of the conclusion and some recommendations.

2. Literature review

The Dutch housing market contains two types of markets: a rental housing market and an owner occupied housing market. This article takes only the rental housing market into consideration. Kemeny (1995) developed a framework that distinguishes between a unitary rental market and a dual rental market. His framework describes how the social housing sector is embedded within the rental housing market. In a dual rental market, the social housing is strongly segregated from the rest of the housing market; no competition exists with other parts of the housing system. In this case, the social housing market is strongly regulated. The rent level is independent from the current market price and social housing is only available to the lowest income groups. In a unitary rental market, the social housing is integrated within other parts of the housing system. Social housing can be viewed as a complementary aspect of the housing market that provides low-priced dwellings. Some competition exists between social housing and other parts of the housing market. Housing associations offer dwellings with a lower quality at a lower price. The rent level is slightly dependent on the market price, but is always less than the market price. Due to the competition in a unitary rental market, the dwellings are available to other income groups besides the lowest income groups.
The Dutch rental housing market can be described as a unitary rental market (Elsinga, Haffner, & Heijden, 2005), but the new legislation could lead to adaptations to the Dutch unitary housing market. Studies have argued that the legislation could lead to the dismantling of the unitary rental market (Elsinga, Haffner, & Heijden, 2008), although the extent is still unclear. Unitary and dual rental markets are two extreme conditions in the rental housing market. In reality, the Dutch rental housing market is between these two extreme positions. Legislation or housing association’s specific decisions can lead to a housing market’s transition towards a more unitary or a more dual rental market.

There are studies that measure the type of rental housing market (unitary rental market or dual rental market). Lennartz (2014) explains a concept to measure whether or not perfect competition exists in a certain region. Competition in a rental housing market, however, does not explicitly distinguish between unitary or dual rental markets. In a unitary market, the competition should be found in the complete rental housing market. In a dual rental market, competition exists only in the commercial housing market and not in the social housing market. In the commercial housing market, the competition should function even better in comparison to the unitary rental market. Competition in the social housing market should not exist in a dual rental market. The distinction between a unitary rental market and a dual rental market is not the same concern as the measurement of the competition in a rental market. When the competition in the social housing market is measured through the number of households’ movements to the social sector, it is arguable whether a more dual or unitary rental market exists (Elsinga, Haffner, Heijden, & Oxley, 2009). In a dual rental market, the movements in the social housing market are assumed to be low. In a unitary rental market, the number of movements should increase.

Studies attempt to measure some aspects of unitary or dual rental markets between several regions. These studies do not account for the development of housing regions over time. The project aims to measure the transition between the two types of housing markets over time. In order to measure the transition of the rental housing market, the following variables are taken into account and presented in figure 1:

- **Number of movements**
  The number of movements in the social housing market provides information about the accessibility of the housing market. In a unitary rental market, dwellings are more accessible to households. In a dual rental market, the social housing market is less accessible and fewer movements are realisable. The disruption of movements

![Figure 1: Dual or unitary rental housing market](image-url)
should be taken into consideration as a result of the new legislation. Households with a higher income are more likely to leave the social housing market.

- Rent levels
Due to the competition in the housing market, rent levels in a unitary market are sensitive to competition. It is assumed that social housing provides dwellings with lower rents and a lower quality, although there is an applicable price to quality ratio. The price to quality ratio is absent in the social sector of a dual rental market. Housing associations offers dwellings at a rent that is based on the costs for the exploitation, which is independent of the market price.

- Concentration of low income groups
In a dual rental market, the social housing sector is solely intended for households with a low income, and which therefore, are unable to buy a dwelling on the owner occupied housing market. The social sector is not intended for households that are not willing to buy a dwelling, as they already hold a sufficient financial position. Households with a higher income must rent on the commercial rental market in the case that they wish not to buy a dwelling. In a unitary housing market, the social sector is often available for higher income groups, even in the case that they are able to buy a dwelling.

- Demand surplus
In a dual rental market, the demand and supply on the private rental market is allocated due to competition. The rent should ideally balance the demand and supply. For that reason, there exists neither a waiting list nor a demand surplus on the commercial rental market. In the social housing market, competition does not allocate the rent and there is not a direct incentive for housing associations to develop more property, which results in a demand surplus on the social housing sector. The unitary housing market offers rental market dwellings with a price that is dependent on competition, but beneath the market price. Consequently, in a unitary market, a demand surplus is evident in all parts of the rental housing market.

3. Position of Havensteder
Havensteder is a housing association in the region of Rotterdam. The housing portfolio contains approximately 46,000 dwellings. 33,000 of their dwellings are located in the city of Rotterdam, which is 25% of the local social housing market. 11,000 dwellings are located in Capelle aan den IJssel, a city in which Havensteder is nearly the only housing association. The other dwellings are located in other municipalities in the region, where Havensteder has only a small share of the social housing market. This research concentrates only on the dwellings in the cities Rotterdam and Capelle aan den IJssel. From an interview with the housing association, it is established that Havensteder’s main objectives in the social housing market are as follows: achieve a financial feasible position and maintain the same share of dwellings on the social housing market. Not only does Havensteder’s environment change due to the new legislation, but furthermore, their financial position demands adaptations to their policy. With the help of a reorganisation, the average business costs are reduced from €1,630 per dwelling to €1,320 per dwelling per year. New tenants will have to pay a higher rent for a dwelling, which is 98% of the maximum rent based on the quality of the dwelling. Moreover, Havensteder aims to improve dwellings with the help of renovations and attempts not to demolish dwellings for the sake of building new dwellings on the specific location. Havensteder remains careful as they sell property, because it will lead to a decrease of dwellings, and consequently, a lower share
of dwellings in comparison to other housing associations.

4. Methods

This work uses a system dynamics analysis to determine the effects of Havensteder’s policy on the social housing market in the long-term. The model is able to test several different policies. The results of the analysis do not give precise outcomes, but make trends apparent as they viewed over a longer period. The method suits the research to the unitary and dual rental market, because precise data is unknown with respect to the market’s position as a dual rental housing market. The research emphasises the transition and the direction of the housing market’s development. The model is simulated over a time span of 30 years. The program Vensim Pro was used to simulate the model. The methodology of system dynamics is extensively discussed by Sterman (2000) and Pruyt (2013). A more applied use of system dynamics model on the housing system is found in the system dynamics models of Eskinasi (2014). The model used for this article can be found in the thesis of Venema (2016).

The model aims to provide results in regard to the transition between the unitary rental market and the dual rental market. Havensteder’s viability is an important condition for the transition. The system dynamics model demonstrates the developments of the factors that distinguish between the unitary and dual rental market. Havensteder’s policy is used as a tool to model different outcomes in the unitary and dual rental markets, as well as Havensteder’s viability. Developments in economy, demography and legislation are seen as inputs that the housing association cannot control. The model remains a simplification in many aspects: it does not speak to the liveability of the housing environment, agreements with local governments, the type of maintenance, the behaviour of other housing associations, the evolution of housing preferences and many other aspects.

5. Results

Several scenarios are used in the system dynamics model in order to view the results for different policies. First, this section discusses some general results and next, it discusses the results on the dual and unitary rental market.

Havensteder has decided to reorganise as a company. Its goal is to cut back operational costs from €1,632 to €1,320 per dwelling. It has shown that these cuts would result in a complete refund of the debts within 30 years. The complete refund is not necessary; a reasonable debt is not considered a problem as long as the loan to value and interest coverage ratio do not rise. Their long-term plan provides a certain solution space in which Havensteder can make improvements to the social housing markets. It will result in a remaining debt, but also a better or larger social housing market.

Dwellings are not rented to households with a high income. In each scenario, a decline of the higher income group is visible. On average, it takes about 10 years before the higher income group comprises of only 10% of all the tenants. The slow decrease of the higher income group results in a longer period in which the housing association is not able to realise new dwellings that would be financed by government loans. Finally, the group of tenants with a high income become very small. It can be discussed whether or not Havensteder will succeed to make the group smaller than 10% of the total tenants. It is possible that a certain number of tenants with a high income would not leave their social dwelling at all.
Two main solutions are proposed for Havensteder concerning the rent policy. The current policy is to increase the rent for all new tenants to 98% of the maximum rent. It is proposed to lower the rent level for all the dwellings to 70% or 80% of the maximum rent when a new tenant moves into a dwelling. All tenants profit from a lower rent level and it makes the social housing market more social. The other solution is to only lower the starters’ rent of specific dwellings. These dwellings would be transferred to the commercial rental market when the rent level becomes too high. Due to this measurement, some of the higher quality dwellings are not transferred and the social housing market remains larger. To finance this solution, the rent level of all social dwellings should be higher.

In most of the scenarios the same direction of the indicators is present, and only the extent of the transition varies. The scenarios take into consideration that Havensteder’s objectives are realised. It is shown that the number of movements within the social housing market decline to 50% to 60% compared to the annual number of movements in the current situation. The rent levels rise. Currently, the average rent level is 80% of the maximum rent. Havensteder intends to demand 98% of the maximum rent for new tenants. Several scenarios with lower rent percentages show that an initial rent of 80% is needed to maintain the financial position. This rent level increases each year due to annual increase of rent levels.

A direct consequence of the legislation is that households with a high income (above the income of the target group) are excluded from the social housing market. It results in a larger concentration of the target group in the social housing market. The number of available dwellings in the social housing market for the target group is dependent on Havensteder’s choices. When the housing association aims to provide dwellings for the target group, it should be possible to increase the number of available dwellings as a result of the outflow of households with too high of an income. It is only achieved when Havensteder makes the choice to save many of the higher quality dwellings for the social housing market and does not transfer them to the commercial housing market.

6. Conclusion and recommendations

Figure 2 shows that not all indicators move to a dual rental market. The average rent level increases as a consequence of Havensteder’s financial needs. More dwellings can be realised in the social housing market, but it is uncertain and depends on the choices of Havensteder. It cannot be concluded that the social housing market becomes a more dual rental market, but the indicators towards a dual rental market are stronger, in comparison

![Diagram showing the relationship between dual rental housing market and unitary rental housing market.](image-url)
to the indicators toward a unitary rental market.

This research is conducted for the housing association Havensteder. As the circumstances for each housing association are different, and for that reason it is suggested that the same system dynamics model be used different housing associations. The input for the model can be adapted to the specific housing association. Are the same results visible for other housing associations and to what extend does the input of the model change the results of a transition between a dual and unitary rental market?

It is assumed that the households with an income above the target group for social housing are not allowed to rent a dwelling on the social housing market. It is not mentioned where these households will find a dwelling in the future. It is possible that not all these households are able to buy a dwelling or to find a dwelling on the commercial rental market. Research on the behaviour and choices of these households could in the future provide suggestions to improve the supply of needed dwellings for these households.

**Literature**

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