First–time buyers on the Dutch housing market

An analysis of their (changing) position

Master Thesis

Technical university of Delft
Faculty of Architecture and the Built Environment
Master Architecture, Urbanism and Building Sciences

COLOPHON

TU Delft Department of Architectural Engineering + Technology
BK Bouwkunde

Delft University of Technology
Academic year 2021/2022

Faculty of Architecture and the Built Environment
Master Architecture, Urbanism and Building Sciences
Track Management in the Built Environment

First–time buyers on the Dutch housing market

An analysis of their (changing) position

Final report

Victor E. Aerts
v.e.aerts@student.tudelft.nl
student nr. 5407788

First supervisor: prof. dr. P.J. Boelhouwer
Second supervisor: dr. M.E.A. Haffner
Examiner: dr. ir. W.H. van der Spoel

Delft – November 2022

Foreword

This report is the result of twelve months of research on first–time buyers in the owner–occupied housing market in the Netherlands. The results of the research are interesting, but also quite complex. To my supervisors and everyone who will jump into the depths of this report with me: welcome. However, my graduation work is running considerably out of the original schedule due to various circumstances. As a result, I did eventually manage to include the information from WoON2021 in my analysis, which not only led to a very relevant update but also enriched the research results. In retrospect, therefore, I am happy with the decision to extend my thesis.

Now it is time for some thanking words. Although I have a fairly autonomous working style, I could never have completed this journey on my own. I therefore owe many thanks to a large number of people for their more or less direct contribution to this thesis work. Starting with both my supervisors. During the first weeks of this research, I was able to find a lot of support and ideas from Peter Boelhouwer. I thank him as my first supervisor for his trust and interesting suggestions that always helped me on my way. He helped me a lot with his knowledge and experience, which he used to steer the research mainly on outlines. Although he also paid attention to the details, I was mainly allowed to fill them in myself. The input of my second supervisor, Marietta Haffner, complemented these contributions perfectly. I was grateful for her knowledge and experience in researching the financial exposure of the owner–occupied housing market. Her literature tips and detail–oriented guidance clearly contributed to the research results. I am proud to graduate under both supervisors.

I consider myself fortunate to have been able to call on the knowledge and expertise of colleagues within the MBE section during my research period. I was always able to discuss various problems concerning data processing and analysis techniques with Harry Boumeester, without whose enthusiasm and knowledge much of my research would not have been possible. I would therefore like to take this opportunity to thank him for all the help he offered me to find a way through the jungle that may be called the WoON. However, the help I received was not limited to Delft. I also found support from former OTB member Peter Neuteboom in Tilburg to complete a large part of the research. His help was therefore indispensable to me. Towards the end of my graduation period, I gratefully found help and expertise from Roland Goetgeluk, without whom an important part of my research would not have been possible.

In particular, I would like to thank my girlfriend Jessie for her support and offering a listening ear whenever I got stuck again. Graduating at the same time meant we could discuss many of the same issues together. Both of us are therefore starting a new part of our lives. Finally, I would finally like to thank my fellow students, family, and friends for their unconditional support, interesting conversations, and welcome distractions at times, without whom I would not have been able to achieve this.

Abstract

'De meest courante woningen zijn niet courant'
Hugo Priemus (1984 p. 175).

Ensuring good living accomodation is a constitutional duty of the government, but there is now a shortage of 300,000 homes. Demand for housing has grown sharply in recent years. In the last two years, the housing market issue has been high on the political agenda again. In it, the issue of starters regarding home ownership occupies a prominent place.
The importance of first-time buyers and the benefits of home ownership has therefore not remained underexposed. The inflow of 'new' households into the owner-occupied housing market not only stimulates movement but also provides the necessary liquidity. Partly due to quantitatives shortage, the position of first-time buyers is said to have continued to deteriorate. In the formulated housing policy, the quantitative housing demand is therefore emphatically central. Being able to realise the stated policy objectives – suitable and affordable housing for starters – depends on the demand exercised. Such policy requires accurate knowledge about the position occupied by first-time buyers in the (owner-occupied) housing market.

This research focuses on the (changing) position of first-time buyers in the Dutch housing market. The research question answered in this respect is: *What is the position of first-time buyers in the Dutch housing market and how has this position developed from 2009 to 2021?*

To arrive at this position, an insight needs to be gained into how first-time buyers operate on the housing market. For this, the 'housing market' needs to be explored first. Therefore, this research firstly discussed the background developments prior to the data analyses.
The data research is divided into three parts. Firstly, the concept of 'first-time buyer' is explored in more detail whereby various profiles are identified. Next, the various distinct households are researched with respect to the demand for owner-occupied housing. Finally, a model-based analysis of housing market accessibility and success rates for these households is provided.
The research results conclude to five main findings. Firstly, whereas the absolute market entrance declines lightly, the relative influx decreases sharply. The total demand for housing from both aspiring first-time buyers as well as homeowners has grown sharply. Secondly, the most current houses are not current, meaning the demanded housing is scarcely available in the most demanded regions. Thirdly, the results show that it is increasingly the high-potential households that find their way into the market. Fourth, the position of first-time buyers has been increasingly determined by the total competition, as the affordability seems not to be the issue. This is mainly rooted in low interest rates. Lastly, the general succes rate among first-time buyers decreased while the diversity among these households has increased.

Keywords — first-time buyers, housing market, Netherlands, WoON survey, starter houses, regular houses, affordability, accessibility, success rate, NHG

Summary

Introduction
The position of first-time buyers in the owner-occupied housing market has deteriorated in recent years. Partly due to the skewing of lending standards towards price developments, increased demand for owner-occupied houses and competition with first-time buyers combined with a persistent housing shortage, this group of households seems to be finding it increasingly difficult to enter the owner-occupied housing market.

In 2022, the *National Housing and Construction Agenda* (MVRO, 2022) was published. In contrast to the market-oriented housing policy in previous years, the government is now once again taking the lead to prevent these households from becoming further downsized. In the government's formulated housing policy for the period up to 2030, the quantitative housing demand is emphatically central. As a result, being able to realise the stated policy objectives – suitable and affordable housing for first-time buyers is partly dependent on the demand exercised.

At the same time, the absolute inflow of first-time buyers does not appear to be decreasing significantly (Wisman & de Vries, 2020), raising the question of which first-time buyers are still entering the housing market. This study focuses on the position of first-time buyers within the Dutch housing market. In it, first-time buyers operate (i.e. exercise a housing demand) exclusively in the owner-occupied market.
The position of first-time buyers is mainly explained on the basis of the demand exercised – and the characteristics of the households exercising this demand. In doing so, demand also depends on the context in which it is exercised. By examining the period from 2009-2021, developments in their position are also identified.

The research question answered is:

What is the position of first-time buyers in the Dutch housing market and how has this position developed from the period 2009 to 2021?

The corresponding sub-questions are:

1. How have social shifts and housing market-related changes within the Dutch owner-occupied housing market in the period from 2001-2021 affected the position of first-time buyers?

2. How did the composition of the housing market segment of (starter)owner-occupied houses evolve both by housing characteristics, as well as the occupants' characteristics during the period 2009 to 2021, and what regional differences exist in this development?

3. In what way can first-time buyers be differentiated on the basis of their demographic and socioeconomic characteristics and (characteristics of) the owner-occupied dwelling?

4. How did the demand for (starter) owner-occupied houses develop in terms of size and nature in the period 2009-2021 and what regional differences exist in this development? What influence do market conditions and moving motives have on the demand for (starter) owner-occupied houses?

5. In what way did the owner-occupied housing-related housing expenditure of first-time buyers evolve over the period 2009-2021 and how is home ownership financed?

6. In what way has the accessibility of the homeownership market for first-time buyers in the Netherlands developed in the period 2009-2021 and what regional differences are there?

7. In what way has the (regional) success rate of first-time buyers developed in the period 2015-2021 and to what extent can the success rate be explained by the relevant household characteristics?

Research method

The sub-questions are operationalised in two ways: firstly, demographic and socioeconomic developments as well as developments in the housing & mortgage market and in government policy can be traced from a background study. Within this framework, residential mobility, i.e. the (desired) move to an owner-occupied house from households' moving motives (in their own regional submarket) can then be analysed and explained using the WoON surveys.

This mobility is broken down into realised demand and potential demand. In effect, it thus constitutes a semi *stated and revealed preference* method. Here, realised demand refers to observed moves. The potential demand refers to the desired removals of the so-called movers. For a glossary of terms, please refer to the glossary on page 223.

Results

The main findings for each sub-question are presented point by point. The conclusion further elaborates on any correlation and coherence.

Sub-question 2

- The characteristics of the housing stock of starter homes have seen little change in recent years. However, the relative share of these houses in the total (owner-occupied) housing stock does fluctuate. Currently, 46 per cent of the total owner-occupied housing stock can be counted in the starter segment. Over the entire study period, this share is lower than other years.
- The number of starter homes occupied by first-time buyers has declined in recent years. On average, 67 per cent of all first-time buyers move into a starter home.

- The share of owner-occupiers in total residential mobility has decreased to 12 per cent. In the previous period(s), this share was still 15-18 per cent.
- The number of single owner-occupiers living in starter homes has increased to 41 per cent in recent years. The number of couples (with children) has slightly decreased in the recent period. Both developments follow the trend of household thinning.
- Compared to the previous period(s), the share of households with an income up to one-and-a-half times modal moving into starter homes has fallen sharply. The higher income groups 2-3 times modal are gaining share significantly. At the same time, the share of higher-educated people moving into such houses is growing. Currently, over 41 per cent have at least a bachelor's degree. First-time buyers who move into a house in the regular segment earn at least up to 3 times modal and almost always have at least a bachelor's degree.
- Only 7.5 per cent of the housing stock of starter homes is located in the G4. The vast majority of homes are located outside the G44 (61 per cent). The provinces with the largest share of starter homes are South Holland, followed by North Brabant and North Holland. The fewest starter homes are in Flevoland. The share of starter homes involved by owner-occupiers is above the share in the stock in these provinces.

Sub-question 3
- From the cluster analysis, households belonging to direct entrants or former tenants are found to be distinguished by: household composition and household size, disposable household income, type of income and housing type of the owner-occupied dwelling concerned.
- Three profiles were formed for direct entrants: singles, cohabitants and families.
- Four profiles were formed for former tenants: singles, cohabitants, families and others.

Sub-question 4
- Total realised demand for owner-occupied housing by first-time buyers is 202,000 households. Against this, the total potential demand is 853,000 households. This makes potential demand more than four times higher than realised demand.
- The share of realised demand for starter homes in total demand is lower than the share of potential demand in total housing demand. As a result, there is residential substitution. Direct entrants are significantly more likely to compulsorily choose rental housing. Former tenants are more likely to postpone the housing desire.
- For direct entrants, the absolute realised demand of singles has remained the same. Cohabitants and families experienced a decrease of 13 per cent compared to the 2015/2018 period. The potential demand of singles a cohabitants has increased by 62 per cent and 22 per cent, respectively.
- For the former tenant, the absolute realised demand of all distinct households decreased by 20 (cohabitants and families) to 40 per cent (singles and others). The absolute potential demand increased sharply by 40 to 80 per cent compared to the 2015/2018 period.

The nature of the demand for (starter) owner-occupied houses is elaborated by 'who' (characteristics households), 'what' (characteristics owner-occupied houses) and 'why' (the motives to move).

- Direct entrants are at the beginning of the household and labour market cycle. A majority are in the 25–34 age group with an average but stronger socioeconomic position.
- Direct entrants in potential demand appear to be mainly in the 17–25 age group.
- Former tenants are at a slightly later stage of the household cycle; households up to 25 years old are almost non-existent. Socioeconomically, these households occupy a higher position than the direct entrants.
- Potential demand from former tenants shows a breakdown by socioeconomic characteristics. On average, moving inclined households have lower incomes. Age barely plays a role.
- Among both direct entrants and former tenants, there appears to be a segregation of households with a strong socioeconomic position. Consequently, a comparison with previous years shows that the dichotomy in socioeconomic characteristics of recently moved and moving inclined households has increased significantly recently.

- Among direct entrants, terraced houses and apartments are particularly desired. As the household career progresses, the demand for terraced houses increases. The average purchase price here is between €200,000–300,000 for homes in the starter segment.
- Eight in 10 households exercise a potential demand in the €200,000–300,000 price range. In the regular segment, terraced houses are the most sought-after.
- The houses requested by former tenants consist mainly of terraced houses and apartments. In the starter segment, 55 per cent of these houses turn out to be above €250,000. In the regular segment, homes from €400,000 euro onwards appear to be mostly desired.
- The ratio between the two demand types shows that single-family homes are less frequently occupied than desired. The proportion of multifamily houses is increasing. This applies to singles and cohabitants in the starter segment. Thereby, the purchase amount of the realised house decreases compared to what is desired.

- Secondary moving motives win out over primary motives more often. The reason concerns the 'coerciveness' of the motive.
- Direct entrants appear to want to move into owner-occupied housing for various reasons. Singles mostly move in from a primary action motive (wanting to live independently). Cohabitants and families mostly act from secondary action motives (living and/or working together).
- Former tenants show a similar picture. Singles are slightly more likely to act from a secondary motive; after all, these households already live independently.

Finally, the regional distribution of potential demand can be compared with realised demand and the distribution of regional supply.

- The share of moving inclined direct entrants in the starter segment who wish to move into a house in the G4 is higher than the share of these cities in the total stock of these houses. In the regular segment, this difference is less pronounced. The opposite is true for cities in the G40.
- Single people in the starter segment know best how to fulfil their wishes regarding the living environment. Cohabitants and families have a significantly larger difference. Families differ the most.
- The share of relocating former tenants in both segments who wish to move into owner–occupied housing in the G4 is more than three to four times higher than the share of these cities in the total stock of these properties.
- In the starter segment, the share of moves to an owner–occupied house in the G4 decreases sharply compared to the share of desired moves to such a house.
- Singles and cohabitants in particular differ in this respect. In the regular segment, a similar pattern, although less pronounced, seems to occur.

Sub–question 5

- Falling mortgage rates have caused gross housing expenditure (repayment + interest), compared to the previous period(s), to fall sharply. At the same time, households in the owner–occupied housing market have seen a sharp rise in incomes. The combination of lower expenses and higher incomes means that for direct entrants and former tenants, the average housing costs ratio has fallen.
- The position of households with weaker income development has continued to deteriorate. These include households in the rental sector.
- There appears to be a segregation of disadvantaged households with, increasingly, higher incomes.
- For direct entrants and former tenants, substantially higher housing costs are experienced in the G4. The difference between the G4 and the rest of the Netherlands ranges between conservative 20 per cent, to excessive 100 per cent.
- In places where a higher share of demand is agglomerated, housing expenditure is higher. Thus, higher demand leads to higher housing costs.
- In recent years, the relationship between (wanting to) buy and (wanting to) rent has been constantly changing. Since 2018, buying has become more conducive than renting privately for many households.
- The reason for this is twofold: on the one hand, low mortgage rates have resulted in lower monthly housing costs; on the other hand, rents in the private sector have risen sharply in recent years.
- Singles in particular (direct entrants and former tenants) appear to be more advantageous (as single earners) when buying. For cohabitants and families, the difference in housing costs between renting and buying is small.
- The proportion of own equity (by way of parental donation) appears to have increased sharply in the funding structure, particularly in recent years among both direct entrants and former tentants.

- Direct entrants, receive varying degrees of financial contribution. Singles in particular receive donations. In the regular segment, the average amount is €53,000. In the starter segment it is lower: on average up to €25,000.
- Households that once received a donation were more likely to buy a slightly more expensive home with lower housing costs than those that did not receive a gift.
- Former tenants are more likely to receive a donation; on average 25 per cent of households. In doing so, the amount donated – in the starter segment – is often less than €25,000 euro. In the regular segment, more is donated: €25,000 to €100,000 on average. Again, this results in a higher purchase amount and lower expenses.

Sub-question 6

- Both direct entrants and former tenants have low accessibility.
- This low accessibility is due to a quantitative supply deficit. This is evidenced by the high affordability of households and the high competition experienced. The fact that this affordability is so high appears to be mainly due to falling mortgage rates and rising incomes.
- Compared to previous years, the proportion of unsuccessful buyers (18 per cent) in housing demand has increased. Almost one in five potential buyers cannot find a house. Access to the housing market thus appears to depend largely on income. In the lower price brackets, competition appears to be too high.
- The time-series analysis shows that the quantitative deficit has consistently increased since 2009. The halt in housing production and the decline in housing transactions contribute to this.
- The proportion of households that do not experience accessibility problems in the market (high affordability & low competition) has increased.
- Among direct entrants and former tenants, the greatest accessibility problems are experienced in the big cities within the Randstad. As people move out to the moderate- to non-urban areas, accessibility increases.

Sub-question 7

- The success rate of direct entrants depends mainly on the moving motive. The model results show that the secondary (more coercive) moving motive leads to a higher success rate. The lower age groups have a lower than average success rate, as well as households seeking cheaper owner-occupied housing.
- The time analysis shows that the role of purchase price has increased significantly in recent years. The negative parameter for low-cost owner-occupied housing shows there is a quantitative shortage of this type of housing. In this, it mainly concerns single-family houses.
- For former tenants, those moving from a primary moving motive have a success rate of 14 per cent. A low success rate therefore means that there is little suitable supply for this group of demanders. For the most part, differences in the success rate can be traced to income and the urbanity of the municipality.

- For dual earners, it appears that housing type also affects the success rate. Single-family houses are less accessible. The average success rate is 35 per cent.
- The shifts over time show that for these households, income and purchase amount have become more important. The probability of success has also decreased in the process.
- Secondary action moves have a success rate of 25 per cent. There appear to be large differences in success rates among this group. Single-family houses have a low success rate. This success rate decreases further when a house is demanded in an urban area and/or with a low purchase price.
- Dual earners succeed significantly more often with a success rate of 59 per cent. Again, household income, purchase amount and urbanity influence the success rate.
- The time analyses show that housing type and income were more likely to play a major role.
- The regional distribution of the success rate for both direct entrants and former tenants shows that lower success rates are experienced particularly in the Randstad (high urbanisation). In addition, the success rate has deteriorated significantly over time.

Conclusions

The main question of this study is*: What is the position of first-time buyers in the Dutch housing market and how has this position developed from 2009 to 2021?*

There is no doubt that the starting position of first-time buyers has changed in recent years. Underlying this are various social shifts. These changes therefore influence actual and desired residential mobility. The empirical findings can be summarised in 5 main findings.

Absolute inflows decline little – relative inflows decline sharply

- The absolute inflow of direct entrants decreased by 5 per cent compared to 2018 to 80,000 households.
- The inflow of former tenants fell more sharply by 20 per cent compared to 2018 to 121,000 households.
- The potential demand of both household groups has doubled since 2009 to 850,000 households. This demand is little affected by the market conjuncture. Demand is expected to increase in the coming years.
- The inflow rate[1] among direct entrants in the starter segment is 65 per cent. In the regular segment, it is 80 per cent.
- The inflow rate of rental housing (housing substitution) is 120 per cent. Compared to 2018, it has increased by 20 per cent.
- The inflow rate among former tenants in the starter segment is 80 per cent. In the regular segment, the percentage is 122 per cent. In other words, relatively more renters are buying a more expensive property.
- Housing substitution among former tenants hardly takes place: households simply postpone the desire to buy.

1 The inflow rate equals: the relative share of movements in the realised demand to the relative share of movements in the potential demand for the different movement demand types. These demand types are distinguished by (1) starter home, (2) regular home and (3) rental home.

Current homes are not current

- The distribution of house types desired by first-time buyers has barely changed in recent years. First-time buyers consistently desire the same type of housing over the years
- The relative demand for apartments in both housing segments exceeds the share of apartments in the respective housing stock. In particular, singles and cohabitants exercise relatively higher demand for this type of housing.
- The 'smaller' homes up to 90 m^2 with up to four rooms are significantly more in demand than are present in the stock.
- The share of moving inclined buyers in the starter segment who wish to move into a house in the G4 is higher than the share of these cities in the total stock of these houses. In the regular segment, this difference is less pronounced.
- A similar picture applies to former tenants. The share of moving inclined former tenants in both segments who wish to move into an owner-occupied house in the G4 is more than three to four times larger than the share of these cities in the total stock of these houses. Particularly in the regular segment, over 60–70 per cent of the total demand for owner-occupied houses appears to be exercised in the (larger) cities.

Buying more reserved for high-potential households

- The share of highly educated and/or households with income from twice modal in realised demand is clearly higher than the share of these households in potential demand.
- The number of households receiving a donation has grown sharply, especially among single people. In over 25 per cent of all housing transactions by direct entrants in the mainstream segment, a donation is part of the financing. Former tenants were even more likely to receive a donation, with more than 35 per cent of them being singles.
- Households that received a grant do not buy excessively more expensive homes, but use these funds mainly for lower housing costs. The disposable income of households that received a grant is also often lower.

Quantitative shortgages determine accessibility

- The slight drop in realised demand compared to the clear increase in potential demand (high competition) appears to be mainly due to quantitative shortages.
- The accessibility of the starter and regular housing segment for both direct entrants and former tenants deteriorated more sharply than for those moving on.
- The position of households with a lower socioeconomic position has further deteriorated. On average, one in five potential first-time buyers will be forced to rent.
- The quantitative housing shortage is uneven, with inner-city housing demand in particular far exceeding available supply. Outside the big cities, competition is decreasing. There, affordability more often concerns the position.

Declining success rates and increased diversity

- The average success rate has decreased by 15 per cent in recent years and is currently at the lowest point of the period studied.

- The diversity among first-time buyers has clearly increased from 2018. More factors appear to play a (greater) role in housing market opportunities.
- The probability of successfully moving into a house has become more dependent on income, purchase amount, urbanity and house type. Thereby, secondary moving motives always led to higher success rates.
- Regionally, COROP areas that previously had high success rates appear to have deteriorated in particular. The COROP areas in the northern provinces and Brabant have seen the largest decline in succes rate. Comparatively, the highly urban areas (Randstad) have deteriorated relatively less compared to previous years. This area has always known a low succes rate.

Solution directions with regard to position

Based on the research findings, a number of generic solution directions can be drawn up to strengthen the position of first-time buyers:

Building to regional demand

Potential demand often turns out not to match the regional housing stock. When the desired housing is not available, substitution is more likely to occur. In particular, the availability of suitable housing supply turns out to be the biggest obstacle for first-time buyers. The fact that affordability played less of a role is mainly the result of low interest rates. In particular, it appears that the demand for (inner-city) apartments and (outer-city) terraced houses exceeds the share of these houses in the regional stock. Broadening the stock specifically to meet the needs of first-time buyers is conducive to inflow. This could involve looking more specifically at the housing characteristics demanded. The research found that houses with an area of up to 90 m^2 and up to 3 rooms were particularly highly sought after.

Stimulate the rental market as an alternative

Demand for owner-occupied housing has risen dramatically in recent years. Especially from 2018, a doubling in housing demand among single people is visible. Mainly, demand for rental housing among these households appears to have declined. The survey results show that buying has often been more conducive than renting for these households. Making renting attractive for single-person households in particular removes a significant portion of the total demand for owner-occupied housing. Such demand reduction can only be realised with sufficient supply in the private rental sector.

Promote the use of NHG

The National Mortgage Guarantee appears to be used by first-time buyers in the starter segment in only 60 per cent of all mortgage applications. At the same time, the proportion of homes in the stock that can be counted as belonging to the starter segment has declined sharply. Promoting the use of the NHG scheme, especially at a time of rising mortgage interest rates, is an appropriate means of strengthening the position of first-time buyers. To this end, reducing the premium to zero per cent and increasing the NHG limit to the average sale price could be considered.

Future research

The interpretation of these solution directions are mainly policy issues. Recommendations for future research are addressed to the public system. First, this study should explore ways to implement the recommendations from this study. A study mirroring the recommendations with national housing policy (see MVRO, 2022) would therefore provide interesting policy insights.

The literature showed that concrete statistical models for the position of first–time buyers are lacking. A second recommendation for future research therefore focuses on forming further updated accessibility models where the influences of different forms of financing and mortgage interest rates can be compared. Understanding the positional development of first–time buyers under current interest rates provides insight into the expected position. Such research could reflect the positional changes of households under different scenarios.

Finally, future research should focus on the practical functioning of first–time buyers in the housing market where, among other things, housing (desire) substitution could be investigated. Such research could contribute to the influences of market conditions on the position of first–time buyers. This could also examine the relative influence of market conditions on households.

Table of contents

Chapter 1
Introduction

1.1 Background

The policy and instruments to promote home ownership in the Netherlands have a rich history (Briene et al. 2021). Thanks to broad political and social support for this, the government has actively promoted homeownership for decades, using essentially the same policy instruments (i.e., mortgage interest deduction and mortgage guarantee through NHG). This stemmed mainly from the original ideology that home ownership makes a positive contribution to citizens' personal development (ownership and wealth creation; self-determination; emancipation), particularly for lower-income households. Over the decades, the motivation to promote home ownership has shifted somewhat towards the political choice to satisfy consumers' ultimate housing desire and, by extension, realising a free choice between buying and renting (Boelhouwer and Schiffer, 2019).

In recent years, the credit crisis has confirmed that home ownership and, in particular, its financing, also involve risks. In response, by tightening regulations on mortgage credit (Boelhouwer and Schiffer, 2015b), the government has taken far-reaching measures to reduce the financial risk of home ownership. At the same time, due to the housing shortage on the one hand and historically extremely low mortgage rates on the other, prices of owner-occupied houses have risen to record levels. On balance, the accessibility of home ownership, especially for starting low and middle income households, is under great pressure (Boelhouwer et al., 2022). Government policy on home ownership currently seemed to focus on limiting financial risks.

In 2022, the *National Housing and Construction Agenda* (MVRO, 2022) was published. In contrast to the market-oriented housing policy in previous years, the government is now once again taking the reins to prevent households from becoming trapped. In doing so, the government aims to significantly increase housing production to 100,000 new dwellings per year. In addition, the ambition is expressed to keep steering towards building *suitable and affordable* housing for first-time buyers where they are wanted.

In the government's formulated housing policy for the period up to 2030, quantitative housing demand is emphatically central. As a result, being able to realise the stated policy objectives – suitable and affordable housing for first-time buyers – depends in part on the demand exercised. Such policies require not only a good understanding of the current supply and demand relationships in the housing market. Accurate knowledge about the position that starters occupy in the (owner-occupied) housing market is also essential here.

1.2 Problem definition and research questions

Against this background, it can be noted that developments in the (owner-occupied) housing market in recent years can largely be traced back to the policies pursued within the relevant housing market policy field. Restricted lending standards (Boelhouwer and Schiffer, 2015a, 2015b) in favour of reducing mortgage risks have further marginalised households with mostly little or no equity (Hoekstra and Boelhouwer, 2014, Boelhouwer and Schiffer, 2019). Partly due to persistent housing shortages, the effects of low-interest rates (including widened lending standards) and tax incentives (including the inclusion of the interest-only part) that favour movers in particular, the need for both short-term and long-term structural solutions for first-time buyers has become increasingly apparent. In the literature, the starter issue is mostly discussed from a generalised perspective with a focus on affordability and the housing shortage (Vlak et al. 2017; Musterd, S. 2020, Groot et al. 2022). Moreover, the discussion around first-time buyers is somewhat clouded by the different definitions of the term.

At the same time, more recent studies (Wisman and de Vries, 2020) show that the net inflow of first-time buyers within the homeownership market has not decreased significantly. Plegt (2021) suggests that this is partly due to the large differences between households. In the context of the policy ambition to focus on achieving affordable housing for first-time buyers (Coalitieakkoord, 2022), it is important to form an understanding of the different starter households and how they are active within the housing market. It is therefore questionable whether the goals of building more housing within the current market conditions will have the desired result and whether precisely the starter who experiences the most problems will reap the benefits. The central research question to which this study answers is as follows:

> **What is the position of first-time buyers on the Dutch housing market and how has their position changed in the period from 2009 to 2021?**

This central research question is further broken down into seven sub-questions:

1. *How have social shifts and housing market-related changes within the Dutch owner-occupied housing market in the period from 2001-2021 affected the position of first-time buyers?*

Before examining the development in the position of first-time buyers, the social shifts within Dutch society that have affected the (owner-occupied) housing market are discussed. The social context, construction & fiscal policy, developments in the housing and mortgage market and, finally, changes in the position of first-time buyers within this framework will be addressed.

2. *How did the composition of the housing market segment of (starter)owner-occupied houses evolve both by housing characteristics, as well as the characteristics of the occupants during the period from 2009-2021, and what regional differences exist in this development?*

Chapter 5 discusses the definition used for the starter–owner housing market in the Netherlands. Using the data files of the five successive WoON surveys, the composition of the housing market segment of starter houses is then outlined according to both the characteristics of the houses and the characteristics of the occupants of these houses.

3. *In what way can first-time buyers be differentiated on the basis of their demographic and socioeconomic characteristics and (characteristics of) the owner-occupied dwelling?*

To form a clearly delineated baseline for the analyses, the study population is first delineated through a cluster analysis in which distinctions between households are sought based on the demographic & socioeconomic characteristics found and the owner–occupied housing units involved. These characteristics are derived from the career/life cycle theory.

4. *How did the demand for (starter) owner-occupied houses develop in terms of size and nature in the period 2009–2021 and what regional differences exist in this development? What influence do market conditions and moving motives have on the demand for (starter) owner-occupied houses?*

Based on these profiles, the trends in both the realised demand (revealed moving behaviour) and the potential demand (stated moving behaviour) for starter housing are discussed. This provides the first impression of housing and household characteristics and possible changes in these characteristics over time. Regional differences and households' motives to move are also discussed.

5. *In what way did the owner-occupied housing-related housing expenditure of first-time buyers develop over the period 2009–2021 and how is home ownership financed?*

Next, the developments in housing expenditure for first–time buyers are outlined. Here, it discusses the housing expenditure ratio [koopquote] and living expenditure ratio [woonquote] development and the financing form of households within the realised demand. These expenditures are then compared with the group of people wanting to move. In this way, a picture is obtained of potential first–time buyers' perceptions of the housing market.

6. *In what way has the accessibility of the homeownership market for first-time buyers in the Netherlands developed in the period 2009–2021 and what regional differences are there?*

Modelling both supply and demand, the accessibility model analyses the owner–occupied housing market in more detail. In it, accessibility can be determined from affordability on the one hand and housing demand and (suitable) supply on the other. This also makes it possible to provide insight into the development of accessibility (in the various regional submarkets) for the various households in the past periods.

7. *In what way has the (regional) success rate of first-time buyers developed in the period 2015–2021 and to what extent can the success rate be explained by the relevant household characteristics?*

Finally, the succes rate compares the realised and potential demand. Based on a logistic regression analysis, the extent to which the various households succeed on the housing market is revealed. The factors involved are again derived from Priemus' career/life cycle model and the literature studied. Using a CHAID analysis, these factors (variables) were further reduced without losing some of their explanatory power.

1.3 Societal and scientific relevance

Societal relevance

Over the years, housing policy towards home ownership from the original ideology that home ownership makes a positive contribution to citizens' personal development through wealth creation and emancipation, seems to have given way to a restrictive housing policy in favour of reducing financial risks after the credit crisis. The market forces of the previous years gave way to stronger government control. Partly due to the tightening of mortgage standards and the stagnation of housing construction, the flow within the housing market stalled. The period that followed the crisis included changes to the transfer tax and a temporary increase in the NHG limit to €350,000 to stimulate demand. To bridge the gap between acquisition costs and the maximum mortgage amount, start-up loans also remained available.

To pull the housing market out of the doldrums, in the Rutte II cabinet period, then Housing, Spatial Planning and Environment minister Blok flexibilised the housing market, also liberalising the (private) rental market. In effect, market forces were trusted to help the housing market get back on its feet. Towards the end of the government's term in 2017, Minister Blok, therefore, declared that the "housing market was finished" (Cats, 2017).
In the following years, although the housing market climbed out of the recession, it consequently increasingly faced significant price increases with the cause running mainly along two economically oriented lines.

First, the skew in borrowing capacity between low- and high-income groups increased. Within the context of the Netherlands' low supply elasticity, the increased borrowing capacity of part of households due to falling mortgage rates was fully absorbed in house prices. On the other hand, the slow upturn in housing production appeared to lead to quantitative shortages in housing supply. The increased demand due to demographic trends, therefore, exerts a price-raising effect on the existing housing stock (Boelhouwer, 2020).

Subsequently, actual new construction production did not appear to parallel demand trends in the second half of lasts decenium. First, the volume of new construction in the first years after

the onset of the credit crisis lagged behind programming (Boelhouwer en Heijden, 2018). After the housing market took off, the increased quantitative housing shortage combined with rising house prices resulted in housing production that mainly met demand at the top end of the market. However, housing differentiation by market segment left the lower end of the housing market lagging, causing production to increasingly outpace actual demand trends.

The lesson the newly established Ministry of VRO drew from these experiences in the *National Housing and Construction Agenda and Programme* (MVRO, 2022) was to set a two-pronged approach. On the one hand, the government would – as in the post-crisis period – take more direction regarding public housing. In doing so, control over what is built increases significantly. As a result, housing programming will focus on housing construction that matches housing wants and needs. On the other hand, affordability is coming back into focus. Rising house prices resulted in a net decrease in the housing supply in the affordable (owner-occupied) sector.

By wanting to make up for quantitative housing shortages in the affordable housing market segment, it is assumed that the availability of (owner-occupied) housing at the lower end of the segment for first-time buyers, among others, will increase. At the same time, with the growing financial possibilities for a part of households from the second half of the last decenium onwards due to developments in the mortgage market, a precedent has been set for the increased demand for owner-occupied houses. Partly because of varying borrowing capacities, the concept of *affordability* is difficult to interpret.

Quantitative housing demand is therefore likewise not an autonomous concept. In part, this demand will have a more structural development, stemming from demographic and socioeconomic developments. To a large extent, demand is also highly cyclical.

The question is whether policies that focus less on the market and building at the bottom of the housing stock are in line with demand from the current housing market position of first-time buyers as it has developed in recent years. This focuses on the questions to what extent first-time buyers in the homeownership market experience affordability problems and whether the exercised housing demand matches the construction programming.

A proper inventory of first-time buyers' qualitative and quantitative housing demands could help match the housing supply with the demand of these households. This would give housing consumers more opportunities to realise their initial housing needs.

Scientific relevance

Several comparative national and international studies have been conducted on the position of first-time buyers. These studies often look at first-time buyers from a single perspective that either relates to their financial position and price trends (Galin, 2006; Aalbers, 2008; Galin, 2008; Tu et al. 2016) or to the influences of (macroprudential) policies within prevailing

housing market conditions (Boelhouwer & Hoekstra, 2014; Lee & Reed, 2014; Kinghan et al. 2019; Tarne et al. 2022). The position of first-time buyers has been increasingly widely discussed in the aforementioned research.

Very few comparative (international) studies using a modelling approach have been conducted to date. Any explicit studies on the position of starters in relation to housing preferences from stated and revealed preference models date back to the late 1990s by Goetgeluk (1992, 1997). One such model-based study is important in this context: Brounen & Neuteboom (2010). To date, this is one of the few comparative studies that has sought to model the position of different groups of households in the housing market based on both their financial position and prevailing market conditions in terms of supply and demand. Again, it compares the period from the late 1980s to the early 2000s.

This study contributes to the existing literature in three areas. First, it contains a longitudinal comparison between different WoON years. Such studies have been conducted in the past where the time span often included two periods. Moreover, the new data make for an actualisation of current knowledge.

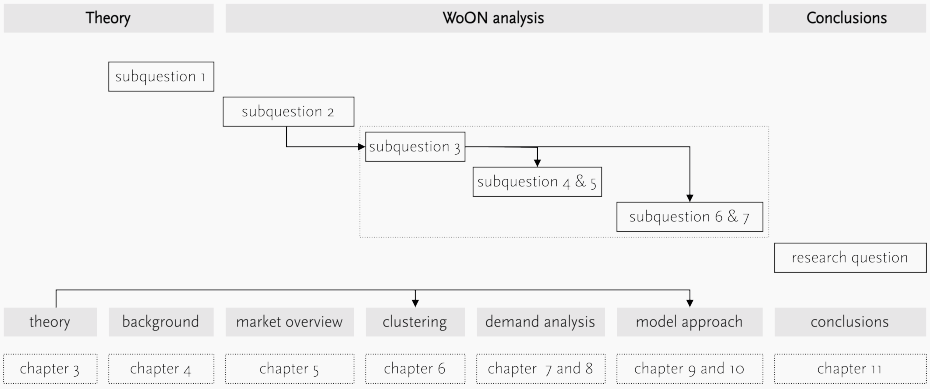
Second, using a grouping algorithm, relevant groups of households are extracted from the study population based on their specific demographic and socioeconomic characteristics. This makes for a fine-grained analysis of first-time buyers in which concrete differences can be revealed. It also defines more concretely the concept of first-time buyers.

Finally, this research focuses on a model-based approach to the owner-occupied housing market for first-time buyers. Most modelling approaches, although few in number, are not only outdated but also pay limited attention to (the position of) first-time buyers. Both accessibility and success probability approaches thus provide more concrete insights into the underlying factors of, and influences on, the position of first-time buyers.

1.4 Structure of the report

This study focuses on the position of first-time buyers within the Dutch housing market. The housing market can be divided into two submarkets: the owner-occupied and rental markets. In it, first-time buyers operate (i.e. exercising a housing demand) exclusively in the home ownership market. Underlying this demand for owner-occupied housing appears to be a desire to buy. The theoretical basis for explaining the moving behaviour of first-time buyers with respect to home ownership is formed from Hugo Priemus' career/lifecycle theory. The position of first-time buyers is explained mainly by the demand exercised – and the characteristics of the households exercising this demand. In doing so, demand also depends on the context in which it is exercised. By examining the period from 2009 to 2021, developments in the position are also identified.

Figure 1.1 Sequential layout of the report by chapter and research question



source: own illustration

Chapter 2 discusses the existing theory on households moving behaviour and home ownership, to place an home ownership housing choice within a theoretical framework. Chapter 3 then discusses the research methodology used, discussing the two-part structure of this report. Interpreting the position of first-time buyers in the housing market requires an understanding of the context. Chapter 4 therefore describes demographic and socioeconomic trends, as well as developments in the housing and mortgage market and in government policy, as they developed over the period.

Chapters 5 to 10 aim to map how first-time buyers operate on the housing market from the (change in) position taken. To this end, first the starter housing market is defined, followed by a more in-depth examination of the concept of 'first-time buyers' in Chapter 6. This approach forms the basis for successively analysing housing demand, housing costs, accessibility and the success rate of first-time buyers on the housing market. An accessibility model and regression analysis are applied for accessibility and success rate, respectively. The report concludes with the final conclusions in Chapter 11.

Figure 1.1 provides a visual overview of the sequential layout of the report by research question and chapter order. The arrows indicate where input is taken from previous chapters and/or research questions to continue the analysis of subsequent chapters. For example, research question 3 (in chapter 6) forms the prerequisite for the remaining empirical chapters. Chapters that use theory as the basis for subsequent analyses are also indicated by an arrow.

Chapter 2
Moving theory and homeownership

2.1 Introduction

This research explains the (changing) position of first-time buyers, through developments in housing demand in the owner-occupied housing market. Chapter 2 presents a theoretical framework, in which the research can be placed. After all, in order to characterise the way first-time buyers operate, the choice to move to an owner-occupied house must first be explained. Section 2.2 therefore discusses the decision-making process that households go through when moving (to an owner-occupied house). During the WoON analysis, several points are related to the theory formed.

In this study, it is assumed that households base such a moving decision largely on a cost-benefit trade-off in current and desired housing consumption. Section 2.3 discusses the theoretical approach to the moving process: *career/life cycle theory*.
Using the aforementioned model, the trend in demand for owner-occupied houses by different starter households can largely be explained. Some additions to that model are elaborated in section 2.4, which also discusses moving motives. The chapter concludes with the choice of home ownership in section 2.5.

2.2 Moving as a decision-making process

People often act from a long-term vision to maintain continuity in their lives (Mulder and Hooimeijer, 1995) and try to shape their lives along a coherent path called a career. People pursue parallel and intertwined careers in different areas, such as education, work, family formation and housing (Goetgeluk, 1992). Life course studies have shown a clear correlation between events in these careers and the occurrence of a move. Often an event in a certain career is the reason for the desire to move; this career can be referred to as the triggering career. In that case, the other careers can be seen as the conditioning careers; these also determine the possibilities within the search process (Goetgeluk, 1997).
People's preferences and behaviour are thus influenced by society. Changes in that society (increasing economic resources but also, for example, changing government policies) can lead people to redefine their preferences (e.g. individualisation in our society).

A classic definition of moving (residential mobility) comes from Rossi and dates from 1955: *'The process by which families adjust their housing to the housing needs that are generated by shifts in family composition that accompany life cycle changes'* (Rossi, 1955).

Priemus (1984) also argues that moving can be interpreted as adapting a living situation to the resident's wishes as much as possible, whether forced or not, by changing the place of residence. Moving costs money and energy, which, as it were, creates a decision threshold for the person considering moving (Goetgeluk, 1997). Moving can thus be seen as a decision-making process, in which at least the current living situation, (changing) housing preferences or preferences and knowledge about alternative living spaces play a role. The decision of whether or not to move to a particular dwelling can thereby be broken down into three sub-decisions:

- choosing when to move;
- the choice between renting or buying;
- the choice of a certain amount of housing services (type, size and quality)

These partial decisions are strongly interrelated. The choices are often made simultaneously and the choice of one partial decision may determine the other choices (Elsinga, 1995). The choice of a certain type of dwelling, for instance, may lead to relying on the owner-occupied sector. The unavailability of the desired owner-occupied dwelling may lead to substitution behaviour in the form of moving to a comparable rented dwelling or an owner-occupied dwelling with characteristics other than those desired, but may also lead to postponing the move.

2.3 Moving process and housing career

2.3.1 The household cycle (life cycle)

Rossi's (1955) work is considered by many to be the beginning of research on moving behaviour and decision-making (Priemus, 1984). Rossi related moving to developments in the household cycle. He points out that the desire to move is a function of the stage in the household cycle and, in relation to this, household size, age of the head, desired and current ownership ratio and the number of rooms in the dwelling (Priemus, 1984).
According to the lifecycle model, the degree of mobility, the preference for buying or renting and the preferred quantity of housing services are closely related to the stage of the lifecycle the household is in. Relocations tend to take place around a transition to another stage in the household cycle.

As a result, household housing needs will also change. Younger households move more often and are also relatively more likely to live in rented accommodation. As one progresses through the cycle, the propensity to move decreases and the probability of moving into owner-occupied housing increases. The amount of housing services at one's disposal also increases over time. At the end of the life cycle, moving again becomes more frequent and there is an increased likelihood of renting (Elsinga, 1995).

Dutch research also regularly uses household demographic characteristics as independent variables in moving surveys (Conijn and Mantel, 1989; Goetgeluk, 1997; Boumeester, 2004). This often highlights the joint effect of household characteristics (household composition and size and the age of the head) on residential mobility or housing choice.

2.3.2 The labour market cycle (career cycle)

However, Rossi's life cycle theory was not found to be comprehensive. Since the 1990s, several researchers have pointed out the close connection between the household cycle and the position on the labour market in relation to moving behaviour (Mulder, 1993; Oskamp, 1997, Goetgeluk, 1997). In most cases, the labour market position is thereby operationalised in terms of (household) income, occupation and/or education. Labour market careers can thereby be seen as conditioning careers, but also as causing careers. Kendig (1984), for instance, sees income primarily as a condition within which the household arrives at a housing choice. The position in the household cycle and changes therein, greatly influence this income.

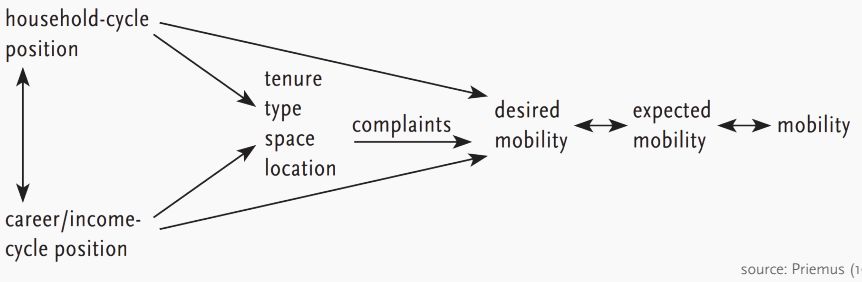
Deurloo et al. (1987) also find a clear relationship between income and ownership ratio in the Dutch situation, with a government–regulated housing market. However, opinions on the relationship between income and moving desires or moving behaviour appear to differ in the various moving surveys (see Conijn and Mantel, 1989).
First of all, it appears that for a more complete interpretation of this relationship, it makes sense to start with household income. In addition, it makes sense to also include the income perspective in a study of the moving decision process (Mulder and Hooimeijer, 1995, Boelhouwer and Schiffer, 2015a). In this context, besides the current position in the labour market, the education and occupation of the household head are also important.

2.3.3 The career/life cycle model

Thus, this labour market cycle cannot be separated from the household cycle. Indeed, income levels and certainly income prospects are strongly related to age (Priemus, 1984). In addition, household composition may influence certain choices one makes in one's working career. Together, both careers then form the basis for subsequent choices in the moving process.
The modified career/lifecycle model shown in Figure 2.1 reflects the interrelationship between the various careers (the household cycle, the labour market and the housing career).

The importance of this interconnection of the various careers is also emphasised by Mulder (1993) and Goetgeluk (1997). In addition, the model offers the possibility of distinguishing moving desires according to underlying motives. Moreover, the model covers the entire decision process. Both the choice of the moment to move, the choice of the number of housing services as well as the choice between renting or buying are contained in this model.

Figure 2.1 Priemus' modified career/life cycle model (1984)



source: Priemus (1984)

2.4 Additions to the theory

2.4.1 Changes in the household cycle and labour market careers

Criticism of the use of the term *lifecycle* can be found in the literature. Especially in less recent research, the household cycle is mostly used to explain moving behaviour. Many authors have pointed out that the traditional definition of the term is certainly not readily applicable in today's society. There is an increasing diversity of life cycles and household developments. People now live alone more often and fewer children are born (Hooimeijer and Linde, 1988).

In addition to the increasing diversity of household careers, a great deal of diversity has also emerged in household labour market careers (Boumeester and Dol, 2016). Since 1995, the share of workers on temporary contracts within the labour force has doubled from over 10 per cent to over 35 per cent by 2021.

Household income growth is also interrupted more often than before by changes in household composition. One example is the increasing number of younger two-person households, which initially have a higher household income because both are working full-time. Their income can drop considerably when, with the birth of a child, one of the partners stops working, or one or both partners start working less. These developments also contribute to a less clear pattern in household income trends.

The relation between the on the one hand, demographic and socioeconomic characteristics of households and on the other hand, the choice of housing (type or price) and moving behaviour seems to be confirmed by several studies. However, it appears that besides the more 'traditional' variables such as age and income, other 'modern' variables should be included in the study. In particular, these include variables such as household composition, activity in the labour market and the number of 'earners'.

2.4.2 The role of moving motives

For a sound interpretation of the moving behaviour, it is important to take into account the motives underlying the move (Priemus, 1984; Goetgeluk, 1997). The different moving motives are found to influence both the time of moving and the final housing choice.
Various classifications of moving motives exist in the literature (Kendig, 1984). Several researchers use as a characterisation the dichotomy proposed by Graham (1985). Graham argues that a distinction should be made between households, whose move is due to the need to adjust the housing situation (primary action) and households that move for other reasons (secondary action).

Priemus emphasises the correlation found between residential moving motives and movements in housing careers. He argues that when housing factors come into play, households will generally not move to a housing situation that is only slightly better than the current housing situation. Most residents will wait until they can secure a better housing situation before deciding to move (Priemus, 1984). Because their desire to move is less urgent, they can usually postpone their move until the preferred housing situation becomes available. This is different for the so-called 'secondary' movers, the households that (wish to) move as a direct result of changes in the working or personal sphere. Their moves tend to be more urgent. A well-known example of such a change in the work sphere is accepting a job at a long distance (Goetgeluk et al., 1992; Goetgeluk, 1997).

2.5 The choice for home ownership

Buying a home is strongly related to household characteristics and changes in them. Besides the amount of housing services desired or needed, households often indicate other motives for buying a home. Several studies have found the following motives: having something for yourself, being the owner of your own home and the shorter-term availability of a house to buy. Saunders (1990) even speaks of a 'natural preference' to own a home. Tenants tend to counter this by saying that they do not have to do maintenance, are or want to stay mobile and that people feel too old to buy (Boelhouwer, 1988; Elsinga, 1995).

Among both tenants and owner-occupiers, however, financial motives appear to play an important role in the consideration between renting or buying. Tenants often indicate that buying a house is not among their financial options or that they want to avoid the financial risks associated with owning a house (Elsinga, 1995). These include the lack of provisions for owner-occupiers in case of income decline, the risk of capital loss due to market developments and (unforeseen) maintenance expenses. The 2008 financial crisis as the result of excessively loose lending in the United States is an example of this.

Owner-occupiers often motivate their decision by pointing out that buying is financially

advantageous (Boelhouwer, 1988; Elsinga, 1995). Due to the tax treatment of home ownership in the Netherlands (mortgage interest deduction), it was more financially attractive, especially for the middle and high-income groups, to buy a house than to rent the same one. Moreover, housing costs in the owner-occupied sector are known in advance for a certain period and are fairly stable. In the rental sector, households face annual rent increases unknown in advance.

Incidentally, many owner-occupiers base their assessment of housing costs on mortgage expenditures and do not take into account expenditures on maintenance, (home) insurance, house value development and loss of interest on equity invested in the house (Elsinga, 1995). If such expenditures were included in the assessment, as happens in the living expenditure ratio, the assessment of housing costs may well be different (Elsinga and Conijn, 2001). However, households often see buying a house as a good way of 'forced' saving.
Households see homeownership as a 'piggy bank' for old age, but also regard home ownership as an attractive investment property due to the relative stability of property values (Boelhouwer, 1988). Many households share the assumption that home ownership is good for asset accumulation. It is assumed that house prices develop on average at least in line with the inflation trend in the longer term. Various research has also found, that in recent decades, owning one's own home usually means an advantaged position compared to households that did not buy a house (Boelhouwer, 1999).

The possibility of capital gains from their home, which are not (yet) taxed in the current tax system in the Netherlands, and the size of such gains depend on market developments. The development of purchase prices, interest rates and inflation, and hence the timing of purchases, determine this opportunity for capital gains. In addition, the method of financing plays a role here. When looking at the price development of owner-occupied houses in real terms (purchase prices adjusted by the price index for household consumption), the opportunities for capital growth in the owner-occupied sector in the Netherlands in the period 1995-2022 turn out to be considerable. The increase over this period is 156 per cent or an annual increase of 5.9 per cent on average. This increase is further driven to a large extent by price developments in the period 2015-2022, during which prices increased by more than 7 per cent annually.
An investment in the owner-occupied sector does appear to hold its value over this longer period. Especially in times of high inflation, this makes investing in an owner-occupied house attractive (Priemus, 1989; Boelhouwer, 1999). Depending on when you buy in the period mentioned, there may of course be capital gains or losses (Elsinga, 1995). Recently, the owner-occupied sector, after adjusting for inflation, has been found to create significant positive (unrealised) wealth gains.

Besides the time of purchase, the type of house bought also affects the potential for capital growth. Both Elsinga (1995) and Boelhouwer (1999) conclude in their study that it is mainly the higher-quality houses that experience stronger, above-average price increases. In recent years, it is precisely the houses with a relatively low purchase price (low intrinsic quality) that

experience the greatest increase in value. Another aspect, regional differences, appears to be of less importance for the probability of capital gains in the Netherlands. While it is true that there are clear regional differences in the average price level of owner–occupied houses, the evolution of prices appears to be very similar until the late 1990s (Boelhouwer, 1999).
Davies and Pickles (1991) conclude from their research that households do not move to maximise capital gains, but that any such gains are merely a 'by–product' of the moving process. On the contrary, other researchers point out that owner–occupier moves to owner–occupied housing are more related to capital gains from the previous home than to an increasing need for housing services.

Buying a house is an important financial event anyway, especially for those households buying a house for the first time. Besides changed demographic and/or socioeconomic conditions in the household, the decision whether or not to move to an owner–occupied house will therefore certainly include conditions in the (regional) housing market. These circumstances are reflected in the factors such as the supply of newly built owner–occupied houses and of owner–occupied houses in the existing stock and the level of nominal mortgage interest rates in relation to the inflation level, the ratio in the cost of renting and buying.
The influence of purchase price and interest rate on the buying decision is twofold. First, the actual level of the purchase price and mortgage interest rates determine which homes are or are not attainable with a given household income (maximum attainable mortgage amount). But a certain influence can also be attributed to the change in nominal interest rates and/or purchase price. Potential buyers will be hesitant to purchase a home when interest rates are rising; interest rates are quickly considered 'relatively' high in such a situation. An opposite situation occurs when interest rates fall.
Purchase price trends also affect households' buying decisions. In the literature, this is also referred to as 'speculative demand'. This effect mainly plays out in the short term and in housing market areas with unbalanced demand–supply ratios. Speculative demand means that demand for owner–occupied houses is also influenced by the development of sales prices in the recent past. When prices rise, households will want to buy more quickly to take maximum advantage of capital gains opportunities. Conversely, when prices fall, households will also delay their buying decision to avoid capital losses (Boelhouwer, 1999).

Housing market conditions will particularly affect the buying decision of households that (want to) buy a house for the first time (Everaers and Dieleman, 1993). For them, an increase in the purchase price of a desired house, for instance, is not compensated by an increasing sales value of the already owned house. Households, which (wish to) move as a result of housing–related motives will also be sensitive to housing market conditions (Kendig, 1984; Goetgeluk et al., 1992). The moving desire of these households is usually less urgent than that of 'secondary–action' movers, so they are more likely to wait for a favourable moment before buying a house. Since first–time movers' moves to an owner–occupied house are generally expected to belong to the 'secondary–action' category, it is to be expected that the level of demand for owner–occupied houses will be strongly influenced by developments in the factors mentioned above.

Chapter 3
The research methodology

3.1 Introduction

This chapter discusses how the research form is operationalised. The study uses five successive WoON housing surveys. The semi-longitudinal nature of these surveys makes it possible to follow certain groups through time. Before the data structure can be broken down, the research design needs to be known.
Section 3.2 shows the conceptual research model with the theoretical basis from chapter 2 as its foundation. Section 3.3 then discusses the operationalisation of the research methods used, focusing on the alignment with the data structure within the WoON. The chapter concludes in section 3.4 with a workflow diagram for the following chapters.

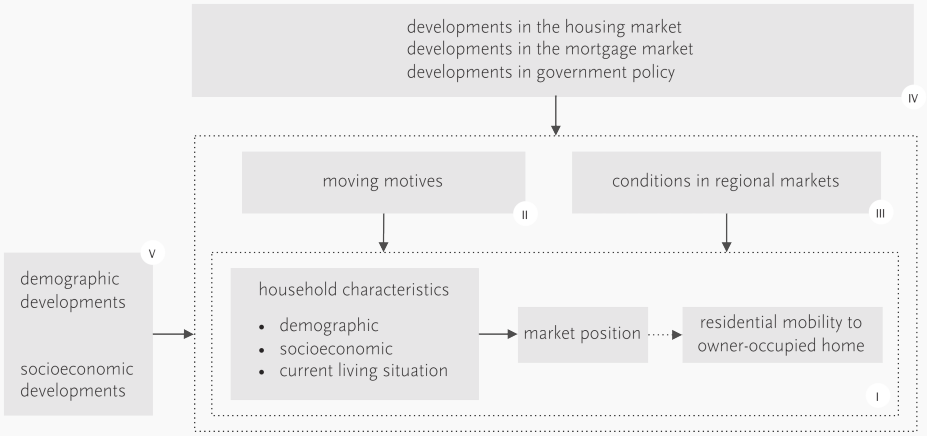
3.2 Conceptual research model

This research relies on the assumption that first-time buyers' demand for owner-occupied housing is the result of a household decision-making process based on their specific preferences regarding their desired housing and employment careers. In this decision-making process, three choices are made in interdependence: the choice of moving moment, the choice of buying and the choice of a certain amount of housing services. The way they operate in the owner-occupied housing market results from these three choices.

According to the 'career/lifecycle' theory, changes in the household cycle and the labour market position lead to changing housing preferences, which in turn can lead to moving propensity and ultimately residential mobility. Households will usually only move when they can improve their housing situation and therefore usually make a forward step in the housing hierarchy. For first-time buyers, this means leaving a rented house for an owner-occupied one or moving independently into an owner-occupied house from a non-independent living situation.

(Starter) owner-occupied housing belongs to the bottom of this housing hierarchy. Therefore, it can be assumed that the demand for such houses is mainly exercised by (un)independently living households in an early phase of the household and/or labour market cycle, whose housing situation does not (yet) meet their stated housing preferences. A certain instability in the household situation and a starting position on the labour market seem to be important conditions for (wanting to) move to owner-occupied housing. The size of this group of households partly determines the size of the demand for (starter) owner-occupied houses (see Block I in Figure 3.1).

Figure 3.1 The conceptual research model*



* Based on the WoON data files used, it is not possible to make a direct link between the propensity to move and the actual moving behaviour of individual households. A two-part approach has been chosen, using a separate study of the development in potential demand and the development in realised demand excerted by first time buyers

Within the decision–making process and the choice of an owner–occupied house, the moving motive appears to play an important role here, whereby a distinction can be made between primary and secondary action moves. However, moving of independently living potential owner–occupiers (tenants) to an owner–occupied house is expected to be much already the result of motives in the housing sphere. In contrast, potential owner–occupiers living independently can be expected to move into owner–occupied housing mostly for reasons in the personal and/or work sphere (see Block II in Figure 3.1).

In addition, regional housing market conditions may distort the expected moving pattern. Housing availability and accessibility of housing market segments partly determine the outcome of households' decision–making process. Moving plans can be realised only when the desired housing supply is also available. Due to alternating market conditions, there has been both tightning and easing in the overall housing market and within the owner–occupied sector throughout the studied period. If preferred housing is not available, substitution behaviour may occur or desired moves may be postponed. As a result, the final choice may differ for similar households in different regions (see Block III in Figure 3.1).

Moreover, moving flows will vary over time. This certainly applies to the demand for (starter) owner–occupied houses. Figure 3.1 shows that this time context has two sides. On the one hand, the demand for (starter) owner–occupied houses is influenced by developments in the housing market, the mortgage market and government policy. On the other hand, social developments at the macro level will influence demand.

Moving to an owner-occupied house should be seen not only as a decision from a housing desire but also as a decision to invest. The acquisition of an owner-occupied house requires a mortgage loan in most cases. When making a buying decision, households will therefore be guided partly by developments in purchase prices, (nominal) mortgage interest rates and the supply of houses. In addition, developments in the mortgage market (mortgage conditions and forms) also play a clear role. Finally, government policy on the housing market partly determines the context in which a buying decision is made.

This study assumes that from macro-level demographic and socioeconomic developments, demand for owner-occupied housing may also change over time. These developments create differences in household types with their own housing preferences. Examples include households living alone more often and for longer and buying a home later.
But even if the housing preferences of distinguishable household types were unchanged, the size of demand for housing will vary over time as a result of the aforementioned social developments. In absolute numbers, the number of households, both cohabitants and especially also single-person households, is still increasing due to the migration balance. In addition, the number of households in the higher income brackets has grown significantly since 2018 (see Block V in Figure 3.1).

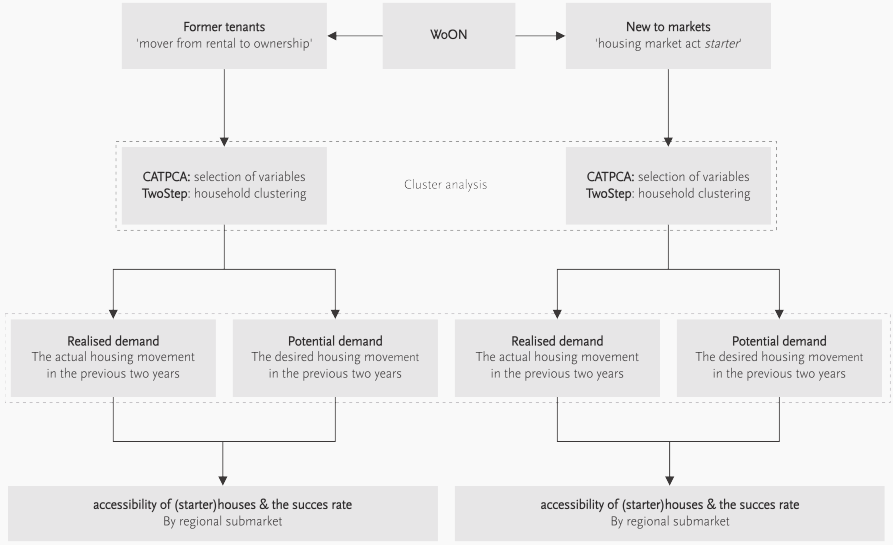
3.3 Operationalisation of the research method

Based on the conceptual research model formed above and the research questions drawn up, the research design can be formed. The starting basis of this design can be derived from the data structure of the WoON which has a quasi-longitudinal character. In a longitudinal research structure, data are collected from the same sample group over a certain period (Bryman, 2012). However, the quasi-character means that the survey group does not remain constant. Indeed, the surveyed group changes over time. Nevertheless, the size of the sample group is such a strong reflection of Dutch society that a constancy of respondents does not appear necessary.

The research model formed can be operationalised in two ways: on the one hand, demographic and socioeconomic developments as well as developments in the housing and mortgage market and in government policy can be traced from a literature review (Box IV & V). Within this framework, the WoON surveys can then be used to analyse and explain residential mobility, i.e. moving to an owner-occupied house from households' moving motives (in their own regional submarket).

Background developments (literature)
In fact, the background study constitutes a preliminary study and serves as input for forming the independent research variables in order to explain the dependent variables (moving to an owner-occupied house). In addition, the independent variables should also be available within

Figure 3.2 The data structure within the WoON operationalised to the analyses to be carried out



the WoON. The literature review is composed of two primary parts as can be seen in Figure 3.1. First, demographic and socioeconomic developments in the Netherlands over the past 20 years are outlined. Next, the Dutch housing and mortgage markets are discussed separately, although they are highly interconnected. In addition, government policy on home ownership is discussed. Within this framework, the developments found in the data analysis can then be explained.
The main part of the literature review is included in the first sub-question of this study. Besides social shifts and housing market-related developments, the position of owner-occupiers over time is also explained in more detail based on this context.

WoON (data) analysis
The data analysis is performed using the available Residential surveys WoON in the studied period from 2009-2021. To this end, WoON2009 to WoON2021 are used. In this way, a picture of the development through time emerges. In fact, this is a secondary data analysis. The surveys in question were made available by the DANS Institute for (university) research purposes.

The number of respondents within the research population is around 60,000 households annually. This research population is a reflection of the entire Dutch population. For the sake of the purpose of this study, this group needs to be further demarcated. The concrete demarcation takes place in chapters 4 and 5. Within each chapter, the operationalisation of

the concept in question is further explained using the WoON. In outline, the independent variables found in the literature review are thus empirically tested. In this way, the assumed developments in the literature are examined.

The set-up of the data structure within the WoON, translated to this study, is shown in Figure 3.2. From the data file, first of all a split can be made into household type. The creation of these household demarcations is further explained in the following chapters. These two study groups of first-time buyers are then separately grouped into strongly differentiating subgroups using a statistical clustering technique (subquestion 3). The household groups found form the basis for the analyses on demand and housing expenditure development as formulated in sub-questions 4 and 5. This analysis runs along two lines: realised demand (households that have moved) and potential demand (households willing to move). In the following two sub-questions 6 and 7, realised demand is combined with potential demand to identify accessibility (based on Brounen & Neuteboom, 2010) and success rates (through logistic regression analysis).

For the most part, the analyses relate to the most recent housing survey. Where relevant, these findings are supplemented with data from previous years to show trends. Incidentally, accessibility and the chances of success are examined fully longitudinally. This includes regional sub-markets in addition to differentiation by household group. The classification of the regional submarkets comes from the housing market area classification as used by CBS.

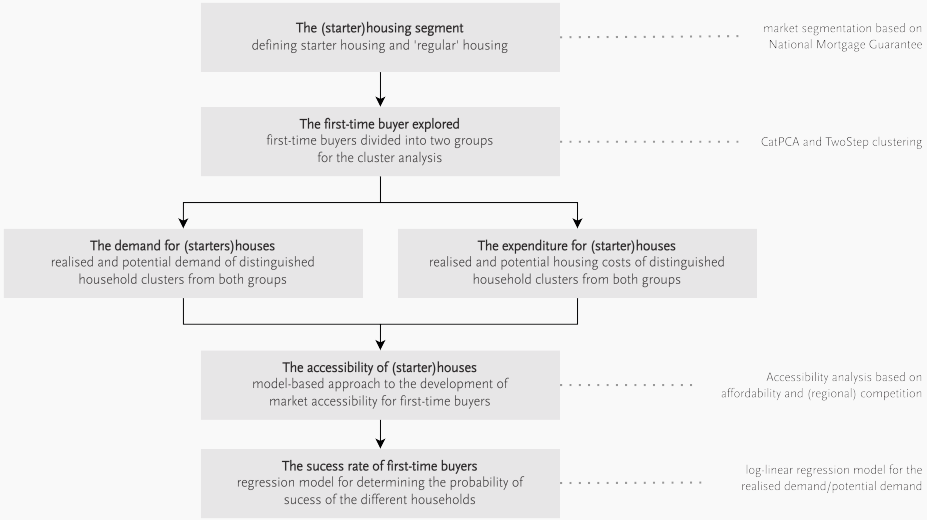
The definition of the area classification, among others, is given on page 222 in a glossary defining the most common terms used in this study.

3.4 The applied workflow

Figure 3.3 shows, based on the WoON data structure and the formulated sub-questions, the design of the chapter setup. Along the workflow, the respective analysis method is shown. Before carrying out the cluster analysis (see also Figure 3.2 second row), the starter owner-occupied housing segment is delineated. In the above, the term has already been named in a few places.
After clustering, the demand for (starter) owner-occupied houses and the associated housing expenditure of different households are analysed successively. Herein, the differences by regional submarket (housing market area) are also examined in more detail.

The second part of the analysis consists of two model-based elaborations. From the picture formed of the development in demand and housing expenditure for and of owner-occupied houses, a picture of the accessibility of the owner-occupied housing market is drawn. This is done on the basis of an accessibility model operationalised to the WoON. The analysis concludes with a regression model for the success rate. This model describes the relative

Figure 3.3 The workflow by chapter order of the analyses to be performed based on the data structure setup



influence of the variables of interest on the success rate of the different households. It also shows the success rate of different household groups over time. Both models are used to provide insight into the (change in the) position of first-time buyers.

Chapter 4
Background developments

4.1 Introduction

Chapter 2 concluded that households' housing choice is largely determined by households' demographic & socioeconomic characteristics, their current housing market position, housing market conditions and government policies. Developments in the demand for owner-occupied housing exercised by first-time buyers are then determined by, on the one hand, housing market-related changes and, on the other hand, societal shifts. To properly study and interpret this demand development in the period from 2006 onwards, it is therefore necessary to be well aware of the context in which it took place.

The social shifts in the position of first-time buyers are mainly due to demographic and socioeconomic developments in the period under review. These developments are related and there is also mutual influence.

The housing market-related changes can be broken down into developments in government policy on housing and developments in the housing and mortgage market. Again, these developments are strongly interrelated. Moreover, these developments are of course not entirely unrelated to general social shifts. In the following paragraphs, the social and housing market-related developments in the period under review are explained, after which the current starting position of first-time buyers is discussed in more detail.

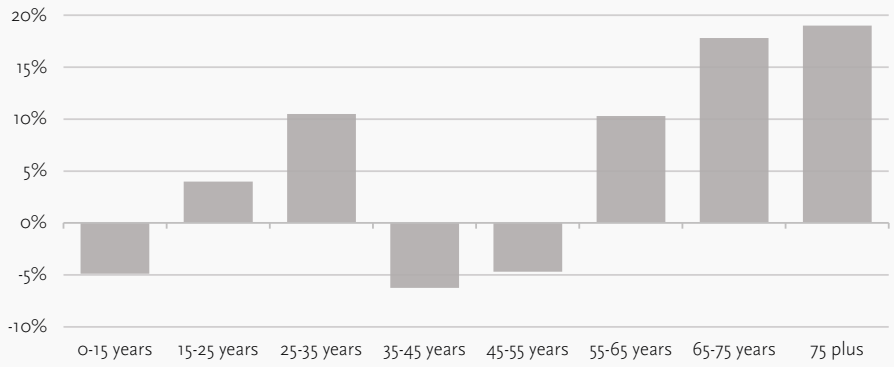
4.2 Demografic developments

Demographic trends are important to describe the social context of the period targeted by this study. In this respect, developments in the period 2006-2022 are largely the result of past demographic events. However, socioeconomic developments also play a role. In particular, the absolute population development from both natural growth and migration in the period under study, the current (double) ageing population and the continuation of individualisation are important demographic developments that influence the playing field of the owner-occupied housing market in the Netherlands.

substantial population growth

Figure 4.1 shows that the Dutch population has grown significantly in the recent past. On 1 January 2006, the Netherlands still had about 16.3 million inhabitants. In the years 2006-2022, the population increases by an average of over 88,000 people per year, so that in 2022 over 17.7 million people live in the Netherlands; or a growth of 8.6 per cent in 16 years (CBS,

Figure 4.1 Relative population growth by age group in the period 2014 - 2021



source: CBS, 2017 (own edit)

2022c) . It appears that the 50–64 age group in particular has seen very strong growth, due to the sizeable birth cohorts of the 1970s entering this category during this period.
The ageing of the population continued during the period studied. The over–75s group is relatively the strongest growing age group between 2006 and 2022. (CBS. 2022b). In addition, the group of 20–30–year–olds appears to be increasing in size from 2015, after a stable period of 10 years. Most of the growth in this age category is explained by the increased migration balance during the period 2015–2022 by an average of 86,000 per year (CBS, 2022a).

For housing demand, the development in the number of households is more significant than the growth of the total population. CBS data show that the number of households grew more than the population size between 2006 and 2022. In 2006, there were 7.1 million households living in the Netherlands. This number rose to 8.0 million in 2022, or a growth rate of 12.7 per cent over a 16–year period (CBS, 2022d). Population growth over the same period is 'only' 8.6 per cent. The strong growth in the number of households appears to be largely caused by the trend increase in the number of single–person households. The number of single people in particular continued to rise steadily between 2006 and 2022. In 2022, this group constitutes about 18 per cent of all households. These developments clearly reflect the influences of individualisation (CBS, 2017).

Double ageing

Double ageing refers not only to the increase in the number of older people in the population structure, but also to the increase in the proportion of people aged 75 and over in the total population. Double ageing is the phenomenon that not only does the group of elderly people form a relatively larger share of Dutch society (partly as a result of the baby boom after World War II), but also that the average age is getting higher. Consequently, ageing is increasing in two ways. From 2006, the number of over–75s grew sharply from 11 per cent to 15 per cent

of the total population in 2020. The increasing life expectancy also makes the proportion of over–65s compared to 20–65s (the grey pressure) rise. In the period 2006 to 2022 in this grey pressure increased by 7 per cent to 34 per cent. In other words, the share of over–65s is one–third of the total population.

Figure 4.1 showed earlier that population growth from 2014 onwards among people over 55 has seen a significant increase. To a large extent, this increase is caused by the substantial birth wave shortly after World War II, but sociocultural shifts also play a role here. The development of the number of single people in this age category, for example, is partly influenced by the growing number of divorces, after which some of the individuals do not enter into a new relationship.

The ageing of the Dutch population coincides simultaneously with the development in the independent living duration of older people. For instance, it appears that the number of over–65s living longer at home has increased significantly in recent years, partly due to active government policies (De lange & Witter, 2014).

Declining household size

The influences of individualisation since the 1970s become even clearer when the age of the household head is included in household trends. For instance, it appears that living alone has gained strong popularity especially among young people in the age group up to 30 years (CBS, 2022).

As living alone is mostly seen as a temporary phase (De Jong, 1995), the group of couples without children is also growing within this age group. The fact that young people are consequently postponing having children is reflected in a minimally increasing number of couples with child(ren). Thus, the proportion of these households with children (in all age categories) appears to have grown minimally from 2006 to 2022; by only 3 per cent on average.

However, the concept of individualisation is difficult to place in isolation. For instance, developments in society as a whole play into the unfolding of the term. Consequently, much of what can be considered individualisation overlaps with issues such as emancipation, de–pillarisation and labour market flexibility (CBS, 2017). Broadly speaking, it can be said that such developments in society have led to a continuous form of individualisation, resulting in a declining household size.

4.3 Socioeconomic developments

Economic conditions have a major impact on how households shape their various careers. The influence on labour market careers is evident in this regard. In addition, these conditions also influence the process of household formation through developments in income. With

Table 4.1 Some key economic figures for the period 2006-2021

year	GDP	CAO index	inflation CPI	year	GDP	CAO index	inflation CPI
2006	3,5	1,5	1,1	2014	1,4	0,8	1
2007	3,8	1,8	1,6	2015	2	1,4	0,6
2008	2,2	2,9	2,5	2016	2,2	1,9	0,3
2009	-3,7	2,4	1,2	2017	2,9	1,5	1,4
2010	1,3	1	1,3	2018	2,4	2	1,7
2011	1,6	1,1	2,3	2019	2	2,7	2,6
2012	-1	1,3	2,5	2020	-3,9	3,3	1,3
2013	-0,1	1,1	2,5	2021	5	2,3	2,7

source: CBS 2021 (own edit)

this, economic conditions also have an indirect effect on housing demand and housing quality (Priemus et al., 1994). In addition, there is a direct relationship between developments in the economy on the one hand and housing availability and willingness to move on the other.

Economic growth and crises

After the 2001 dotcom crisis and subsequent period of strong economic growth in the summer, the Netherlands faced a new crisis in 2007; the credit crunch. Table 4.1 shows a longitudinal overview of economic developments over the past 15 years.

Gross domestic product (GDP) growth in the period 2002–2008 stagnated and was even negative in 2009. Inflation levels, on the other hand, were not historically high. Consequently, wages grew significantly less during the 2008–2015 crisis period (the aftermath of the credit crunch) than in the previous period. From 2015, a clear improvement in the economic environment was noticeable in both GDP and wage growth. Inflation was low during this period; 1% on average. The minimal wage development (inflation–adjusted negative during 2008–2015) was also accompanied by high unemployment. The most recent crisis: the corona crisis is clearly visible in GDP in 2020. For now, the economic fallout does not seem to translate into lower wage growth. Preliminary inflation figures for 2022 do show an expected inflation rate of 12.3% (CBS, 2022e).

The economic downturn during the crisis was due to the emerging financial problems in the mortgage market in America (Elsinga et al., 2011). Often, overly loose lending through so–called subprime mortgages in the US housing market and innovation in financial markets (securitisation) are considered the trigger for the emerging crisis in financial markets worldwide (see Elsinga et al., 2011 for a detailed account of the origins of the credit crisis).

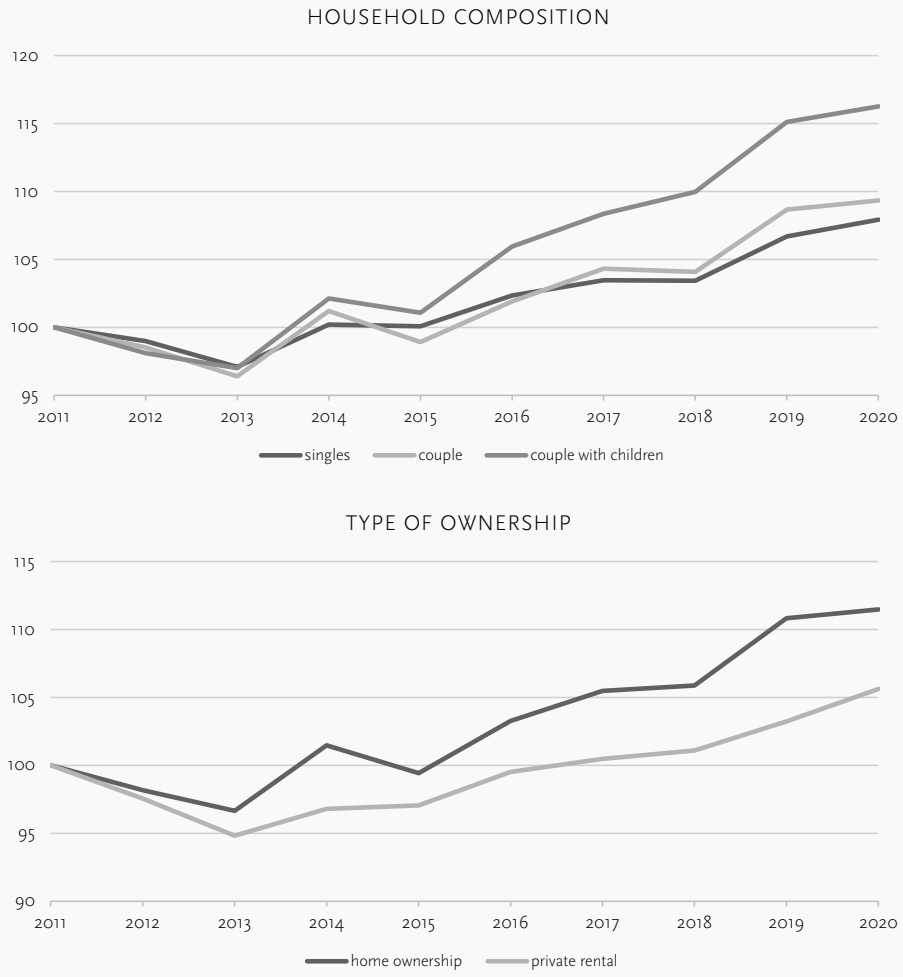
The housing market in the Netherlands reacted immediately and as early as 2007, the number of transactions of both new and existing owner–occupied houses fell. In the autumn of 2008, after Lehman Brothers collapsed, the effects of the crisis on the Dutch housing market became much more apparent. Despite the fact that (real) income continued to rise (in 2008 and

2009) and interest rates remained at reasonably low levels (due to government intervention), confidence in financial institutions disappeared and the housing market more or less came to a standstill. Many households postponed moving house; the number of transactions fell very sharply and sales of new owner-occupied houses declined even more.
In principle, the fall in prices in the owner-occupied housing market improved affordability for first-time buyers. On the other hand, home financing became more difficult; lending criteria were tightened by banks, not only for (potential) first-time buyers, but also for market players such as property developers and construction companies. Nevertheless, there was still some movement by first-time buyers in the owner-occupied housing market, especially in the lower segment.

Increasing skew in income developments

Dutch households benefited differently in real terms (adjusted for inflation) in terms of average disposable income from economic growth in the period 2015-2020 (Figure 4.2). In addition, the development outlined is partly the result of previously mentioned developments; both demographic and socioeconomic. For instance, the proportion of (young) single people appeared to have increased continuously in recent years. Singles often (still) have a lower (disposable) income and, it turns out, have experienced the smallest increase in disposable income in recent years. In real terms, an average of 7% over a period of almost 10 years. Incidentally, the pick-up in the economy is clearly visible in the maximum spending possibilities of households. Couples with child(ren) improved the most on average by over 16%.
When looking at the income distribution of households broken down by type of home ownership, a clear pattern emerges. It appears that the average disposable income of owner-occupiers over the average period has been more volatile than that of tenants. In the years following the credit crunch (2011–2015) and during the financial crisis, the average disposable income of owner-occupied households was found to fluctuate significantly. Almost all studies and purchase price models show that home ownership is (among other things) strongly related to the level of income (Elsinga, 1995; Boelhouwer et al. 2022a). Therefore, in times of falling house prices and low interest rates, home ownership becomes available to lower income classes. As a result, the average disposable income of homeowners falls. In boom times (from 2018 onwards) when house prices rise rapidly, a significant increase in disposable income is visible. Indeed, higher income is increasingly needed to finance home ownership. Such strong developments are less visible in the rental market. In this context, Haffner et al. (2006) speaks of an 'impoverishment' of the rental sector and an 'enrichment' of the owner-occupied sector. The most advantaged households prefer owner-occupied housing to rented housing.
Behind the increase in disposable income (in real terms) among all households appears to be a certain polarisation between income groups. In section 4.2, the individualisation of households was already discussed; in other words, households increasingly consist of single people. At the same time, this group has the lowest income development, as Figure 4.2 shows. Couples (with children), on the other hand, have a greater development in income. Earlier we showed that within the owner-occupied sector there is a certain 'enrichment'.

Figure 4.2 Trend in real disposable income in the Netherlands by household type and by type of home ownership, in the period 2011 - 2020 (2011=100)



source: CBS 2020 (own edit)

This enrichment emerges more strongly when looking at absolute values. Single people on average have a disposable income of €25,800 in 2020. Couples and couples with children have €62,000 and €73,600 to spend respectively; on average a factor of 2.5 higher (CBS, 2020). A similar difference is noticeable between the rental and owner–occupied sectors. The average disposable income of households is found to be €28,200 and €61,100 respectively; more than twice as high. Figure 4.2 shows that this skew in income has increased in recent

years. Given the strong dependence on income in homeownership opportunities, it can be argued that there has been some skewing of household opportunities. When discussing such developments, the literature often refers to 'insiders' and 'outsiders' (see Niehof, 2008; Boelhouwer, 2014; Bosma et al., 2018, among others)

The importance of (housing) equity

With the growth of home ownership over the period 2006–2021 (including a decline during the crisis) among Dutch households, in addition to the level of household income, home equity has started to play a greater role in the development of demand for owner–occupied housing and housing quality.

The total equity balance of all Dutch households in the Netherlands increased by over 63% to €1,900 billion between 2006 and 2021 (CBS, 2021). For the most part, this increase takes place from 2015 onwards. In the same period, the total owner–occupied home value appears to have grown by over €1,000 billion since the trough of the credit crisis, to €1,900 billion by early 2022. As a result, the share of total (excess) value on owner–occupied housing in the total wealth of all households has grown to 60% in seven years. Equity excluding home ownership therefore appears to have barely grown over the past decade.

Two other still important components of household wealth in absolute terms are bank deposits and substantial interests. In absolute value terms, the totals of both assets are also growing reasonably well over the period 2006–2021.

The share of bank deposits in the total wealth of all households, shows a sharp increase in the said period from 2020 onwards (CBS, 2022). Thus, most of the wealth growth in recent years is due to annual increases in house prices and households' savings behaviour during the corona crisis. Today, home equity can increasingly be seen as part of households' overall financial planning. For instance, the surplus value can be withdrawn for investment, investment and donation purposes when liquidated.

Not unexpectedly, there appears to be a correlation between household income and age on the one hand and household home equity on the other (source). On average, households in the 25–55 age group have the highest home equity. Younger households tend to have lower home equity. The over–65s seem to use the surplus value mostly to pay off the remaining mortgage amount or withdraw it as liquid assets.

In most cases, the purchase of an owner–occupied home is largely financed with debt capital by taking out a mortgage. Depending on the time of purchase and the real price trend in the owner–occupied housing market, it is also possible to make capital gains through home ownership. The excess value created in this way (the difference between the sale value of the home and the remaining mortgage amount), which is not taxed under the current tax system, can be converted into an additional mortgage loan for sustainable investments in the home or for the purchase of other durable goods, or used to move on within the owner–occupied sector.

A final path through which equity affects demand for owner-occupied housing is the inheritance of wealth by children. Particularly in recent years, the share of households with excess assets in the higher age groups has increased. These households tend to have no or only a small mortgage burden (LTI) on their homes. As a result of the tax exemption (jubilee bonus), part of the equity can therefore be passed on to the children, who can use it to (partially) finance their start to the owner-occupied housing market.

4.4 Governmental policy developments

Besides the changes on the demand side of the housing market, any changes in government policy, or anyconstant factors within this policy, also affect the development in the position of first-time buyers in the demand for owner-occupied houses. This section deals successively with construction policy and fiscal policy from 2008 onwards. For an analysis of the previous period see, among others, Boelhouwer & Hoekstra (2009) and Boelhouwer et al. (2006).

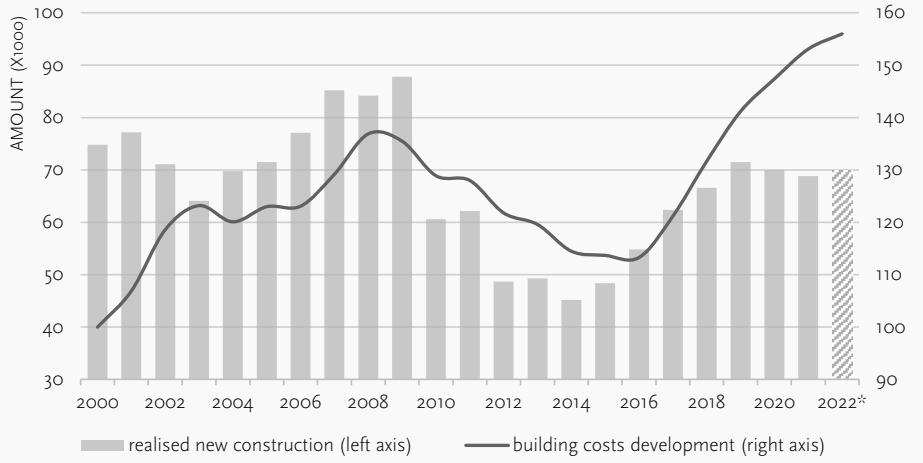
Construction policy

As a result of the crisis, subsidies were initially provided in 2009 and 2010 for housing projects that did not get off the ground (Van der Heijden & Boelhouwer, 2018). In addition, the Crisis and Recovery Act was introduced in 2010 (Chw Act 2010), aiming to speed up legal procedures. Figure 4.2 shows that despite subsidising housing construction, annual production more than halved in 2010. The dropped demand also led to a sharp drop in construction costs. Despite this, no new agreements were made around housing production. Up to and including 2010, such agreements were made between the central government, provinces and municipalities. From 2010, the responsibility for housing construction lies primarily with municipalities and provinces (van der Heijden & Boelhouwer, 2018).

In 2013, the 'Housing Accord' was concluded between the then cabinet and opposition parties. Mainly, this agreement focused on a levy on regulated (mostly social) rental housing and the introduction of an income-dependent rent increase for regulated rental housing. The landlord levy limited the investment capacity of housing corporations and led to a further decline in housing production (Priemus, 2014; Conijn & Achterveld, 2012). Consequently, the bottom of realised building production appeared to be reached at the end of 2014 with only 45,000 houses left. In the following years, construction cost trends also appeared to stabilise (Figure 4.2, right axis) after a sharp decline.

Part of the housing market reforms was the introduction of the new Housing Act in 2015 (WonW Act, 2015). Housing associations have to refocus on housing the policy's target groups: low-income households. The primacy for building rental housing lies again with commercial landlords. As a result, housing corporations hardly invest any more in the construction of medium-rent and owner-occupied housing (Hochstenbach & Van Gent, 2018). Nevertheless, housing production increased again due to the rise in house prices in the previous periods (see later Figure 4.4).

Figure 4.3 Development of annual realised new construction output and indexed construction costs (2000 = 100) in the period 2000 - 2022



source: CBS (own edit)

As a result of the sharply declining housing production and the increase in the number of households (Boelhouwer, 2018), the statistical housing shortage has now exceeded 279,000 dwellings (CBS, 2022). Moreover, the overall extent of the housing shortage proves difficult to interpret (Court of Audit, 2022). In recent years, housing production in the Netherlands has risen from under 50 000 houses in 2015 to almost 71 000 in 2021. The number of building permits granted was above that at over 75,000, but still not close to the required production level of 87,000 homes per year until 2025 and 100,000 homes per year from 2026 (Coalition Agreement, 2022). At the same time, new issues have re-emerged, such as housing restrictions due to nitrogen issues and PFAS (Boelhouwer & van der Heijden, 2022).

To a large extent, the lagging construction output during the first years after the crisis can be attributed to the deep valley from which housing production has to emerge. Across the construction column, there has been major restructuring during the crisis and a sharp decline in financial leeway (van der Heijden & Boelhouwer, 2018). Moreover, during the crisis years, municipalities and developers took some of the housing plans and housing sites 'off the market' and no new plans were developed. The sharply reduced construction output as a result of the crisis led to a sharp reduction in staff capacity at developers and construction companies. This also applies to the industry supplying construction. In the meantime, there is a scarcity of personnel and materials, which not only slows down the increase in construction production but also has a strong price-increasing effect on construction costs (van der Heijden & Boelhouwer, 2018).

Fiscal policy

Although it does not fall directly within the policy area of the Ministry of VRO (housing and spatial planning), the tax treatment of owner-occupied housing in particular, in combination with the rent policy pursued, has had a major impact on the development of home ownership in the Netherlands. In this respect, mortgage interest deduction, borrowing capacity (Loan-To-Value & Loan-To-Income) and the donation exemption (jubelton) play an important role. In addition, buyers are obliged to pay an owner-occupied home tax, transfer tax and local tax. Within the Dutch income tax system, the dwelling is considered a source of income when it is owner-occupied. According to this view, the house is an investment asset that produces housing services, the value of which can be considered an income component. The acquisition cost of keeping the investment in place as a source of income (interest cost for the mortgage loan) is then deductible (Boumeester, 2004). Regardless of assets, income and the price of the home, mortgage interest can be deducted at the applicable marginal income tax rate.

From 2001, the deductibility of mortgage interest paid was limited by the Income Tax Act (IB Act) to the first home and for a maximum period of 30 years (Ministry of Finance, 2001). In the period 2001-2008, the character of this deduction was raised several times but did not lead to a change in the system of mortgage interest deduction until before the credit crisis (Brounen & Neuteboom, 2008). Proponents of the interest deduction mostly point to the entry opportunities of lower-income households (Kuipers et al. 2006) while critics mainly emphasise the price-driving effect and the disruption of market dynamics (Grob, 2005; VROMraad, 2007). Brounen & Neuteboom (2008) show, based on the WoON2006, that first-time buyers translate almost the entire tax benefit into the offer they make on a house for sale. For those moving on, this capitalisation rate is considerably lower.

In 2013, the interest deduction was limited to annuity and straight-line mortgages only and the maximum deduction period was set at 15 years (Boelhouwer, 2017). Starting with cabinet Rutte III, the level of mortgage interest deduction in the highest tax bracket will be reduced by half a per cent annually to 38 per cent in 2041.
Whereas previously home ownership was actively promoted, government policy toward homeownership after the crisis was mainly focused on limiting financial risks (Boelhouwer, 2016). Mainly, the policy focus was on reducing mortgage debt. Subsequent fiscal policy was formed through the Code of Conduct on Mortgage Finance (2011) and the Temporary Regulation of Mortgage Credit Act (2013), which drastically curtailed households' financing options. Said reforms only affected new mortgages where the risks of current mortgages remained (Boelhouwer, 2016). As a result, significantly fewer new mortgages were taken out and the mortgage market continued to deteriorate.

A second relevant aspect within fiscal policy is the (ranges of) lending standards. Regarding the maximum mortgage-to-value ratio (LTV), it was stipulated that it would be gradually reduced year by year from 105 per cent in 2013 to 100 per cent in 2018. As a result, the option of financing both the purchase and additional costs expired and, from then on, buyers

increasingly had to bring in their own money (Boelhouwer & Schiffer, 2015b; Boelhouwer, 2016).
The simultaneously declining purchasing power of households (Figure 4.2), as a result of the tightened NIBUD standards for the LTI, led to a further reduction in households' financing options. Two earners were particularly affected by this (see also Boelhouwer 2017 for a further explanation of the calculation model).
For the benefit of flow, after many homeowners became 'underwater' due to falling house prices, the transfer tax on homes was reduced from six to two per cent in 2011. From 2021, the transfer tax for first-time buyers has been further reduced to zero per cent under certain conditions. For those moving on, the high rate of eight per cent applies.

The third and last relevant aspect within tax policy in this context is the treatment of the donation exemption for the purpose of purchasing an owner-occupied home; the so-called *jubelton*. From 2017, it is possible to receive a tax-free donation (from parents and/or guardians) up €100,000. Such national policies to help start-up children on the housing market via parents would mainly drive up prices and favour only a select group (Verheul & Hobma, 2022).

This suggests that the tax treatment of home ownership has seen a major change in the wake of the financial crisis. However, tax policy changes were difficult to implement because of the high stakes and long-term commitments, which residents took partly based on the tax regime. The pass-throughs also mainly affected newly contracted mortgages. Thus, new homeowners increasingly face lower mortgage interest deductions and restrictions in maximum borrowing capacity.

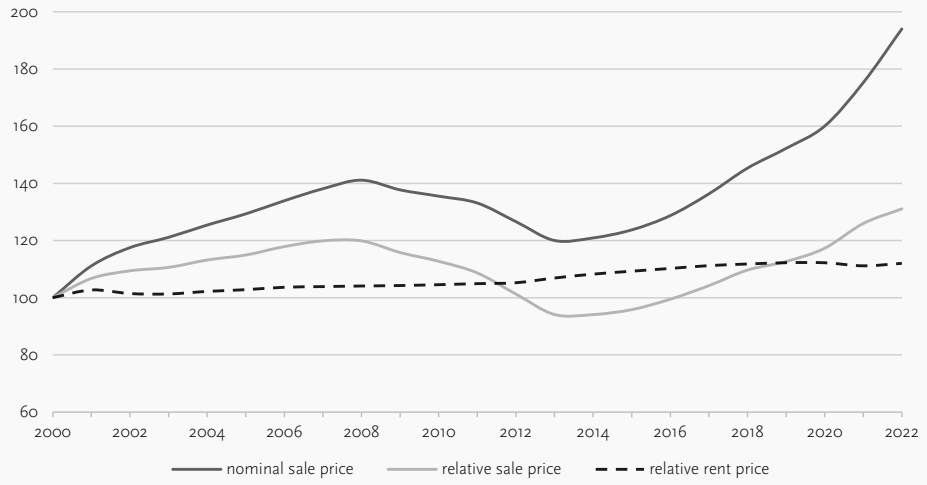
4.5 Housing market developments

Chapter 2 indicated that developments in demand for owner-occupied houses are also influenced by changing housing market conditions. In this respect, we can understand housing market conditions as the result of a complex market process, in which various interrelated developments help determine the choice process of households. For a discussion of recent cyclical developments in the housing market, see Verheul & Hobma (2022).

Some important developments in this respect are the price development of owner-occupied houses in relation to that of rented houses, the development of mortgage interest rates and mortgage lending, and the size of the supply of owner-occupied houses in the existing stock. Although these developments are strongly intertwined, this section describes them separately.

Price trends over time
Section 4.4 has already discussed the boom period from 2001 to 2007 and the credit crisis in the period 2008–2015. This development is clearly reflected in the (indexed) course of

Figure 4.4 Development of nominal and relative housing (sale) price and relative average rent, in the period 2000 - 2022 (2000 = 100)



source: CBS (own edit)

annual average sales prices, as shown in Figure 4.4. The average selling price appears to rise in nominal terms from €172,000 in 2000 to over €254,000 in 2008. An increase of almost 50 per cent in seven years. Then the average falls sharply again by about 16 per cent over 5 years until 2013, and then bottoms out at €215,000. The recovery of the owner-occupied housing market from 2015 resulted in an annual price increase of 7 per cent on average until 2020 and as much as 14 on average from 2020 to 2022. Eventually, the nominal selling price in 2022 will reach almost €430,000, or more than 150 above the 2000 price level and a 70 per cent increase from the peak in 2008.

When nominal purchase prices are adjusted for the trend in inflation, this results in the relative sales price. This trend is also shown in Figure 4.3. At 2.8 per year, the rise in the average relative sales price is less extreme. The price decline after 2008 then continues until 2013. In that year, the relative price is almost 35 below the 2008 price level. The relative sales price also rises much more gradually than the nominal sales price from 2014 onwards. It takes until 2020 before the relative sales price exceeds the 2008 level again.
In addition, it is relevant to know how price developments in the owner-occupied sector compare with the development of rents over the same period. The relative rent (adjusted for inflation) appears to increase gradually but steadily over the entire period. Until the second half of 2011, the relative rental price thereby remains below that of the relative expiry price, after that year an opposite trend can be identified in the 2012/2018 period. The increase in the relative rent finally amounts to 12 per cent which corresponds to an average of 0.54 per cent per year on top of inflation.

These developments of average prices do not yet say anything about the actual housing expenditure of (individual) tenants and buyers, as this expenditure also depends on, for instance, mortgage interest rates, equity and tax treatment. Nevertheless, it can be assumed that these price developments have made buying a home more (financially) attractive than renting.

Credit lending and mortgage rates

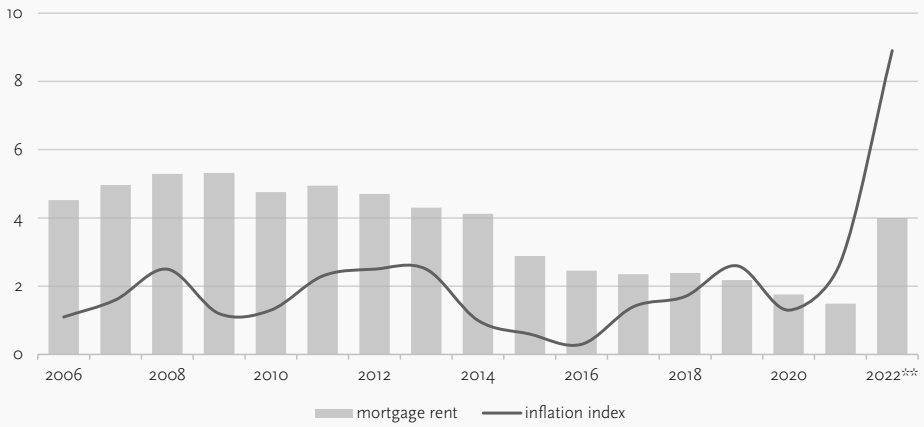
A household's choice to move to owner-occupied housing will, in addition to the price of the house, also be determined by the mortgage amount obtainable. Especially in the Netherlands, where building up equity through savings is not very common compared to other countries, mortgage provision has a clear influence on buying a house. The amount of the mortgage sum to be obtained depends on income on the one hand and is strongly determined by the available mortgage form(s), lending criteria and not least by the level of mortgage interest rates.

The Dutch mortgage market experienced tremendous growth from the 1990s onwards. Partly due to the liberalisation of financial markets from the second half of the 1990s and the emergence of new methods for banks to raise capital (e.g. securitisations), mortgage lending was able to take off significantly. When strong purchase price increases during the same period led to the creation of sizeable excess values on owner-occupiers' homes, new products were again introduced to the mortgage market. These mortgage forms (the capital gains mortgage and the investment mortgage, among others) were aimed at exploiting this surplus value more actively. Partly due to expanded lending, the volume of owner-occupied mortgages rose from 23 per cent to 100 per cent of GDP during 1995-2008.

The economic crisis from 2008 and the collapse of the mortgage market in 2008, influenced by the downturn in the owner-occupied housing market, caused a significant reduction in mortgage lending (MBE, 2021). The combination of payment problems among owner-occupiers and the emerging financial difficulties among banks due to the problems in the financial markets are leading to a reluctance to grant mortgage loans. The ratio between the value of the home and the maximum credit granted is drastically reduced in the 'temporary' mortgage credit scheme (TRHK). The income requirements (LTI) are also being tightened through the NIBUD standards and the LTV was lowered stepwise.

From the end of 2014, the mortgage market showed a slight recovery. Influenced by European monetary policy, the economy in the Netherlands is recovering rapidly and consumer confidence is rising again (CBS, 2021). Due to the extremely low mortgage interest rates caused by the European Central Bank's interest rate policy, demand for owner-occupied houses increases again from the end of 2013 and prices of owner-occupied houses rise rapidly. Consequently, the borrowing capacity of two-income (modal) households increase sharply again from the second half of 2015 (MBE, 2021).

Figure 4.5 Development of nominal mortgage interest rate* and annual inflation in the period 2006 - 2022



source: DNB, CBS (own edit)

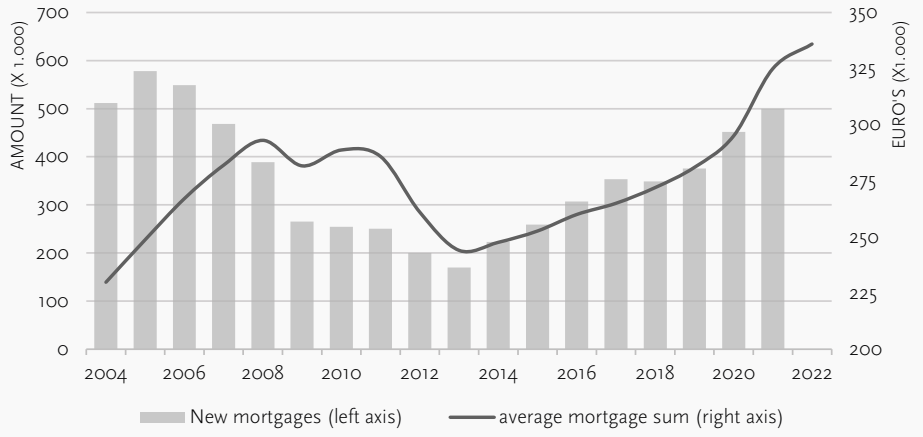
* Average mortgage rates paid for new home mortgages with fixed interest periods between 5 and 10 years.
** Estimated based on preliminary inflation rates and mortgage rates (10-year fixed).

Ample monetary policy and low capital market rates meant that mortgage lenders were able to charge historically low mortgage rates from 2015 onwards. Borrowing money became cheaper and cheaper. Prospective buyers took advantage of the low-interest rates and saw their maximum funding ceiling continue to rise. Thanks in part to significant income increases from 2015, the maximum mortgage value kept increasing. At the same time, previously popular mortgage products like the interest-only mortgage were further tightened to a maximum of 50 per cent of the mortgage amount and mortgage interest deductions were further curtailed.

As described earlier, the development of mortgage interest rates is linked to developments in the financial markets. As the mortgage market works with different fixed-interest periods, it is influenced by both the money market (short-term) and the capital market (long-term). The cost structure of the mortgage interest rate charged depends on the revenue model chosen. In this, a distinction can be made between savings, equity, debt and securitisation. The credit crisis has shown that the latter market is not without risks. Parties that were completely dependent on this form of financing therefore had a particularly difficult time during the credit crisis. Moreover, compared to most other European countries, securitisation was relatively widely used in the Netherlands. With the introduction of the NHG, the covered bond market (covered bonds) has gained considerable popularity in recent years for raising capital for mortgage lending.

That mortgage interest rates have a major impact on household choice behaviour is widely acknowledged. The level of nominal mortgage interest rates, together with income, mortgage

Figure 4.6 The development in the number of new mortgages and the average mortgage amount in the period 2004 - 2022



source: Land Registry (own edit)

type and lending criteria, helps determine the maximum borrowing capacity of households. The change in nominal mortgage interest rates can also influence a household's decision by another route. When interest rates rise from, say, 2 per cent to 4 per cent, potential buyers will hesitate to purchase a house; the 4 per cent interest rate is quickly perceived as relatively high in such a situation. In contrast, if in the previous period the interest rate has been at, say, 6 per cent, the 4 per cent will actually be perceived as relatively low and potential buyers will be more inclined to buy (Boelhouwer, 1999).

Figure 4.3 shows the development of nominal mortgage interest rates over the period 2000–2022. It shows that mortgage interest rates have gradually and consistently declined from 2008 to a historical minimum of 1.5 per cent in 2021. Combined with rising incomes, the maximum borrowing capacity clearly increases on average, creating a favourable situation for buying a home. Despite the significant easing of monetary policy through reduced interest rates from 2015, average inflation remains low.

The influence of interest rates and mortgage lending criteria on potential buyers' decisions is also evident from the trend in the number of mortgages taken out and the level of the average mortgage amount (see Figure 4.5). During the period of wider criteria (2005/2008) but rising interest rates, the number of new mortgage registrations appears to decline while the average mortgage amount increases. This picture therefore confirms the importance of mortgage interest rates. From 2009 onwards, the number of mortgages granted declines sharply, with the average mortgage amount also falling with some delay. The absolute bottom in both mortgage applications and the average mortgage amount seems to be reached in

2013. In the years following the crisis, a consistent rise in the number of mortgage originations is visible and the average mortgage amount rises in line with the increase in purchase price (Figure 4.2). From the bottom in 2013, the number of new mortgages granted appears to have increased by over 195 per cent to €500,000 by 2021. It should be noted, however, that an increasing share can be attributed to rollover mortgages in recent years.
The sharply falling interest rates, the widening of mortgage eligibility criteria and the growth in the number of higher-income households (above one-and-a-half times modal) lead to a significant widening of the maximum borrowing capacity of households. This space, prompted by rising purchase prices, is clearly being used.

The above developments largely affect the options available to first-time buyers. By and large, they are entirely dependent on mortgage credit to buy a home. From that premise, it can be reasoned that developments in lending and mortgage rates have a greater impact on first-time buyers than on first-time buyers. Therefore, changes in mortgage lending i.e. prevailing standards, interest rates almost entirely determine the possibility of market entry for this group of households.

Supply of owner-occupied housing
The final choices of when to move, between renting and buying and the quantity of housing services desired, depend largely on the supply of housing. In a wider housing market, in the long run, the supply of housing will increasingly match housing consumer demand. However, this is not the case in the current market: consumers have always faced a housing shortage in both quantitative and qualitative terms. As a result, the size and composition of the housing supply have at some point had a clear impact on the choice behaviour of households in the housing market. This is especially true for first-time buyers who move in from either a non-independent housing situation or as former tenants.
In the total range of housing, a distinction can be made between two sub-markets: new-build production and existing housing. The supply from new-build production has already been discussed in section 4.4. Broadly speaking, three phases can be distinguished in new housing production. From 2002 to 2008, between 70,000 and 87,000 houses are added annually in increasing numbers. Due to the collapse of the housing market, new-build production falls by over 30 per cent in 2009 and by a further 21 per cent in 2012. From to peak, total new construction production falls over 48 per cent to in 45,000 homes in 2014. From 2015, new construction production slowly picks up before reaching a new construction mutation of around 70,000 houses in the period from 2018-2022.

Regional differences
The picture painted so far about developments in the housing market concerns developments as they occurred on average in the Netherlands as a whole. However, it is well known that we cannot talk about the Dutch housing market, but that there are major regional differences in terms of housing market conditions. Table 4.2 shows some key figures of the owner-occupied housing market in the various provinces. Strikingly, all provinces except North and South

Table 4.2 Some key figures of the owner-occupied housing market by province in 2021

Province	1	2	3	4	5	6
Groningen	154.924	54,4	283.578	7,076	26,7	254
Fryslân	188.927	62,0	290.253	8.248	24,9	231
Drenthe	148.079	65,9	316.653	6.915	18,1	215
Overijssel	313.196	60,8	325.701	14.162	15,8	213
Flevoland	113.347	64,9	351.576	6.442	9,1	225
Gelderland	561.826	60,9	379.346	25.384	1,9	199
Utrecht	344.137	58,0	460.992	18.020	19,2	219
Noord-Holland	684.465	50,3	490.225	37.523	26,8	241
Zuid-Holland	887.826	51,9	384.214	47.397	0,6	241
Zeeland	125.046	66,3	294.022	5.719	24,0	248
Noord-Brabant	703.732	61,1	385.036	34.910	0,4	207
Limburg	323.975	60,4	300.077	14.291	22,4	191
Netherlands	**4.549.480**	**57,1**	**386.714**	**226.087**	**0**	**225**

source: Kadaster, CBS (own edit)

1. Number of owner-occupied houses in housing stock 2021
2. Share of owner-occupied sector in housing stock 2021
3. Average selling price in euros in 2021
4. Number of owner-occupied houses sold in 2021
5. The percentage deviation from the average selling price for the Netherlands as a whole in 2021
6. The price index of the average (nominal) selling price for the period 2000-2021 (2000=100)

Holland have a higher share of owner–occupied houses in the provincial housing stock than the Dutch average. The influence of both provinces on the average is evident in the absolute size. About a third of the Dutch owner–occupied housing stock is in these provinces.
Interestingly, the highest of the average selling prices of the package of owner–occupied houses sold does not match the price indexes. The Groningen and Zeeland region have increased the most relative to the year 2000, while sales prices remain (far) below the Dutch average. In addition, table 4.2 (item 5) shows that the average selling price of the local package of houses varies considerably between regions.

4.6 Developments of first-time buyers

Demographic and socioeconomic developments, changing housing market conditions and changes in construction and fiscal policies have largely influenced the (current) housing market position of first–time buyers. This position, based on the above trends, is additionally reinforced by the larger mortgage dependency for owner–occupancy relative to movers (Boelhouwer & Schiffer, 2019). This section positions the first–time buyer in the social context of the Dutch owner–occupied housing market outlined above.

Positional developments in the period 2008 to 2021

Developments within the owner-occupied housing market have placed first-time buyers in a persistently changing position (Boelhouwer and Schiffer, 2021). In academic discussions leading up to the crisis, first-time buyers were mostly presented as the ones that paid the price (Dol & Boumeester, 2016). The argument was that many residents of rental properties delayed the eventual purchase of a property, thus stagnating the flow and reducing opportunities for first-time buyers in the rental housing market (Schilder and Conijn, 2013).

In their study, Dol and Boumeester (2016) nuanced the trend at the time that these households are exclusively in a marginalised position. Within the study, a distinction was made between two typologies of first-time buyers: new households from a non-self-contained situation and households moving on from an independent rental property.

Newly forming households wishing to move, mostly turned out to go ahead as usual. However, wishes were sometimes adjusted and entry into the housing market was slightly postponed in the crisis years. The flow of former tenants into the owner-occupied sector did stagnate clearly in the years 2009-2011. In fact, the above conclusion has two implications: on the one hand, there is a significant difference in the starting position of households exercising demand in the owner-occupied market, and on the other hand, the different starting positions also appear to implicitly influence the opportunities on the owner-occupied housing market.

From the literature studied, it can be seen that developments in the position of first-time buyers in the post-crisis period in the Netherlands mainly follow three lines: the restrictive nature of the LTV/LTI standards, rising housing costs and increasing competition from so-called 'buy-to-let' investors. In addition, construction policy and housing production play an important role in the market entry opportunities.

In the years following the start of the crisis, first-time buyers were found to be involved in more than half of all housing transactions (Marwijk et al., 2014). Despite this, overall house mobility lagged far behind. Only one in three first-time buyers moved into a house where there was a movement chain while the share that moved into a house via market outflow increased. In the same period, the share of first-time buyers involved in a new-build transaction was found to have risen to 50 per cent.

At the same time, restrictive fiscal (government) policies resulted in a tightening of LTV and LTI norms and a reduction in the maximum mortgage interest deduction (Boelhouwer and Schiffer, 2019). In particular, two-earners (2x modal) were found to experience the biggest setback in financing capacity: over 28 percent in the period 2011-2014 (MBE, 2022). In contrast, single earners experienced a rather horizontal trend until 2017. From 2018, significant growth in maximum financing capacity is visible among all income types. The strong correlation between households' income and maximum mortgage is also evident when the course of the two developments is laid alongside each other.

The other side of the coin shows that the financing position of first-time buyers who tend to have middle-income modal incomes (van der Heijden and Boelhouwer, 2018) lags behind

high-income and homeowners who have seen their assets grow in response to house price developments. Studies on LTV and LTI standards for first-time buyers (Boelhouwer and Schiffer, 2015a, 2015b, 2019) also argue that these households in particular could benefit from more flexible standards where the income perspective is (again) taken into account in mortgage applications under current mortgage rate conditions.

A second development relevant in this context is the (total) housing expenditure trend. Despite the continued fall in effective mortgage interest rates (Figure 4.5), the gain in monthly lets due to lower interest payments is largely offset by higher mortgage repayments. Given that interest payments are not deductible within the legislation surrounding mortgage interest deduction, the amount of maximum monthly lets (and mortgage payments) is further limited (Bean and King, 2019). The significant reliance on mortgage credit for the realisation of home ownership means that first-time buyers tend to end up in a disadvantaged position. Within this framework, however, a number of caveats should be made. First, the relationship between income and mortgage costs should remain in balance. Recent research by the Financial Markets Authority (AFM, 2021) shows that first-time buyers, relatively to other homeowners, often have a high housing expenditure ratio and little equity to absorb setbacks. In addition, first-time buyers increasingly have student debt in the coming years, which threatens to increase the risk of debt accumulation.
Second, the restrictions regarding the type of mortgage chosen in combination with NHG create higher monthly payments than necessary. Indeed, in combination with the National Mortgage Guarantee, a interest-only mortgage cannot be chosen (NHG, n.d.).
Interest-only mortgages generally play an important role in the accessibility of the owner-occupied housing market (Vereniging Eigen Huis, n.d.). In recent years, this mortgage form has increasingly come under discussion due to the potential affordability risks at the end of the mortgage term (Briene et al. 2019). However, the mortgage product remains a popular addition to the financing structure in many cases (Wegwijs, n.d.).

A third relevant development regarding the position of first-time buyers is the growth of the private rental sector and the progressive confrontation with private investors in urban housing markets (Bosma et al. 2018; Aalbers et al. 2020). For instance, it appears that in 2017, more than 10 per cent of all housing transactions in major cities belonged to private investors, with outliers of 20 per cent in the Randstad (van der Harst and de Vries, 2019). The popularity of this form of investment is also reflected in the rapid growth in the size of securitised rental mortgages. Still totalling 800 million in 2017, the total had grown to over 3,300 million by the end of 2020 (DNB, 2021). The increased competition between investors and start-ups, with investors mostly having the option to contribute (part of) equity, created an uneven playing field. This increase in competition was also reinforced by lagging construction output.

Follow-up research by Wisman & de Vries (2020) shows that where initially first-time buyers played a significant role in housing transactions (van der Harst and de Vries, 2019), overall residential mobility in the Netherlands doubled in the years 2014 to 2020. In percentage

terms, this resulted in a decline in the number of first-time buyers in the housing market, with the absolute numbers of these households remaining the same. Later shown in the literature, a possible explanation for this development seems to lie in the demographic and socioeconomic differences between potential first-time buyers (Plegt, 2021). Dol and Boumeester (2016) previously showed that it is possible to distinguish between household entry positions.

This shows that the position of first-time buyers has seen little stability in recent years, partly due to social change. The changed lending conditions mean that a section of first-time buyers (dual-income earners, with a double-mode income) developed relatively more borrowing space than single first-time buyers. However, the initial improvement in the position of first-time buyers in the housing market led to an influx of money and thus further price increases (Boelhouwer et al. 2022b). In the longer term, the wider credit conditions thus worsen accessibility for first-time buyers. The tightening of LTV/LTI norms, although they initially reduced the financial risks of the housing market, resulted in an uneven restriction of borrowing space for first-time buyers compared to those moving on. This financing space was further constrained by the phasing out of mortgage products such as the interest-only mortgage combined with the NHG scheme. The donation exemption (jubelton) and reduction in transfer tax provided new air in the market. In conclusion, the growth in demand for owner-occupied dwellings partly due to the rise of private investors and demand for rental mortgages (buy-to-let) and lagging housing production partly worsened the competitive position.

4.7 Concluding review

Chapter 2 indicated that the housing choices of first-time buyers are largely determined by the demographic and socioeconomic characteristics of these households, housing market conditions, policy areas relevant to housing and the current housing market position. In the period targeted by this study (2006-2021), and the years preceding it, clear social changes have taken place. The changes in different areas are thereby strongly interrelated.

Population growth and individualisation
There has been strong population growth in recent decades. Especially the positive migration balance has enjoyed a significant share in this in recent years. Nevertheless, net population growth does not appear to be equally strong in all age categories. The higher age categories in particular appear to have become larger. It is not only in absolute numbers that the older population groups appear to be increasing. The general grey pressure also seems to have increased sharply. With this, there is double ageing. For housing demand, however, the household picture is more interesting. Over the past 16 years, the number of households in the Netherlands has increased by 13 per cent. This increase turned out to be greater than the net population growth. Indeed, a large proportion of households appear to be increasingly single-person households in the age categories relevant to the demand for starter homes.

With this, the individualisation of society appears to be continuing, further increasing the absolute size of housing-seeking households.

An economy hit hard by crisis

In autumn 2007, the Dutch economy was hit by the credit crisis. The resulting downturn appeared to be the result of the financial problems that arose in the US mortgage market. The housing market in the Netherlands reacted immediately. As confidence in financial institutions disappeared, the housing market came to a standstill. Many households postponed moving house; the number of transactions fell very sharply and the sales of new houses for sale declined even more. In principle, the fall in prices in the owner-occupied housing market improved affordability for first-time buyers. On the other hand, housing finance became more difficult; lending criteria were tightened by banks, not only for (potential) owner-occupiers but also for market players such as property developers and construction companies.

Increased skewness in income

In the years following the financial crisis, wages rose and the economic landscape was marked by low inflation. In it, different household groups appeared to benefit differently from economic progress. Families in particular experienced the largest increase in disposable income. Singles and cohabitants followed suit. In addition, households owning their own homes in particular showed the largest changes in household income. On average, income changes were greater for households owning their own homes.

Increasing importance of (housing) equity

Besides income, also with the growth of home ownership over the period 2006-2021, home equity has started to play a bigger role in the evolution of the socioeconomic position of households. For instance, household equity has grown by 60 per cent in recent years. This growth comes largely from the annual increase in house prices. As a result, homeownership is increasingly becoming part of households' financial planning.

Due to the increasing effect of inheritance (due to more home ownership among the elderly and a lower number of children) on household wealth accumulation, equity will play an increasingly important role in the housing market behaviour of young households starting out in the owner-occupied housing market.

Building policy leaves much to be desired

To promote the construction process, subsidies were initially provided in 2009 for construction projects that did not get off the ground and the Crisis and Recovery Act was introduced in 2010. Despite subsidies, new-build production sank by over 50 per cent. However, the Housing Accord further limited the investment capacity of social housing associations. The new Housing Act made commercial parties responsible for building medium-rent properties. This sought to restart construction production. As a result of the sharply reduced housing production and the increase in the number of households, the housing shortage has now exceeded 279,000 houses. However, the laborious recovery of construction production from

2016 onwards is further constrained by the sharply increased construction costs in recently.

Tax reforms for owner-occupied housing

The tax treatment of home ownership has shown little stability in the period 2009–2021. The deductibility of mortgage interest was significantly reduced during this period, while capital gains from home ownership remained untaxed. As a result, buying a home has become slightly less attractive fiscally. At the same time, this negative incentive is set against low mortgage interest rates. As a result, the actual benefits of the interest deduction became less. However, lending standards were sharply tightened. For instance, income requirements (LTI) became stricter and the maximum mortgage amount was gradually reduced to 100 per cent of the purchase price (LTV). Finally, to promote opportunities for young households, the donation exemption was introduced and the transfer tax was reduced to zero per cent.

Rippling housing market gains momentum

The housing market conditions within which households made their housing choices show strong fluctuations over the period studied. This is true, for example, for the evolution of house sales prices over the past 20 years. Substantial price increases in the years 2000–2008 are followed by a price decline in the years 2009–2013. After a period of gradual growth, the average selling price rises sharply again from 2016 onwards.

Opportunities for households to obtain mortgages also fluctuate significantly. This is due to both the changing criteria for mortgage lending and the development of mortgage interest rates. In the first few years after the credit crisis, conditions have been difficult. Mortgage interest rates hovered around 5 per cent while lending standards were drastically curtailed. From the second half, mortgage interest rates fall and the relative importance of second income increases. In addition, the maximum borrowing capacity is further widened. Hence, the opportunities for households to get a high mortgage have widened in recent years. The narrowing and widening of borrowing capacity is also reflected in the number of mortgage loans. From 2007–2013, the number of mortgages granted fell by over 55 per cent. At the low point, the mortgage amount averaged 200,000 euros. From 2013, the size of the mortgage market grew back to its 2007 level and the amount of the mortgage sum increased to over 330,000 euros in 2021. Regionally, this development appears to show significant differences. Major cities in particular have been marked by large price increases in the recent period.

Developments of first-time buyers

The position of first-time buyers within the Dutch housing market has always enjoyed a lot of attention in research. In the process, these households were mostly presented the ones paying the price. Although this was later somewhat nuanced, developments appeared to run along three lines: the restrictive nature of the LTI/LTV standards, housing costs and increasing competition due to the supply shortage. Whereas first-time buyers initially played a significant role in total housing transactions after the crisis, total residential mobility appears to have doubled in recent years. In relative terms, therefore, the share of first-time buyers decreased. Demographic and socioeconomic developments play a role in this.

Chapter 5
The (starter)housing segment

5.1 Introduction

The previous chapters have already indicated in some places what is meant by market inflow, namely the inflow of first-time buyers – whether or not from the rental sector or as direct entrants into the homeownership market.
With regard to market inflow, this chapter focuses on the second research question of this study: *How did the composition of the housing market segment of (starter)owner-occupied houses evolve both by housing characteristics, as well as the characteristics of the occupants during the period from 2009-2021, and what regional differences exist in this development?*

Section 5.2 presents the operationalisation of the term 'starter house' and how starter houses are distinguished from regular houses. It then briefly discusses the development in the size of the identified housing segment during the 2009-2021 period. Section 5.3 focuses on the question of to what extent starter homes differ from regular owner-occupied homes in terms of characteristics. It also identifies possible shifts in the characteristics of starter homes during the 2009-2021 period. Section 5.4 describes the characteristics of residents of starter homes, as can be derived from the WoON. It then examines whether the demographic and socioeconomic characteristics of these households have changed over the years. Finally, section 5.5 provides an overview of the geographical distribution.

5.2 Operationalisation of the term 'starter house'

This paragraph explains the principles and procedures used to define the aforementioned housing market segment. The demarcation methodology establishes a submarket that is as concrete as possible and clearly differentiated from other housing market segments, which is sufficiently large in size for the intended analyses.

To ensure homogeneity by dwelling function, only self-contained dwellings were included in the analyses. CBS understands this to mean dwellings that, according to construction or conversion, are entirely intended for residential purposes (CBS, 1994a).
The purchase value of the house used in this study refers to the estimated purchase value of the house in unoccupied condition, as reported by the residents in the WoON. However, the upper limit of the homeownership segment suitable for first-time buyers fluctuates during all years within the 2009-2021 study period. Selecting only the owner-occupied houses below said upper limit creates a more homogenous and more distinctive submarket. To meet this

Table 5.1 The cap (by NHG standards) and the absolute and relative size of the housing market segment of starter owner-occupied houses in the period 2009-2021

					first-time buyers		
year	upper limit	nr. of dwellings	% of owner-occupied stock	% of total housing stock	res. mobility under limit	% of first-time buyers	% all res. mobility
2009	€265.000	2.107.736	54	30	194.698	82	17
2012	€350.000	3.273.699	82	45	174.734	95	18
2015	€290.000	2.901.171	68	39	153.401	88	18
2018	€245.000	2.004.045	46	26	167.939	71	15
2021	€300.000*	2.102.201	46	26	135.407	67	12

source: CBS, WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Refers to the average NHG cap during the WoON 2021 survey period

assumption, a purchase value according to NHG standards should be used for each reference year (for a detailed explanation of the functioning and effect of the NHG within the Dutch owner–occupied housing market, see Priemus, 2012).

Ultimately, it was decided to set the upper limit of the starter home segment for the reference year equal to the maximum purchase price (without energy–saving features) as applied according to the standards of the National Mortgage Guarantee Scheme in the relevant research period. In this, it may happen that the NHG limit shifts during the research period or – in the case of recently moved households – during the two years prior to the measurement. In these cases, the choice was made to use the average NHG limit as a starting point. It is assumed that the number of moves below the upper limit is the same in both periods.
The trend in the average selling price does not give a completely pure picture of the price development of owner–occupied houses. This is because the annual averages are not corrected for differences in the composition of the package of houses sold in a given year; they include differences by characteristics of the house (type, size price range) and by region. When these characteristics are available from each transaction in addition to the selling price, the annual average selling prices can be compared with these differences in the basket of houses sold.

Applying the established upper limits of the starter housing segment to the various WoON files yields the following picture. The lower limit of the regular owner–occupied segment first rises from over €265,000 in the period 2007/2008 to around €350,000 in 2009/2010 despite price declines due to the recession in the owner–occupied housing market. Thereafter, this limit drops again to €245,000 in 2015/2016 and then rises to €300,000 for the WoON2021. The same development can be seen to a slightly lesser extent in the relative number of owner–occupied houses below the limit. In absolute numbers, the number of houses is constantly decreasing in size. Especially from the 2018 period onwards, the market segment of regular

owner–occupied houses appears to have decreased considerably in absolute numbers. Despite the significant increase in the upper limit for the WoON2021, the number of houses under the limit increases minimally. When looking at the size of the removals of first–time buyers, a clear shift in the average purchase value is visible from the WoON2018 period. On average, 67 per cent of owner–occupiers buy a house below the upper limit in 2019/2021.

5.3 Characteristics of the houses

The question is whether starter dwellings clearly distinguish themselves from other segments of the housing market in terms of other characteristics besides price level. Therefore, based on WoON2021, a comparison is drawn between the characteristics of starter houses and those of 'regular' owner–occupied houses. The extent to which the composition by housing characteristics of the starter–owner housing segment has changed in the period 2009–2021 will also be indicated.

Based on WoON2021, starter owner–occupied houses can be briefly characterised as predominantly terraced and corner houses and semi–detached houses, with an average of four to five rooms and built after 1970 and before 1995, with a living area of predominantly 90 to 150 square metres (table 5.2). The difference compared to other distinct housing market segments is mainly in the type and size of the house. Over 70 per cent of all owner–occupied houses above the NHG limit appear to have more than five rooms and comprise a larger proportion of detached houses. In absolute terms, the segment covers only 27 per cent of the total housing market.

Proportionally, terraced houses predominate among starter homes. Not unexpectedly, the difference in construction period between the two owner–occupied market segments is greatest in the later periods. Almost half of the newly built houses are offered in the higher segment. In contrast, 1960s and 1970s homes are present below the NHG limit to a greater extent.

The starter segment is further broken down by time period (see table 5.3). This shows that the housing market segment that qualifies as starter homes has been subject to relatively little change. The exception is the number of square metres. Within this housing characteristic, a clear shift is noticeable. Whereas in the periods before 2009, a good 56 per cent of starter homes had an area of more than 120 square metres, in 2021 this proportion will drop to 35 per cent. At the same time, the proportion of homes in the lowest class has also declined over the years. From both the upper and lower housing surface areas, a shift is visible towards homes between seventy and one hundred and twenty square metres.
Representation by housing type has seen little noticeable change in recent years. Despite the decrease in living space, the proportion of detached houses has not decreased significantly over the years. The number of rooms also seems to have been subject to little change over

Table 5.2 The housing stock in the Netherlands by housing market segment and by some housing characteristics, in 2021 as a percentage of the column total

characteristics	Starter dwellings	Regular dwellings	Rental dwellings*	All dwellings
Dwelling type				
Terraced house	35,8	22,4	24,0	26,7
Corner house	16,9	12,0	11,0	12,9
Semi-detached house	17,1	20,5	2,8	12,4
Detached house	9,2	31,1	1,8	13,4
Apartment & other	21,0	14,0	60,4	34,6
Number of rooms				
Up to 3 rooms	21,2	9,1	54,1	30,6
Four rooms	33,3	20,4	31,1	28,2
Five rooms	30,7	32,3	11,5	23,5
Six rooms	10,0	19,9	2,2	10,1
Minimum 7 rooms	4,8	18,2	1,1	7,7
Building period				
Before 1945	16,1	22,0	16,2	18,0
1945-1960	8,9	5,4	10,8	8,5
1961-1970	15,0	7,5	14,4	12,3
1971-1980	20,9	12,7	15,9	16,2
1981-1990	17,9	9,9	16,6	14,8
After 1990	21,1	42,5	26,1	29,1
Size (m^2)				
Less than 70 m^2	8,1	1,8	30,7	15,2
70-90 m^2	16,3	4,1	28,9	17,4
91-120 m^2	40,8	19,2	29,5	29,2
121-150 m^2	25,2	26,7	7,7	18,6
More than 150 m^2	9,6	48,2	3,3	19,6
Total (absolute)	**2.071.552**	**2.508.497**	**3.110.841**	**7.690.890**

source: WoON 2021 (own edit)

* Covers all independent rental properties

the WoON years. Roughly speaking, minimal shifts are visible in the share of houses with seven rooms or more with a slight decrease and those with up to three rooms consistently showing a limited increase. Of all starter-built houses in the Netherlands since 2009, about two-thirds appear to have been built after 1970. Compared to the regular owner-occupied housing market segment (see table 5.2), the share of houses built after 1990 is lower in the starter home segment.

Table 5.3 The housing market segment of first-time buyers in the Netherlands by period and by some housing characteristics, as a percentage of the column total

characteristics	WOON2009	WOON2012	WOON2015	WOON2018	WoON2021
Dwelling type					
Terraced house	38,8	33,5	35,9	38,6	35,8
Corner house	15,6	14,8	16,7	15,7	16,9
Semi-detached house	16,2	18,8	18,2	15,9	17,1
Detached house	7,4	13,0	8,9	7,0	9,2
Apartment & other	22,0	19,9	20,3	22,8	21,0
Number of rooms					
Up to 3 rooms	21,4	18,4	19,4	22,6	21,2
Four rooms	35,6	30,9	31,8	34,3	33,3
Five rooms	31,6	32,3	32,1	30,7	30,7
Six rooms	8,2	12,3	11,2	8,6	10,0
Minimum 7 rooms	3,0	6,2	5,6	3,7	4,8
Building period					
Before 1945	18,2	18,5	17,3	17,1	16,1
1945-1960	7,8	7,5	8,4	9,3	8,9
1961-1970	14,9	12,5	14,1	15,4	15,0
1971-1980	20,1	19,2	19,7	20,2	20,9
1981-1990	17,9	16,2	16,3	17,9	17,9
After 1990	21,2	26,0	24,3	20,2	21,1
Size (m^2)					
Less than 70 m^2	10,3	13,4	6,7	8,1	8,1
70-90 m^2	11,7	12,8	14,3	17,7	16,3
91-120 m^2	21,4	23,4	40,7	44,6	40,8
121-150 m^2	22,5	23,4	26,7	21,9	25,1
More than 150 m^2	34,0	27,0	11,6	7,7	9,6
Total (absolute)	**2.089.574**	**3.214.005**	**2.882.503**	**2.004.045**	**2.071.552**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

The picture of the stock of (starter) owner-occupied houses sketched for 2021 is very similar to the composition by housing characteristics of this housing market segment in the previous WoON years (see Tables 5.2 and 5.3).

From 2009 onwards, an increasingly smaller share of pre-war starter homes can be seen over the years. On the one hand, this development can be explained on the basis of an above-average increase in the value of a proportion of pre-war homes due to changing housing

demand. On the other hand, the prevailing NHG cap limits the view of the development. Table 5.2 shows that the share of pre-war houses in the regular owner-occupied market already enjoys a significant share. In addition, when compared to the data in Table 5.2, it is clearly visible that new construction production after 1990 focuses mainly on the regular housing segment and is hardly included in the starter housing segment. It should also be noted that the share of homes that may be counted as part of the starter housing segment – in proportion to the NHG limit – also fluctuated considerably over the years (see table 5.1). For the most part, this can be explained by the following upper limit to purchase price development leading. During the years following the credit crunch, the share of first-time buyers grows significantly. As a result, the absolute number has remained fairly constant. In fact, this confirms the significant drop in value of many owner-occupied houses in the regular owner-occupied segment, which means that they may be counted as starter homes.

Finally, it should be noted that the actual moves by first-time buyers to starter houses (Table 5.1, column 7) and the overall inflow can be explained to a limited extent by housing characteristics. In addition, the relative demand for a certain type of house cannot be exclusively interpreted. Chapter 2 has already indicated that the position of a dwelling in the housing hierarchy (a ranking of houses according to the 'quality' of the houses perceived by the residents), in addition to type of ownership and price range, is partly determined by the building type, size, age and amenity level of the house (Priemus, 1984). Based on the findings outlined in Table 5.2, it can be concluded that, also considered with other characteristics, starter houses indeed belong to the bottom of that housing hierarchy.

5.4 Characteristics of residents

Chapter 2 expressed the expectation that the houses at the bottom of the housing hierarchy will mostly be occupied by households starting out in their housing careers. This housing career, in turn, is closely related to the stage of the lifecycle and labour market career of the household. It is therefore expected that it is mainly households with some instability in the household situation and with an average socioeconomic position that occupy starter houses. Using information from the WoON, this section examines the extent to which this expectation is confirmed. It first looks at the demographic characteristics of the households in (starter) owner-occupied houses and then at the socioeconomic characteristics of these households.

Demographic characteristics

Table 5.4 shows the demographic characteristics of (independent) households in the four distinct sub-segments for 2021. This clearly shows the relationship between household stage and position on the housing market (Priemus, 1984). The heft of all households in the regular owner-occupied segment (above the applicable upper limit) belongs to the 35-54 age group, mostly divided between the household types couples with children and couples (now) without children. These households are demographically in the most stable household phase. In

Table 5.4 Households in the Netherlands by demographic characteristics and by housing market segment in 2021, as a percentage of column total

			koopstarters	
characteristics	**Starterswoning**	**Reguliere woning**	**Starterswoning**	**Reguliere woning**
Age head of household				
Up to 25 years	1,2	0,4	14,2	4,3
25-34 years	15,0	9,6	59,5	58,2
35-44 years	15,7	18,8	13,1	20,3
45-54 years	20,9	23,7	7,3	10,0
55-64 years	20,3	22,0	4,1	5,5
65 and over	26,8	25,5	1,8	1,7
Household composition				
Single	31,7	14,3	41,4	15,1
Couple without children	33,7	38,3	37,5	49,8
Couple with child(ren)	28,1	43,1	15,5	30,0
Other households	6,6	4,3	5,5	5,1
Household size				
One person	31,7	14,3	41,4	15,1
Two persons	37,5	40,4	40,1	52,4
Three persons	13,7	15,0	12,4	18,0
Four persons	13,0	20,8	5,7	10,1
Five or more persons	4,2	9,5	0,5	4,3
Total (absolute)	**2.071.552**	**2.508.497**	**107.753**	**94.129**

source: WoON 2021 (own edit)

addition, this household composition is also reflected in household size. Over 40 per cent of households are found to consist of two people. This proportion is mainly made up of couples without children.

The share of households owning starter homes is little different by age from the regular buying segment. Just under 5 in 10 households fall within the age group of 55 and above. These households are demographically at the end of their housing careers (Priemus, 1984) and move into smaller, cheaper homes. By household composition, such a development is also visible. Here it mainly concerns couples without children and single people after divorce/death of a partner. Given the strong representation of singles and couples without children, it is not surprising that especially medium-sized households (one to two persons) are more than proportionally present among the residents of starter-buyer houses.
The proportion of households that can be considered owner-occupied starters shows a more

Table 5.5 First-time buyer households in starter dwellings in the Netherlands by period and by some household characteristics, as a percentage of the column total

characteristics	WOON2009	WOON2012	WOON2015	WOON2018	WoON2021
Age head of household					
Up to 25 years	20,0	19,0	15,2	13,3	14,2
25-34 years	53,8	57,0	55,7	61,2	59,5
35-44 years	18,8	13,8	16,1	14,1	13,1
45-54 years	5,2	7,7	8,0	5,8	7,3
55-64 years	1,8	2,1	3,5	3,7	4,1
65 and over	0,5	0,4	1,5	1,9	1,8
Household composition					
Single	37,1	33,3	35,8	37,9	41,4
Couple without children	39,7	44,4	39,1	37,8	37,5
Couple with child(ren)	20,0	19,1	20,6	20,6	15,5
Other households	3,1	3,2	4,5	3,6	5,5
Household size					
One person	37,1	33,3	35,8	37,9	41,4
Two persons	41,8	46,0	41,8	39,4	40,1
Three persons	11,5	12,6	13,7	13,1	12,4
Four persons	6,9	5,5	5,9	7,1	5,7
Five or more persons	2,6	2,7	2,8	2,5	0,5
Total (absolute)	**178.283**	**172.470**	**147.907**	**146.221**	**107.753**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

diverse picture. In line with the expectation associated with the start of the housing career, the average age for over 7 in 10 households can be attributed to the age group up to 34 in the starter house segment. Within the regular segment, the average age shifts upwards. Looking at household composition, these are predominantly couples without children. Within the starter segment, single people make up the majority of the composition. A similar picture can be drawn from household size.

Table 5.5 once again shows the demographic characteristics of first-time buyers who have moved into a house marked as starter, with a longitudinal comparison drawn to earlier years. Within the lower age group, a noticeable shift upwards is visible since the 2007/2008 period. Whereas previously an average of 20 per cent of houses were still occupied by first-time buyers up to 25 years old, this share has decreased to 14 per cent in the 2019/2020 period. So first-time buyers seem to (be able to) start their housing careers later. By absolute numbers, an impoverishment of the number of first-time buyers is also noticeable (see also table 2.1). In terms of household composition, a limited shift is visible among singles, couples without

children and couples with children. The share of the former group has increased to 41 per cent in recent years.

The distribution by demographic characteristics in the period 2019/2020 shown in Table 5.4 is the result of clear shifts in the period 2007–2021, which partly parallel the general demographic trends in that period. First, a shift from younger households to mainly middle-aged households is visible. The share of the latter category thereby increases more strongly within the starter owner-occupied sector than among the regular owner-occupied segment. This changing age structure partly means that the distribution by household composition has also changed between 2007 and 2020, both in the starter and regular segments. Among first-time buyers, this is most visible among single-person households. Single-person households therefore appear to increase proportionally the most. Couples, on the other hand, appear to have been the least subject to change. In contrast, the number of families has declined in recent years.

As a partial conclusion, it can be said that living in a starter home is slightly more reserved for single people today than during the years during the crisis. Increasingly, it is more stable households of older age that own these homes. At the same time, the (relative) share of first-time buyers in starter homes is decreasing. A closer look at the socioeconomic characteristics of this group can give a clearer picture of whether the shift found also means a shift in income.

Socioeconomic characteristics

The owner-occupiers (first-time buyers) of starter homes tend to have an average socioeconomic position, i.e. high education, active in the labour market and/or a modal income. This expectation based on the theory (Priemus, 1984) is confirmed by the data in table 5.6.

About 85 per cent of first-time buyers in the starter segment has an education at least at mbo level, including over 41 per cent with a hbo/wo education. Only the regular segment (occupied by both first-time buyers and other households) has a higher proportion of higher-educated households. Households with lower levels of education (up to mbo 1) appear to be heavily underrepresented in the regular owner-occupied sector.

Over 75 per cent of households in the regular owner-occupied sector are active in the labour market in 2021. Being in paid employment seems to be an important prerequisite for home ownership anyway, with the level of income determining whether or not households move into starter or regular owner-occupied housing. Even in the starter home segment, 70 per cent of households are active in the labour market. However, the share of households with no earned income is significantly higher in this housing segment. Further analysis reveals that 86 per cent of households are in receipt of pension benefits. Table 5.4 showed earlier that the share of households over 65 years old in this segment is also higher.

To a large extent, the relationship between position on the labour market and home ownership

Table 5.6 Households in the Netherlands by socioeconomic characteristics and by housing market segment in 2021, as a percentage of column total

			First-time buyers	
characteristics	**Starter dwellings**	**Regular dwellings**	**Starter dwellings**	**Regular dwellings**
Education head of household				
None/unknown	0,9	0,5	3,5	3,3
Primary education	6,1	3,3	2,0	0,7
Onderbouw & mbo 1	19,0	11,8	9,1	4,8
Bovenbouw & mbo 2-4	42,1	33,0	44,0	22,5
Hbo & wo-bachelor	22,2	28,8	24,1	31,9
Hbo & wo-master	9,6	22,7	17,3	36,7
Income form head of household				
Self-employed / CEO	6,9	15,1	6,3	10,3
employee	63,2	59,6	87,7	85,1
Unemployed / student	1,5	0,4	0,7	0,3
Unfit for work	2,5	1,5	1,8	1,0
retired	25,9	23,4	3,5	3,3
Household income class				
Below modal	17,7	7,0	16,4	5,6
Up to 1.5x modal	26,7	11,7	32,1	7,7
Up to 2x modal	23,5	15,3	27,6	16,1
Up to 3x modal	23,5	31,3	18,8	44,8
More than 3x modal	8,5	34,7	5,2	25,8
Nature of income source(s)				
No income	0,4	0,3	0,5	0,3
No earned income	28,1	23,6	4,4	3,8
Single-earner	36,1	22,3	51,0	27,0
Two earner	35,4	53,8	44,1	68,9
Total (absolute)	**2.071.552**	**2.508.497**	**107.753**	**94.129**

source: WoON 2021 (own edit)

runs through the level of household income. It appears, that first-time buyers have, on average, a lower income (measured by modal income in the relevant period) compared to other households within the same housing segment. Between the two housing segments, the proportions also appear to differ considerably. For instance, half of first-time buyers in the startersegment have an income up to one and a half times modal, compared to 'only' one-third among all households. A similar pattern is visible in the regular owner-occupied housing segment. Here, 19 per cent of first-time buyers have an income up to one and a

Table 5.7 First-time buyer households in starter homes in the Netherlands by period and by some socioeconomic characteristics, as percent of column total

characteristics	WOON2009	WOON2012	WOON2015	WOON2018	WoON2021
Education head of household					
None/unknown	0,8	1,1	2,1	1,2	3,5
Primary education	1,3	1,7	1,4	1,5	2,0
Onderbouw & mbo 1	11,6	11,4	12	11,1	9,1
Bovenbouw & mbo 2-4	44,9	43,4	41,2	40,0	44,0
Hbo & wo-bachelor	27	27,5	27,6	29,9	24,1
Hbo & wo-master	14,4	14,9	15,7	16,2	17,3
Income form head of household					
Self-employed / CEO	7,6	8,3	9,7	5,5	6,3
employee	90,4	85,6	85,6	87,5	87,7
Unemployed / student	0,4	1,2	0,5	1,4	0,7
Unfit for work	0,7	1,0	1,8	1,9	1,8
retired	0,9	0,7	2,2	3,5	3,5
Household income class					
Below modal	27,5	29,0	30,9	25,6	16,4
Up to 1.5x modal	35,8	32,8	37,3	36,1	32,1
Up to 2x modal	21,0	21,2	18,6	24,2	27,6
Up to 3x modal	13,5	13,6	11,0	12,4	18,8
More than 3x modal	2,2	3,5	2,2	1,8	5,2
Nature of income source(s)					
No income			0,1	0,7	0,5
No earned income	1,8	3,6	4,5	5,2	4,4
Single-earner	41,5	46,6	50,6	49,3	51,0
Two earner	56,6	49,8	44,8	44,8	44,1
Total (absolute)	**178.283**	**172.470**	**147.907**	**146.221**	**107.753**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

half times modal compared to 10 per cent among all households. The household income therefore appears to be higher between both groups as well as both housing segments. This is therefore in line with expectations. Older households, with longer housing careers, have higher incomes on average. In addition, the dependence on income for whether or not (being able to) own a regular (more expensive) owner–occupied house is also clear from this.

Finally, the distribution by income form and nature of income source is shown in Table 5.6. The 'no earned income' category includes households receiving only benefit(s) (one or more).

Single-earners are households in which one person receives income from employment (any possible partner has no income). The households in which both partners receive income from employment are called dual-earners. From the distribution within the four distinct segments and groups, the first thing that stands out is the large share of 'no income from employment' among all households in the starter segment. First-time buyers in starter homes appear to consist mostly of single-earners. Mainly, these are also singles. The proportion receiving no income (from employment) is therefore the lowest in this group. When looking at the share of first-time buyers who moved into a regular owner-occupied house, the importance of income is once again confirmed. Just under 70 per cent of households receive income as dual earners.

In terms of socioeconomic characteristics, too, first-time buyers in starter homes differ minimally across the different periods. For instance, the proportion who are employed as employees appears to have remained the same in recent years. At the same time, the proportion who are unemployed/unemployed or retired has increased significantly. Given the ongoing 'ageing' in this housing market segment (see table 5.4), this is an explicable development.

When looking at household income classes, a noticeable 'enrichment' within the housing segment is visible. In general, it is the households with an (ample) above-modal income that move into owner-occupied houses. Whereas during the crisis years the inflow from the lower income classes gained share, this share tilted sharply from the 2016/2017 period onwards. In part, this can be explained by rising house prices and higher financing burdens. Compared to other households (in both segments), first-time buyers on average appear to be at the lower end of the income distribution. Therefore, based on the earlier stated expectation of working career and income development, this is not an unexpected picture – given the career stage of first-time buyers. Older households in particular appear to have higher incomes.

Finally, this table shows that starter homes are relatively slightly more often owned by households belonging to the category of no income from employment. Given the ageing observed earlier, within the starter home segment, this is an explainable development. Two-earners appear to be for the most part in regular (more expensive) owner-occupied houses. Indeed, these households have more financial options with regard to mortgage applications than single-earners.

In conclusion, first-time buyers are (also increasingly) highly educated with over 4 in 10 households having at least a hbo or wo bachelor's degree. As a result of their starting position in the labour market, their average income, by modal, is lower than other households. Nevertheless, the share with a higher income has increased significantly in recent periods. In part, this can be explained by the rising house price development since 2015 (measured in WoON2018). Considering the more favourable opportunities for two-earners, the increase in two-earners is therefore a logical development. By socioeconomic characteristics, too, first-time buyers belong to the bottom of the housing hierarchy.

Table 5.8 The housing stock in the Netherlands by housing market segment and by province, municipal size, and G4 region, in 2021, as a percentage of the column total

			first-time buyers	
	starter dwellings	**regular dwellings**	**starter dwellings**	**regular dwellings**
Province				
Groningen	5,0	2,1	6,8	3,2
Friesland	5,7	2,8	5,1	1,3
Drenthe	4,5	2,2	2,9	1,1
Overijssel	7,9	5,9	5,0	3,6
Flevoland	3,1	1,9	3,5	1,2
Gelderland	12,0	12,6	12,7	11,5
Utrecht	4,5	10,3	5,8	9,7
Noord-Holland	10,6	18,9	11,9	22,3
Zuid-Holland	19,0	20,3	20,1	26,1
Zeeland	3,6	1,8	2,5	0,6
Noord-Brabant	14,2	16,5	14,5	15,2
Limburg	9,9	4,6	9,3	4,2
Municipal size				
Up to 20,000 residents	6,0	7,5	5,7	5,0
20-50,000 residents	38,6	37,7	35,6	26,6
50-100,000 residents	24,8	20,5	21,3	16,8
Min. 100,000 residents	30,6	34,3	37,5	51,6
Region (G-class)				
G4	7,5	12,0	9,0	23,1
G40	31,0	25,9	34,6	30,4
Rest of the Netherlands	61,6	62,1	56,4	46,5
Total (absolute)	**2.071.552**	**2.508.497**	**107.753**	**94.129**

source: WoON 2021 (own edit)

5.5 Geographical spread

A final question to be answered in this chapter is in what way the (starter) houses in question are geographically distributed. In the WoON2021 data on the distribution of the existing housing stock by housing segment and province (see table 5.8), differences are mainly noticeable in the group of first–time buyers who have moved into a regular house. Generally, it can be inferred that the municipalities of North and South Holland have the largest share of households.

Looking at the size of the municipality, first-time buyers in starter homes seem to have a slight preference (over 37 per cent) for municipalities with more than 100,000 inhabitants. For the most part (81 per cent), these are also municipalities within the Randstad. In line with this distribution, it can also be seen that first-time buyers live outside the G40 region to a slightly lesser extent.

It should be noted that the picture is somewhat determined – or even distorted – by the widely varying characteristics in housing stock within the G4. A clear example of this is the relatively high proportion of first-time buyers in the province of North Brabant in the regular housing segment. Looking at the housing value distribution within this province, it is therefore visible that the majority (76 per cent) consists of (significantly) more expensive housing. Reasoning from that fact, it can be explained that the proportion of first-time buyers who moved into a more expensive owner-occupied house also lives in this province. The provincial choice is therefore partly influenced by the local supply and the corresponding house value. Chapter 9 discusses this in more detail.

During the periods studied, only small fluctuations in regional distribution of (first-time buyer) households in both housing segments can be observed. Comparison with previous periods is therefore not included. In conclusion, first-time buyers prefer the larger municipalities within the G40 with a municipality size of at least 50,000 inhabitants (over 58 per cent). The most popular provinces in this respect are also North and South Holland, followed by Gelderland.

5.6 Conclusions

Share of starter homes in existing housing stock
In this study, starter homes are defined as 'all independent owner-occupied houses with a purchase value of at most the – in the relevant period – applicable upper limit for which the house falls within the NHG standards'. Based on this definition, in the periods under consideration, a strongly fluctuating share (46 to 82 per cent) of the owner-occupied housing stock can be considered part of the starter segment. In absolute terms, however, a continuous decrease in the number of starter homes is visible. By size, the segment will count more than 2,000,000 starter homes in 2021. For the most part (67 to 95 per cent) starters also move to an owner-occupied house within this segment. In recent years, the proportion of starters (absolute and relative) who move into a starter home appears to have decreased considerably.

Kenmerken van de (starters)koopwoningen
In general, the houses in the starter segment also appear to qualify as belonging to the bottom of the housing hierarchy by characteristics other than price. In particular, the homes involved by first-time buyers. The starter segment differs from the other housing market segments mainly by house type and house size. Just under 50 belong to terraced- and corner houses with up to 4 rooms. As the purchase price increases, the proportion of detached houses and

larger (over 150 m^2) ones steadily increases. Pre-war houses have a larger share over starter homes. Consequently, these are mostly (for the part pre-war, characteristic) large houses. The development of the starter home supply has appeared fairly unchanged in relative terms. The clearest change is visible in house size. Starter homes increasingly appear to be between 70 and 120 m^2 in size. The shift is visible from both larger and smaller homes.

Characteristics of households

Households living in starter homes tend to be in a later, predominantly stable middle and final phase of the household cycle. A different picture emerges among first-time buyers in the starter segment (5 percent of all affected starter homes). Here, over 73 per cent are households up to 34 years of age, whose household composition shows mostly singles and couples. Family formation thus appears to be mostly associated with a later phase within the housing career. In addition, the proportion of 'single people' increased over the years. This happened in parallel with the so-called 'ageing' among first-time buyers. This development is also reflected in household size, where the proportion of single-person households is increasing.

In socioeconomic terms, first-time buyers are (still) at the lower end of their working career. The household income is therefore relatively more often below modal than for other households. First-time buyers with a higher income are more likely to move into a regular house. These households have often managed to acquire a good socioeconomic position through a combination of higher education, dual-earner status and/or a longer employment history. Over the years, an overall strong 'enrichment' is visible in the share of first-time buyers in starter homes.

Geographical spread

Starter homes (occupied by first-time buyers) turn out to be largely (32 per cent) in North and South Holland in municipalities with a population of 100,000 or more. On average, first-time buyers most often live outside the G40 zone.

In conclusion, a few remarks regarding the figures from the socioeconomic characteristics. To a small extent, the group of first-time buyers is made up of pensioners and, more generally, a group of elderly people. From a starter perspective, these are groups that mostly belong to the so-called 're-entrants'. These households come from divorce, among other reasons. Given their age and uncertain background in housing careers, we chose to exclude this group from further analysis. The older age cohorts have therefore been kept out of the analysis files.

Chapter 6
The first-time buyer explored

6.1 Introduction

Based on the data from the five successive WoON surveys, it was found that the owner–occupied houses, which in terms of the purchase value (by the prevailing NHG limit) are counted as belonging to the starter segment in this study, also tend to belong to the bottom of the housing hierarchy when measured by other housing characteristics. In addition, it turned out that most of the occupants – who are counted as first–time buyers – of these owner–occupied houses are in the early stages of the life cycle and/or in an average socioeconomic position, given their household characteristics. This has provided an initial picture of the housing market segment of starter houses and the first–time buyers living in it, without distinguishing between influx from the rental sector and direct entrants. Nevertheless, viewed from both demographic and socioeconomic characteristics, the distribution of first–time buyers is marked by a certain diversity.

This chapter answers the second research question of this study, as formulated in chapter one: *In what way can first–time buyers be distinguished based on their demographic and socioeconomic characteristics and (characteristics of) the occupied owner–occupied dwellings?*

As indicated in Chapter 2, a distinction can be made between direct entrants and entrants from the rental sector. Here, only the percentage distribution between the owner–occupied housing market segment and the occupants on the one hand and the various, respectively, housing and household characteristics were considered. Thereby, no statements were made about the characteristics of different subgroups within the analysis group. However, the results sufficiently demonstrate that distinctions can be formed within both entry–level segments. To describe at the micro level (households) the (desired) inflow into the housing market from various characteristics of households and their (desired) housing situation, a further subdivision is necessary. A frequently used technique to distinguish groups of data by various characteristics is the TwoStep cluster analysis (Gelbard et al. 2007).

Such an analysis attempts to identify homogeneous subgroups from a data file on a two–stage basis where cases with the smallest possible log–likelihood distance from each other are aggregated into independent subgroups. In other words, can different 'homogeneous' owner–occupier starter groups be identified using various characteristics?
Following the career/lifecycle theory (Priemus, 1994), this study assumes that belonging to a subgroup can be traced back to the household's specific demographic and socioeconomic characteristics as revealed in Chapter 2. The choice to buy a house depends both on the

household's position within its housing career and on the financial resources at its disposal. As a result, belonging to a particular subgroup can be determined based on household characteristics. To keep the results of such an analysis easily interpretable, the number of variables and clusters in the analysis should be kept as sparse as possible, without losing distinctiveness. Therefore, it is not advisable to include all household characteristics in the analysis without further ado. For this reason, it is chosen to make a selection from the demographic and socioeconomic characteristics based on a *principal components* analysis. This is explained in section 6.3

6.2 Operationalisation of the term 'first-time buyer'

6.2.1 The direct entrants

In addition to household and dwelling characteristics, respondents are asked about the housing market act of the (desired) move. Based on this, it is therefore easy to determine what role the household played within the (desired) move. In this, two forms can be distinguished; the previous housing market act and the desired housing market act. Chapter 7 discusses the demand exerted by both groups in more detail. Direct entrants are classified within the WoON in the market act as 'starter'. Combined with the selection made in chapter 5 (self-contained housing), this group can be delineated. In addition, the WoON gives a second option; the so-called 'semi starters'. This includes all households where the house left behind does not become available in the market again. This is usually the case in a divorce in which part of the household is left behind or in the case of house demolition. Semi-starters were not selected as direct entrants due to a lack of data. Table 6.1 shows this distribution of direct entrants by period. It shows that during the period 2006 to 2021, over 387,000 households directly entered the owner-occupied market from a non-self-contained housing situation.

Similarly, table 6.1 shows that the relative removals of direct entrants decreased more sharply than those of all households in the period since 2012. Only in the 2009/2012 period were the relative removals of direct entrants higher than those of all households compared to the previous period. In other words, first-time buyers were relatively more likely to buy a house in owner-occupied housing between 2009 and 2012. This picture also stands out from the percentage of moves by direct entrants compared to all moves. During the crisis years, an average of 20 per cent of all removals can be attributed to direct entrants.

6.2.2 The former tenants

Besides households entering the owner-occupied housing market segment directly, a second group appears to be definable of households entering from the (free) rental sector. This group has moved into rental housing in the years preceding current owner-occupied housing.

Table 6.1 Number of direct entrants (absolute and percentage of total) by period.

Period	Absolute	vs. previous period**	% of total	% of all households*
2006-2009	86.314		22,3	15,4
2009-2012	75.481	19,9	19,5	20,0
2012-2015	60.739	-2,8	15,7	19,3
2015-2018	84.505	-33,6	21,8	15,6
2018-2021	80.473	-7,0	20,8	14,5
Total	**387.513**		**100**	

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* All independent living households in the owner-occupied sector who moved in the past two years.
** Difference between mutation of all households compared to the previous period and mutation of subgroup compared to the previous period. A positive figure shows that the subgroup, relative to all households, decreased less/increased more.

Table 6.2 Number of former tenants (absolute and as percentage of total) by period.

Period	Absolute	vs. previous period**	% of total	% of all households*
2006-2009	149.964		23,2	26,8
2009-2012	108.277	4,7	16,8	28,7
2012-2015	113.782	21,8	17,6	36,2
2015-2018	151.958	-39,2	23,5	28,0
2018-2021	121.409	-22,3	18,8	21,9
Total	**645.389**		**100**	

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* All independent living households in the owner-occupied sector who moved in the past two years.
** Difference between mutation of all households compared to the previous period and mutation of subgroup compared to the previous period. A positive figure shows that the subgroup, relative to all households, decreased less/increased more.

Within the WoON, it is distinguished by current and former housing situation and housing type (rented/purchased). In combination with the housing market act 'through-flowers', a selection can be made of the group of first-time buyers whose former housing situation involved a rented house. Again, this distribution refers only to households living independently in ordinary housing. Any removals of households in previously other rented housing and live-in households are thus excluded from the analyses of this study. This was decided because there is no or insufficient information available on the characteristics of the former living and household situation of these respondents. As a result, these respondents are (have to be) mostly left out of the analyses anyway. Furthermore, a brief examination showed that the 'excluded' households only make up the group of former tenants to a very small extent. Table 6.2 shows the distribution of former tenants by period.

Table 6.3 Number of direct entrants and former tenants in the housing market (absolute and as percentage of total) by period.

Period	direct entrants	former tenants	row total	% of all households*
2006-2009	86.314	149.964	236.278	42,3
2009-2012	75.481	108.277	183.758	48,7
2012-2015	60.739	113.782	174.521	55,5
2015-2018	84.505	151.958	236.463	43,6
2018-2021	80.473	121.409	201.882	36,4
Total	**387.513**	**645.389**	**1.032.902**	**100**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* All independent living households in the owner-occupied sector who have moved in the past two years.

It shows that, compared with direct entrants over the whole period, the size of former tenants is two-thirds of the total. Thus, the majority of owner-occupiers seem to enter from the rental sector. In total, this concerns 645,000 households during 2006 to 2021.

In addition, table 6.2 shows that the number of relative moves of former tenants decreased significantly more sharply compared to the moves of all households during 2015. In the period from 2009 to 2015 – the tipping point – the relative removals of former tenants relative to the previous period were significantly higher than those of all households. The period 2009–2012 appears to have been a more favourable period for direct entrants (see Table 3.1) while in the period from 2012 to 2015, it was precisely former tenants who accounted for a large share of moves.

Viewed from all moves to independent owner-occupied housing, the share of former tenants is most visible in the same period when the relative share of moves increased the most. In the WoON2018 period, the share of former tenants out of all moves decreased by 8% while the relative change increased less by about 39%. Where all removals increased by over 72%, the share within the group increased by 'only' 33%. From 2018, an absolute decrease is noticeable. Compared to the previous period, the share of former tenants, relative to all moving households, decreases more sharply by over 22%. The relative share of moving households is also 22%.
Over the different periods, both groups appear to contribute between 42% and 55% of all household removals within the independent owner-occupied housing market (table 3.3).

In conclusion, over the period, the group of former tenants represents 65% of all owner-occupier moves. The group of direct entrants amounts to 35% over the years. Earlier in chapter 2 it was concluded that first-time buyers tend to be in a less stable period of their life at the start of their working career. As a result, renting or not renting a house often carries the preference over buying. Consequently, this picture appears to be consistent with the findings.

As such, within this study, direct entrants are defined as: *the number of households that have moved from an undependent living situation into an independent, ordinary owner–occupied dwelling in the past two years*, and former tenants are considered as: *the number of households that have moved from a rented, ordinary independent living situation into an independent, ordinary owner–occupied dwelling in the past two years.*

6.3 CATPCA and the TwoStep clustering algorithm

The career/lifecycle theory (Priemus, 1994) assumes that a household's moving decision is (partly) determined by its position in the household cycle,, in the labour market cycle and in the housing market. Following this theory, within this study, the assumption is made that – given the appointed housing career dependency of households can be described sufficiently distinctively using these characteristics.

The collection of these factors is available as variables in the WoON files used. These variables have been used in Chapter 5 to provide an initial description of households. They are, divided into three groups, the following variables with the number of categories in brackets:

- **Demographic characteristics of household**
  - Age head of household (5)
  - Household size (5)
  - Household composition (4)

- **Socioeconomic characteristics of household**
  - Educational level of head of household (5)
  - Income form head of household (5)
  - Disposable household income (–)
  - Nature and composition household income (3)

- **Characteristics of the dwelling**
  - Purchase price (7)
  - Housing type (5)
  - Building period (6)
  - Living area (5)

Including all these variables in a cluster analysis could lead to a large number of significant clusters, diluting the purpose of the analysis. A reduction in the variables to be included is therefore desirable, without otherwise losing too much explanatory power. A Categorical Principal Components Analysis (CatPCA) is therefore suitable to achieve a meaningful reduction based on the underlying structure in the data (Linting & Van der Kooij, 2012). Section 6.3.1. explains successively the CatPCA and TwoStep cluster analysis methodology.

6.3.1 Methodology and procedure

CatPCA (Categorical Principal Components Analysis) is a technique for reducing a large amount of data measured at the nominal or ordinal level. What results is the sparsest possible description of the variance in the data. To this end, based on determining the *eigenvalues*[1] of variables, it determines which principal components (the direction within the data) determine the most variance in the data (Jolliffe & Cadima, 2016). In addition, categorical principal components analysis allows the use of ratio data. This allows variables with a ratio distribution to be included in the analysis.

When variables can correlate with each other, any significant correlations between the variables to be included should be revealed. Given the aim of categorical PCA to define as sparse a set of variables as possible, the reciprocal correlation should be excluded. By that method followed within the CatPCA analysis, such correlations are automatically excluded.
The procedure within CatPCA follows a number of steps. Linting & Van der Kooij (2012) describe these as follows:

1. Perform univariate analysis for each variable, excluding or merging categories within variables with a low number of respondents.
2. Perform discretisation for all continuous variables transforming them to an integer.
3. Within all standardised variables, look for outliers within respondents. Values outside the range of 3.5 to 3.5 can be counted as outliers.
4. Determine the VAF (variance accounted for) for all variables and select all variables that exceed the predefined critical value (default 0.25).
5. On an iterative basis, evaluate the scree plots to determine the number of components where the critical value is set to an eigenvalue of 1.
6. Evaluate transformation graphs to determine measurement scale and reduction of categories within a variable. See Linting & van der Kooij (2012) step 3e for a concrete explanation.
7. Perform the final CatPCA analysis.

Whether or not variables with categorical scaling can/should be bootstrapped is approached from several angles in the literature. For the sake of maintaining the brevity of the method, reference is made to Linting (2007) and Markus (1994) for a comprehensive discussion of bootstrapping in non-linear PCA analyses and the effects thereon of low marginal frequencies within variable categories. Within this study and in agreement with Linting (2007), a lower limit of at least 15 cases is maintained.

To determine the range beyond which respondents are classified as outliers, it was chosen within this study to deviate from the method within the CatPCA analysis. Instead, the method

1 Eigenvalues are the special set of scalar values that is associated with the set of linear equations most probably in the matrix equations.

of Hoaglin & Iglewicz (1987) is applied. In fact, to determine outliers within the CatPCA, standardised values are considered. However, the range of 3.5 to 3.5 is considered too imprecise in the literature (Hoaglin et al. 1986). The final analysis found 13 respondents found to be outliers. The approximation method within the CatPCA method failed to filter out these outliers from the data. Given the nature of this study, the choice was made to leave the respondents out of the data.

Direct entrants

In determining the largest possible accountable variance (VAF), seven variables eventually emerged after aggregating categories. The level of analysis of the variables ultimately remained nominal and ordinal. Only for disposable household income was a spline ordinal chosen (degree 1, interior knots 40). Based on the scree plots, the number of components (dimensions) appears to be two (see Annex B6.1). The two-dimensional initial analysis shows that 55.9% of variance is accounted for by the components (see Annex B6.3). Here, three out of 10 variables are found to fall below the critical value. Within second iteration, 75.6% of the variance is found to be explained by the components. Here household composition is found to have the largest share, followed by number of persons in the household and disposable income.

After performing several iterations on the data in which the level of analysis of the variables differed, the above model eventually emerged as the best fit. In addition, it was found that only the variable home purchase amount could be further reduced in categories by merging the first three categories. The household composition was found to be reduced to three categories after performing the grouping discretisation. In this, the third and fifth categories are merged and the fourth category is dropped.

Former tenants

Broadly speaking, the results for determining the most explanatory variables parallel the study group of direct entrants. In the end, six variables emerged to explain most of the variance to be accounted for. Again, the level of analysis of the variables remained nominal and orinal with spline ordinal (degree 1, interior knots 40) chosen for disposable household income. The number of components (dimensions) also appears to be two based on the scree plots (see Annex B6.2). The two-dimensional initial analysis shows that 51.3% of variance is accounted for by the components (see Annex B6.4). Here, four out of 10 variables are found to fall below the critical value. Within second iteration, 79.5% of the variance appears to be explained by the components. Here, household composition is again found to have the largest share, followed by nature of income source and housing type.

To a large extent, the model results seem to be in line with the findings of the direct entrants. In contrast, the explained variance seems to be higher. It was also found that the variable home purchase amount could be reduced in categories by merging the first three categories. However, the explanatory power does not appear to be able to contribute sufficiently to the

Table 6.4 Total explained variance for direct entrants of the principal components (after VARIMAX rotation) in two dimensions after model optimisation.

	centroid coordinates			total (vector coordinates)		
	1	2	mean	1	2	total
household composition	.920	.035	.477	.919	.022	.941
household size	.883	.032	.457	.881	.023	.903
disposable income	.711	.036	.374	.710	.032	.742
nature of household income	.586	.173	.380	.570	.133	.702
total living area	.032	.701	.367	.027	.701	.728
housing type	.030	.665	.347	.027	.664	.692
purchase price	.040	.545	.292	.036	.545	.580
Total	**3,20**	**2,19**	**2,70**	**3,17**	**2,12**	**5,29**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Table 6.5 Total explained variance for former tenants of the principal components (after VARIMAX rotation) in two dimensions after model optimisation.

	centroid coordinates			total (vector coordinates)		
	1	2	mean	1	2	total
household composition	,028	,797	,413	,026	,797	,822
household size	,055	,750	,402	,044	,749	,793
disposable income	,869	,082	,476	,868	,053	,921
nature of household income	,889	,078	,483	,733	,038	,771
total living area	,631	,055	,343	,625	,019	,644
housing type	,793	,033	,413	,792	,030	,823
Total	**3,27**	**1,80**	**2,53**	**3,09**	**1,69**	**4,77**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

total explained variance (VAF) and is thus excluded in the follow-up analysis. Unlike the direct entrants, it appears that household composition cannot be further discretised.
Ultimately, this set of variables allows for the most sparse cluster analysis possible. Taking into account the purpose of the cluster analysis, an attempt is made to include at least one variable from each distinguished group of independent variables in the TwoStep analysis to be performed.

TwoStep Clustering

For the clustering method to be applied, the same limitation arises as for variable determination. Indeed, most methods appear to be suitable only for quantitative data. Within the range of

possible clustering methods available, the TwoStep method is the most suitable. Such a technique offers several advantages over more traditional techniques, such as determining the number of clusters based on a statistical measure rather than on a random choice and being able to combine categorical and continuous variables (Gelbard et al. 2007; Kent et al. 2014).
While forming the clusters using the determined variables, a problem arises. A significant proportion of the housing characteristics–related variables seem to contribute only to a very limited extent to the explanatory power of the clusters found by the model. At the same time, the model sacrifices much of its explanatory power.

The requirement to include at least 2 variables from each category in the cluster analysis was therefore revised downwards. Most of the dwelling characteristics were dropped, leading to significantly better results. The choice was made to keep the dwelling type in the model despite its decreasing explanatory power. Thus, the remaining housing characteristics across the study population do not appear to be able to produce significant differentiation to a sufficient extent. In other words, by characteristics, the homes that first–time buyers occupy cannot be differentiated in combination with other demographic and socioeconomic characteristics.

Further analysis shows that the housing characteristic–related variables push the cluster results in two directions despite their limited explanatory power. Single–person households both make up a significant proportion of the total population and live predominantly in multifmily houses. This creates a distorted picture of the remaining households that are now clustered together. Since the housing stock characteristics within a type are fairly homogeneous by the variables used (multifamiliy houses have the smallest living area and purchase amount), all housing characteristics as such distort the cluster results. The final cluster analysis results in 7 significant clusters where the explanatory power of the model (model silhouette), by direct entrants and former tenants, respectively, equals 0.7 and 0.5 (range 1 to 1). The detailed cluster model analysis is presented in Appendix II.

6.3.2 The direct entrants

Of the demographic characteristics of direct owner–occupied housing market entrants, household composition and household size consistently emerge as the most important variables over the entire period. The model results show that the subpopulation of first–time buyers can be distinguished into singles, cohabitants and families (table 6.6). Household income and the nature and composition of household income emerge as the main explanatory socioeconomic variable in the model analysis. Despite its low explanatory power, it appears that housing type may also partly contribute to clustering.

Among single (single–person) households, over 92 per cent appear to receive income. The remaining households are mostly studying or receiving (some form of) benefits. Logically,

Table 6.6 Number of direct entrants by period and by some demographic and socioeconomic household characteristics

2006-2009	singles	cohabitants	families
Age head of household	1,86	1,59	2,23
Household size	1,00	2,00	3,40
Purchage price	159.645	188.657	227.304
disposable income	21.725	38.261	43.470
Total	**37.150**	**38.991**	**6.580**

2009-2012	singles	cohabitants	families
Age head of household	1,90	1,65	2,13
Household size	1,00	2,00	3,32
Purchage price	153.596	187.377	175.412
disposable income	22.902	37.385	40.118
Total	**30.646**	**35.927**	**5.590**

2012-2015	singles	cohabitants	families
Age head of household	1,92	1,64	2,00
Household size	1,00	2,00	3,36
Purchage price	149.077	187.233	199.910
disposable income	23.691	37.627	38.627
Total	**26.905**	**26.067**	**4.975**

2015-2018	singles	cohabitants	families
Age head of household	1,96	1,81	2,25
Household size	1,00	2,00	3,60
Purchage price	187.385	206.583	265.806
disposable income	26.140	44.671	45.973
Total	**31.212**	**34.675**	**10.253**

2018-2021	singles	cohabitants	families
Age head of household	1,91	1,81	2,56
Household size	1,00	2,00	3,74
Purchage price	234.580	261.106	304.057
disposable income	27.795	50.982	51.631
Total	**31.917**	**30.002**	**9.110**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

these households belong to the lower end of the household income distribution. It also appears that the majority of this group (59 per cent) live in a multifamily dwelling. The cohabitants (two-person households) are found to be 82 per cent two-earners and 18 per cent one- and no-earners. Thus, household income coincides with the upper end of the distribution. For the most part (65 per cent), cohabitants appear to be living in a terraced or multifamily house. The smallest distinguishable cluster (about 9 per cent) consists of families with a household size of three, predominantly four persons. The nature and composition of income show that more than 8 in 10 households receive income as dual earners. By household income, the distribution is similar to cohabitants. For the most part (73 per cent), terraced, or semi-detached houses are occupied.

The longitudinal distribution seems to confirm the prevailing picture that first-time buyers are getting older. Among both singles and cohabitants, the average age is increasing. In contrast, the average age at which families buy a house seems to decrease in the period 2009/2015. In other words, families appear to be more likely to move into owner-occupied houses during the years following the credit crunch.
The percentage change (in absolute numbers) of direct entrants in table 3.1 can also be explored by household composition. The singles appear to have consistently seen a change of 15 to 20 per cent on average over the years. The cohabitants show a different picture. Until 2012, the numbers remained mostly stable. However, in the period 2012/2015, a sharp decline of 31 per cent is visible. However, the proportion of families 'only' decreased by 15 per cent during the same period. From 2015, the number of removals by first-time buyers increased significantly again. The share of cohabitants grows by over 40 per cent while family households more than double.

6.3.3 The former tenants

Over the entire study period, the demographic characteristics of former tenants consistently show the household size as the most important variable. The model results show that the sub-population of former tenants can be grouped into singles, cohabitants, families and other households (table 6.7). The latter group mainly concerns households with the household composition couples (+ children) where the nature and composition of income is single-earner. In other words; there is a distinguishable group of former tenants (excluding singles) who have moved into owner-occupied housing as single earners.
Relatively, this concerns 1 in 10 households. The nature and composition of household income and absolute household income emerge as the main explanatory socioeconomic variable in the model analysis. Despite its low explanatory power, it appears that housing type may also contribute in part to cluster formation.

Among singles (18 per cent of the households), over 96 per cent appear to receive income. The remaining households are mostly studying or receiving (some form of) benefits. Logically,

Table 6.7 Number of former tenants by period and by some demographic and socioeconomic household characteristics

2006-2009	singles	cohabitants	families	others
Age head of household	2,47	2,20	2,57	2,79
Household size	1,00	2,00	3,60	2,67
Purchage price	181.985	224.762	238.967	224.077
disposable income	26.279	45.026	45.829	35.318
Total	**33.796**	**48.370**	**45.826**	**8.109**

2009-2012	singles	cohabitants	families	others
Age head of household	2.37	2,15	2,52	2,48
Household size	1,00	2,00	3,63	2,73
Purchage price	175.163	218.940	237.761	188.143
disposable income	25.910	47.110	47.380	33.416
Total	**25.745**	**35.684**	**25.446**	**15.822**

2012-2015	singles	cohabitants	families	others
Age head of household	2,52	2,18	2,67	2,69
Household size	1,00	2,00	3,59	2,93
Purchage price	179.426	214.872	263.983	195.448
disposable income	27.433	49.542	53.328	34.335
Total	**25.191**	**32.721**	**25.748**	**18.043**

2015-2018	singles	cohabitants	families	others
Age head of household	2,47	2,20	2,51	2,80
Household size	1,00	2,00	3,64	2,88
Purchage price	188.939	252.493	269.657	209.934
disposable income	29.111	53.650	55.650	37.018
Total	**28.929**	**48.925**	**42.153**	**18.065**

2018-2021	singles	cohabitants	families	others
Age head of household	2,53	2,17	2,58	2,79
Household size	1,00	2,00	3,45	2,53
Purchage price	254.080	303.480	329.520	309.635
disposable income	39.261	59.414	59.437	42.393
Total	**21.321**	**43.749**	**28.119**	**14.040**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

these households belong to the lower end of the household income distribution. It also appears that the majority of this group (55 per cent) live in a multifamily house. The cohabitants (two-person households) turn out to be 100 per cent two-earners. With this, household income coincides with the middle-upper end of the distribution. For the most part (70 per cent), cohabitants are found to be living in a terraced or multifamily house. Cohabitants make up the majority of the household distribution (40 per cent). The other distinguishable cluster (about 30 percent) consists of families with a household size of three, predominantly four persons. The nature and composition of income show that 100 per cent of households receive income as dual earners. By household income, the distribution is similar to the cohabitants. For the most part (73 per cent), terraced and semi-detached houses are occupied. The last distinguishable cluster (11 per cent) consists of other households with two, predominantly three people. Despite the household composition, these households receive income as single earners. They therefore belong to the bottom of the income distribution. By housing characteristics, the different housing types are evenly distributed.

A comparison over time does not seem to follow the emerging picture among direct entrants. For instance, the age distribution seems to remain fairly similar across the various distinct subgroups. During the crisis, the average entry age was the lowest. A similar picture was already visible among direct entrants. On the other hand, another trend is clearly discernible. As of the 2018 period, a significant increase in the average purchase amount and disposable household income is visible across all households. Singles seem to experience the strongest growth; both purchase amount and disposable household income rise by a whopping 34 per cent. Over the same period from 2018-2021, disposable income in the Netherlands increased 'only' by 2.6 per cent. Thus, it seems to be persistently higher-income households that manage to move into owner-occupied properties.

Trend-wise, the various distinct households seem to correspond in absolute numbers to the direct entrants. During the crisis, a decline in absolute numbers is discernible, after which they slightly increase again in the period from 2015-2018. Recent developments show that the total inflow is declining across all household groups. Families thus seem to be decreasing the most, by 33 per cent.

6.4 Summary

One of the central objectives of this study is to identify possible relationships between the demographic and socioeconomic characteristics of households on the one hand and the characteristics of their housing on the other. To this end, a household-level categorical cluster analysis was carried out with the various characteristics of households and their housing as variables. As potential demand and realised the demand of households certainly do not always match and a direct link between plans and actual behaviour based on the available WoON data files is not possible, realised demand is taken as the starting point.

Given the categorical nature of the variable to be included in the operationalisation of first–time buyers, it was decided to use the TwoStep cluster analysis. To keep the results of such analysis insightful and easily interpretable, the number of variables and categories involved in the analysis should be kept as economical as possible. Therefore, a CATPCA was performed prior to the cluster analysis to arrive at the most valuable set of variables with optimal scaling.

The CATPCA analysis eventually revealed seven of the 10 variables of interest that were able to explain a significant part of the variance in the data. This included a desire to retain at least one variable from both the demographic, socioeconomic and housing characteristic categories for the cluster analysis. In the end, it appears that for the direct entrants: two demographic characteristics, two socioeconomic characteristics and three housing characteristics account for the largest variance. Within these variables, the number of categories was also reduced in some cases.
For former tenants two demographic characteristics, two socioeconomic characteristics and two housing characteristics could account for almost 80 per cent of the variance. In addition, it was found that the categories within the variables could not be further reduced/merged.

The TwoStep cluster analysis showed that housing characteristics contributed little to the explanatory power of the model, making mainly demographic and socioeconomic characteristics the determining factor. In the end, it was decided to include a housing characteristic as in the analysis. Finally, for direct entrants, three clusters emerged: singles, cohabitants and families. For former tenants, four clusters can be formed: singles, cohabitants, families and other households.

Given the predominantly strong internal cohesion and external separation of the clusters formed, these provide a sufficient basis to carry out further analyses.

Chapter 7
The demand for (starter)houses

7.1 Introduction

Chapter 5 provided an initial picture of the housing market segment of (starter) owner–occupied houses and the households living in them. As indicated in Chapter 6, a distinction can be made between potential demand and realised demand for housing. Changes in the household may lead to different preferences for the housing situation and thus dissatisfaction with the current dwelling. In addition, economic conditions and general market sentiment also play a role. Any dissatisfaction may in turn lead to a desire to move in the household: the potential demand. When such moving plans are converted into actual moving behaviour, it is called the realised demand.

This chapter answers the fourth research question of this study, as formulated in Chapter one: *How did the demand for (starter) owner–occupied houses develop in terms of size and nature in the period 2009–2021 and what regional differences exist in this development? What influence do market conditions and moving motives have on the demand for (starter) owner–occupied houses?*

In this respect, the eventual moving behaviour of households may certainly not fully match their moving plans. Households wanting to move may have insufficient information about the housing market or may have misjudged their options in that market. In addition, the desired housing supply may not be available. Substitution behaviour or postponing the desired move may result. However, the data in WoON do not allow for tracking the actual moving behaviour of households willing to move. Each WoON only provides information on moving behaviour in the years prior to the reference year and on moving desires in the years that follow.

This study will therefore separately study both potential and realised demand. In addition, the conclusion will also confront developments in both types of housing demand. Because a lower realised demand for owner–occupied houses in a certain period, while potential demand is relatively high in the same period, has a completely different meaning, than when potential demand is also low.
The remainder of this chapter first indicates how realised and potential demand for owner–occupied housing was operationalised in this study. It then discusses the size and development of realised and potential demand over the period studied. Developments in the nature of the demand for housing in the owner–occupied segment are the focus of Section 7.4 For this purpose, the nature is based on the households as formulated in Chapter 6. Thereby, the situation as can be noted from the WoON2021 data is described first, followed

by a brief description of any shifts compared to the previous periods. Keeping the current housing situation of households in mind, the demographic and socioeconomic characteristics of households that have moved into owner–occupied housing in the period of the WoON2021 are discussed successively (section 7.4.1) and of households that intend to move into such housing in the years 2018–2021 (section 7.4.2). The characteristics of the affected dwellings (section 7.4.3) and of the desired dwellings (section 7.4.4) are then discussed.
Section 7.5 focuses on the moving motives of both actual and potential entrants to the owner–occupied segment. This concerns a description of the motives and of possible changes in these moving motives during the previous years. Finally, section 7.6 outlines geographical differences in demand for owner–occupied houses. The chapter is summarised in section 7.7, which also discusses any differences between realised and potential demand.

7.2 Operationalisation of demand for (starter)houses

7.2.1 The realised demand

In addition to household and dwelling characteristics, WOON asks respondents, among other things, about the period when the household moved into the current dwelling. Based on this, it is therefore easy to determine when a household last moved. The way in which the first–time buyers are operationalised in chapter 6 assumes that these households have moved recently. Only the so–called 'recent movers' are asked questions about their previous living situation and reasons for moving.
According to WOON, over 1,032,000 households moved into independent housing between 2006 and mid–2021 (table 6.3). Respectively, the share of direct entrants and former tenants was 37% and 63% over the whole period. The steadily declining trend in the share of first–time buyers during the years 2006 to 2015 is reversed from mid–2015 after which the share of first–time buyers increases significantly. The change from economic downturn to upturn – and the related increase in house value – thus resulted in greater realised demand.
As both the previous and current housing situation is known only from the last move, in this study the realised demand for housing is equated with the number of recently moved households. The realised demand for (starter) owner–occupied houses then corresponds to: *the number of recently moved households that have moved into a house in the (starter) owner–occupied segment.*

7.2.2 The potential demand

Besides actual moving behaviour, WOON also asks respondents about any moving plans for the next two years. First, it is established whether and, if so, to what extent the respondent is inclined to move. Next, those who do not want to move are asked whether they think they will have to move (forced moves).

Table 7.1 Number of first-time buyers willing to move by type (absolute / as a percentage of total) by period

Period	direct entrants	former tenants	total	% of households*	no moving desire**
2006-2009	187.199	259.551	446.750	45,4	72,0
2009-2012	164.247	243.609	407.856	38,7	68,7
2012-2015	175.548	261.641	437.189	40,5	60,1
2015-2018	278.086	415.948	694.034	40,4	58,9
2018-2021	355.312	498.038	853.350	43,9	57,3
Total	**1.160.392**	**1.678.787**	**2.839.179**	**-**	**-**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* All households willing to move to an independent owner-occupied house in the next two years.
** Proportion of all households that are not moving (next two years) at the time of the survey.

Again, this distribution refers to only the (currently) (un)independently living households (respondents) with the desire for an ordinary owner–occupied dwelling. Thus, any relocation plans of households to other living spaces remain outside the analyses of this study. The methodology used in section 6.3 resulted in the clusters identified being based on realised demand. In other words, the household groups reflect actual moves. To contrast this group with the potential demand, it was chosen to approximate this group using the most explanatory variable, namely the (expected) household composition (after moving) corresponding to the household group in question. This determination is presented in annex 2 table B7.2

Table 7.1 shows that in 2021, 43 per cent of the potential demand exerted by 1,950,000 households are potential first–time buyers. Among them, 355,000 and 498,000 households (18 per cent and 25 per cent of all households) qualify as potential direct entrants or former tenants, respectively. Potential first–time buyers include 4,950 households (0.6 per cent of all households) who expect to experience a forced move within the time frame mentioned. Over 375,000 households say they might want to move, compared to 474,000 households who (definitely) want to move. The households belonging to these two categories, together with those who are forced to move, form the group of 'inclined to move'.
The picture just outlined can also be seen in all other WOON years. In the post–crisis period, the percentage of households eager to move was always between 39 per cent and 40 per cent with an increase visible from 2018 onwards to 44 per cent. In absolute terms, the number of households willing to move therefore increases in the period 2009–2021, in line with the growth of the total number of households.

In this study, potential housing demand is equated to the total number of households (possibly or definitely) wanting to move. This potential demand, in its totality, thus appears to have consistently increased in size since 2009. The potential demand for owner–occupied dwellings then corresponds to: *the number of households wanting to move within two years into an independent dwelling in the owner–occupied segment.*

7.3 Size of the demand for (starter)houses

7.3.1 The realised removals

In section 7.2.1, it was observed that the total realised demand for housing, as operationalised in this study, fluctuated significantly during the period 2009–2021 and stabilised back to pre-crisis levels around 2018. When these moves are broken down by the subgroups and housing market segment identified in Chapter 6 to which the house involved in the move belongs, it can be seen that the trend in realised demand differs from the overall picture.
The changing conditions in the housing market are clearly reflected in the distribution of recently moved households across the two distinct housing market segments (tables 7.2 and 7.3). The recession in the owner-occupied housing market in the first half of the 20s led to a sharp drop in the relative number of moves into the owner-occupied segment and a greater orientation towards the rental housing market among moving households. The recovery of the owner-occupied housing market from 2015 translates into a significantly increasing share of removals to an owner-occupied house.

From the 2009 period onwards, shifts from rental to owner-occupied sector can be observed in realised removals. Among direct entrants, the percentage of removals to rented housing clearly increases until 2015 (table 7.2). This is offset by a decrease in the relative number of removals by first-time buyers to a starter or regular owner-occupied house. From 2015, a clear turnaround is visible after which the share of removals to owner-occupied houses among direct entrants increased. In the period since 2018, however, it appears that the inflow of direct entrants in the starter segment has decreased. This inflow now seems to take place mainly in the rental market.

Trends among former tenants show a similar picture. From 2009 to 2018, the relative inflow into the rental sector seems to decrease sharply. From 2018, however, it increases again. In addition, the absolute inflow of households has also slightly decreased compared to the previous period. More tenants, therefore, appear to be moving on within the rental sector. There thus seems to be a correlation between housing market conditions and household moving behaviour, as assumed in Chapter 2.

The direct entrants
The trend in the absolute number of removals of direct entrants to owner-occupied houses in the 2009–2021 period presents a similar picture, as shown in Table 7.4. This number drops sharply from the start of the crisis (2009) and then increases significantly again from 2015 onwards. In absolute terms, this development can also be seen within distinguished groups of direct entrants. The share of singles appears to have fallen the most at the start of the crisis. The share of cohabitants and families remained predominantly the same during the same period. From 2012, the relative share of cohabitants also decreases significantly. The share of the 'rental sector' does increase (table 7.2).

Table 7.2 Number of recently moved direct entrants by moving period and by housing market segment, in the period 2006-2021 as a percentage of the row total (absolute)

Period	starters segment	regular segment	rental segment*	total
2006-2009	32,2	3,2	64,7	244.246
2009-2012	30,9	0,6	68,5	239.428
2012-2015	24,8	1,4	73,9	232.328
2015-2018	27,5	6,6	65,9	247.967
2018-2021	25,9	6,5	67,6	248.474

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Refers to all moves with the market act 'starter' to ordinary rental properties

Table 7.3 Number of recently moved former tenants by moving period and by housing market segment, in the period 2006-2021 as a percentage of the row total (absolute)

Period	starters segment	regular segment	rental segment*	total
2006-2009	29,5	8,6	61,9	393.762
2009-2012	30,0	2,3	67,7	335.439
2012-2015	31,1	5,8	63,1	307.987
2015-2018	27,7	14,5	57,8	360.241
2018-2021	21,1	14,9	64,0	337.706

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Refers to all removals with the market act 'mover' within the rental sector (rent to rent)

The decline in absolute removals thus seems to consist partly of postponing the desire to move and opting for (temporary) renting after which these households will start as former tenants. From 2015, the share of removals among all distinguished households increases again. In the most recent period 2018–2021, total realised demand seems to stagnate. Within most household groups (except singles), the total inflow decreases in the relevant period. Earlier, Table 7.2 showed that realised demand for rental housing increased. In other words, potential direct entrants more often substitute purchase desire for rental housing.
Viewed by housing market segment (see also Table 5.1), it can be clearly seen that most of the removals within the regular owner–occupied housing segment are made by cohabitants (Table 7.4). It should be noted that the shifts in limit used by the NHG (maximum purchase amount) somewhat distort the results.

Over the period, the inflow into the owner–occupied sector as a direct entrant seems to be marked by two developments. On the one hand, a general, absolute decline is visible during the credit crisis and the accompanying general worsening of the housing market. On the

Table 7.4 Number of recently moved direct entrants by household group and by housing market segment, in the period 2006-2021

	starters segment			regular segment		
Period	**singles**	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
2006-2009	34.522	35.643	4.736	2.107	2.608	844
2009-2012	30.460	35.573	5.164	242		
2012-2015	24.565	24.009	4.007	173	855	371
2015-2018	28.181	27.958	7.378	2.719	6.345	2.453
2018-2021	28.254	24.139	6.351	3.663	5.853	2.759
Totaal	**145.982**	**147.322**	**27.636**	**8.904**	**15.661**	**6.427**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* The table total differs from the total in Table 3.3 due to the exclusion of outliers during the catPCA.

other hand, part of the decline in removals seems to find substitution in the rental sector or move desires are simply postponed. The turning point in low to high economic activity in the housing market from 2015 is clearly visible in both absolute removals and relatives.

Former tenants

Table 7.3 shows an opposite pattern in terms of relative inflow into the owner–occupied sector compared to direct entrants. Despite the absolute decrease in removals within and from the rental sector, the share of former tenants entering the owner–occupied market instead of moving in the rental market increases in percentage terms in the period 2009–2018 (decrease in the share of the rental segment). Despite the absolute decline, a growing share seems to leave a rental property for an owner–occupied dwelling. This also clearly shows the different (financial) starting positions.

Over the period, the share of households starting within the regular owner–occupied housing market appears to be higher than direct entrants during the same period. In addition, the relative inflow (both relative and absolute) also appears to be decreasing. In other words, relatively more tenants choose to move on within the rental sector.

This relative change seems to consist partly of postponing the desire to buy through the choice of (temporary) renting. A similar proposition appeared earlier to hold true for direct entrants. By contrast, former tenants show a different trend in realised removals when looking at the different household groups. Single people appear to be finding it increasingly difficult to move on to the owner–occupied sector in both housing segments from the start of the crisis. Cohabitants and families appear to be buying homes in the regular segment in sharply increasing numbers from 2015. Again, this appears to be largely due to the financial starting position. Other households appeared to find it easier to buy a house, especially during the period of economic downturn. In the period from 2009–2015, these households bought a house more often than in previous years.

Table 7.5 Number of recently moved former tenants by household profile and by housing market segment, over the period 2006-2021

	starters segment				regular segment			
Period	**singles**	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
2006-2009	31.135	37.494	32.268	5.862	2.661	10.876	13.557	2.248
2009-2012	25.225	33.242	23.593	14.935	521	2.442	1.854	887
2012-2015	23.189	28.273	20.002	16.492	2.002	4.448	5.756	1.551
2015-2018	24.787	28.768	23.167	13.853	4.142	20.157	18.986	4.212
2018-2021	15.964	23.242	16.492	8.212	5.357	20.507	11.628	5.828
Total	**120.300**	**151.019**	**115.522**	**59.354**	**14.683**	**58.430**	**51.781**	**14.726**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* The table total differs from the total in Table 3.3 due to the exclusion of outliers during the catPCA.

Looking at the period as a whole, the development of former tenants also seems to indicate two developments. On the one hand, the an absolute decline of singles in both housing segments, especially in the most recent period. And on the other, the recovery of the absolute inflow of cohabitants in both housing segments since the crisis in 2008. Families appeared to catch up with deferred demand particularly in the 2015–2018 period, while other households benefited from price declines in the years before.
Hence, the borrowing capacity of these households increased sharply during the 2009–2012 period. For instance, the borrowing capacity of single earners with 1x modal and 2x modal increased by an average of 6% and 16%, respectively. This borrowing capacity stabilised at the same level in the 2012–2015 period; which can also be seen from the total realised removals.

7.3.2 The desired removals

Like actual moving behaviour, the desire to move also seems to vary with housing market conditions. The total number of those willing to move also fluctuates throughout the period. From 2015, a significant increase is visible in absolute households from both entry segments. Since 2009, interest in the rental sector among direct entrants appears to be steadily declining. In contrast, the share of households wishing to enter the owner-occupied market directly (Table 7.6) is growing significantly. In particular, the group of households wishing to move into a house in the regular owner-occupied segment is increasing significantly.

A similar trend is visible among the moving inclined former tenants (table 7.7). In absolute numbers, the number of households willing to move fluctuates in relatively equal measure with the direct entrants. From the 2009 period onwards, the interest in moving within the rental sector seems to decrease and the desire for an owner-occupied house increases.

Table 7.6 Number of moving inclined direct entrants by moving period and by housing market segment, in the period 2006-2021 as a percentage of the row total (absolute)

	owner-occupied housing segment			
Period	**starter segment**	**regular segment**	**rental segment***	**Total**
2006-2009	32,6	3,5	63,9	517.852
2009-2012	28,3	0,9	70,8	562.448
2012-2015	28,9	2,8	68,3	528.126
2015-2018	26,1	10,3	63,6	747.029
2018-2021	38,4	7,9	53,7	752.632

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Refers to all desired moves with the housing market act 'starter' to an ordinary rental dwelling

Table 7.7 Number of moving inclined former tenants by moving period and by housing market segment, in the period 2006-2021 as a percentage of the row total (absolute)

	owner-occupied housing segment			
Period	**starter segment**	**regular segment**	**rental segment***	**Total**
2006-2009	28,2	5,5	66,3	698.227
2009-2012	27,9	2,1	70,0	727.917
2012-2015	26,9	6,2	67,0	678.622
2015-2018	19,1	15,4	65,5	1.020.823
2018-2021	26,0	12,0	61,9	1.130.088

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Refers to all desired moves with the housing market act of 'mover' on to ordinary rental dwelling.

Consequently, absolute demand for owner–occupied housing remains fairly stable. From 2015, housing demand among former tenants explodes. In absolute terms, potential demand increases by over 50% compared to the previous period. This clearly reflects the recovery of the owner–occupied housing market. The desired move by direct entrants also increases by 41% in the same period.

When desired moves are compared with realised moves, an interesting picture emerges. Particularly in the most recent period, it is noticeable that the absolute potential demand is increasing and the relative potential demand for rental housing in both housing segments is decreasing sharply by 5% to 10%. However, this decrease is not reflected in realised removals. Tables 7.2 and 7.3 show that the rental segment is relatively more involved in the removals. In other words, the demand for rental housing decreases but the relative (and absolute) realisation

Table 7.8 Number of direct entrants by household group and by housing market segment, in the period 2006-2021

	starters segment			regular segment		
Period	**singles**	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
2006-2009	107.251	52.175	3.943	6.698	9.238	1.303
2009-2012	97.556	47.926	7.104	1.947	2.237	1.060
2012-2015	95.766	48.304	2.965	7.093	5.684	1.072
2015-2018	127.480	53.497	4.459	42.105	24.937	4.230
2018-2021	206.703	65.126	3.039	32.918	19.904	4.386
Total	**634.756**	**267.028**	**21.510**	**90.761**	**62.000**	**12.051**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

of moves to the rental segment increases. Especially compared to previous periods, it appears that potential owner-occupiers are less and less likely to realise their desire to move and 'have to' choose the rental segment.

Direct entrants

In absolute numbers, the number of households willing to move, is steadily increasing throughout the period to 332,000 households in 2021. In addition, table 7.8 shows that there have been only minimal shifts in the absolute desired demand of distinguished future households until 2018.

Until 2015, at the time of sharp price declines in the owner-occupied housing market, 63% of the total demand expressed comes from single people. Subsequently, the size of this demand increases slightly to 66% in 2018 and 72% in 2021. Singles thus appear, in both housing market segments, to account for almost three-quarters of total demand. Despite the strong increase in demand for owner-occupied houses in the period 2015-2018, the distribution by household composition does not appear to change significantly. From 2018 onwards, this shift is more pronounced, and the share of cohabitants and families continues to decrease. Most of the increased demand seems to be attributable to the eponymous decrease in the demand for rental housing (table 7.6) of moving inclined households within the same housing market position.

In absolute numbers, the annual total volume of desired removals by household group and housing segment appears to be marked by three developments. From 2015, a significant increase in demand from single people is visible, far exceeding pre-crisis levels. Despite the continuing individualisation of society, demand from singles in both housing segments has risen sharply over the period described. In addition, a consistent increase of cohabitants in both inflow segments is visible from 2009 onwards. Finally, among families, in addition to absolute growth, a shift towards the regular segment is mainly visible. Families, especially from 2018 onwards, appear to increasingly wish to occupy a house in the regular segment.

Table 7.9 Number of moving inclined former tenants by household group and by housing market segment, in the period 2006-2021

	starters segment				regular segment			
Period	**singles**	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
2006-2009	81.960	41.161	38.263	35.399	7.406	11.659	9.744	9.707
2009-2012	77.037	34.713	34.962	56.478	2.608	1.923	5.720	4.976
2012-2015	68.279	35.490	27.349	51.101	9.046	9.636	12.453	10.902
2015-2018	81.420	30.108	22.764	60.248	39.156	42.951	32.349	43.098
2018-2021	147.292	47.467	32.149	67.171	33.849	49.968	24.809	27.446
Total	**455.988**	**188.939**	**155.487**	**270.397**	**92.065**	**116.137**	**85.075**	**96.129**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Former tenants

A similar trend can be identified among former tenants. The total size of the group of former tenants with a desire to move increases from 218,000 (2009–2012) to 430,000 households in 2021. It can also be seen from Table 7.9 that minimal shifts in absolute desired demand again took place until 2018. Over the entire studied period from 2009 to 2021, it appears that single former tenants exercise between 34 per cent to 38 per cent of housing demand. In contrast, demand from cohabitants and families make up 20 per cent and 18 per cent of the total, respectively.

As of 2018, clear differences are noticeable in the development of potential demand. For instance, the number of potential singles and cohabitants appears to increase to 42 per cent and 23 per cent. This is offset by a relative decrease in moving inclined families and other households to 13 per cent and 22 per cent respectively. Thus, even among former tenants, demand dynamics appear to have changed significantly in recent years with relatively greater demand being exerted by singles and cohabitants.
In absolute numbers, it is notable that the absolute size of singles and cohabitants in the starter segment is smaller than the respective households within the potential direct entrants. In contrast, the total demand exercised in the regular segment is higher among former tenants. The share of families is also found to be higher among former tenants. Family formation, therefore, tends to occur at a more stable stage within the household cycle.

7.4 Nature of the demand for (starter)houses

It has been established, that actual and desired residential mobility in absolute numbers has increased substantially in recent years. This is also broadly true for the realised and potential demand for (starter) owner–occupied houses. But the development of this demand varies quite a bit per distinct, group of recently moved and moving inclined households.

The nature of the demand for (starter) owner-occupied housing indicates who exercises this demand. In Chapter 4, a number of variables were identified, based on the literature review, that may influence (wanting) to move into such housing. These variables (demographic and socioeconomic characteristics), when combined, give an indication of the household stage and socioeconomic position in which households find themselves.

This section discusses some demographic and socioeconomic characteristics of, respectively, households that actually moved (section 7.4.1) and households that wish to move (section 7.4.2). The nature of demand for owner-occupied housing can also be seen as what is demanded. Therefore, section 7.4.3 discusses the characteristics of the owner-occupied houses in question. This analysis is repeated in section 7.4.4 with regard to the characteristics of the houses, which the households that are inclined to move, desire. Using the data from the present WOON surveys, it is also indicated whether, and to what extent, the outlined picture differs from the situation in the period before.

7.4.1 The recent movers

Direct entants

Table 7.10 shows that first-time buyers in the starter home segment are often at the beginning of the household cycle: among singles and cohabitants, over 91% of households are younger than 35 years. Within the regular owner-occupied housing segment, the average age shifts slightly towards the higher age categories. households in regular owner-occupied housing are found to be older on average within all household groups.

Single people appear to occupy a lower position by socioeconomic characteristics. About a third (32 per cent) of first-time buyers in the starter home segment have an income below the modal (€36,500 gross, CPB 2021). A similar distribution is visible in the regular owner-occupied housing segment. Singles are most often highly educated (hbo or higher) with predominantly a third having a master's degree. The singles within the starter home segment mainly differ from the same group in the regular housing segment by income type. Among this group of households, nine in 10 households receive earned income, compared to only seven in 10 of those in the regular segment. In addition, it appears that this group tends to be the highest educated among all direct entrants.

Cohabitants make up a similar proportion of the total inflow within the starter segment in terms of size. In contrast, cohabitants appear more likely to occupy a house in the regular segment. The socioeconomic position of this group of households appears to be considerably stronger. Within both housing segments, an average of 84 per cent of households receive income form a dual-income. Cohabitants in both housing market segments differ by demographic characteristics mainly in the age distribution. Households in the regular owner-occupied segment are predominantly older than those who moved into starter houses.

Table 7.10 Demographic characteristics of recently moved direct entrants by type of move in 2021, as a percentage of column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
age head of household						
up to 25 years	19,8	23,9	20,3	22,6	11,8	
25-34 years	71,0	74,2	33,0	77,4	82,6	34,1
35-44 years	5,7	1,9	39,3		4,4	25,3
45-54 years	3,6		7,3			40,5
Household size						
One person	100			100		
Two persons		100			100	
Three persons			60,2			31,8
Four persons			22,9			21,2
5 persons and more			16,9			47,0
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WoON 2021 (own edit)

The last group, family entrants, in both housing segments account for only 13 per cent of all households that entered the owner-occupied housing market. These households tend to be at a later stage of the household and labour market cycle. Over 47 per cent of these households have a head older than 34 years in the starter segment. In the regular segment, the proportion older than 34 years appears to be higher at over two-thirds of all households. The fact that these households are more often in a less active phase of the working career is mainly reflected in Table 7.11 in the proportion employed in the labour market.
Especially in the starter segment, an increased group of households is active within the labour market as single-earner households. The most obvious contrast between the two housing market segments is visible in the education level of the household head. Whereas within the starter segment only a small 25% have completed HBO or higher, in the regular segment this rises to 55%. Also in terms of income, the latter group is overrepresented in the category up to 3 times modal. A later stage within the labour and household cycle thus seems to lead to higher incomes when viewed across the group as a whole. Direct entrants in the regular owner-occupied segment appear more often to be older and highly educated and thus to have acquired a stronger position in the labour market.

The differentiation by household stage outlined above between the three household groups is also largely reflected in the present (WOON) periods. Within each individual group, the more general demographic trends discussed earlier in section 4.2 can be seen (ageing of first-time buyers and pre-entry family formation). It is noteworthy, however, that the share of young

Table 7.11 Socioeconomic characteristics of recently moved direct entrants by type of move in 2021, as a percentage of column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
Education level head of household						
Onderbouw & mbo	5,4	4,4	2,3	32,2	7,1	27,8
Bovenbouw & mbo	47,6	51,8	70,5	38,9	19,0	27,6
Hbo & wo bachelor	24,7	28,5	21,8		41,9	13,2
Hbo & wo master	22,3	12,5	5,4	29,0	23,1	31,5
Income form head of household						
Salaried	91,5	89,9	100,0	72,0	91,9	80,5
Self-employed	3,2	7,4		13,3		19,5
Benefit	2,3	2,7		14,6		
Pension	3,0				8,1	
Household incomeclasses						
Below modal	32,4	10,7		46,5		
Up to 1.5x modal	54,8	11,2	17,7	53,5		15,6
Up to 2x modal	9,3	31,7	52,1		20,2	27,2
Up to 3x modal	3,5	37,7	23,8		65,6	41,6
> 3x modal		8,9	6,4		14,2	15,7
Nature of income source(s)						
Single-earner	93,8	18,1	27,3	73,4	13,6	14,3
Dual-eaner		81,9	72,7		86,4	85,7
No (earned) income	6,2			26,6		
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WoON 2021 (own edit)

first-time buyers (aged between 17 and 24) has declined dramatically (more than 30%) as of 2018. Direct entrants only seem to (be able to) realise their desire to buy at a later age. This development is most visible among singles and cohabitants. In addition, a larger proportion of highly educated people (with higher incomes respectively) can also be noted.

The former tenants

Table 7.12 shows that first-time buyers in the starter home segment tend to be at a later stage of the household cycle: among all the household groups distinguished, the most common age category is between 24 and 35 years. An exception is the other households in the regular segment. Within the regular owner-occupied housing segment, on the other hand, the average age of singles and cohabitants does not appear to shift towards the higher age

categories as appeared to be the case for direct entrants. On average, first-time buyers do not appear to be older when they opt for an owner-occupied house in the regular segment.

These households' opportunities within the regular owner-occupied segment are mainly facilitated by income. Table 7.13, for instance, shows that the share of households active within the regular owner-occupied housing market enjoy significantly higher incomes than the same household groups within the starter segment. The higher average incomes of former tenants (relative to direct entrants), in light of the labour market cycle, appear to make it clear that this group of households is also at a further stage within the said cycle. The degree of activity in the labour market is also strongly revealed by the nature of the income source(s). Thus, across the household group as a whole, there appear to be no households receiving no income (from employment) during the period 2018-2021. The distinguished household groups consist exclusively of single- and dual-income earners.

Single people appear to occupy a lower position in the starter segment by income class. About a sixth of first-time buyers in the starter home segment have an income below the modal (€36,500 gross, CPB 2021). A different distribution is visible in the regular owner-occupied housing segment. This shows that singles tend to have an income of three times modal. By socioeconomic characteristics, singles seem to be most often highly educated (hbo or higher) with predominantly 40 per cent in the starter segment and 72 per cent in the regular segment having a master's degree. The singles within the starter segment mainly differ from the same group in the regular housing segment by income type and average age.

Former tenants with a cohabiting household composition appear to make up twice as much of the total inflow within both housing segments by size. In addition, cohabitants appear to be just as likely to occupy a house in the regular segment as in the starter segment. The socioeconomic position of this group of households, therefore, appears to be considerably stronger. Cohabitants in both housing market segments differ by socioeconomic characteristics mainly in education and income class. Cohabitants in the regular segment are found to have over half of them with a master's degree compared to only 21 per cent of relative households in the starter segment. A substantial difference can also be observed in the income classes of cohabitants. For instance, it appears that 85 per cent of cohabitants in the regular segment earn at least up to 3 times modal or higher compared to 5 per cent in the starter segment. On the demographic front, households in the regular owner-occupied segment are found to be predominantly younger than those who moved into starter-occupied homes.

The third group to be distinguished, families, in both housing segments, comprise only 13 per cent of all households entering the owner-occupied market. corresponding to the households that entered the market as direct entrants, the relative households tend to be at a later stage in the household and labour market cycle. The level of activity in the labour market also appears to be higher than for direct entrants. On the other hand, significantly more households are buying homes within the regular segment.

Table 7.12 Demographic characteristics of recently moved former tenants by type of move in 2021, as a percentage of column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Age head of household								
Up to 25 years	5,7	7,7		8,2		1,6		3,7
25-34 years	54,9	75,0	60,9	45,7	52,2	83,2	43,5	15,8
35-44 years	21,0	12,9	26,4	21,1	41,3	9,2	45,6	54,9
45-54 years	18,4	4,4	12,8	25,0	6,6	6,0	10,9	25,6
Household composition								
Single	100				100			
couple		100		39,3		100		22,7
Couple with children			100	22,6			100	26,3
Single-parent family				38,1				51,0
Household size								
One person	100				100			
Two persons		100		62,5		100		51,7
Three persons			63,4	37,5			49,8	40,1
Four persons			36,6				44,9	8,3
5 persons and more							5,3	
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WoON 2021 (own edit)

The most obvious contrast between the two housing market segments is visible in the education level of the head of household and income. Where within the starter segment 52 per cent have completed at least HBO or higher, this rises to 74 per cent in the regular housing segment. In terms of income, households in the regular segment appear to receive significantly higher incomes. Viewed across the group as a whole, a later phase in the work and household cycle, therefore, seems to lead to a higher income.

The last distinguishable group of former tenants are other households. Demographically, both housing segments turn out to be mainly older households. For instance, 25 per cent of all households turn out to be 45 years or older. Thereby, this group is mainly composed of cohabitants and (1–parent) families where the income comes exclusively from single–earner households.

Despite the single source of income, the income class shows that the average income tends to be higher than for singles. These households thus appear, in both housing segments, to have higher incomes partly due to their later stage within the labour market cycle. Notable is

Table 7.13 Socioeconomic characteristics of recently moved former tenants by type of move in 2021, as a percentage of column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Education level head of household								
Onderbouw & mbo	6,2	6,6	5,9	13,5		0,9	3,7	
Bovenbouw & mbo	30,5	34,6	27,9	44,8		14,1	20,4	8,3
Hbo & wobachelor	20,5	33,7	32,2	27,1	25,9	31,3	33,2	40,6
Hbo & womaster	39,0	21,4	19,0	14,6	72,4	50,5	41,3	36,5
Income form head of household								
Salaried	96,2	98,2	96,5	79,9	78,3	93,1	89,2	91,4
Self-employed	3,8	1,8	3,5	3,7	21,7	6,9	10,8	3,6
Benefit				7,3				
Pension				9,1				
Household incomeclasses								
Below modal	16,9		4,8	13,4	4,2			20,7
Up to 1.5x modal	47,1	10,0	14,5	31,0		2,4	4,3	19,7
Up to 2x modal	25,5	37,8	27,8	47,9	9,9	10,3	10,1	
Up to 3x modal	10,5	45,0	49,1	7,7	40,7	52,7	53,3	33,2
> 3x modal		7,2	3,8		45,1	34,7	32,3	19,5
Nature of income source(s)								
Single-earner	100			100	100			100
Dual-eaner		100	100			100	100	
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WoON 2021 (own edit)

the proportion of the remaining households in the starter segment that are already retired or receiving (some form of) benefits. Given this household composition and higher age, it can be expected that some of the households are in fact 're-entrants' to the purchase market.

The outlined differentiation by household group among the four groups of households is also largely reflected in the present (WOON) periods. Within each individual group, the more general demographic trends discussed earlier can be seen. The average age appears to have increased in recent years. The proportion of first-time buyers in the 25-34 age group has therefore also increased. In addition, household income relative to modal appears to have increased slightly. The biggest change is therefore visible in the increased share of highly educated people.

7.4.2 The desired movers

In addition to the recently moved households, households with a desire to move can also be looked at more closely by demographic and socioeconomic characteristics. Within WOON, however, this does present a limitation. So far, the analyses have only looked at household-level characteristics after moving house. However, the regular WOON survey does not provide information at individual respondent level before household formation. The reason for this is quite simple: the respondents in question are for the most part (still) part of an existing household and are included in WoON as such. Thus, over 80 per cent of the moving inclined direct entrants appear to be members of a household. However, this restriction only applies to direct entrants. After all, the households identified as (desired) former tenants already live in an independent rental home. As a result, a less clear picture of the group of direct entrants can be obtained at the socioeconomic level.

The direct entrants

The three distinct groups of (still living dependently) households with a desire to move to an owner-occupied house differ not only by household composition but also by demographic and socioeconomic characteristics. The distinction does appear to be slightly less sharp here than for recently moved households.

The group of potential single market entrants from a non-self-contained housing situation consists mostly of households in the age group up to 25 years, while 25-34-year-olds are also strongly represented (table 7.14). These demanders have indicated that they remain in the singles category after moving. They are in the early stages of the household cycle at the time of the survey. Nevertheless, these households have often already managed to attain a medium socioeconomic position, as shown in Table 7.15. Half of these potential entrants have completed at least MBO 2-4 education. In the regular segment, the proportion of colleges/universities appears to be increasing significantly.

Two-thirds of the prospective cohabitants are found to be households in the age group of up to 25 years. By far the largest share of this group of demanders falls in the age group up to 35 years. Looking at place in the current household, over 80 per cent of the demanders for a starter home appear to still be living with their parents, compared to 67% of the demanders in the regular segment. These demanders have indicated their intention to live together from the parental home immediately. There is also a proportion of households living semi-independently (singles & head/partner). In terms of socioeconomic characteristics, this group of potential buyers appears to occupy a weaker position in the starter segment, relative to singles. Within the regular buying segment, on the other hand, the proportion of highly educated people is also higher.

Prospective households show the most differentiation between the two market segments. Especially by age, households at a further stage within the household cycle appear to exercise

Table 7.14 Demographic characteristics of moving inclined direct entrants by type of move in 2021, as percent of column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
age head of household						
up to 25 years	54,3	67,4	25,9	49,3	44,2	5,4
25-34 years	39,7	29,3	34,0	40,3	47,4	25,0
35-44 years	4,6	1,8	36,7	3,3		52,2
45-54 years	1,5	1,4	3,5	7,2	6,2	16,5
Place of respondent in current household						
Single	9,6	5,9	8,4	17,4	8,7	7,3
Head/partner	0,3	4,1	60,6	0,1	15,0	72,4
child	82,9	84,0	30,8	70,5	67,8	17,7
In-law		1,5			2,1	
Other	7,2	4,5		12,0	6,4	2,7
Household size after moving						
One person	100			100		
Two persons		100			100	
Three persons			61,6			100
Four persons			29,7			
5 persons and more			8,7			
Total (absolute)	**206.703**	**65.126**	**3.039**	**32.918**	**19.904**	**4.386**

source: WoON 2021 (own edit)

Table 7.15 Socioeconomic characteristics of moving inclined direct entrants by type of move in 2021, as percent of column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
Education level head of household						
primary school	0,8	1,3				
Onderbouw & mbo	9,3	9,4	26,9	14,8	2,4	16,9
Bovenbouw & mbo	54,9	62,4	66,7	51,8	47,5	22,6
Hbo & wo-bachelor	24,4	20,9	6,5	21,5	34,9	20,8
Hbo & wo-master	9,2	5,7	4,6	11,9	15,2	39,6
Total (absolute)	**206.703**	**65.126**	**3.039**	**32.918**	**19.904**	**4.386**

source: WoON 2021 (own edit)

greater demand for (starter) owner–occupied houses. This difference is also reflected in the place occupied in the current household. Both segments appear to be characterised by an overrepresentation of singles and head/partners. These households appear to be mostly still occupying non–self–contained accommodation. Both in the household and labour market cycle, these households are significantly further advanced than (prospective) singles and cohabitants.

The comparison picture with the data of the three distinct groups of potential demanders from the present (WoON) period shows a number of developments. Besides the more general developments, as also observed for the households that actually moved, some striking shifts can also be observed in the characteristics of the potential entrants. For instance, the average age of this group of demanders appears to be decreasing over the different reference years in the starter segment. Potential direct entrants appear to express their desire to buy a house earlier and earlier. Families, on the other hand, appeared to express such a desire mainly later. Within the regular segment, the average age also seems to be moving upwards. This development is contradictory to the developments in realised demand; where the average age among all households is increasingly shifting upwards.

The former tenants

The restriction that obscures the picture of direct entrants does not occur in the case of former tenants. Thus, the four distinct groups of (already independently living) households that wish to move to an owner–occupied house appear to differ mainly on socioeconomic characteristics. Demographically, the strongest differences appear to be in the age distribution.

A majority of the group of potential single entrants from the rental sector are households in the 25–34 age group, while 35–44–year–olds and 45–54–year–olds also make up a significant proportion (table 7.15). These households remain in the singles group after moving. For the most part, they are already single households, and a smaller proportion is couples separating. What is striking is the absolute demand of these potential demanders which appears to be lower than the demand of potential single direct entrants.

By socioeconomic characteristics, this group of demanders appears to be mostly highly educated. Over 50 per cemt of potential single former tenants have at least a college bachelor's degree. This is in contrast to the same household group of direct entrants (30 per cent). Nevertheless, household income lags somewhat behind. In both housing segments, 40 to 45 per cent are found to have a household income below modal. The biggest difference between the household groups exercising demand in both housing segments appears to be the nature of the source of income. Within the starter segment, there is a 13.5 per cent share of demanders who do not receive income (from employment). The vast majority (90 per cent) of these are pensioners and households receiving some form of benefit.

The second group of households, potential cohabitants, appears to make up a significantly smaller share of total absolute demand than the group described above. However, the

Table 7.16 Demographic characteristics of moving inclined former tenants by type of move in 2021, as percent of column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
age head of household								
up to 25 years	7,3	10,4	1,1	7,8	11,1	4,2	1,9	11,1
25-34 years	52,7	74,5	40,3	44,3	49,7	80,2	45,2	44,8
35-44 years	20,4	8,0	44,6	30,3	28,1	12,9	40,5	30,1
45-54 years	19,6	7,1	14,0	17,6	11,1	2,7	12,4	14,0
Household composition after moving								
Single	100				100			
Couple		100		45,5		100		58,0
Couple with child			100	25,2			100	22,5
Single-parent family				29,7				19,5
Household size after moving								
One person	100				100			
Two persons		100	4,7	75,5		100	8,7	77,5
Three persons			47,2	17,2			39,2	15,7
Four persons			34,6	7,3			39,8	6,8
5 persons and more			13,5				12,2	
Total (absolute)	**147.292**	**47.467**	**32.149**	**67.171**	**33.849**	**49.968**	**24.809**	**27.446**

source: WOON 2021 (own edit)

proportion of households exercising demand in the regular segment (50 per cent) is significantly higher. This demand in the regular segment is mainly traceable to the strong socioeconomic position. For instance, nearly 80 per cent of potential cohabitants are found to have at least a college bachelor's degree and enjoy a household income of up to 3 times modal or higher (70 per cent).
The same group within the starter segment appears to be weaker on both counts. For instance, the majority of these demanders appear to receive an income of 2 to 3 times modal and a more substantial proportion have an MBO degree. Nevertheless, these households have a high socioeconomic position in both segments compared to the other distinguished household groups.

The potential family entrants from the rental sector appear to be larger in absolute size by a factor of eight than the comparable group of potential direct entrants. Earlier, the literature in chapter 4 showed that family formation mostly takes place in a more stable situation within the household and labour cycle. Independent living in an owner–occupied or rented house

Table 7.17 Socioeconomic characteristics of moving inclined former tenants by type of move in 2021, as percent of column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Education level head of household								
primary education	1,9	0,8	4,5	1,5				
Onderbouw & mbo	3,7	5,3	10,8	8,0	3,2	0,6	4,5	2,8
Bovenbouw & mbo	38,8	33,1	59,3	41,7	20,2	11,8	30,03	25,1
Hbo & wo-bachelor	32,5	33,7	16,2	32,6	34,2	31,8	27,1	31,8
Hbo & wo-master	19,6	20,6	8,3	13,8	37,6	47,1	32,8	34,7
Income form head of household								
Salaried	84,5	95,7	90,6	88,8	86,3	96,8	90,1	88,9
Self-employed	6,2	4,3	9,4	9,4	9,1	3,1	9,9	8,2
Benefit	6,5			1,9	4,6			2,0
Pension	1,4							0,8
studying	1,5							
Household incomeclasses								
Below modal	45,2	1,7	2,8	30,2	40,6	1,6	1,8	24,8
Up to 1.5x modal	39,3	17,1	28,8	47,7	25,5	8,2	10,0	33,6
Up to 2x modal	11,2	40,1	34,3	15,2	15,6	18,7	14,4	19,9
Up to 3x modal	3,7	36,5	24,8	4,7	13,1	48,3	44,0	15,4
> 3x modal	0,6	4,6	9,2	2,2	5,1	23,3	29,9	6,3
Nature of income source(s)								
Single-earner	86,5			100	100			100
Dual-eaner		100	100			100	100	
No (earned) income	13,5							
Total (absolute)	**147.292**	**47.467**	**32.149**	**67.171**	**33.849**	**49.968**	**24.809**	**27.446**

source: WOON 2021 (own edit)

appears to be an important factor in this when looking only at the size of the demand. By demographic characteristics, these households are also significantly older. Over 80 per cent of the demanders in both housing segments are found to be between 25 and 44 years of age. The proportion below 25 years of age is very small in this regard. By socioeconomic characteristics, this group of potential former tenants appears to have the starkest difference in education level and income class between the two distinct housing segments. Within the starter segment, the largest share of households (60 per cent) appears to have a mbo degree with a household income predominantly up to twice modal. Within the regular owner–occupied market, the average education level and income class is significantly higher.

The last group of demanders to be named, other households, appears to differentiate little between the two entry segments in demographic terms. In more interesting picture emanates from the socioeconomic characteristics. Although this group of potential entrants consists entirely of single-earners, household incomes turn out to be (significantly) higher than for singles. However, the average age differs little from this group. In both housing market segments, it appears to be mainly couples where one person in the household receives income. Accordingly, the portion of households exercising demand in the regular segment appears to receive a slightly higher income. By education level, these households also appear to occupy a 'stronger' position.
The longitudinal comparison to the preceding (WoON) periods shows that developments in demographic and socioeconomic characteristics have seen few changes. Broadly speaking, an ageing of the asking households as well as a general enrichment is again visible. Thereby, the developments of former tenants broadly correspond to the direct entrants.

In conclusion, the group of potential former tenants can be described in two lines. On the one hand, the differentiation of relative households exercising demand in the regular owner-occupied segment of the two distinct segments can be traced back to a higher average age, higher education level and significantly higher household income. On the other hand, this group is distinguishable from the direct entrants by the group of other households that make up a sizeable share of total demand and the general further phase within the household and labour market cycle in which all households find themselves. This further phase results in proportionally more households (being able to) exercise demand in the more expensive regular segment. This appears to be especially the case among cohabitants and families.

7.4.3 The realised housing characteristics

Besides the characteristics of households, to study the nature of demand for owner-occupied housing, one can also look at the characteristics of housing: what is in demand? This subsection, therefore, looks at the composition by housing characteristics of realised demand. The desires regarding the housing characteristics of potential movers are the focus of section 7.4.3.

Direct entrants
A large proportion of the households that moved to an owner-occupied house in the period 2018-2021 turn out to have moved into an apartment (multi-family house) or terraced house (see table 7.18). Thereby, the necessary differentiation can be noted between the different housing segments. However, this should consider the characteristics of the package of houses sold within the different segments. For instance, the choice of a detached house among households within the regular segment is greater than the comparable households within the starter segment. Thereby, a comparison with Table 5.2 can show the extent to which household demand matches the stock.

Table 7.18 Some characteristics of occupied owner-occupied houses in the Netherlands by housing market segment and by starter type, in 2021, as a percentage of the column total

characteristics	singles	cohabitants	families	singles	cohabitants	families
Type of dwelling						
Terraced house	23,7	38,5	42,2		27,3	6,6
Corner house	17,0	23,9	7,2		27,3	18,0
Semi-detached house	8,4	12,7	23,0	12,8	6,1	16,7
Detached house	1,6	6,6	9,4	8,5	18,2	28,8
Multi-family & other	49,2	18,3	18,2	78,8	21,2	29,9
Number of rooms						
Up to 3 rooms	53,0	18,1	12,9	83,4	21,3	2,5
Four rooms	29,5	44,3	37,5	3,8	24,2	11,4
Five rooms	26,6	21,6	35,8	12,8	27,3	14,0
Minimum 6 rooms	4,6	16,1	13,8		27,3	72,1
Purchase price						
up to €99.999	4.4	1,3				
€100.000-149.999	12,7	6,6	10,2			
€150.000-199.999	40,2	21,0	24,4			
€200.000-249.999	25,5	34,4	26,9			
€250.000-299.999	17,2	36,6	38,5			
€300.000-349.999				35,1	31,6	14,6
€350.000-399.999				8,2	36,4	13,3
400,000 or more				56,7	32,1	72,2
Total living area						
Up to 50 m²	16,1			14,6		
51-70 m²	22,4	7,8		14,1	8,1	
71-90 m²	22.1	16,3	25,1	41,7	17,3	
91-120 m²	25,6	45,1	23,3		27,7	6,2
121-150 m²	11,7	23,9	24,1	29,5	26,6	20,8
More than 150 m²	1,9	7,1	27,5		20,4	73,0
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WoON 2021 (own edit)

Table 7.18 shows that the differences between the three groups of recently moved households are more pronounced where the type and size of houses are concerned. Within the starter segment, single people appear to occupy mainly an apartment with up to 3 rooms and an average house price of up to €250,000. The average living area thereby varies between 51 and 120 m² with outliers up and down. Cohabitants mainly occupied terraced and corner houses

(62 per cent) and relatively more often semi-detached and detached houses. The total living area is thus also higher with an average of 91–150 m^2. The purchase value also falls towards the upper end of the distribution with 70 per cent of households buying a house between €200,00 and €300,000. Families thus seem to be one step further within the housing career and 42 per cent of the moves involved a terrace house. The proportion of semi-detached houses is also rising sharply. The living area and number of rooms do appear to be at the upper end of the distribution within this set of houses. In contrast, the average purchase value is not above the cohabitants. In part, it will turn out that these differences find an explanation in the geographical distribution.

Within the more expensive regular housing segment, a stronger contrast is once visible, both between different household groups and between purchase amounts. For instance, it appears that single people who manage to move into a house in the regular segment then also purchase a considerably expensive house (apartment). By contrast, the living area (and the number of rooms) is at the lower end of the distribution. However, the statistical relevance of this group can be questioned given its very small size. Incidentally, the same applies to families in the regular segment. Broadly speaking, it can be said for this group of households that they occupy the more expensive and larger (detached) owner-occupied houses. Cohabitants in the regular segment appear to differ less from those in the starter segment. Thereby, the average living space is higher as well as the purchase price.

This picture of the affected owner-occupied houses, in both housing segments, to which the distinguished groups move, is largely reflected in the previous WoON periods (see table B7.6 in Annex 3). There appear to have been few shifts over time in the characteristics of the dwellings concerned. This is also not entirely surprising since a similar conclusion was drawn earlier in chapter 5. It should be noted here that an absolute comparison cannot be made one-to-one due to the methodology used. However, the package of houses that can be considered part of the starter segment has changed little, with the exception of the WoON2012. Mainly, it appears that single people have started living smaller as the housing market strengthened.

Former tenants

The general pattern visible among the affected owner-occupied houses by direct entrants is likewise discernible from the affected houses by former tenants. The realised housing demand thus appears to be little influenced by the underlying housing situation. Table 7.19 shows that also by distribution, the differences between the different groups largely match the relative household group among direct entrants. Despite the stronger socioeconomic position as shown earlier in section 7.4.1, the housing package in both segments is similar in many respects. To this end, differences can of course be noted.

Among singles in the starter segment, a higher proportion (60 per cent) appear to be moving into a multi-family house as well as a terraced house (30 per cent). The average purchase price here is between €150,000 and €250,000. The average living area also appears to make up a

Table 7.19 Some characteristics of occupied owner-occupied houses in the Netherlands by housing market segment and by starter type, in 2021, as a percentage of the column total

characteristics	singles	cohab.	families	others	singles	cohab.	families	others
Type of dwelling								
Terraced house	29,9	39,1	66,2	44,8	20,1	40,8	49,7	50,6
Corner house	8,9	15,2	18,6	12,6	6,0	11,5	18,7	8,1
Semi-detached house	2,8	17,1	3,9	13,7		12,6	17,3	11,3
Detached house	1,1	3,5	0,7	12,3		9,6	11,1	11,2
Multi-family & other	57,4	25,1	10,7	16,6	73,8	25,5	3,2	18,7
Number of rooms								
Up to 3 rooms	58,1	23,4	9,0	18,0	57,3	14,0	1,3	22,8
Four rooms	22,7	20,9	36,2	43,9	11,6	24,1	24,4	22,2
Five rooms	15,0	41,9	45,1	26,6	19,1	35,1	37,8	19,3
Minimum 6 rooms	4,1	13,8	9,7	11,5	12,0	26,8	36,5	35,7
Purchase price								
up to €99.999		1,9	0,9	4,5				
€100.000-149.999	12,3	5,9	12,2	20,0				
€150.000-199.999	37,9	24,5	10,8	10,5				
€200.000-249.999	38,1	25,6	26,0	28,3				
€250.000-299.999	11,7	42,1	50,0	36,7				
€300.000-349.999					16,2	32,7	20,4	33,5
€350.000-399.999					27,3	28,4	18,4	26,0
400,000 or more					56,6	38,9	61,3	40,5
Total living area								
Up to 50 m²	10,5		3,1		11,4			
51-70 m²	21,2	6,9	6,4	3,6	25,0	5,1		1,7
71-90 m²	38,4	20,0	12,8	33,5	23,1	10,3	2,8	8,2
91-120 m²	23,8	35,9	44,5	43,6	9,3	26,8	22,9	23,5
121-150 m²	4,8	25,6	28,0	10,6	19,2	41,5	33,0	34,7
More than 150 m²	1,2	11,6	5,2	8,6		16,3	41,4	31,9
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WoON 2021 (own edit)

significant part of the bottom of the distribution. For over 70 per cent, this concerns houses up to 90 m². Within the regular segment, the distribution of living space appears to shift towards the top again, with a larger proportion of the affected houses having a surface area between 121m2 and 150m². With this, the average purchase amount is also above €400,000 in 56 per cent of all households. The homes involved in the purchase are mainly apartments.

The former tenants who can be counted as cohabitants differ little among themselves in the distinct segments. The biggest noticeable difference is the purchase amount and the somewhat larger homes involved. Thus, it appears that in the regular segment, homes between 91–150 m^2 are predominantly more frequently purchased.

Families appear to have a greater differentiation between the houses involved from both segments. Starter homes involved in 66 per cent of all removals are terraced houses. Detached houses are rarely involved in the move. The purchase price range shows that it is more often the more expensive owner–occupied houses within the segment that are involved by a family. Families in the regular segment appear more likely to buy semi–detached or detached houses, with the proportion of mid–terrace houses decreasing. Besides this contrast in housing type, the living area also appears to be characterised by a significant difference. This can largely be explained by the differences in the price range. For instance, 62 per cent of the cases concern a purchase price range of €400,000 or more in the regular segment. Within the starter market, it appears that in 50 per cent of all removals it concerns a house value of €250,000 to €300,000.

The remaining households in both distinct segments differ little by housing type. For the most part, the breakdown involves terraced houses and (semi–)detached houses. However, the package of houses by the other characteristics does differ. Within the starter segment, 65 of the houses involved in a purchase are found to have a value between €200,000 and €300,000. Within the regular buying market, the distribution is more proportional. From the number of rooms and living space, it can again be seen that the more expensive houses have a larger surface area.
The outlined picture of owner–occupied houses occupied by former tenants in both segments has also changed little over time. During the crisis, larger homes were occupied by the entire household group as a result of general price declines. From 2015, single people appear to have started living smaller.

7.4.4 The desired housing characteristics

The desires regarding the characteristics of the owner–occupied houses, as indicated in WoON2021 by the potential entrants from a non–self–occupied housing situation (direct entrants) and from the rental segment (former tenants), turn out to differ in a similar way for all household groups compared to the houses in question by the recently moved. Broadly speaking, the desired purchase amount of the inquiring households is higher than the purchase amount of the relative households that have recently moved. Correspondingly, the living area also appears to be more desired.

Direct entrants
Table 7.20 shows that in both housing segments, the greatest demand is for houses at the

Table 7.20 Some characteristics of desired owner-occupied houses in the Netherlands by housing market segment and by starter type, in 2021, as a percentage of the column total

characteristics	singles	cohabitants	families	singles	cohabitants	families
Type of dwelling						
Terraced house	27,3	32,7	63,3	30,2	30,7	31,3
Corner house	7,3	10,6	15,5	8,3	8,9	10,3
Semi-detached house	6,0	13,8	12,9	13,0	20,1	13,1
Detached house	9,2	12,0	4,8	13,3	18,5	23,5
multi-family & other	50,1	30,8	3,5	35,2	21,8	21,8
Number of rooms						
Up to 3 rooms	53,2	33,0	10,4	34,1	18,4	14,6
Four rooms	22,2	28,1	41,9	36,5	28,5	22,6
Five rooms	10,6	21,8	41,4	11,0	24,8	51,0
At least 6 rooms	5,7	9,1		10,5	25,5	11,8
No preference	8,2	8,0	6,3	8,0	2,8	
Purchase price						
up to €99.999	1,8	1,4	6,8			
€100.000-149.999	3,9	0,7	12,4			
€150.000-199.999	23,2	13,7	7,1			
€200.000-249.999	33,2	33,3	16,2			
€250.000-299.999	37,9	51,0	57,6			
€300.000-349.000				13,2	15,2	13,7
€350.000-399.000				35,3	41,4	20,0
€400.000 or more				51,5	43,4	66,4
Total (absolute)	**206.703**	**65.126**	**3.039**	**32.918**	**19.904**	**4.386**

source: WoON 2021 (own edit)

upper end of the purchase price ranges of the related housing segment. Households in the starter segment want a house with a desired purchase price of €250,000 to €300,000. Households in the regular segment exercise the highest demand for homes above €400,000.

Singles in the starter segment appear to want to occupy mostly multi–family houses (50 per cent) with up to three rooms compared to this group of households in the regular segment (35 per cent). In both segments, the share of households wishing to occupy such a house appears to be higher than the share of this house type in the total stock of starter and regular owner–occupied houses (see table 5.2). The preferences of cohabitants by housing type also appear to be largely similar in both segments. In the regular segment, however, the demand for multi–family houses seems to be giving way to (semi–) detached houses.

The exercised demand by households in both segments for the 'terraced' housing type appears to differ significantly from the realised housing types. For instance, 68 per cent of the demand for terraced housing ultimately turns out to be only 42 per cent of realised housing demand. In the regular segment, the contrast is even stronger: only a good 6 per cent remains of the 40 per cent within the unrealised housing demand. Within families, incidentally, shifting housing segments seems to play a strong role. Families expressing a desire for the regular segment seem more likely to move into a house within the starter segment. The limited size of the household group in the analysis also contributes to the increasing degree of uncertainty.

A comparison over time of housing preferences shows that the preferences of households wanting to move to an owner-occupied house are somewhat influenced by housing market conditions. The preferences of these households in 2015, at the time of the trough in the owner-occupied housing market, clearly differ from those in the current period. In particular, the purchase price range seems to differ significantly. Whereas in the 2015-2018 period, demand was still mainly for houses in the €150,000 euro price range (among singles) to predominantly €250,000 euro among cohabitants and families, a few years later this demand seems to have increased to at least €250,000-300,000 euro. Adjusted for average house price developments (see figure 4.4), the desired purchase amounts still appear to be well above the 2015 price level. The house price increases discussed in chapter 4 are thus also strongly reflected in the studied first-time buyers. Finally, by characteristics, mid-terrace houses in particular seem to have become more popular.

Former tenants

From Table 7.21, it can be seen that once again the vast majority of demand for owner-occupied houses by purchase price range is exercised at the upper end of the distribution. In the starter segment, 44 per cent of demand from singles consists of houses between €250,000 and €300,000. Cohabitants (68 per cent) and families/others (53 per cent) carry even higher demand in this price range. The same pattern can be seen in the regular segment. The vast majority of households aspire to an owner-occupied house of €400,000 or more. Compared to the direct entrants, the desired purchase amount appears to be closer to the realised purchase value among the relative group of recently moved households.

Singles in both housing segments seem to differ little from each other on desired housing type. Four in 10 singles appear to want a multi-family house, followed by the terraced house. This demand for multi-family houses appears to be more than twice as high as the share of multi-family houses in the total starters housing stock (table 5.2). The characteristics of the houses do differ slightly in this regard. Single people with a demand in the regular segment wish to move into a slightly larger house in terms of the number of rooms.
Cohabitants in both segments seem to be able to fulfil their specific housing demand when the desired housing type is compared with the owner-occupied houses available. Therefore, the demand exercised, especially in the starter segment, corresponds almost entirely to the distribution in the housing stock as shown in Table 5.2.

Table 7.21 Some characteristics of desired owner-occupied houses in the Netherlands by housing market segment and by starter type, in 2021, as a percentage of the column total

characteristics	singles	couples	families	others	singles	coules	families	others
Type of dwelling								
Terraced house	28,6	36,7	40,1	39,3	23,7	39,1	34,0	32,5
Corner house	9,4	15,9	16,1	13,3	13,0	10,8	13,1	12,7
Semi-detached house	5,7	14,5	14,6	13,7	13,8	13,2	19,9	12,3
Detached house	12,0	9,9	13,9	14,5	8,3	17,6	20,4	19,1
apartments & other	44,2	22,9	15,3	19,2	41,2	19,2	12,6	23,4
Number of rooms								
Up to 3 rooms	53,7	21,8	4,9	11,1	45,2	9,1	4,8	11,9
Four rooms	29,2	41,5	34,7	30,1	33,6	44,8	28,4	27,5
Five rooms	8,9	30,9	42,4	20,9	16,7	31,1	37,3	26,3
At least 6 rooms	3,2	1,7	18,0	8,2		11,2	28,3	17,0
No preference	5,0	4,1	0,0	29,7	4,5	3,8	1,2	17,3
Purchase price								
up to €99.999	2,7	2,3	3,5	2,2				
€100.000-149.999	4,7	1,1	1,3	3,3				
€150.000-199.999	18,4	12,0	19,2	15,1				
€200.000-249.999	30,1	16,5	22,0	26,3				
€250.000-299.999	44,0	68,0	54,0	53,0				
€300.000-349.000					10,3	12,7	19,8	8,0
€350.000-399.000					42,5	24,4	19,7	39,1
€400.000 or more					47,2	63,0	60,5	52,9
Total (absolute)	**147.292**	**47.467**	**32.149**	**67.171**	**33.849**	**49.968**	**24.809**	**27.446**

source: WoON 2021 (own edit)

Within the regular segment, again, the demand for intermediate houses seems to be slightly higher. In addition, the vast majority in the starter segment appears to want an owner–occupied house up to €300,000. However, this demand appears to be adjusted downwards for some households. Not entirely to be ruled out here is a part of households that manages to buy a house in the regular segment; a so–called upward step. That this is indeed the case could be substantiated by the large proportion of households in the €300,000 to €350,000 category. Families appear to express the strongest preference in housing type. In both segments, the terraced house again appears to be the most desired. Thereby, the majority of households aspire to at least 5 rooms or more. Families within the regular segment also appear to exercise the greatest demand for detached houses. Nevertheless, this demand is lower than the share of detached houses in the total stock (see table 5.2). This type of dwelling appears to be more

desirable, especially in the starter segment. When taking a closer look at the purchase price range, it also appears that the same possible segment shift may apply to the cohabitants. Some of the households at the upper end of the price range distribution in the starter segment will buy a house in the regular segment.

The exercised demand of the other households largely matches the demand of families. By both housing characteristics and desired housing value, it appears to match in many areas. Within the regular segment, the magnitude of demand for houses of €400,000 or more is greater among the other households.

A comparison over time of housing preferences shows little change in the preferences of households wanting to move to an owner-occupied house with respect to housing characteristics. The biggest differences are noticeable in the purchase price range. Whereas in 2015 houses in the price category of 150,000 to 200,000 euros were still mostly desired, this appears to have increased to 250,000 to 300,000 euros in recent years. Corrected for the price development in the relevant period, there still appears to have been a considerable increase in the desired purchase price.

7.5 The moving motives

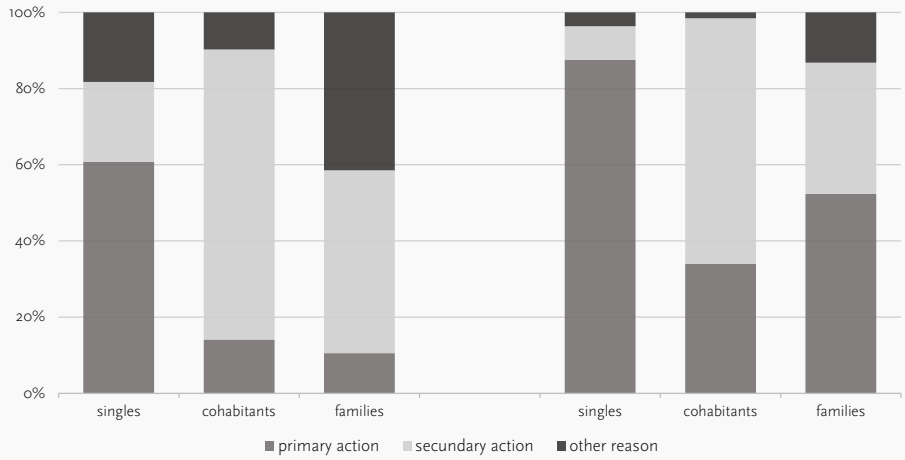
Chapter 2 indicated that households moving for housing-related reasons, from the need to adjust the housing situation, will usually take a forward step in their housing career. When the housing situation cannot be improved, they will postpone the non-forced move. The situation is often different for secondary movers, households that want or need to move due to changes in work or personal life. They are more likely to make concessions in their desired position within the housing hierarchy due to those changes. Moreover, their move tends to be more urgent, which means that they do not always have enough time to search for the most suitable housing situation. Goetgeluk (1992 & 1997) earlier showed the importance of urgency in households' final housing choices. Indeed, urgent movers are more likely to accept a house when it becomes available.

Chapter 2 expressed the expectation that moving into a (starter) owner-occupied house by first-time buyers could be counted among secondary moves in most cases. An exception to this could be singles and older households. The (desired) move by these households is more likely to be the result of primary action reasons (house dissatisfaction in family formation).

Direct entrants

The picture in Figure 7.1 confirms the correlation between moving (wanting to move) to an owner-occupied dwelling and moving motives for both recently moved and inclined to move households in the 2018-2021 period. Around 90 per cent of singles who want to move to an owner-occupied dwelling in the period 2018-2021 indicated that it was a primary move.

Figure 7.1 Moving motives of recently moved (left) and inclined to move (right) direct entrants in the Netherlands by starter type, in 2021, as percent of total



source: WoON 2021 (own edit)

Independent living was the immediate reason for these households to move. In comparison, among future cohabitants and families, this percentage is 30 per cent and 20 per cent respectively. Prospective cohabitants by the ratio of 64 per cent of all households indicate that wanting to buy a house is a secondary action; namely, living together. The proportion of households exercising demand from a primary moving action indicates wanting to live independently as the main reason.
Among family households with a desire to move, the proportion of secondary action movers is smaller (50 per cent). Again, cohabitation is seen as the main reason for this. The primary move desires appear to be larger in this respect. Half of these households (55 per cent) say they want to move because of dissatisfaction with their current home. The remaining households appear to see wanting to live independently as the main reason.

The distribution by moving motives of the recently moved direct entrants within the owner–occupied housing market is also in line with prior expectations. Namely a higher proportion of secondary moves where primary moves are postponed. Again, a majority of single households report having moved for residential (primary) reasons and the majority of cohabitants and families for reasons from secondary action motives.

Among the recently moved cohabitants, cohabitation appears to be the largest underlying moving reason. Only a marginal part of the removals is due to the desire to live independently. The same picture can be seen among recently moved families. The share of removals for other reasons also increases sharply, while cohabitation substitutes for the desire for independent living.

In the previous WOON periods, the same distribution in terms of moving motives for the different groups of recent movers and movers with a desire to move can largely be recognised. A considerable number of people living alone always indicate that reasons in the living environment are the most important moving motive. Among cohabitants and families, 70 per cent and 45 per cent, respectively, indicate a private reason. A notable shift over time concerns the ratio between cohabitation and moving independently among family movers. During the recession, a higher proportion of recently moved family households appear to be entering from a desire to live independently. This is consistent with the picture obtained earlier that families entered the owner-occupied market relatively more often.

Former tenants

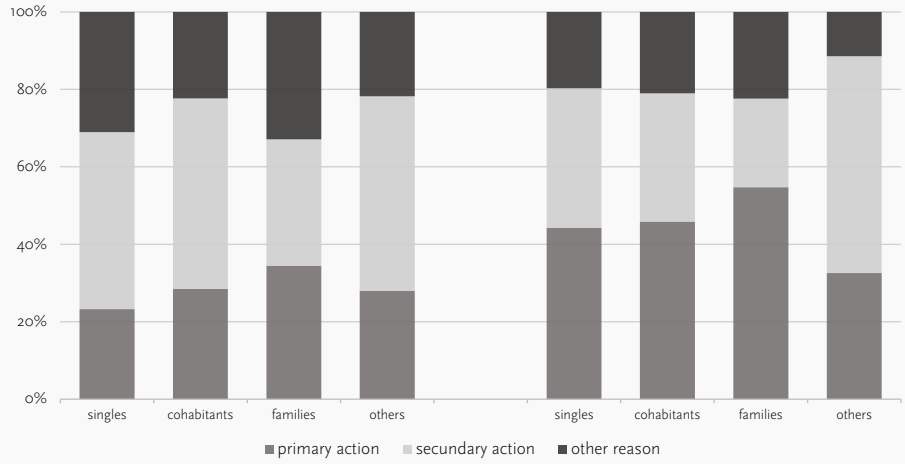
The picture in Figure 7.2 draws a different picture for recently moved former tenants than what emerged among direct entrants. For instance, an average of 23 per cent of all households appear to have (wanted to) move for a reason other than a primary or secondary action. The proportion of households that moved for another reason is slightly higher on average. In addition, it appears that the ratio of primary and secondary action moves among both recently moved and those with a desire to move is more evenly distributed. This picture is not entirely unexpected since, among direct entrants, 'independent living' in particular explained a significant proportion of primary actions.

Among singles who are willing to move, 42 per cent says they want to move into a house from a primary action. This proportion of households reveals 71 per cent want to move from a housing dissatisfaction motive. The remaining 29 per cent indicate that they see the living environment as the main motive for moving. The share of households wishing to move from a secondary action appears to have mainly a financial motive (housing expenditure or work).
The picture among singles described above also appears to be true for cohabitants and families. The remaining move-in households differ from the emerging picture among these groups of households. Among this group of households, besides financial reasons, cohabitation appears to have a significant share (60per cent) in the total secondary-action demand. The part that wishes to move from a primary motive does appear to occur from dissatisfaction with the current house or living environment. Finally, among all relocating households, there appears to be a significant proportion who have another moving reason.

The distribution by moving motives of the recent movers is also in line with the pre-stated expectation, as also described in Chapter 2 on the basis of theory. Broadly speaking, the relative share of households that moved from a primary-action is decreasing among all distinguished household groups. This decline is offset by a growing share of secondary-action movers and those moving for another reason.

The previous WoON periods show that among former tenants there have been few changes in moving motives. At the time of the crisis, it appears that the motive financial reasons' is relatively less frequent among secondary-action moves. The share of primary-action moves

Figure 7.2 Moving motives of recently moved (left) and inclined to move (right) former tenants in the Netherlands by starter type, in 2021, as percent of total



source: WoON 2021 (own edit)

is also higher in the 2009–2015 period. Former tenants were thus more likely to flow into the owner-occupied market out of the desire to own an owner-occupied home whereby a better position within the housing hierarchy is achieved. The perceived barriers in the searches are listed in Annex 3

7.6 Geographical differences

Geographical differences in the development of demand for owner-occupied housing is the last aspect studied in this chapter. Indeed, it was argued in Chapter 4 that the demand for these houses depends partly on their availability. In addition, Chapter 5 shows that the existing stock of (starter) owner-occupied houses varies widely geographically, both in absolute and relative terms. It is therefore expected that realised and potential demand for these owner-occupied houses will also show regional differences. These differences in realised demand are first discussed in more detail (section 7.6.1), followed by geographical differences in potential demand in section 7.6.2.

7.6.1 The realised demand

Direct entrants

Table 7.22 shows that the distribution of total realised demand for owner-occupied housing in 2021 is broadly in line with the distribution of the total stock of owner-occupied housing

Table 7.22 Regional characteristics of realised demand for owner-occupied housing by direct entrants by housing market segment and by starter type, in 2021, as a percentage of the column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
Municicapal size						
< 20.000 inhab.	7,4	7,4	5,3		5,8	3,3
20.000 tot 50.000	36,0	39,7	47,2	15,4	29,1	55,5
50.000 tot 100.000	25,5	27,5	18,6	19,7	18,9	33,2
100.000 tot 150.000	5,2	9,4	18,4	21,0	10,1	
150.000 tot 250.000	16,1	14,3	8,2	7,8	19,7	
> 250.000 inhab.	9,7	1,7	2,2	36,1	16,3	8,1
region (G-class)						
G4	9,7	1,7	2,2	36,1	16,3	8,1
G40	23,0	28,2	34,0	40,4	25,0	
rest of Netherlands	67,3	70,1	63,8	23,5	58,7	91,9
Country region						
North Netherlands	14,0	12,5	12,0	10,9		8,7
Eastern Netherlands	15,3	29,2	26,9	16,8	17,2	30,9
West Netherlands	50,3	28,9	41,1	60,8	56,4	25,3
South Netherlands	20,4	29,4	20,1	11,5	26,4	35,1
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WOON 2021 (own edit)

occupied by first-time buyers (table 5.8). This is true both when distinguishing by municipal size and region. Five to six in 10 households who moved into owner-occupied housing live in an average municipality with 20,000 to 100,000 inhabitants. The West Region accounts for over 50 per cent of the total realised demand.

When looking at the distribution within the individual groups of moving households, it appears that inflow from cohabitants occurs mostly in the smaller (20,000 to 50,000 inhabitants) cities. This is largely related to the composition and size of the housing stock in the municipalities. Moving motives earlier showed that first-time buyers mostly limit the potential search area to the current municipality. Regional differences thus tend to find their cause in local supply and exercised demand. For instance, it appears that direct entrants in the Northern Netherlands mainly move into the starter segment. After all, house prices here are lower than in the Randstad. It also turns out that the G4 region is mainly overrepresented by single people, both in the starter and regular segments. Again, regional differences play a role here.
An analysis of the previous WOON periods shows, that the ratios found are generally also found in the 2009-2018 period. However, a few developments can be added. For instance,

Table 7.23 Regional characteristics of realised demand for owner-occupied housing by former tenants by housing market segment and by starter type, in 2021, as a percentage of the column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Municicapal size								
< 20.000 inhab.	2,9	8,5	2,7	4,5		2,0	7,4	
20.000 tot 50.000	28,3	31,9	33,4	32,4	9,3	22,8	27,6	5,6
50.000 tot 100.000	10,7	13,1	21,5	14,1	12,0	17,2	13,1	11,0
100.000 tot 150.000	11,6	10,9	15,6	21,4	9,2	5,8	8,8	13,2
150.000 tot 250.000	30,1	25,8	14,7	16,3	8,1	19,2	24,1	49,1
> 250.000 inhab.	16,5	9,8	12,2	11,3	61,4	33,0	18,9	21,2
region (G-class)								
G4	16,5	9,8	12,2	11,3	61,4	33,0	18,9	21,2
G40	46,9	40,3	41,1	33,4	17,3	29,8	32,6	64,6
rest of Netherlands	36,6	49,8	46,7	55,3	21,2	37,2	48,5	14,2
Country region								
North Netherlands	19,5	13,3	3,2	30,5	8,1		4,7	10,4
Eastern Netherlands	17,9	17,2	22,2	22,7	9,3	14,2	11,0	17,6
West Netherlands	43,6	34,5	58,5	34,8	82,7	58,4	61,9	59,8
South Netherlands	19,0	35,1	16,0	12,0		27,4	22,3	12,3
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WOON 2021 (own edit)

it appears that the inflow of first-time buyers in the starter segment takes place considerably less often within a G4 region. Whereas 9 per cent of cohabitants (in the starter segment) bought a house in a G4 municipality in the 2015–2018 period, this will be just under 2 per cent in 2021. Among families, the difference is greater; from 14 in the 2015–2018 period to 2 per cent in 2021. The housing stock within these municipalities seems to have shifted towards the regular segment. Indeed, within this segment, the relative inflow appears to have increased significantly.

Former tenants

The distribution in the regional spread of former tenants as visible in table 7.23 again appears to be broadly in line with the distribution of housing stock by segment as shown in table 5.16. Thus, 50 per cent to 70 per cent of the households that moved to an owner-occupied house turn out to live in a municipality with 20,000 to 100,000 inhabitants. The West Region again accounted for well over the majority of the realised demand.

The distribution within the individual groups of moving households shows that within the

Table 7.24 Regional characteristics of potential demand for owner-occupied housing by direct entrants by housing market segment and by starter type, in 2021, as a percentage of the column total

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
Municicapal size						
< 20.000 inhab.	6,3	8,4	0,0	9,5	8,9	4,5
20.000 tot 50.000	38,7	42,1	68,0	32,6	32,6	16,8
50.000 tot 100.000	23,1	23,1	8,3	19,7	21,4	23,6
100.000 tot 150.000	7,7	5,9	0,3	9,4	9,6	8,4
150.000 tot 250.000	13,7	9,4	3,6	14,0	15,3	0,0
> 250.000 inhab.	10,5	11,1	19,7	14,8	12,3	46,6
region (G-class)						
G4	10,5	11,1	19,7	14,8	12,3	46,6
G40	26,6	21,2	3,9	27,8	30,2	19,9
rest of Netherlands	62,9	67,7	76,4	57,4	57,5	33,5
Country region						
North Netherlands	9,2	9,0	9,9	2,4	4,0	0,0
Eastern Netherlands	20,3	20,9	41,3	18,4	24,9	7,7
West Netherlands	48,2	46,3	48,8	52,6	46,8	80,5
South Netherlands	22,3	23,8	0,0	26,5	24,4	11,9
Total (absolute)	**206.703**	**65.126**	**3.039**	**32.918**	**19.904**	**4.386**

source: WoON 2021 (own edit)

starter segment, cohabitants and other householders move relatively more often to a region outside the G40. Singles, on the other hand, buy mainly in the large G4 cities. Within the regular segment, the relative inflow to housing in the G4 cities is significantly larger. The regions outside the G40 seem to have fewer relative moves in this respect. The composition and size of the total housing stock in the different municipalities, combined with the demand exercised by these households, is an important factor in this dispersion. The moving motives showed earlier that the potential search area is limited by location and that concessions in it are almost non-existent. Regional differences thus appear to be mainly the result of actual supply and demand.

7.6.2 The potential demand

Direct entrants

The correlation between the supply of and potential demand for owner-occupied houses at regional level is stronger than for realised demand, as shown in Table 7.22 and Table 5.6. The

Table 7.25 Regional characteristics of potential demand for owner-occupied housing by former tenants by housing market segment and by starter type, in 2021, as a percentage of the column total

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Municicapal size								
< 20.000 inhab.	2,9	1,2	3,6	6,5	5,0	0,8	4,8	5,3
20.000 tot 50.000	22,1	18,6	37,3	25,0	14,2	9,6	22,2	14,5
50.000 tot 100.000	18,6	19,2	24,9	19,6	10,5	11,8	17,8	11,4
100.000 tot 150.000	12,3	11,9	12,0	8,7	8,4	8,5	8,1	9,6
150.000 tot 250.000	21,5	22,5	8,0	20,3	9,3	23,2	12,4	24,3
> 250.000 inhab.	22,6	26,6	14,4	19,9	52,6	46,1	34,6	35,0
region (G-class)								
G4	22,6	26,6	14,4	19,9	52,6	46,1	34,6	35,0
G40	38,5	42,9	23,7	33,4	18,6	35,3	23,4	37,2
rest of Netherlands	39,0	30,4	61,9	46,8	28,8	18,6	42,0	27,7
Country region								
North Netherlands	9,7	11,1	14,7	9,5	4,1	5,4	1,8	4,9
Eastern Netherlands	17,2	19,7	21,0	23,2	9,1	12,3	15,6	14,6
West Netherlands	53,1	50,8	43,1	49,6	73,3	69,2	67,9	60,2
South Netherlands	20,0	18,5	21,3	17,8	13,5	13,1	14,6	20,3
Total (absolute)	**147.292**	**47.467**	**32.149**	**67.171**	**33.849**	**49.968**	**24.809**	**27.446**

source: WoON 2021 (own edit)

preferences of those willing to move are still mainly based on their own preferences and even less adjusted based on the opportunities on the (regional) housing market.

Thus, the share of moving inclined direct entrants in the starter segment who wish to move into a house in the G4 is clearly larger than the share of these cities in the total stock of these houses. In the regular segment, this difference is less pronounced. The opposite is true for cities in the G40. This trend is strongest for singles and cohabitants. The potential demand by families for owner–occupied housing in the G4 is substantially higher in both segments than the share of these houses in the total stock. Interestingly, demand for housing in the G40 is almost negligible.

A comparison between the two demand types provides insight into the discrepancy between realised and potential demand. Single people in the starter segment know best how to fulfil their wishes in terms of living environment. Cohabitants and families have a significantly larger difference. Families differ the most, both in supply and in both demand sides.

The distribution of relocating households by desired region shows that on average 50 per cent of these households are looking for a home in the West Region. It is particularly the potential mand for housing in the four major cities that contributes to this.

The former tenants

Broadly speaking, former tenants have a more divided picture as direct entrants. For instance, the share of moving inclined former tenants in both segments who wish to move into owner-occupied housing in the G4 is more than three to four times larger than the share of these cities in the total stock of such housing. This high demand for housing in the G4 is also reflected in the distribution of demand by population size. Especially in the regular segment, over 60-70 percent of the total demand for owner-occupied houses appears to be exercised in the (larger) cities with more than 100,000 inhabitants.

The fact that households need to adjust their housing requirements with regard to the living environment is evident from a comparison of potential demand with realised demand (table 7.23). Especially in the starter segment, the share of moves to an owner-occupied house in the G4 decreases sharply compared to the share of desired moves to such a house. Singles and cohabitants in particular differ in this respect. In the regular segment, a similar pattern, although less strong, seems to occur; the share in potential demand is higher than in realised demand for most households. Households in this segment generally know better how to realise their housing wishes with regard to the desired residential location. This is also reflected in the absolute ratio of realised demand to potential demand.

In general, moving into the big cities is less frequent than desired, with substitution taking place towards the G40 and suburban settlements.

7.7 Conclusions

How did the size of realised and potential demand from first-time buyers for owner-occupied houses in the Netherlands develop in the period 2009-2021?

The impact of the conditions in the (owner-occupied) housing market can be clearly seen in the trend in the size of realised demand for owner-occupied houses between 2006 and 2021. After a decline in the period 2009-2014, realised demand grew vigorously from 2015 to over 236,000 households moving into owner-occupied housing by the end of 2017. The total inflow of first-time buyers is thus back to pre-crisis levels. From 2018 onwards, total realised demand appears to decline again to 202,000 households. In this, the share of direct entrants and former tenants is 40 per cent and 60 per cent respectively. Former tenants are thus decreasing in relative share. In previous years, this ratio appeared to be 67 per cent. Within total residential mobility, the share related to first-time buyer moves has also decreased sharply.

Developments in the absolute and relative size of potential demand for owner-occupied housing are steadily increasing in the post-2009 period, especially from 2015 onwards. The number of households wishing to move into an owner-occupied house is more than twice as high in 2021 as in 2006-2015. The share of households not wishing to move therefore consistently decreases over the period. In addition, the ratio of direct entrants to former tenants appears to differ little from the ratios among realised removals.

Based on these figures, it can be concluded that potential demand has always exceeded realised demand. Thereby, the ratio between realised demand and potential demand did change significantly over time. The ratio between the share of starter homes involved and regular homes has also changed. Partly due to the handling of the NHG limit, the share of households moving into a regular owner-occupied house appears to fluctuate. Particularly in the most recent period, this share increased significantly.
From 2009, a decline in relative moves to the rental sector was also visible among both distinct household groups. In other words, more first-time buyers chose owner-occupied housing. As of 2018, however, this share is increasing again. This turns out to be an interesting development when measured against the percentage in potential demand. It shows that the relative share of households wishing to move into a rented house (either directly or from the rental market) actually decreased sharply from 2018 onwards. Substitution, therefore, seems to play a strong role here. In conclusion, based on the WoON data, first-time buyers have increasingly deviated from their original desire to buy in recent years and substitute this desire with a rental property or postpone the purchase.

How did the nature of (realised and potential) demand from first-time buyers for owner-occupied houses in the Netherlands develop in the period 2009-2021?

The nature of demand for owner-occupied housing has been worked out in two ways: 'who' is moving or wishing to move to a dwelling and 'what' type of owner-occupied housing is in demand?

Herein, the distinction of the household groups found on the basis of clustering has been maintained. The households that entered the owner-occupied market as direct entrants are often at the beginning of the household and labour market cycle. A clear majority are in the 25-34 age group. This shows, compared to 2018, a shift towards the upper end of the age distribution. Direct entrants buy homes later on average. However, they have usually already managed to acquire an average socioeconomic position. For instance, the majority appear to have completed at least a secondary vocational education (MBO) and on average 40 per cent appear to have obtained at least a bachelor's degree. Within the regular segment, this proportion is increasing. By income, most households appear to earn up to 2-3 times modal. Singles in the starter segment are an exception. They mostly earn up to 1.5x modal. This is mainly due to the nature of the source of income. Among all households, almost everyone appears to be active in the labour market, with 80-85 per cent of households active as dual earners.

As such, realised demand differs from potential direct entrants in a number of areas. For instance, the age of this group of demanders appears to fall mainly in the 'up to 25 years' category. Thus, the requesting households are considerably younger than those that manage to succeed. In socioeconomic terms, no comparison can be drawn based on the available data.

Those entering from the rental sector tend to be at a slightly later stage of the household cycle. Thus, households up to 25 years of age appear to be almost non-existent. The proportion of families is also significantly higher. Indeed, household formation goes hand in hand with a more stable phase in life. Having an independent (rental) home therefore contributes to this. In socioeconomic terms (within the labour cycle), former tenants also do better. For instance, the vast majority have at least a hbo/wo bachelor's and, especially in the regular segment, the share with a master's degree is over 35–50 per cent. That their position in the labour market is already more advanced is evident from household income. Households appear to earn mainly up to 3 times modal. Again, singles are an exception.
The picture among those moving house shows the average age is again lower. From a socioeconomic point of view, the asking households appear to have lower household incomes. The share of households with an income between 1 to 2 times modal is therefore significantly higher. It thus appears that mainly the higher-income households manage to buy a house. Incidentally, these also appear to be more often the highly educated households.

Direct entrants are found to occupy terraced and corner houses in the starter segment in an average of 50 per cent of moves. However, singles mostly start in apartments. Therein, the average purchase amount varies widely. However, most removals take place to houses between 250,000–300,000 euros. In the regular segment, the share of apartments appears to be increasing. This was also to be expected on the basis of building production in the high-end segment in recent years. The desired housing demand, therefore, deviates mainly in purchase price, which is often higher.
The affected owner-occupied houses of former tenants also show an overrepresentation of mid-terrace houses. The share of this housing type in potential demand also appears to be the highest. Apartments appear to be particularly popular among singles. Generally, the more expensive homes in the starter segment have a purchase price between €250,000–300,000. In the regular segment, houses above 400,000 euros are especially frequently bought. The desired houses thus largely correspond to the ultimately occupied owner-occupied houses. In this, mainly the demand for detached houses is substituted for another house type and the purchase price seems to be adjusted downwards.

What barriers exist in the search action from the potential demand of first-time buyers for owner-occupied houses in the Netherlands?

Consistent with the expressed expectation in chapter 2, singles (direct entrants) appear to want to move mostly from a primary action. Cohabitants and families more often wish to enter the owner-occupied market from a secondary action move. The proportion of desired primary action movers who actually move is lower. This is in line with prior expectations where households moving for housing-related reasons tend to postpone this move when no suitable offer becomes available. Secondary action moves (motives in the private sphere) tend to be more urgent. An identical picture can be recognised among former tenants.

In particular, property quality, followed by location, is high on the priority list for direct entrants. In this, price often seems to be placed second. Willingness to make concessions in price range are therefore most common. Housing substitution appears to be in the option package only among a portion of households. Despite the willingness to make concessions on purchase amount, with it mainly needing to be adjusted downwards, an increasing proportion (as time provides) of 50 per cent of households say they cannot find a house because of price. Compared to previous periods, this share has therefore grown significantly.
Both living environment and housing quality are prioritised by former tenants. Price is again subordinated. Concessions therefore mainly take place in the price range. In addition, a large proportion of households appear willing to accommodate specific requirements. Therefore, the differences between the affected and desired owner-occupied houses appear to be explained by this. The moving-inclined households in both segments again seem to see house price as the biggest impeding factor. As time passes, this proportion, therefore, increases to 60 per cent of all households.

What regional differences exist in the development of the size and nature of the (realised) demand of first-time buyers for owner-occupied houses in the period 2009-2021?

For both direct entrants and former tenants, the distribution of total realised demand by municipality class and municipality size largely corresponds to the distribution of the existing stock of starter and regular owner-occupied houses by municipality class and municipality size. This did reveal some deviations for the different households in both entry segments. For instance, direct entrants were found to be mostly below average while former tenants were above. This applies, for instance, to the average inflow in the G4(0). But also for the relative removals to the larger municipalities. Direct entrants thus seem to move more often than average in the Rest of the Netherlands (but within the West Region). Former tenants, on the other hand, manage to purchase a house more often in the larger municipalities.

Based on the examination of the bivariate relationships, it can be concluded, that there is an association between the various demographic and socioeconomic characteristics on the one hand and moving to an owner-occupied house on the other. Households are generally found to be in a first stage of the household cycle and/or in a predominantly favourable socioeconomic position.

Chapter 8
The expenditure for (starter)houses

8.1 Introduction

The size of the realised demand for (starter) owner–occupied houses (value of up to the applicable NHG limit) has consistently increased in both absolute and relative terms from 2015 to date; this has been established on the basis of the successive WOON surveys (chapter 7). In addition, it was found that the potential demand for such homes has always been more substantial than the realised demand in the period studied. The nature of potential and realised demand does appear to show shifts in this regard; this applies both to what is in demand and to who is asking for a type of (starter) owner–occupied house. Nevertheless, after studying the bivariate relationships, the conclusion is drawn that (wanting to) move to an owner–occupied house often seems to go together with an earlier stage in the household cycle and/or a middle socioeconomic position. Moreover, the starting position on the housing market (direct entrant, former tenant) and the desired region play a certain role in whether or not households move to a dwelling in the owner–occupied segment.

This chapter attempts to answer the fifth research question of this study, as formulated in Chapter one: *In what way have the owner–occupied housing–related housing expenditures of first–time buyers in the Netherlands developed in the period 2009–2021 and how is home ownership financed?*

Chapter 7 limited itself to a description of the relationships between the demand for owner–occupied housing on the one hand and the various characteristics of households and their housing situation on the other. In doing so, no statements were made about the financial situation of households and the cost of (future) home ownership. However, the career/life cycle theory assumes that the outcome of the moving decision process (the choice to rent or buy) is influenced by the set of demographic and socioeconomic characteristics of the household and characteristics of the current housing situation. It was argued in Chapter 1 that such a correlation is certainly also to be expected when (wanting to) move to an owner–occupied house. First–time buyers are more likely to want to move to an owner–occupied house if it is more financially conducive than a similar house in the rental segment. In addition, the financial resources of the households in question and the different options for financing owner–occupied housing play a role in the opportunities for home ownership.

The remainder of this chapter provides an interpretation of the concept of housing expenditure. Here, the housing cost model is used. Sections 8.2.1 and 8.2.2 then detail the (desired) housing costs in realised demand and potential demand, respectively. Section 8.3

links the housing expenditure as constructed in section 8.2 to the disposable income of the various distinct households within realised and potential demand. Section 8.4 then highlights the financing of owner–occupied housing in realised demand (recent movers) whereby a picture of housing expenditure development in the renting and owner–occupied sector is drawn using the various WoON periods. The remaining sections discuss successively the relationship between home value and mortgage debt and the mortgage and guarantee form applied, before drawing some conclusions in section 8.5.

8.2 Operationalisation of the term 'housing expenditure'

This section sets out the principles used in the delineation of housing expenditure. With the final delineation, a definition as clear and complete as possible was drawn up, which can also be operationalised within WOON. As a starting point, the 2009 housing expenditure model was used (BZK, 2012), the year covered by the first WOON study included in this study.

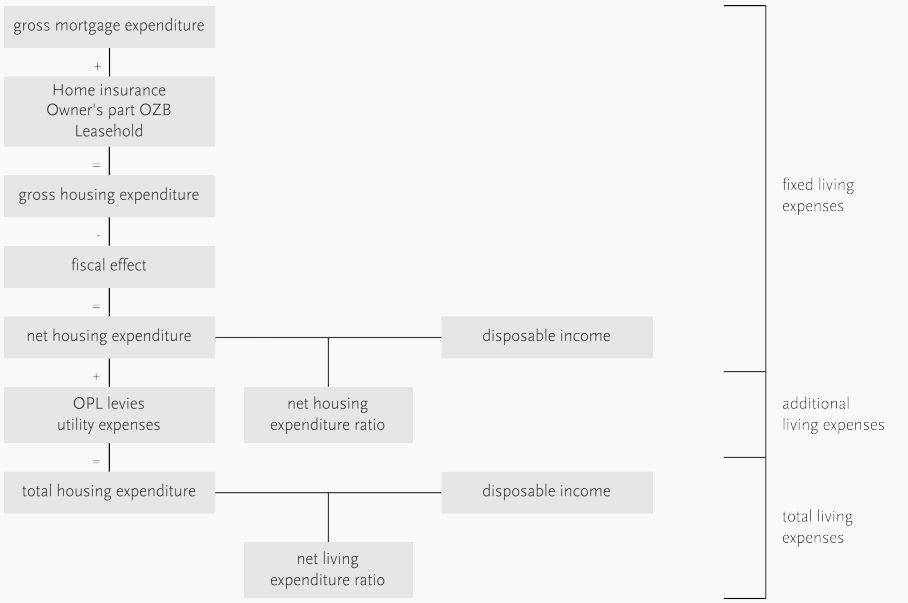
8.2.1 The realised housing expenditure

For realised demand in the owner–occupied sector, the net fixed housing expenditure consists of gross housing expenditure on the mortgage minus the tax effect. The link to the disposable household income yields the net housing expenditure ratio [koopquote]. The net living expenditure ratio [woonquote] is arrived at by adding to net housing expenditure the expenditure on utilities and OPL charges (i.e. property tax and sewerage charges) and expressing it as a share of disposable household income (Figure 8.1).
Such a way of expressing housing expenditure for households has the advantage that payment obligations are actually experienced. Indeed, housing expenditure is calculated per household and expressed as a percentage of income. The quote (regardless of whether it is the housing or living expenditure quote) reflects the financial affordability of a dwelling for a household at the time the expenditure is measured. In other words, a household's quote reflects what proportion of disposable household income is spent on an owner–occupied house under household and location–specific conditions. However, this does not consider the share of equity that may have been contributed to the overall financing of the house. Thus, the net housing and living expenditure ratio of households where the purchase financing structure was built up with a large share of equity will be lower than if the same house was purchased with loan capital (mortgage debt).

8.2.2 The potential housing expenditure

Besides realised housing expenditure in the owner–occupied sector among successful market entrants (direct entrants and former tenants), WoON also asks households wanting

Figure 8.1 The housing expenditure model of realised housing expenditure for independent living households in the owner-occupied housing sector in the Netherlands.



source: BZK (2012)

to move to give an estimate of their desired maximum monthly gross mortgage burden. This also distinguishes between any tax deductions.

In chapter 7 (section 7.4.2), it was noted that for the group of potential direct market entrants, WoON does not provide data on (expected) household income. For this reason, it is opted to compare for this group only the desired net fixed housing expenditure with the realised housing expenditure of successful direct entrants. No such limitation arises for the potential housing expenditure of former tenants.
However, any charges are mostly location and housing related. This expected expenditure is estimated as a percentage of net fixed housing expenditure, calibrated to the additional housing expenditure of households that have already successfully entered the owner–occupied segment.

8.3 The disposable income and housing expenditure

Based on the WoON2021 data, this section discusses some characteristics of the financial position of, respectively, households that have actually moved (section 8.3.1) and households

wishing to make such a move (section 8.3.2). Here again, the distinction by inflow and housing segment is maintained. Indeed, it was discussed earlier that the relationships between the demand for (starter) owner-occupied housing on the one hand and the stage in the household cycle and in the labour market cycle on the other, differ by inflow position (direct entrant or former tenant).

8.3.1 The recent movers

It has been established, that actual residential mobility in absolute numbers has increased substantially in the period 2015-2021. This is also broadly true for the realised and potential demand for (starter) owner-occupied houses as exercised by first-time buyers from both distinct housing segments. The development in the increase in demand for owner-occupied houses is logically related to the price development within a certain housing segment. Chapter 7 already showed that the demand for starter dwellings is significantly higher than the demand for dwellings in the regular segment.
The relationship between (total) housing expenditure and disposable income indicates what proportion of income is spent on housing. The so-called housing and living expenditure ratios (see figure 8.1). Since 2007, a ceiling on the housing expenditure ratio (borrowing capacity) has been laid down in the *Mortgage Financing Code of Conduct* (GHF). In principle, banks are allowed to deviate from this but must be able to substantiate any deviation to the regulator AFM. In this study, the borrowing capacity of households is assumed in accordance with the GHF guidelines. Typically, a maximum purchase ratio of 35 per cent applies. Households with a net fixed housing expenditure of more than 35 per cent of the net income are considered a high-risk group.

In line with the earlier picture, it appears that average net housing expenditure has also experienced a significant increase since 2015. Since 2018, the average household housing expenditure is declining. Table 8.1 shows that the total housing cost burden of all homeowners in the owner-occupied segment in 2021, averages €923. In contrast, it shows that among first-time buyers, total housing expenditure accounts for a larger share of household expenditure in both absolute and relative numbers. First-time buyers are thus found to spend a more significant proportion of their disposable household income on owner-occupied housing-related expenditures. It thus appears that households entering the owner-occupied housing market from both entry markets both have a relatively high purchase ratio, but it is significantly lower than in the previous period(s).
Across the group as a whole, direct entrants appear to experience the largest reduction in housing costs compared to previous years. For instance, the average total housing cost in 2021 is €892. This puts the total expenditure below the average of all homeowners. The influence of low mortgage interest rates appears to be contributing to this in particular. Consequently, the decrease in housing costs among all homeowners is mainly due to people switching mortgages.

Table 8.1 housing expenditure in realised demand for owner-occupied housing by first-time buyers and all homeowners in the Netherlands, in 2021

	direct entrants		former tenants		all homeowners	
	2018	**2021**	**2018**	**2021**	**2018**	**2021**
Gross housing expenditure	€ 958	€ 833	€ 1147	€ 1111	€ 934	€ 837
Tax effect	€ 146	€ 116	€ 188	€ 159	€ 178	€ 137
Net housing expenditure	€ 812	€ 716	€ 959	€ 952	€ 755	€ 700
Net purchase ratio	27,2	21,6	26,6	21,8	20,9	16,5
Additional housing expenditure	€ 196	€ 175	€ 213	€ 189	€ 236	€ 223
Total housing expenditure	€ 1009	€ 892	€ 1172	€ 1142	€ 992	€ 923
Net housing costs	34,0	27,3	32,7	26,5	28,0	22,4
Disposable income	€ 38.898	€ 41.311	€ 48.292	€ 53.478	€ 49.360	€ 57.271
Income after housing expenditure	€ 26.790	€ 30.607	€ 34.228	€ 39.774	€ 37.456	€ 46.195

source: WOON 2018, 2021 (own edit)

Former tenants also appear to be experiencing a decline in the average housing cost expenditure. For instance, compared to previous years, the average living costs expenditure ratio appears to have fallen by over 6 per cent. Net housing costs, on the other hand, have fallen less sharply. Mainly increase in income seems to contribute to this. At the same time, among all homeowners, additional housing costs have fallen. So living seems to have become cheaper.

Direct entrants

Table 8.2 shows that first-time buyers who recently moved into an owner-occupied house from a non-independent living situation experience relatively high housing costs: over 62 per cent of all households have a total housing expenditure of more than one thousand euros per month. Despite the relatively high housing costs (compared to all homeowners), these households are in a reasonably good socioeconomic position. Cohabitants and families in particular have an above-average disposable income in relative terms. Singles, on the other hand, tend to be in a weaker socioeconomic position. The level of income appears to be the most decisive factor in this. The relatively high incomes among the various household types ensure that the net housing and living expenditure ratios do not differ significantly from the average among all homeowners.

Within the starter segment, it appears that singles on average spend the largest share (29 per cent) of their income on housing costs. Cohabitants and families fare better on average: these households spend a quarter of their income on housing expenses.

Table 8.2 housing expenditure in realised demand for owner-occupied houses of direct entrants in the Netherlands by household type, in 2021

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
purchase price*	€ 204.724	€ 242.690	€ 244.115	€ 482.097	€ 430.822	€ 520.547
Gross housing expenditure	€ 650	€ 920	€ 796	€ 709	€ 1.182	€ 1.300
Tax effect	€ 91	€ 121	€ 131	€ 81	€ 177	€ 198
Net housing expenditure	€ 559	€ 799	€ 665	€ 627	€ 1.006	€ 1.102
Net purchase ratio	**22,7**	**20,5**	**17,5**	**27,1**	**22,1**	**22,3**
Add. housing expenditure	€ 146	€ 187	€ 209	€ 142	€ 203	€ 273
Total housing expenditure	€ 705	€ 986	€ 874	€ 770	€ 1.209	€ 1.375
Net housing costs	**29,1**	**25,4**	**22,8**	**34,6**	**26,7**	**28,1**
Disposable income	€ 28.956	€ 49.440	€ 49.527	€ 26.339	€ 56.264	€ 57.623
net income	€ 20.496	€ 37.608	€ 39.039	€ 17.099	€ 41.756	€ 41.123
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

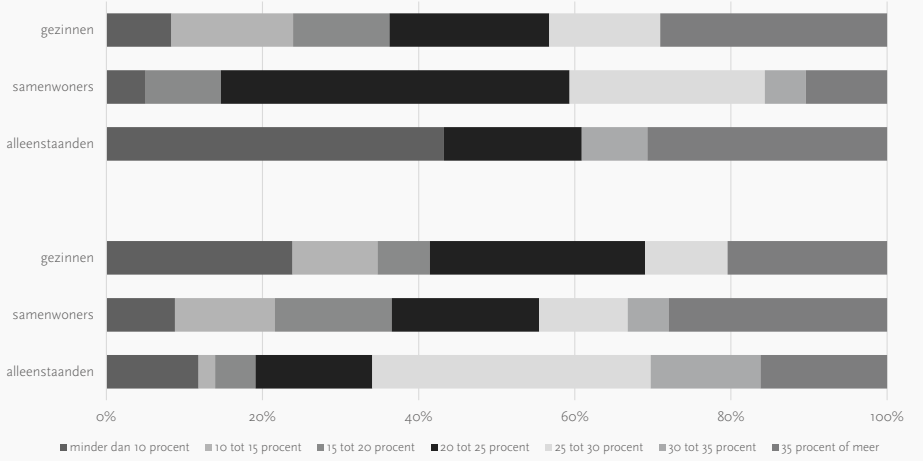
source: WoON 2021 (own edit)

* previous years indexed to price level 2020.

To a large extent, a similar pattern is visible in the regular buying segment as in the starter segment. However, it is notable that, despite the higher purchase amount among all distinguished household types, the average gross housing expenditure increases little on average. Whereas the average purchase amount among cohabitants in the starter segment appears to be €243,000 euro, within the regular buying segment it increases to €430,000 euro. Despite this increase of over €100,000 euros, gross housing expenditure increases by only two hundred euros. For the most part, this minimal increase can be attributed to the share of equity brought in to finance the house. As a result, the mortgage debt taken up is not much higher than the average mortgage debt for cohabitants in the starter segment. This leads to a minimal increase in the housing and living expenditure ratio for households in the regular housing market segment. Singles, on the other hand, are an interesting group within the regular market. The average purchase amount appears to be far beyond expectations based on disposable income. Later in section 8.4.2, it will be seen that these are mainly households that have received a substantial donation from parents.

The average housing and living expenditure ratios of the various household types (especially within the starter segment) seem to decrease as income rises. In other words, the increase in housing expenditure does not keep pace with the increase in income. Besides higher-income households living relatively more expensively, a declining share is evident. To a large extent, the sorting out of relatively wealthy and opportunity-rich households to the owner-occupied sector contributes to this.

Figure 8.2 The frequency distribution of the net housing expenditure ratio in realised demand for owner-occupied housing from direct entrants by household type and housing segment, in 2021



source: WoON 2021 (own edit)

In the distribution of households by net housing expenditure ratio (Figure 8.2), differences appear. A pattern is discernible in this for the distinguished household groups in both the regular segment (top rows) and the starter segment (bottom rows): households within the regular segment have a higher housing expenditure ratio to a greater extent.

Thus, it can be seen that within all distinguished households in both segments, a more or less large proportion of households have a housing expenditure ratio above 35 per cent. For instance, just under 30 per cent of cohabitants in the starter segment appear to fall within the risk group. Singles and families are less likely to have such a high housing expenditure ratio. Respectively, this share of households amounts to 16 per cent and 20 per cent. In particular, singles and families in the starter segment appear to push the limits of their financing capacity when buying a house for sale. For instance, over 30 per cent of all singles have a housing expenditure ratio above 30 per cent.
Within the regular segment, it can be seen that the share of first-time buyers with a high housing expenditure ratio above 35 per cent also accounts for a large part of the total distribution. Cohabitants are an exception. Given the small size of both singles and families, the reliability of this distribution is also questionable in terms of the housing expenditure ratio.

Over the entire study period (2009–2021), a number of changes are clearly visible. For instance, the net housing expenditure ratio among all distinct household groups appears to have been subject to strong changes in recent years. From 2018 onwards, the average housing expenditure ratio among all household groups appears to be declining (sharply). In this, the level of mortgage interest rates plays an important role. The lowering of mortgage

Table 8.3 Net housing expenditure ratio in realised demand for owner-occupied houses of direct entrants in the Netherlands by household type, in the period 2006-2021

	starter segment			regular segment		
	singles	cohabitants	families	singles	cohabitants	families
net housing expenditure ratio						
2006-2009	27,5	21,5	22,8	-	-	-
2009-2012	27,9	21,4	19,7	-	-	-
2012-2015	33,4	24,6	25,6	22,2	18,1	24,7
2015-2018	31,4	24,2	28,0	34,0	24,6	24,2
2018-2021	22,7	20,5	17,5	27,1	22,1	22,3
Total (average)	**28,6**	**22,4**	**22,7**	**27,8**	**21,6**	**23,7**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

* Because of the small size of households in the regular segment in the period 2006-2012, these are excluded from the net housing expenditure ratio.

interest rates in the period 2018–2021, simultaneously with the widened lending conditions (e.g. greater importance of second income), the financing capacity of (1 to 2x modal) one- and two-income earners and the rising income of first-time buyers has ensured that for less money, more could be borrowed. So there does not seem to be a narrowing of the financing options for direct entrants to buy a house at first glance. However, the other side of the coin is that the competitive position of potential direct entrants with less disposable income does deteriorate significantly.

Former tenants

The housing costs of former tenants who moved from the independent (private) rental sector to owner-occupied housing in the past two years are shown in table 8.4. That these are also high is evident from the proportion of households with a total housing expense of more than €1000 per month. Thus, 64 per cent of all households are found to have such a housing expense. Significant differences in housing costs can therefore be observed between the starter segment and the regular segment.

Earlier, Chapter 7 showed that the socioeconomic position of these households also falls at the upper end of the distribution. First-time buyers from the rental sector tend to be at a further stage within the labour and household cycle, which on average involves a higher income. The relatively high income among the various household types ensures that the net housing and living expenditure ratios tend to remain below 30 per cent.

Within the starter segment, it appears that singles on average spend the largest share (23 per cent) of their income on housing costs. Cohabitants and families and other households spend on average 18 per cent of their income on housing. Despite the decreased monthly expenditure on the mortgage (gross housing expenditure), the fiscal impact has also become

Table 8.4 housing expenditure in realised demand for owner-occupied dwellings of former tenants in the Netherlands by household type, in 2021

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
purchase price*	217.776	234.354	256.480	225.330	424.150	398.500	482.011	481.758
Gross housing expenditure	715	946	1011	647	1453	1517	1547	1187
Tax effect	105	151	179	83	177	199	215	118
Net housing expenditure	610	975	832	564	1276	1318	1332	1069
Net purchase ratio	**22,8**	**18,3**	**18,9**	**17,6**	**28,2**	**24,3**	**23,7**	**30,3**
Add. housing expenditure	154	188	209	198	153	197	213	192
Total housing expenditure	764	983	1041	762	1429	1515	1545	1261
Net housing costs	**29,0**	**22,6**	**23,8**	**24,1**	**31,6**	**28,0**	**27,6**	**35,6**
Disposable income	32.712	53.558	54.033	40.416	58.778	66.051	68.450	47.508
net income	23.544	41.762	41.541	31.272	41.630	47.871	49.910	32.376
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

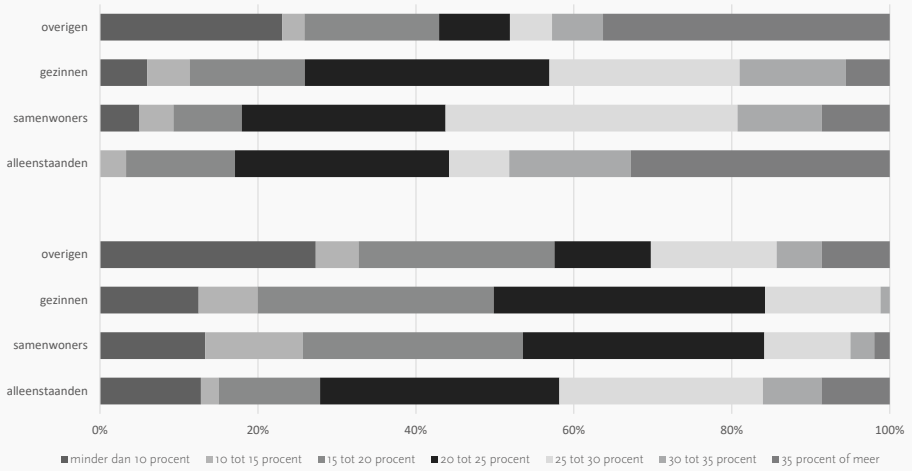
source: WoON 2021 (own edit)

* previous years indexed to price level 2020.

less in recent years. Partly due to lower mortgage interest rates but mainly due to the reforms in mortgage interest deductions in recent years. This restructuring emerges further when household housing costs in both segments are compared. For instance, although the tax benefit of cohabitants increases by over 50 per cent to €1500, it turns out that the housing costs of cohabitants only increase by €40. Examination of the previous WoON periods, therefore, shows a larger difference between such households. For instance, the average tax benefit as a percentage share of gross housing expenditure was still 3 per cent higher in the 2015–2018 period than today.

To a large extent, the same pattern is visible in the regular owner–occupied segment as in the starter segment. Thereby, the gross housing expenditure of these households is usually more than 50–100 per cent higher than the relative household group in the starter segment. The average purchase amount also appears to be 1.5 to 2 times higher. This large difference in purchase value emerged earlier in Chapter 7 when examining the owner–occupied houses occupied by former tenants. However, this higher housing expenditure does not lead to significantly higher housing and living expenditure ratios. Again, it appears that an explanation for this lies partly in the increased share of equity as also the higher income combined with the prevailing borrowing capacity. As a result, the mortgage debt contracted appears to increase, proportionally, by only a few per cent. Again, singles turn out to have a higher housing expenditure ratio than cohabitants and families. Other households are found to have higher quotas mainly due to lower income.

Figure 8.3 The frequency distribution of the net housing expenditure ratio in realised demand for owner-occupied housing from former tenants by household type and housing segment, in 2021



source: WoON 2021 (own edit)

The distribution by net housing expenditure ratio of households shows an interesting picture between the two housing segments (Figure 8.3). Households within the regular segment (top rows) appear to have a (significantly) high housing expenditure ratio more often than households in the starter segment (bottom rows).

Singles and other households in the starter segment have proportionally the largest share of households with a housing expenditure ratio greater than 35 per cent. On average, 10 per cent of households within these two groups have such a housing expenditure ratio. Cohabitants and families, on the other hand, are found to comprise the vast majority (85 per cent) of households with a purchase ratio of up to 25 per cent. The relatively low ratios among these households were previously linked to the high disposable income and the widened lending standards of dual-earner households. In addition, these households do not appear to buy significantly more expensive housing compared to single and other households.

Within the regular segment, the share of households with a housing expenditure ratio greater than 35 per cent among all household groups increases significantly. Singles and others with such a quote are found to account for over 32 per cent of all households in the regular buying market. Again, cohabitants and families appear to be in better financial shape. For instance, 80 per cent of these households have a purchase ratio of up to 30 per cent. Compared to former tenants within the starter market, the percentage share of '25 to 30 per cent' has grown significantly. The '15 to 20 per cent' share thus seems to have been substituted.

Table 8.5 The net housing expenditure ratio in realised demand for owner-occupied houses of former tenants in the Netherlands by household type, in the period 2006-2021

	starter segment				regular segment			
	singes	**cohab.**	**families**	**others**	**singes**	**cohab.**	**families**	**others**
Net housing expenditure ratio								
2006-2009	26,9	20,1	21,0	24,4	26,5	21,7	24,2	47,7
2009-2012	29,1	20,5	20,1	23,2	-	20,1	25,4	-
2012-2015	22,9	18,2	17,7	21,8	55,0	21,9	20,7	21,7
2015-2018	32,4	22,4	23,7	26,9	34,5	25,8	23,5	39,5
2018-2021	22,8	18,3	18,9	17,6	28,2	24,3	23,7	30,3
Total (average)	**26,8**	**19,9**	**20,3**	**22,8**	**36,1**	**22,8**	**23,5**	**34,8**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

The resulting picture in both segments thus differs from the previous WoON periods. Especially in the starter segment, the average housing costs of households appear to have fallen sharply compared to the previous period. Single and cohabitant households in particular pay considerably less. This should also include the use of the NHG limit. Households in the starter segment bought more expensive homes on average than market entrants in previous years. The net effect is therefore even greater.

Particularly in the years 2015–2018, the net housing expenditure ratio was found to be significantly higher among all distinguished groups. In the starter segment, the effect of the housing cost reduction and the rise in household incomes is visible in the most recent period. The reduction in mortgage interest rates, simultaneously with the widened borrowing conditions & financing capacity and rising income has meant that for less money, more could be borrowed. Again, there appears to be no narrowing of financing options. The households that manage to succeed in the owner–occupied housing market realise their desire to buy mostly with a limited housing expenditure ratio.

8.3.2 The desired movers

It was mentioned earlier that potential residential mobility has also increased significantly in recent periods. In other words, demand for owner–occupied housing has grown considerably in recent years. Chapter 7 makes it clear that between the different distinct household groups, potential and realised demand vary considerably. Nevertheless, the differences in demographic and socioeconomic characteristics did not reveal a comprehensive picture of which household characteristics can lead to a higher success rate. However, the cluster analysis already revealed that income and income form are important determinants. The financial starting position of households wishing to move to a (starter) owner–occupied house shows

to what extent the desired housing expenditure corresponds to actual housing expenditure. Differences between the potential and realised housing expenditure then show the extent to which moving inclined households will enter the (starter) owner-occupied market.

Within WOON, households willing to move are asked to state their desired mortgage expenses, after which the question is asked whether the mortgage interest deduction has already been considered. To approximate the group as a whole, the choice was made to deduct the average tax effect from the realised demand (13 per cent) from the gross housing expenditure of the different households when declared as such.

Direct entrants

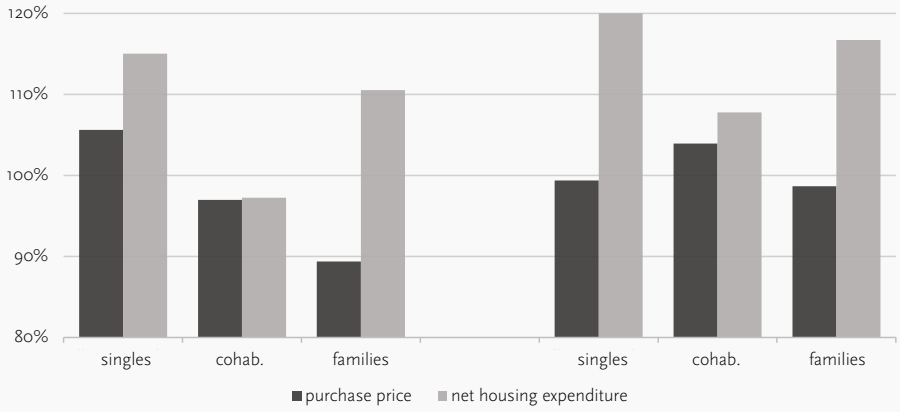
Figure 8.4 shows the proportions of realised and desired purchase amounts and realised and desired housing costs. The baseline in this is 100 per cent. A value above it shows that the desired amounts of the moving households are higher than the realised expenditure of the recently moved households. Conversely, a value below 100 per cent means that the desired amounts are lower. To arrive at a meaningful comparison with the desired purchase amount, the realised purchase amounts of the owner-occupied house were indexed to the 2020 price level (survey date) from the year the house was occupied (2018 or 2019).

In this, two clear patterns can be identified. On the one hand, different households in both housing segments indicate a desired purchase amount that, to varying degrees, falls below the realised purchase amount. On the other hand, it appears that the net desired housing expenditure of the various household groups, and, following on from this, the total housing expenditure, tend to be higher than the realised housing expenditure within the same household group.

Within the starter segment, singles appear to have the largest percentage difference between potential and realised housing expenses. They report over 13 per cent higher housing expenses compared to actual housing expenses.
Within the regular segment, it appears that these households want to go even further. It should be noted, however, that the realised moves are mainly due to a donation, as will be shown in section 8.4.2 Cohabitants appear to be the least divergent from realised housing expenditure, while potential families are again willing to pay more for an owner-occupied house.

This makes the picture very different from previous years. In the 2015–2018 period, potential direct entrants tended to rate their chances much higher with higher purchase amounts and smaller financial resources compared to households in realised moves at the time. The average deviation was over 30 per cent. In other words, actual housing costs were more than 30 per cent above the desired housing costs. Despite the fact that the potential demand from direct entrants matches well with the realised demand, the total number of removals in the period 2018–2021 does not appear to be much higher than in the previous period. One possible explanation lies in whether or not they can obtain the desired mortgage and the available

Figure 8.4 relative purchase amount and housing costs between desired and realised amounts of direct entrants in the 2021 period.



source: WoON 2021 (own edit)

supply. Since no data on current incomes are available for moving inclined direct entrants, no clear picture can be obtained with regard to the possible mortgage.

Former tenants

The ratios of realised and desired expenditure with respect to the purchase amount and housing costs for former tenants are shown in Figure 8.5. Significant differences can be observed both between the two housing segments and between different households. Broadly speaking, it can be seen that the desired purchase amount for most households is below the realised purchase amounts. Households are therefore more often looking for a cheaper dwelling. At the same time, especially in the regular segment, substantially lower housing costs are often desired. In the starter segment, singles and other households, appear to have the largest difference in percentage terms in desired housing expenditure. This corresponds to the direct entrants. The desired purchase amount differs little in this respect. Cohabitants have the least differences between realised and desired expenditure. Families form an interesting group. These households desire a significantly more expensive house, with lower desired expenses. In other words, the desired housing supply is significantly more expensive, while the financing capacity is lower. This lower financing capacity is mainly due to a higher proportion of single-earners.

Within the regular segment, a more uniform picture is forming. Singles tend to desire significantly lower expenditures compared to the realised housing expenditure. The desired housing expenditure amounts to only 80 per cent of the actual expenditure. The purchase amount is also lower. The same picture, although less strong, also applies to families. Housing demanded by cohabitants appears to account for over 115 per cent of the realised purchase price. The fact that these households demand such more expensive houses probably has to

Figure 8.5 relative purchase amount and housing costs between desired and realised amounts of former tenants in the 2021 period.

source: WoON 2021 (own edit)

do with insufficient knowledge of the financial resources at their disposal and the demand for specific housing characteristics of houses that are more expensive. The remaining households in the regular segment, show similarities with the households in the starter segment.

The resulting picture thus also differs from previous years. In the 2015–2018 period, former tenants rated their chances even higher. Typically, more expensive homes were in demand with lower housing costs. The fact that in the meantime cheaper houses are actually in demand shows a clear turnaround in the market.

8.3.3 The regional differences

Chapter 4 showed that the realised demand for owner–occupied houses is quite agglomerated by part of the country. Over 47 per cent of all first–time buyers moving to owner–occupied houses were found to be in the western part of the country. Nevertheless, the realised demand of first–time buyers and former tenants varied considerably by region. The different groups of first–time buyers realise their housing demand in different parts of the country. Regionally, it can therefore be expected that the average housing costs, depending on mortgage debt, differ regionally.

Supply and demand play a role in this. When the (potential) demand for owner–occupied houses exceeds supply, local house prices will rise and, consequently, the monthly costs of financing such a house can be expected to increase as well. The contribution of equity also plays a role. It should also be noted that the house characteristics (i.e. living space) of

Table 8.6 Housing costs for owner-occupied houses of direct entrants in the Netherlands by region, housing market segment and by starter type, in 2021

	starter segment			regular segment		
	singles	**cohabitants**	**families**	**singles**	**cohabitants**	**families**
Size of municipality						
< 20.000 inhab.	€ 10,0	€ 7,8				
20.000 tot 50.000	€ 9,2	€ 9,8	€ 6,8	€ 9,2	€ 9,2	€ 5,6
50.000 tot 100.000	€ 9,5	€ 9,0	€ 5,2	€ 2,6	€ 10,1	€ 9,1
100.000 tot 150.000	€ 11,2	€ 9,8	€ 8,8	€ 4,8	€ 12,1	
150.000 tot 250.000	€ 8,4	€ 9,5	€ 10,7		€ 11,9	
> 250.000 inhab.	€ 9,1	€ 14,0	€ 9,6	€ 17,2	€ 19,3	€ 9,3
region (G-class)						
G4	€ 9,1	€ 14,0	€ 9,6	€ 17,2	€ 19,3	€ 9,3
G40	€ 8,5	€ 9,1	€ 7,8	€ 4,6	€ 10,1	€ 7,1
rest of Netherlands	€ 9,6	€ 9,5	€ 6,9	€ 6,2	€ 10,6	€ 7,3
Country region						
North Netherlands	€ 9,1	€ 10,9	€ 6,1			
Eastern Netherlands	€ 8,0	€ 8,9	€ 7,5		€ 7,0	€ 7,3
West Netherlands	€ 10,3	€ 10,7	€ 8,2	€ 12,5	€ 14,9	€ 11,0
South Netherlands	€ 7,8	€ 8,3	€ 5,5		€ 9,0	€ 5,7
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WOON 2018 (own edit)

the package of houses sold within a certain region also influence the purchase price and ultimately the housing costs. One way to include the above in a regional comparison is to consider housing costs in the context of housing surface area. The basic assumption therein is that housing costs reflect mortgage costs. However, in doing so, mortgage costs should be constructed in a similar way. As will be shown in section 8.4, this is indeed the case. Housing costs per square metre of living space, therefore, provide a sufficiently strong basis to make a statement about the regional distribution of housing costs.

Direct entrants

Table 8.6 shows that the level of housing costs paid per square metre in an independent owner–occupied house by direct entrants indeed varies widely. This is true both when distinguishing by municipal size and by region and part of the country. The highest housing costs are experienced in the G4 cities (The Hague, Utrecht, Rotterdam, and Amsterdam). Logically, it also appears that the highest housing costs are experienced in the West Netherlands. This shows that the gap between the West Netherlands and the other regions is considerable. On average, direct entrants pay 15–25 per cent more in the west.

When housing costs within individual groups of moving households are then studied, it is found that housing costs per metre of living area differ within the same region. In other words, different households pay a different amount per square metre on average. This is largely related to the amount of mortgage debt incurred. For instance, it was found earlier that the gross housing expenditure of families is lower than cohabitants with the same purchase amount. Families appear to bring in a higher proportion of equity (whether through a donation or not). Consequently, singles and cohabitants appear to pay more on average. Viewed by municipal size, it appears that singles in particular also pay relatively much in the smaller to medium-sized (50,000–100,000 inhabitants) cities. A comparison with table 7.20 provides an interesting insight. The cities where a higher proportion of realised demand is agglomerated have lower relative housing costs. Conversely, housing costs are higher in cities (by municipal size) where only a small share of demand has been realised. Single people thus appear to succeed mainly the cheaper cities. To a lesser extent, this seems applicable to cohabitants and families.
In the regular segment, it again appears that the big cities have the highest relative housing costs. On average, relative housing costs are 40–90 per cent higher. Despite this, most of the relocations take place to the western Netherlands.

The regional differences can also be broken down into the price per square metre. This shows that especially in the G4 and urban areas, housing costs per square metre are significantly higher than in other parts of the Netherlands. After all, people in the Randstad buy less house for the same money.

Former tenants
Table 8.7 shows a fairly unambiguous picture in the relative housing costs of the regional package of housing concerned. Mainly the G4 cities have the highest price per square metre. Correspondingly, the West Netherlands also appears to have the highest relative prices. This picture seems to emerge in both the starter segment and the regular segment.
Within the starter segment, a significant skew seems to have emerged between the G4 cities and the rest of the Netherlands. On average, prices in the big cities are 23 per cent to 32 per cent higher than in the G40 and the rest of the Netherlands. This significantly higher price also seems to translate into the price per square metre. On average, households in the G4 cities pay up to 40 per cent more. In doing so, a proportion of households also appear to have contributed more equity have contributed more equity.

In the regular segment, a skew also exists, to an even greater extent. in particular, single, and cohabiting households in the G4 cities pay on average over 40 to 100 per cent more than the same households in the G40 and the rest of the Netherlands. Families and other households have less pronounced differences. That households in the big cities bring in more equity is also reflected in the price per metre. With the exception of the G4 cities (municipal size with more than 250,000 inhabitants), relative housing costs differ little across municipalities. Combined with the relative purchase amount, it can be said that households in larger cities bring in more of their own money. This also appears to be true for households in the starter segment.

Table 8.7 Housing costs for owner-occupied houses of former tenants in the Netherlands by region, housing market segment and by starter type, in 2021

	starters koopsegment				reguliere koopsegment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Size of municipality								
< 20.000 inhab.		€ 8,1		€ 9,2		€ 11,2	€ 11,3	
20.000 tot 50.000	€ 7,6	€ 7,8	€ 9,8	€ 5,8	€ 12,7	€ 11,5	€ 11,2	
50.000 tot 100.000	€ 5,8	€ 10,0	€ 9,2	€ 6,2	€ 8,8	€ 11,3	€ 8,9	
100.000 tot 150.000	€ 11,6	€ 10,3	€ 9,6	€ 10,3	€ 10,7	€ 10,2	€ 11,5	€ 8,3
150.000 tot 250.000	€ 11,0	€ 10,0	€ 10,0	€ 10,3	€ 11,6	€ 11,6	€ 11,8	€ 9,5
> 250.000 inhab.	€ 13,9	€ 12,4	€ 12,1		€ 22,6	€ 16,1	€ 12,8	€ 10,8
region (G-class)								
G4	€ 13,9	€ 12,4	€ 12,1		€ 22,6	€ 16,1	€ 12,8	€ 10,8
G40	€ 10,5	€ 10,1	€ 9,5	€ 10,2	€ 11,1	€ 10,4	€ 11,6	€ 9,5
rest of Netherlands	€ 8,1	€ 8,2	€ 10,3	€ 6,6	€ 10,5	€ 12,1	€ 10,6	€ 7,4
Country region								
North Netherlands	€ 9,2	€ 9,7	€ 5,0	€ 5,8	€ 11,6	€ 10,2		
Eastern Netherlands	€ 9,1	€ 9,2	€ 10,2	€ 9,5	€ 12,7	€ 11,4	€ 9,6	€ 7,6
West Netherlands	€ 12,2	€ 10,4	€ 10,4	€ 7,9	€ 19,3	€ 14,5	€ 11,6	€ 9,9
South Netherlands	€ 7,8	€ 8,4	€ 10,5	€ 8,0		€ 10,0	€ 12,7	€ 9,6
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WoON 2021 (own edit)

The average relative housing costs (as well as the meter price by purchase amount) can still be compared with realised demand in table 7.23. This shows that in the starter segment, removals to an owner–occupied house in the G4 cities account for only a small proportion of total moves. Hence, by far the majority of moves take place to the cheaper houses outside the G4. In the regular segment, this phenomenon seems to be less present; the share of households moving to the G4 is therefore also considerably larger. The fact that this share is larger is therefore not unexpected. The socioeconomic position of these households is usually more likely to allow for the higher housing costs associated with locally available housing.

8.4 The financing of home ownership

Chapter 2 indicated that first–time buyers are more likely to make the move to an owner–occupied house if it is more financially conducive than a similar house in the rental segment. To this end, a number of demographic and socioeconomic aspects lie at the heart of this, as well as the economic climate in the housing market. For instance, it was found that in the period

2009 to 2015, in addition to falling prices and transaction volumes, lending to households fell sharply due to the financial crisis. Section 7.3 already noted that for a number of years now, demand for owner-occupied houses has increased significantly, with renting considered less attractive.

Such a turnaround in the market may be explained by a change in the relative attractiveness between (wanting to) buy and (wanting to) rent. This attractiveness can again be expressed in terms of housing costs. This can provide a picture of the relative financial accessibility of the owner-occupied housing market. Section 8.4.1 discusses this trade-off. Sections 8.4.2 and 8.4.3. then look successively at financing structure (mortgage debt, equity, and any donations) and the type of mortgage applied in combination with any guarantees.

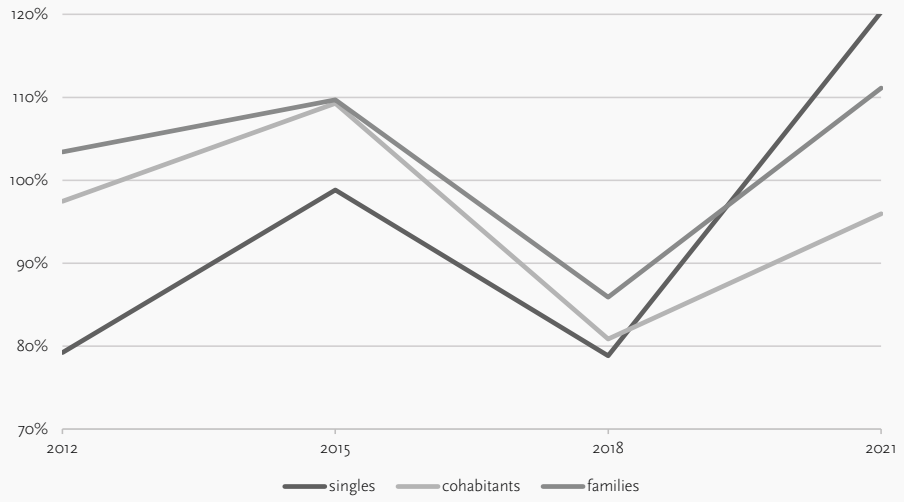
8.4.1 Housing expenditure in the owner-occupied and rental sector

Direct entrants

From Figure 8.3 and Figure 8.4, it can be seen that the gap between renting, whether private or social rent, compared to buying, has narrowed for first-time buyers in the period 2012 to 2015. In fact, such a development means that the difference in housing costs has narrowed (100 per cent means housing costs are the same). The negative house value development during the financial crisis resulted in lower housing costs. In the period 2012–2015, buying even proved to be cheaper than renting in the private rental sector for families and cohabitants. From 2015 to 2018, a reverse trend is visible. The skew in housing costs between the renting and buying sectors is thereby increasing among the distinguished household groups. Single people in the private rented sector are found to pay on average 80 per cent of the housing costs of the same household group in the owner-occupied sector. Buying has thus become significantly more expensive proportionally. For cohabitants and families, this trend is less pronounced. These households are on average 15-18 per cent cheaper in the private rented sector.
In the subsequent period to now, the trend appears to be reversing again. Mainly for singles and families, it appears that buying compared to (privately) renting has become significantly cheaper. Unlike in the earlier period 2012–2015, it appears that this development has mainly a dual cause. On the one hand, the lowering of mortgage interest rates has meant that the total monthly costs households spend on their mortgages have become lower. On the other hand, rents in the private sector have risen sharply in recent years.
A similar pattern, although less pronounced, can also be seen in the social rental sector. Although renting a house within this segment is still significantly cheaper than buying, a decreasing difference is also noticeable in the period 2012–2015 and 2018–2021.

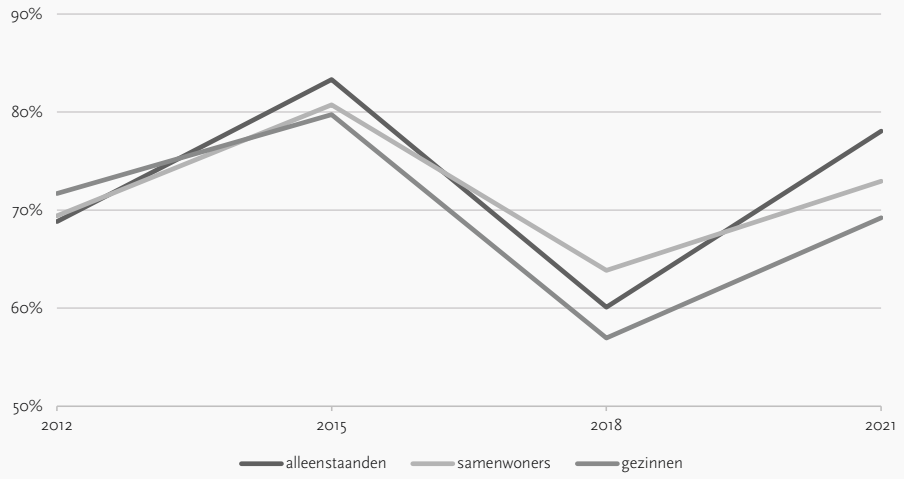
Partly due to the decrease in housing costs within the owner-occupied segment in the most recent period compared to the rental market, the potential demand for (starter) owner-occupied houses is increasing unabated. Nevertheless, Chapter 4 showed that the realised demand for owner-occupied houses exercised by direct entrants did not increase. The

Figure 8.4 relative development of housing costs in the private rented sector compared to the owner-occupied sector in the Netherlands by household type, in 2012 to 2021



source: WOON 2012, 2015, 2018, 2021 (own edit)

Figure 8.5 relative development of housing costs in the social rental sector compared to the owner-occupied sector in the Netherlands by household type, in 2012 to 2021



source: WOON 2012, 2015, 2018, 2021 (own edit)

decreased distancing in the period 2012–2015, therefore, had a different cause than the current developments. The current relatively low cost of living compared to private renting make buying more attractive. At the same time, the relative demand for owner–occupied houses, especially among singles, has also increased significantly. This was shown earlier in Table 7.6 and Table 7.8. However, supply lags behind that demand. As a result, the net inflow of direct entrants seems to be stagnating compared to the previous period, and direct entrants relatively more often (out of necessity) opt for rented accommodation.

Former tenants

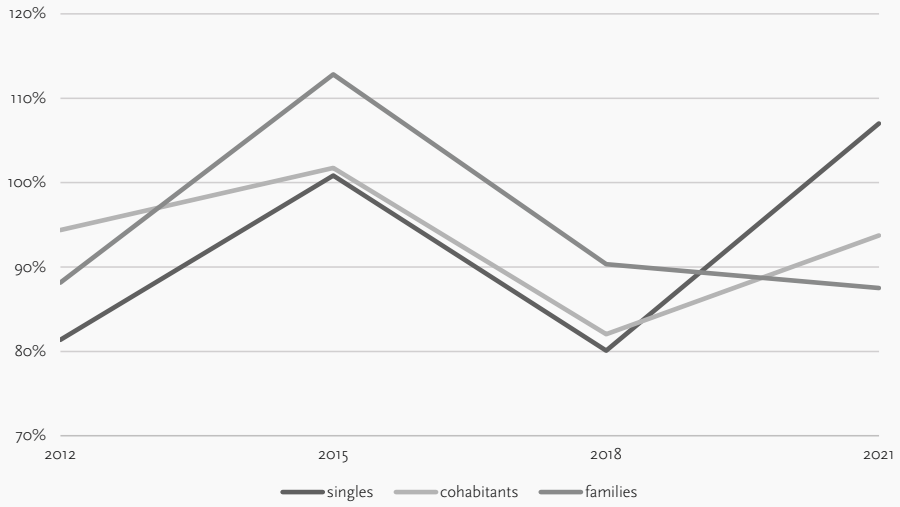
Figure 8.6 and Figure 8.7 show developments in relative housing costs of former tenants. This deviates from the previously used classification of former tenants as formulated in Chapter 5. The other households have thus been omitted. Instead, only household composition has been distinguished. This is for the reason that it is not possible to use the clustered household groups for an analysis of the private/social rented sector.

Over the period 2012–2015, both in the private rental and social rental sectors, it appears that the gap between renting and buying has narrowed. While the monthly living expenses of households who recently entered the owner–occupied sector remained almost the same or decreased slightly, the living expenses of tenants who moved on actually increased. Families in particular were found to be 10 per cent cheaper in the owner–occupied sector. Cohabitants and singles showed no difference. Indeed, the downward price trend of owner–occupied houses during this period resulted in lower housing costs. The subsequent period appears to reverse this trend. During the years 2015 to 2018, average housing costs in the rental segment remained almost the same while buying became significantly more expensive. Cohabitants and singles paid only 80 per cent of the cost of the same households in the rental segment in the buying market during this period.

from 2018, especially among singles and cohabitants, another reversal of the trend line was visible. Although buying again proved cheaper due to falling mortgage rates in the period under review for these households, the average private rent increased sharply. Singles are improving fastest. Families do not seem to keep up with this trend. Relative households seem more likely to move on more cheaply within the rental sector while owner–occupiers pay more. Developments in the social rented sector (Figure 5.7) seem to follow the trend described. Thereby, the different household groups are much closer together. However, in the most recent period, cohabitants seem to be cheaper in the social rented sector.

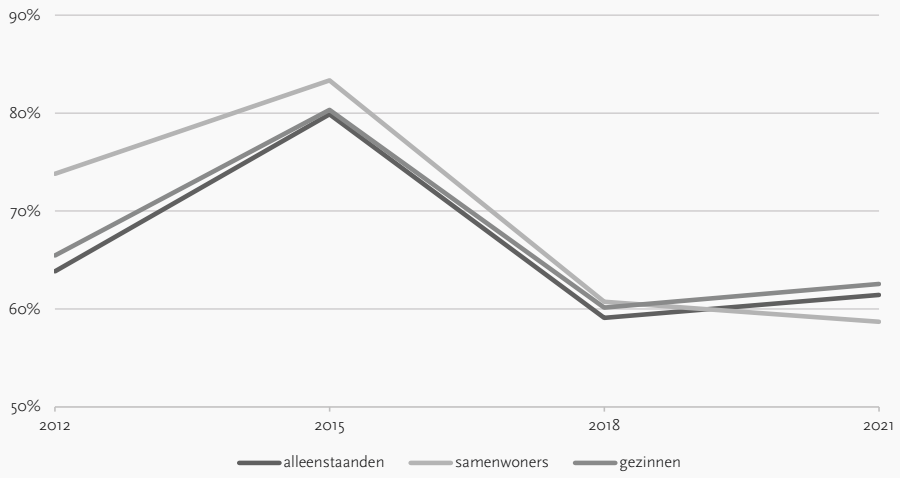
The favourable ratios in 2012–2015, the increased distance in 2015–2018 and the reduced ratio presently seemed to influence former tenants in their final choice to buy or rent until 2018. This is evident when the (potential) inflows from Table 7.3 and Table 7.7 are examined more closely. During the years 2012 to 2015, the relative number of moves into the rental sector (through–flow) was lower than the moving share. In the following period, when buying became relatively more expensive, the share of households that actually moved to an owner–occupied house appears to have decreased relatively. However, when buying seems to become cheaper again in the 2018–2021 period, the number of relative moves decreases.

Figure 8.6 relative development of housing costs in the private rental sector compared to the owner-occupied sector in the Netherlands by household type, in 2012 to 2021



source: WOON 2012, 2015, 2018, 2021 (own edit)

Figure 8.7 relative development of housing costs in the social rental sector compared to the owner-occupied sector in the Netherlands by household type, in 2012 to 2021



source: WOON 2012, 2015, 2018, 2021 (own edit)

Increased housing costs in the private rented sector, relative to housing expenditure in the owner–occupied sector, as well as the boom in the owner–occupied housing market, resulted in an increase in demand for owner–occupied housing from former tenants in the recent period. Nevertheless, realised inflows have declined; as shown in Tables 7.5 & 7.9. The potential demand for rental housing from through–movers also appears to be lower than the realised demand. Despite lower housing expenditure, more tenants are choosing to move within the rental sector.
Competition for owner–occupied housing has therefore increased significantly (table 6.2 last column). Former tenants compete more with households within that owner–occupied sector who also move. However, these households have greater equity as a result of the development in house value in recent years. The competitive position of former tenants, therefore, seems to have worsened, resulting in a decrease in removals.

8.4.2 The mortgage debt and own equity

First–time buyers from both segments appear to be mostly not financing the purchase of their own home from their own resources. For instance, among recent movers in 2021, 90 per cent of all households appear to (partially) finance home ownership with a mortgage. For first–time buyers, a full mortgage is almost always necessary. The tightening of financing conditions since 2007 has led to mortgage banks being allowed to lend up to a maximum of 100 of the house value. In most cases, however, borrowing capacity is the biggest constraint. Any difference between the purchase amount and the maximum mortgage obtainable must then be supplemented by equity. This equity can then consist of savings and/or donation(s). The construction of financing; a combination of mortgage and equity, provides insight into how home ownership is realised. Earlier, the expectation was expressed that with rising house prices, an increasing share will be financed with savings, additional (starter) loans and possible donations from family.

Direct entrants
It was mentioned earlier that over 90 per cent of all households entering the housing market from a non–independent living situation partially finance the house with a mortgage. Table 8.8 shows the relative differences between the different household groups. It shows, for instance, that cohabitants in both housing segments most often finance home ownership with a mortgage. Families appear least likely to need a mortgage. Interestingly, single people who have managed to buy a home within the regular buying segment are the least likely to have taken out a mortgage. For the most part, this can be explained by the size of the group of households that received a donation and/or borrowed amount from relatives. For instance, it appears that over 65 per cent of the group of single households in the regular segment have received some form of a donation from parents. Looking at the other household groups, the proportion of households receiving a donation within the regular segment seems to be consistently higher than within the starter–buyer segment. This suggests that part of the more

expensive home ownership can be explained by the (amount of) any donation received from parents.

On average, 15–25 per cent of households within the buying segment receive some form of donation. Table 8.9 shows the value of the average amount of money received by direct entrants. The expectation that the amount of the donation contributes to whether or not they join the regular buying segment seems to be confirmed here. For instance, it appears that over 10 per cent of singles in the regular buying segment received a donation between €25,000 and €53,000. 50 per cent even received more than €100,000. Direct entrants entering the starter segment receive any kind of donation from parents to a much lesser extent. On average, it appears that single entrants 'only' receive some form of financial support from parents in 12 per cent to 25 per cent of all households. In contrast, single people seem to be particularly characterised by an overrepresentation in donations of up to €25,000. Family entrants seem to receive the lowest contribution across all households: up to €25,000 on average.

A picture thus seems to emerge that direct entrants who receive some form of a donation from parents have a stronger starting position in the owner–occupier market than households that do not receive financial support. However, the question is to what extent the two groups who do or do not receive a donation differ from each other. Logically, it can be expected that the purchase amount of the group of households that received a donation will be higher than those that were not able to get financial assistance, while housing costs remain the same or decrease.

Figure 8.8 and Figure 8.9 show the ratio of total housing costs, disposable income, purchase amount and remaining outstanding mortgage amount of households in the starter segment and the regular segment who did or did not receive a grant, respectively. A value of less than 100 per cent means that the corresponding amount is lower for households that did receive a grant. Among households in the starter segment, the largest financial differences seem to be noticeable. In other words, whether or not they received a donation has the greatest impact on their initial financial position. Thus, it appears that cohabitants can pay 4 per cent more for the purchase of the house. Housing costs thus seem to fall to just 30 per cent of households that did not receive a donation. Singles seem to benefit less from any donation. Not unexpectedly, it appears that households receiving a donation are more likely to have lower disposable income. In terms of purchase amount, singles seem to benefit most from a donation. Despite the relatively low amount (see table 8.9), single people buy a house that is up to 14 per cent more expensive than equal households could without receiving a donation.

In the regular segment, partly due to the size of the household group, single people who did or did not receive a donation showed such large differences that they were omitted from the analysis. Table 8.11 therefore already showed that the proportion of households that did receive a donation (50 per cent of total households) received a substantial amount. In fact, looking only at housing costs and income, it can be seen that the vast majority of these households

Table 8.8 Resources used to finance home ownership by direct entrants and outstanding mortgage debt by household type in 2021

	starter segment			regular segment		
	singles	cohabitants	families	singles	cohabitants	families
house encumbered by mortgage						
Yes	84,4	91,2	76,2	56,8	95,4	93,1
No	15,6	8,8	23,8	43,2	4,6	6,9
donation received from parents(-in-law)						
Yes	25,9	14,0	12,7	65,4	26,5	
No	74,1	86,0	87,3	34,6	73,5	100
money borrowed from family members						
Yes	13,0	10,2	3,1	42,4	17,9	6,6
No	87,0	89,8	96,9	57,6	82,1	93,4
Outstanding mortgage	**€ 145.859**	**€ 160.887**	**€ 154.873**	**€ 171.472**	**€ 216.232**	**€ 243.494**

source: WoON 2021 (own edit)

Table 8.9 Amount donated to finance home ownership by direct entrants by household type, as a percentage of column total, in 2021

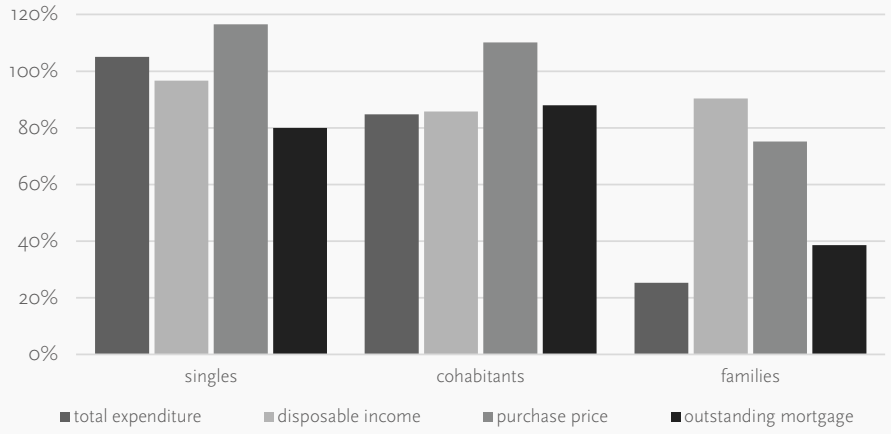
	starter segment			regular segment		
	singles	cohabitants	families	singles	cohabitants	families
Less than 25,000 euros	16,6	4,9	7,1	6,9	10,3	
25,000 53,000 euros	4,3	2,6	5,5		1,5	
53,000 100,000 euros	4,0	3,8		9,7		
100,000 euros or more	0,9	2,5		48,9	14,7	
Total (absolute)	**28.254**	**24.139**	**6.351**	**3.663**	**5.863**	**2.758**

source: WoON 2021 (own edit)

received the house 'as a donation'. The remaining households that managed to finance the house on their own funds turned out to be mostly very successful young entrepreneurs. Cohabitants who received a gift seem to buy a less expensive house than those who did receive a donation. However, the disposable income of this group of households is only 80 per cent of that of households without a received donation. Among households in the regular segment, no household was found to have received a donation (see table 8.10).

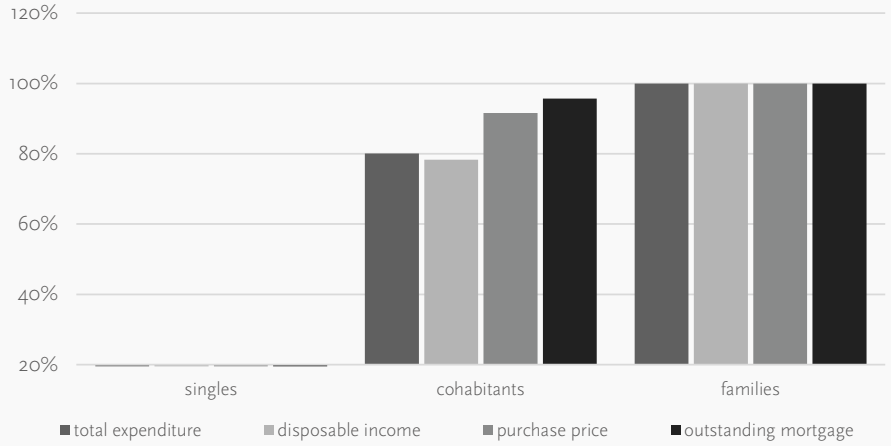
In summary, compared to households within the starter segment, direct entrants in the regular segment are more likely to receive a donation from parents (in–law) where the amount

Figure 8.8 evolution of housing costs, income, purchase amount and mortgage debt between households receiving or not receiving a gift, by direct entrants in the starter segment, in 2021



source: WoON 2021 (own edit)

Figure 8.9 evolution of housing costs, income, purchase amount and mortgage debt between households receiving or not receiving a gift, by direct entrants in the regular segment, in 2021



source: WoON 2021 (own edit)

received is also significantly higher. Whether or not they can enter the regular owner–occupied market appears to depend to a large extent on receiving a donation and/or loan from relatives. For singles, this even seems to be the determining factor. Cohabitants and families, although still more than households in the starter segment, depend to a lesser extent on a donation. The ratio of households receiving or not receiving a donation seems to lead to the strongest differentiation among singles. Loans from family members do not appear to be common in both segments.

Both the number of households receiving a donation and having a loan from relatives has increased sharply, compared to the previous period. Single people in particular appear to be 15 per cent more likely to receive a donation, both in the starter & regular segments. The differences between receiving or not receiving a gift among households does appear to have decreased among households. In contrast, differences between cohabitants have increased

Former tenants

Table 8.10 also shows that over 90 per cent of households entering the purchase market from a self–contained rental property rely on mortgage credit. Within the regular segment, this proportion appears to be even higher; over 95 per cent. An exception is the remaining households. Only three–quarters of all households use a home mortgage to purchase an owner–occupied home. Cohabitants in both housing segments most often use a mortgage to finance home ownership. Interestingly, despite the higher purchase amount as shown earlier in Table 8.6, cohabitants in the regular segment have the same amount of outstanding mortgage. Cohabitants who bought a regular owner–occupied house thus appear to have contributed a higher proportion of equity. The same appears to be true for singles. Families and other households have higher mortgage amounts.

On average, one in four households within the owner–occupied segment receives some form of donation. Singles in the starter segment seem to receive a donation most often. On average, one in three former tenants who moved into an owner–occupied house received a sum of money. This proportion decreases among cohabitants to 21 per cent and even further to 13 per cent for families. Both cohabitants and families are at a further stage within the household cycle and are less likely to receive financial support from their parents. Within the regular segment, one in four households also appears to receive a donation. Table 8.11 shows the value of the average amount of money received by former tenants.

The expectation that the amount of the donation contributes to whether or not they enter the regular buying segment does not seem to hold true here. For instance, it appears that the share of first–time buyers in the regular segment who received a larger amount from parents, especially among singles and cohabitants, is not substantially larger than comparable households who moved into a starter home. Since the outstanding mortgage amount also falls in the same order of magnitude, equity seems to play a role here. In contrast, families and other households received contributions more often. For instance, 7 per cent and 13 per cent of households were found to receive at least 53,000 euros, respectively. For the most

Table 8.10 Resources used to finance home ownership by direct entrants and outstanding mortgage debt by household type in 2021

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
house encumbered by mortgage								
Yes	88,0	90,8	90,3	74,7	100	96,0	95,0	74,6
No	12,0	9,2	9,7	25,3		4,0	5,0	25,4
donation received from parents(-in-law)								
Yes	34,7	21,0	12,7	29,5	22,9	22,7	20,0	24,3
No	65,3	79,0	87,3	70,5	77,1	77,3	80,0	75,7
money borrowed from family members								
Yes	16,0	7,3	9,7	5,8	3,8	12,3	12,0	10,5
No	84,0	92,7	90,3	94,2	96,2	87,7	88,0	89,5
Outstandig mortgage (€)	**108.930**	**146.435**	**169.672**	**110.950**	**93.230**	**140.445**	**218.293**	**218.258**

source: WoON 2021 (own edit)

Table 8.11 Amount donated to finance home ownership by direct entrants by household type, as a percentage of column total, in 2021

	starter segment				regular segment			
	singles	**cohab.**	**families**	**others**	**singles**	**cohab.**	**families**	**others**
Less than 25,000 euros	14,2	10,3	6,0	9,3	12,2	11,0	3,8	
25,000 53,000 euros	6,1	6,2	6,7	11,9		8,2	11,8	6,6
53,000 100,000 euros	11,6	1,7		8,3	8,9		5,9	6,2
100,000 euros or more	2,8	2,7			1,9	5,1	1,3	7,3
Total (absolute)	**15.964**	**23.242**	**16.492**	**8.212**	**5.357**	**20.507**	**11.628**	**5.828**

source: WoON 2021 (own edit)

part, households in the starter segment seem to receive a donation of up to 25,000 euros. Moreover, within the regular segment, a higher proportion of households appear to borrow an amount of money from family members.

The emerging picture seems to indicate that whether or not one receives a donation does not have a major impact on the final purchase amount. In particular, the socioeconomic position as described in chapter 7 and the higher incomes of households in the regular segment seem to contribute to this. However, the extent to which the two groups that do or do not receive a donation differ from each other can still be examined.

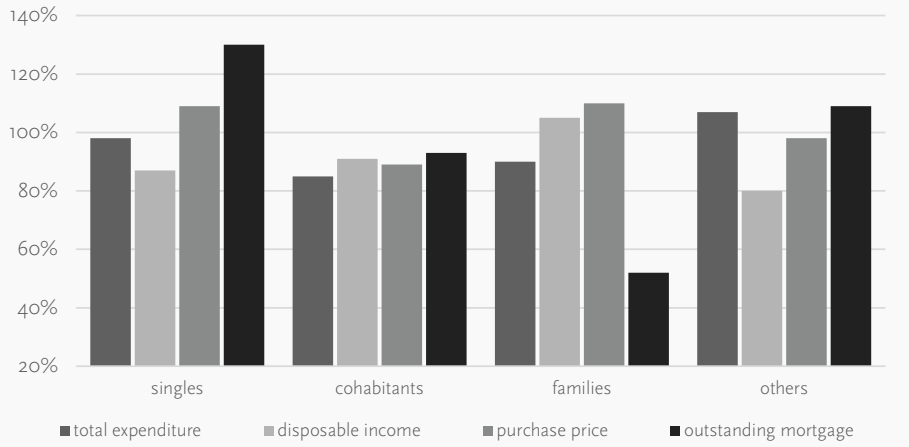
The ratio of total housing costs, disposable income, purchase amount and remaining outstanding mortgage amount of households in the starter segment and the regular segment who did or did not receive a grant is shown in Figures 8.10 & 8.11, respectively. A value of less than 100 per cent means that the corresponding amount is lower for households that did receive a grant. Among singles in the starter segment, it is noticeable that the households that did receive a donation have higher mortgage debt. At the same time, disposable income appears to be lower.
Singles who did not receive a donation generally appear to have a higher disposable income and may be able to finance a larger part from their own resources. Cohabitants seem to show a different picture. Households that received a grant bought cheaper housing with lower mortgage debt and as a consequence have lower monthly costs. Families seem to experience the greatest benefits from the donation. For instance, mortgage debt drops to 50 per cent of comparable households without a donation. The purchase amount also appears to increase by 10 per cent with total monthly expenses decreasing. The other households show similarities with the singles. Again, after analysis, the same reasoning is found to hold.

In the regular segment, single people are ian interesting group. The households that received a grant are found to proportionally purchase a house for sale up to 18 per cent more expensive while the outstanding mortgage debt drops to 18 per cent. Looking at Table 8.13, this is an interesting development. In fact, income appears to differ hardly at all. However, partly due to the size of this group (933 households after weight factor), the results are very doubtful. Families and cohabitants in the regular segment seem to match. Again, it appears that the households that did not receive a grant used more of their own funds, reducing the relative mortgage amount. The households that thus received a grant additionally used a larger part of their borrowing capacity. In contrast, the remaining households seem to be able to buy a house at the lower end of the regular segment mainly as a result of the donation.

Overall, it appears that former tenants are involved in more than a quarter of all housing transactions among this group. The amount of the donation is often up to 53,000 euros. In addition, 10 per cent also borrowed an amount of money from relatives. The various households seem to use this gift in different ways when buying a house. This is evident from the comparison of housing expenditure and the purchase amount of the house in question. The role of own equity and the donated amount seems to occupy an important position in this.

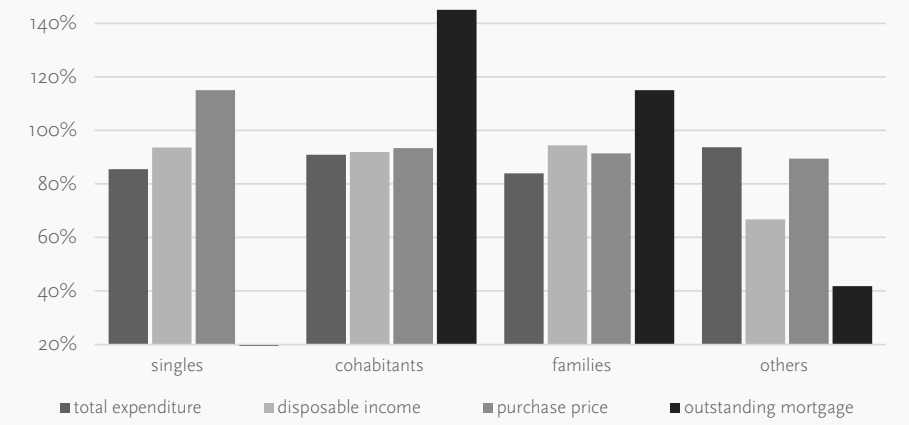
In Chapter 4, the 'jubelton' was mentioned in a few places. Based on the results found, it can be questioned to what extent the jubelton actually has a price driving effect as assumed. Although in recent years an increase is visible in relative numbers of donations (both among former tenants and direct entrants), it not only concerns a small part of the total but it appears that the donated amount does not always lead to the purchase of a more expensive house. In addition, the question remains whether, and to what extent, abolishing this measure deters parents from donating. This appears to play a role, especially for direct entrants in the regular segment.

Figure 8.10 evolution of housing costs, income, purchase amount and mortgage debt between households receiving or not receiving a gift, by former tenants in the starter segment, in 2021



source: WoON 2021 (own edit)

Figure 8.11 evolution of housing costs, income, purchase amount and mortgage debt between households receiving or not receiving a gift, by former tenants in the regular segment, in 2021



source: WoON 2021 (own edit)

8.4.3 The mortgage type and guarantees

Since the liberalisation of financial markets in the late 1980s, the way households can finance their homes has changed significantly. In essence, this liberalisation regulated that there and more financial institutions could provide mortgages and relaxed conditions. However, the supply in the 1980s was limited to linear and annuity mortgages with short terms measured by today's standards. These different mortgage forms have since been 'converted' into different mortgage products by the various lenders. Due to falling interest rates after the financial crisis, previously popular mortgage products such as savings and investment mortgages have slowly disappeared. consequently of the growing share of NHG, the interest-only mortgage has slowly disappeared among first-time buyers.

Direct entrants
Figure 8.10 shows the distribution of the type of mortgage chosen to finance home ownership. Within the starter home segment, the annuity mortgage appears to be by far the most popular. On average, 85-90 per cent of households took out a mortgage with an annuity repayment. Interest-only mortgages in combination with an annuity seem to be little chosen among singles and families. Interest-only mortgages can usually only finance up to 50 per cent of the house value. Families seem to choose such a mortgage construction more often.
Within the regular segment, a combination mortgage appears to be found more prevailing. Still only 10 per cent of cohabitants and singles opt for such a mortgage product

The general picture that can be drawn up shows that first-time buyers mostly choose a 'safe' annuity or linear mortgage form. In this, households are somewhat limited in their choice. For instance, the use of the NHG limits first-time buyers in choosing a (partly) interest-only mortgage. The proportion of households opting for such a mortgage construction, therefore, appears to be almost non-existent in the first-time buyer segment.

Former tenants
A combination mortgage in which part is Interest-only seems to be more frequent among former tenants in both segments. Within the starter segment, singles seem to use such a mortgage construction more often. by far the majority of households use a linear or annuity repayment scheme. Thus, an average of 65 per cent (other) to 82 per cent (cohabitants) appear to repay their mortgage using such a mortgage construction.

Within the regular segment, the proportion of former tenants with an interest-only mortgage increases sharply among most households. Cohabitants are again reluctant while families and others with a part repayment-free doubled. Finally, there appears to be a significant group of households that do not know which mortgage form applies to them.

8.5 Conclusions

How did housing expenditure and income of first-time buyers in realised and potential demand for owner-occupied housing evolve over the period 2009-2021?

Socioeconomic developments are evident in the starting position of first-time buyers. In this, the knife appears to cut both ways. On the one hand, the positive income development among the households studied has resulted in a lower housing and living expenditure ratios; on the other hand, the skewing of incomes, as discussed in Chapter 4, has further worsened the position of households that have experienced a less strong income development. Compared to the present period from 2015 to 2018, housing expenditure among direct entrants and former tenants, both in absolute and relative terms, has fallen (sharply). In this, direct entrants experienced the largest decline in housing expenditure, over 12 per cent. The simultaneous increase in disposable income (2020 price level) results in a net purchase ratio of around 22 per cent. By comparison, in 2018 it was still 27 per cent.
The households that entered the market as direct entrants do not differ too much among themselves. Singles in the starter segment have the lowest housing expenditure. In relation to income, housing costs account for a larger part of this. Cohabitants and families, on the other hand, have a lower housing expenditure ratio. Although net housing expenditure is higher, income increases more strongly. Within the regular buying market, singles again pay relatively more. The purchase amount also rises sharply.

The entrants from the rental sector differ mainly on income. The disposable income of the distinguished households is higher than that of the direct entrants. Mainly the stronger socioeconomic position contributes to this. Consequently, the net housing expenditure ratio is found to be below 20 per cent for households in the starter segment. Within the regular segment, net housing expenditure increases considerably. This also shows a slight increase in the number of households with a purchase ratio above 35 per cent. Singles and other households form an excess in this. The vast majority of households appear to have a purchase ratio of up to 30 per cent. Compared to previous years, this share has increased sharply.
The picture among those willing to move is diverse with regard to desired housing expenses. A large proportion of direct entrants indicate that they are willing to bear higher housing costs than households that have moved into a house in the previous two years. The desired purchase amount, however, is lower. Among former tenants, there appears to be a difference, especially between the two housing segments. Within the starter segment, the desired purchase amount fluctuates around the realised purchase amounts. The desired housing costs fluctuate slightly upwards. In the starter segment, the desired purchase amount is usually considerably lower, as are the desired housing costs. Only cohabitants are an exception, they often wish for a more expensive house.

What regional differences exist in housing costs of first-time buyers in the realised demand for owner-occupied houses in the period 2009-2021?

The level of housing costs depends, among other things, on the purchase amount. Therein, the housing characteristics (i.e. living area) of the basket of homes sold within a given region also affect the purchase amount and ultimately housing costs. One way to include the above in a regional comparison is to consider housing costs in the context of housing surface area.
The distribution in level of housing expenditure by municipality area (G-class) and county corresponds to the distribution of demand exercised. In places where a larger share of demand is agglomerated, housing expenditure is higher. For instance, the G4 is found to have the highest housing expenditure per square metre. This is also evident for the West Netherlands region. That housing expenditure is higher there is also to be expected. Over 50 per cent of demand falls within this part of the country. By and large, price therefore follows demand. The above conclusion holds for both direct entrants and former tenants.

In what way is home ownership financing for first-time buyers structured?
The fact that first-time buyers are more likely to want to make the move to an owner-occupied house when it is more financially conducive than a similar house in the rental segment is evidenced by the total demand exerted as identified in Chapter 7. Therefore, in recent years, the ratio of (wanting to) buy to (wanting to) rent has been constantly changing. In particular, over the past 3 years, buying has become more conducive than private renting. The cause of this appeared to be twofold. On the one hand, the lowering of mortgage interest rates has meant that the total monthly costs households spend on their mortgages have become lower. On the other hand, rents in the private sector have risen sharply in recent years.
Partly due to the decrease in housing costs within the owner-occupied segment in the most recent period compared to the rental market, the potential demand for (starter) houses is increasing unabated. Nevertheless, Chapter 7 showed that the realised demand for owner-occupied houses did not increase. The current relatively low cost of living compared to private renting makes buying more attractive. At the same time, the relative demand for owner-occupied houses, especially among single people, has also increased significantly. However, supply lags behind that demand. As a result, the net inflow of first-time buyers appears to be stagnating compared to the previous period, and households are relatively more often choosing (out of necessity) to rent.

The proportion of own money by means of a donation appears to have increased sharply in recent years. Purchasing still almost always requires a mortgage. Over 90 per cent of households therefore appear to finance their homes partly from a mortgage. Direct entrants, in both housing segments, receive a financial contribution from their parents to varying degrees. Singles in particular receive some form of donation. Thereby, the average donated amount is up to 53,000 euros. Accordingly, households that once received a donation are more likely to buy a more expensive house with lower housing costs than households that did not receive a donation. Among former tenants, a larger share receives a donation; 25 per cent on average. Here, the donated amount, especially in the starter segment, is often less than 25,000 euros. In the regular segment, more is donated; between 53,000 – 100,000 euros. Again, this results in a higher purchase amount and lower expenses.

Chapter 9
The accessibility of (starter)houses

9.1 Introduction

Chapter 7 dealt with developments in the realised and potential demand for (starter) owner–occupied houses, after which Chapter 8 examined the housing expenditure of recently moved and inclining to move households. This showed that both the demand and the (composition of) housing expenditure, have seen major changes in recent years. The overview study by Neuteboom and Brounen (2010) showed that, in the recent literature, the choice to move into an owner–occupied house depends on both demographic and socioeconomic factors (as assumed in the career/lifecycle theory), as well as the relative costs between buying and renting. The evolution of this ratio appears to depend on mortgage rates and the equity (home equity) that can be used. Especially in recent years, the importance of home equity has increased.

The position of first–time buyers can therefore be explained by their demographic and socioeconomic position on the one hand, and the prevailing housing market conditions on the other. In the remainder of the chapter, this starting position is described in terms of accessibility. Accessibility thus reflects different households within the prevailing housing market conditions.

This chapter attempts to answer the fifth research question of this study, as formulated in chapter one: *In what way has the accessibility of the owner–occupied housing market for first–time buyers in the Netherlands developed and what regional differences are there?*

Section 9.2 discusses the operationalisation of the concept of accessibility. It presents the conceptual and analytical model in which a time series analysis can be carried out. Section 9.3 looks at the accessibility of direct entrants and former tenants in 2021, after which developments from 2009 are described in section 9.4. Section 9.5 highlights some regional differences after which the conclusion follows in section 9.6

9.2 Operationalisation of the term ‘accessibility’

The development in the accessibility of the (starter) housing market for first–time buyers can be derived from two concepts: affordability and (regional) competition (Neuteboom & Brounen, 2010). The development in accessibility can be determined using the WOON files.

- The *Affordability indicator* (affordability ratio) shows the number of owner-occupied houses offered, in a given time frame and region, that are financially accessible to a specific household. This indicator thus provides insight into demand-related factors (demographic and socioeconomic characteristics).

- The *Competition indicator* (competition indicator) shows the number of households operating in the same market, at the same time, for which the same set of housing is financially accessible. In other words, is there enough supply in the market?

Both indicators thus provide a picture of tension in the (regional) housing market. Added value occurs in combination. Suppose that in many regions affordability is low (i.e. many houses are not financially inaccessible) and competition is high (due to inadequate supply), this means low accessibility. Conversely, low affordability with a low value of competition indicator mainly reflects that households lack the financial ability to succeed and/or that there is a significant mismatch between supply and demand in terms of quality (price).
In the next section, the concepts of affordability and (regional) competition are discussed using a conceptual approach followed by a more formal definition operationalised to the possibilities within the WOON.

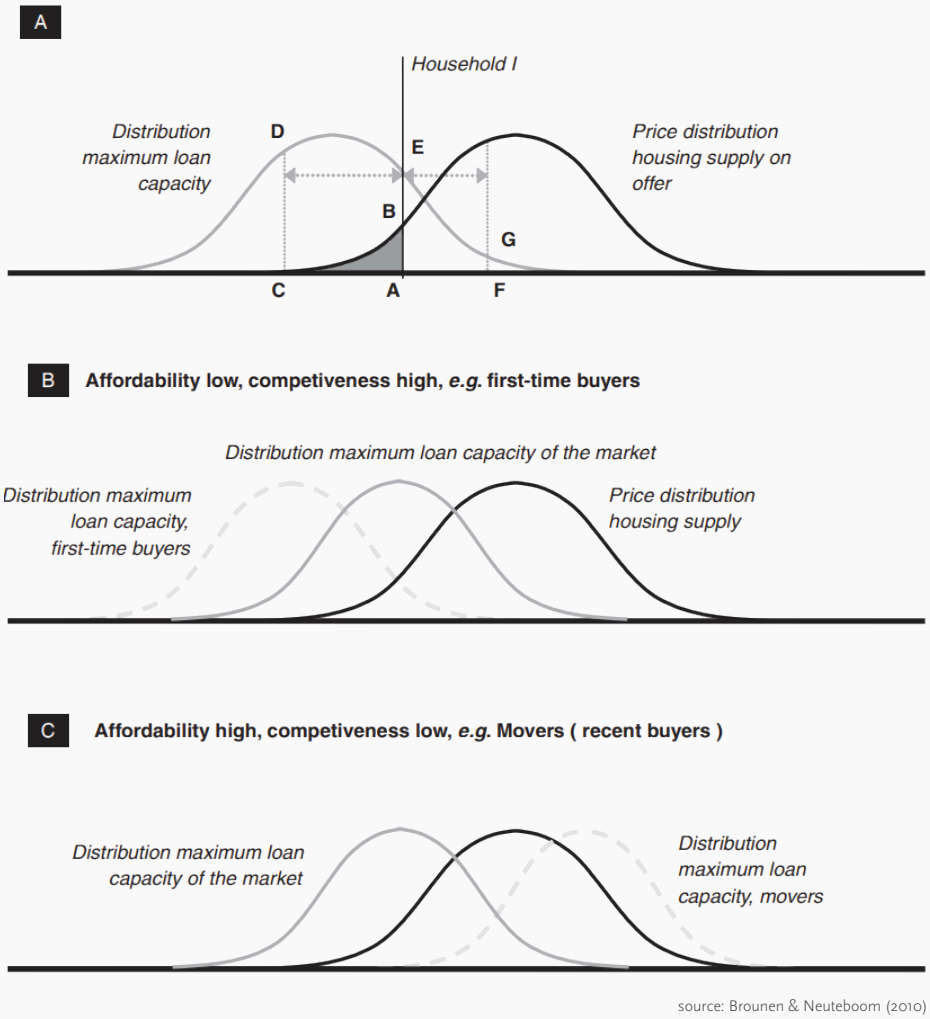
9.2.1 The affordability and the (regional) competition

Accessibility depends on prevailing market conditions and specific household characteristics, modelled using affordability and (regional) competition. As a prelude to the mathematical elaboration, Figure 9.1 visualises the model. Panel A shows both indicators graphically. The continuous dark-grey line shows a frequency distribution of households, while the black line shows the house price distribution of all homes on offer. For household I, with a specific set of household characteristics, panel A shows the overlapping section ABC, which represents the proportion of all offered houses that are affordable for household I.

However, household I does not choose on its own, as the set of affordable housing (ABC) is also affordable to other households in the market. In other words, household I will have to compete with all households in section CDEA: the set of households that will be in the market for the affordable housing in ABC. Moreover, some households with a better financial position may also be looking for housing in the set of affordable housing of household I.

Moreover, housing costs also represent an implicit level of quality. As such, it is assumed that households do not compete for all housing that is well below their financial means. In Panel A, a cut-off point related to the level of housing expenditure ratio is set at F. Here, segment AEFG represents households that are wealthier than household I but are still interested in part of the range of affordable houses ABC. In other words, the total group of competitors for household I consists of all households in section CDFG.

Figure 9.1 Model-based representation of affordability and (regional) competition indicator



source: Brounen & Neuteboom (2010)

In summary, household I searches for a house in set ABC and competes for these houses with households in set CDFG. The number of competitors limits household I's probability of success in the owner–occupied housing market and thus both factors determine the accessibility of the owner–occupied housing market. This probability can be represented in Figure 9.1 (panel A) by dividing the affordable share of the housing stock, ABC, by the share of households able to compete for the same houses, CDFG.

The combination of indicators can be used to characterise market conditions for the different household groups. Panel B, for example, shows that for first-time buyers, there is a low affordability ratio (i.e. a low number of houses affordable to households) only because of relatively low income. A high level of competition leads to an inaccessible housing market for newcomers, while the opposite leads to high accessibility, as shown in panel B. On the other hand, other categories in the housing market, such as first-time buyers, have more opportunities. Panel C shows that a large part of the housing market is accessible to this group of households, while competitiveness is relatively low.

The affordability

The housing expenditure ratio (hci) is defined as net housing expenditure over net disposable household income:

$$\text{hci} = \frac{\text{M i}(1 - \text{t}[\text{Y}]) + \text{c}_1 + \text{c}_2}{\text{Y}(1 - \text{t}[\text{Y}])} \tag{9.1}$$

where M represents the mortgage debt contracted by the household to finance home ownership; and *i(1-t[Y])* represents mortgage interest. Annual repayment and other housing costs are represented by c_1 and c_2 , respectively. Next, *Y(1-t[Y])* represents the household's disposable income.

It is established, that the net housing cost as a proportion of disposable income at which a dwelling can be considered affordable is at most 35 ($\text{hci} = \delta_h$). The affordability ratio (aff_d) can then be prepared as:

$$\text{aff}_{r,d} = \sum_{s=1}^{S} \begin{bmatrix} 1 \text{ if hci}_{r,d,s} \leq \delta_h \\ 0 \text{ otherwise} \end{bmatrix} / \text{S}_r \tag{9.2}$$

In other words, aff_d is the number of affordable homes for a specific household d in a regional housing market *r*, relative to all homes *S* in the market.

The (regional) competition

Regional competition (com_d) can be defined as the number of households in the market for the same set of owner-occupied houses. The competition indicator is based on the weighted group of unique remaining households that are in the market for all owner-occupied houses that are affordable to household *d*.

It was stated earlier that the assumption is made that not every other household is looking for all affordable housing. After all, such households are not looking for owner-occupied housing that is relatively cheap compared to disposable household income or of lower housing quality than desired ($\delta_l \leq \text{hci}_{r,d,s} \leq \delta_h$).). It should be noted that com_d reflects maximum competition in a regional housing market since differences in housing preferences and housing characteristics are not accounted for as such in the model. On the other hand, the model does not seem

to lose explanatory power as financing is generally the largest constraint. The range of the competition indicator com_d ranges from 0 to ∞, with $com_d < 1$ indicating greater supply than demand:

$$com_{r,d} = \sum_{s=1}^{S} aff_d \sum_{d=1}^{D} aff_d^s / S_r Aff_d$$

$$aff_{r,d,s} = \sum_{s=1}^{S} \begin{cases} 1 \text{ if } hci_{r,d,s} \leq \delta_h \\ 0 \text{ otherwise} \end{cases} \qquad (9.3)$$

$$aff_{r,d,s} = \sum_{s=1}^{S} \begin{cases} 1 \text{ if } \delta_l \leq hci_{r,d,s} \leq \delta_h \\ 0 \text{ otherwise} \end{cases}$$

Both indicators are expected to be dynamic in nature, depending on both the economic cycle and housing market conditions. When the economy strengthens, competition will increase, which could tighten the housing market and ultimately lower affordability ratios. . In addition, the regional analysis level and threshold values (δ_1,δ_h) are important drivers in the model. When δ_h wordt verlaagd wordt de betaalbaarheidsratio lager. is lowered, the affordability ratio becomes lower. Earlier in chapter 5, it was already set at 35 to the maximum borrowing capacity (*GHF*). When δ_1 is lowered, the competition increases. Within this study, the lower limit δ_1 is set at a value of 25.

9.2.2 Interpretation of the two indicators

Both indicators are relative measures of regional comparisons on the one hand and comparisons over time on the other. The absolute level of the variable is less telling. In doing so, large differences in variables do indicate changes in affordability or demand for supply (competition). The combination of both indicators is used to characterise prevailing market conditions.

- **low accessibility** → low affordability & high competition;
- **high accessibility** → high affordability & low competition;
- **quantitative shortages** → high affordability & high competition;
- **Qualitative shortages** → low affordability & low competition.

9.3 The explanatory model for accessibility

For the operationalisation of the model, some additional assumptions need to be made in WoON2021. Whereas in previous years the interest paid on the (outstanding) mortgage

amount of the different households was included in the questionnaire, it is missing from WOON2018 onwards. To make an approximation of *i(1-t[Y])*, we chose to use the most common mortgage interest rate in the relative period[1]. This may also further distinguish the use of the national mortgage guarantee. The determination of the monthly interest amount then follows from:

$$\text{monthly interest} = \frac{\text{outstanding mortgage} \times \text{nominal interest rate}}{\text{12 (months)}} \qquad (9.4)$$

Table 9.1 shows the model outcomes of four household groups. In it, direct entrants and former tenants are mirrored against unsuccessful buyers (involving residential substitution through 'forced' rents) and those moving. The latter group is found to have the highest affordability ratio at .95. There are two reasons why this affordability ratio is so high. On the one hand, the low mortgage interest rates combined with the high incomes of this group of households and, on the other, the relatively large proportion of home equity that can be used to finance home ownership when moving. Competition is also high. With this, therefore, there seems to be mainly a quantitative housing shortage among those moving.

The group of unsuccessful buyers differs most markedly from those moving on. The average affordability ratio is only two-thirds of those moving on, with the number of households looking for an owner-occupied house suitable for this group being slightly higher. By total size, this group appears to account for about 13 per cent of total residential mobility. This puts the percentage higher than in previous years. In other words, an increasing number of households are forced to enter the rental market. A study of the demographic and socioeconomic characteristics of this group shows that the significantly lower income in particular can explain this residential substitution. So there seems to be mainly low accessibility for lower-income households. The low income also makes these households have little competitive strength.

For both direct entrants and former tenants, only minimal differences are visible across households. The discussion of the results is therefore limited to some major differences between households in both housing segments. The results of this analysis for household groups by housing market segment. are presented in Table B9.1 and Table B9.2 in Annex V.

Direct entrants

On average, direct entrants have the lowest affordability of all households in the owner-occupied segment. The competition appears to be greater than that among move-through buyers. The discrepancy in affordability arises from the lack of home equity. Direct entrants only have a part of equity (from savings and/or donations) and debt capital (through the mortgage) when buying a house. The high competition shows that there is a higher demand

1 The applicable interest rate is based on the 10-year fixed mortgage rate. Differences in this interest rate then depend on the choice of using the national mortgage guarantee and the prevailing interest rate in the year the house is occupied.

Table 9.1 The affordability indicator and the competition indicator for direct entrants, former tenants, unsuccessful buyers (households in the rented sector) and movers in 2021.

	first-time buyers			
	direct entrants	**former tenants**	**unsuccesful buyers**	**movers**
affordability ratio				
mean	0,89	0,93	0,61	0,95
median	0,96	0,98	0,56	0,93
std. deviation	0,15	0,11	0,30	0,32
competitiveness indicator				
mean	1,73	1,77	1,82	1,50
median	1,69	1,72	1,78	1,46
std. deviation	0,46	0,33	1,33	0,77

source: WOON 2021 (own edit)

for the owner-occupied houses this group of households is looking for. Although the average disposable income of these households is lower, it still appears to be more than enough to finance home ownership. However, the price range in which the housing demand is exercised is lower. In addition, mortgage interest rates play a major role in high affordability.

The combination of high affordability and high competition means that there is a quantitative housing shortage. Hence, housing affordability does not seem to be a roadblock for this group of households. By extension, high owner-occupied housing prices do not result in a lower affordability ratio. Apparently, available houses are affordable. However, the supply of these available homes appears to lag far behind demand. The number of households in the market for the housing package affordable to direct entrants is higher than among those moving on. The comparison between households in both housing segments shows a slight decline in affordability across households, with competition increasing the moment a more expensive owner-occupied house is demanded. This is also not entirely unexpected. The households that moved into a more expensive owner-occupied house did so mainly from a donation. Competition is increasing because of the higher proportion of people moving on with whom they are competing. Within the regular segment, therefore, accessibility is low.

Former tenants

The affordability ratio of former tenants differs less from those moving up. Thus, the overall affordability of the owner-occupied houses sought by this group of households is slightly higher than among direct entrants. This can also be expected based on the higher income. Again, the low mortgage interest rate plays a role in this. The competition indicator here also lies slightly above the move-up households. The package of demanded housing for this group of households therefore has a slightly higher demand. The higher affordability ratio of this group of households can (partly) be traced back to the higher income (the LTI ratio appears

to be lower than for direct entrants). Again, it appears to be mainly the high competition that affects the position of this group of households.

The combination of high affordability and high competition creates a quantitative housing shortage. Demanded housing is also quite affordable for this group of households. Rather, the combination of income, current interest rates and house prices seem to encourage home ownership. The fact that owner-occupied housing is in demand is therefore evident from the competition. To a large extent, it is the number of asking households in the market relative to the homes on offer that is the biggest barrier.

A comparison between different households in both segments shows that singles in particular experience lower affordability with competition being significantly higher. There is low accessibility for this group of households. Households looking for housing in the regular segment generally experience higher competition than households in the starter segment. Consequently, these households have to compete more often with move-up households.

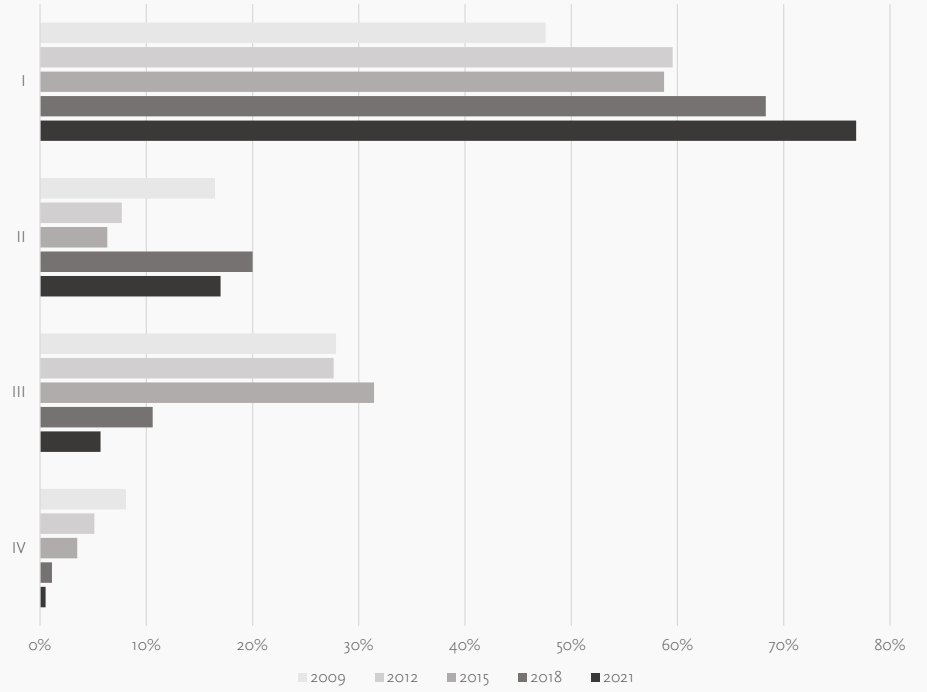
Differences in interest rates
As mentioned earlier, the results of the accessibility model depend heavily on the interest rate used. Consequently, a number of contrast analyses show that the affordability of owner-occupied houses for both direct entrants and former tenants deteriorates sharply when the interest rate is raised to 3.3 per cent (the current NHG rate). This brings affordability to 0.7, with competition also increasing. For first-time buyers, affordability also decreases.
However, the level of the affordability ratio does not consider any overbids. This is because it is estimated based on the current sales value. When this is increased by 50,000 euros (average overbid), affordability also decreases. There is then low accessibility in both scenarios.

9.4 The developments over time

Besides identifying current market conditions from the combination between affordability and (regional) competition, developments in both indicators can also be described for the period 2009 to 2021. Following the accessibility model established in the previous section for households in the most recent period, developments in the four distinct relationships between the two indicators can be calculated for the periods ahead. Thereby, the cut-off point is fixed at the average values of both indicators from 2015.

Figure 9.1 shows the prevailing market conditions for both direct entrants and former tenants by relative share in each distinct category. The analysis shows only minimal differences between the two household groups. In doing so, the trend development also remained the same. The relative developments between the different distinct categories vary slightly. The differences between household groups are also minimal. For the sake of brevity, the comparison figures are included in Annex V.

Figure 9.1 The shifts over time of the four distinct market conditions for first-time buyers over the period 2009-2021.



I. quantitative shortgage
II. High accessibility
III. Low accessibility
IV. Qualitative shortgage

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

In the years leading up to the credit crunch (2009), a quantitative housing shortage appeared to dominate the market. Over 47 per cent of all households were found to face high affordability and competition. The proportion of first–time buyers who experienced low market accessibility was around 28 per cent. Qualitative housing shortage occurred among only 8 per cent of households. After the onset of the crisis in the period 2009/2012, there was a shift from high accessibility towards the quantitative housing shortage. This trend continued until 2015. This shift was (partly) due to both a sharply reduced construction output and a decline in the number of homes sold. Fewer housing transactions took place and thus competition increased sharply while affordability only declined minimally.

In subsequent years, the biggest shift appears to take place in accessibility. The share of households with high accessibility quadruples compared to previous years. Low accessibility

decreases sharply. First-time buyers had a stronger foothold in 2015/2018. Increased incomes, low mortgage interest rates and (still) low competition meant that first-time buyers entered the market more strongly. For both direct entrants and former tenants, the number of low-access households decreased.
From 2018, there appears to have been a further shift from high accessibility towards the quantitative housing shortage. In fact, this has increased competition more sharply. The proportion of households experiencing quantitative shortages has increased by over 65 per cent compared to 2009, to almost 8 in 10 households. The number of households experiencing low affordability (low accessibility & qualitative shortages) is almost non-existent.

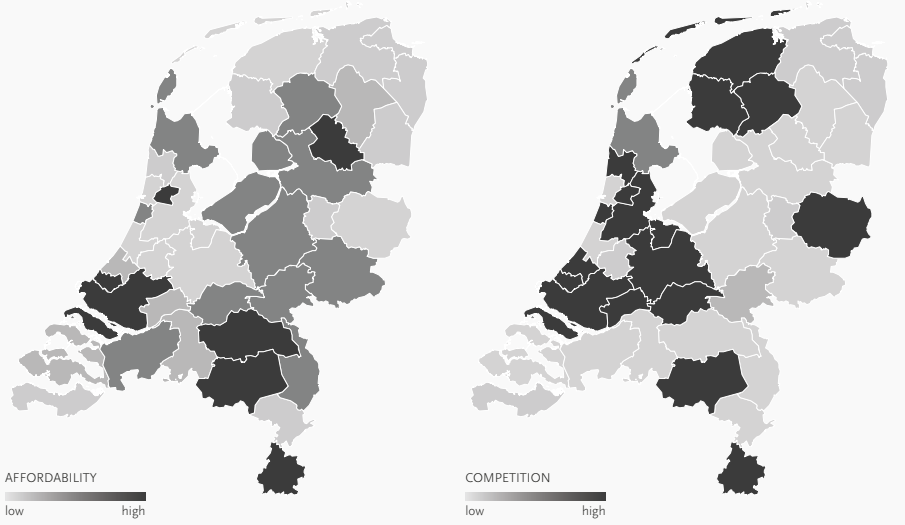
Overall, it does not seem to be affordability that limits access to the housing market. The affordability ratio has increased quite significantly over the years which is (partly) due to the effects of low-interest rates, making mortgages cheaper. Most of the loss of accessibility is due to changes in the degree of competition among buyers in the housing market. The competitiveness indicator has increased by 60 per cent over the years, from 1.12 in 2015 to 1.81 in 2021.
Figure B9.1 and B9.2 in Annex V show the relative differences in the development of the four distinct relationships for direct entrants and former tenants. Among direct entrants in particular, the quantitative housing shortage appears to have increased in the most recent period. Former tenants show a slightly more moderate picture in this respect. The strongest changes are visible in the 2015/2018 period with accessibility in particular increasing sharply. Among former tenants, a higher proportion of low accessibility is visible. This is also not entirely unexpected, the relative decline of former tenants who moved into owner-occupied housing in 2021 decreased relatively more than among direct entrants.

9.5 The regional differences

As indicated earlier, the competition indicator depends on the measurement level. A finer distribution of the local housing market thereby automatically leads to greater regional differences in competition. This is because the determination of the competition indicator is limited to the set of housing units available regionally for a given household type. Thereby, the level of individual indicators again says little about prevailing market conditions. For instance, in Amsterdam, the affordability ratio may be relatively high while housing prices are significantly higher. If the incomes of householder households are also higher, this does not then lead to lower affordability.

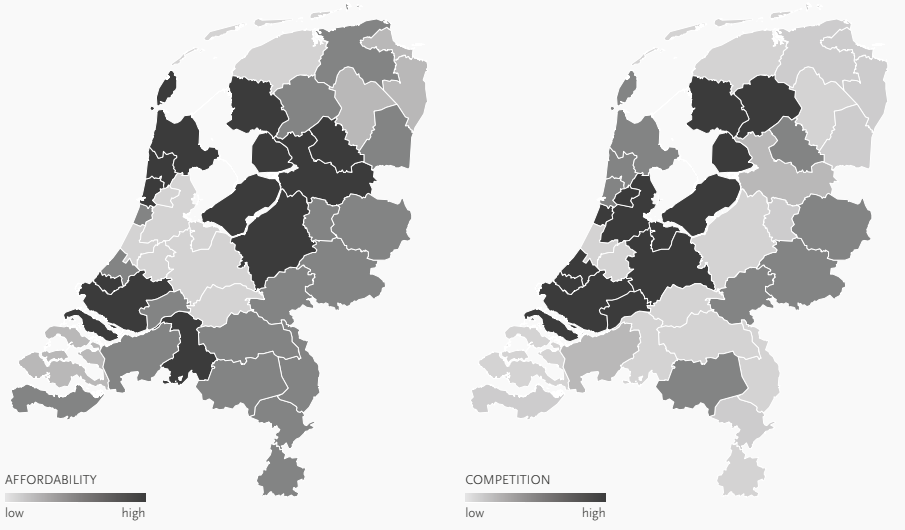
The second part of the sub-question concerns regional differences in accessibility. To understand the regional differences for different households, we chose to use a spatial segmentation using the COROP housing market area as a starting point. Using this segmentation and the two maps, regional housing market conditions can be derived. In doing so, developments of direct entrants and former tenants are discussed successively.

Figure 9.2 Regional distribution of affordability ratio and competition indicator for direct entrants, by COROP area, in 2021



source: WoON 2021 (own edit)

Figure 9.3 Regional distribution of affordability ratio and competition indicator for former tenants, by COROP area, in 2021



source: WoON 2021 (own edit)

Direct entrants

Figure 9.2 shows the affordability indicator (left) and the competition indicator (right) for direct entrants in 2021. A legend is not necessary as the height of the two indicators does not provide any information. Darker colours indicate higher affordability and/or competition.

Affordability ranges from 60 per cent in the Gooi region (Vechtstreek) to 99 per cent in Alkmaar (and surroundings). In high urban areas in the Netherlands, affordability is 90 per cent on average. This high affordability is mainly due to the higher incomes of households in the periphery and the large supply of multifamily houses that are relatively cheaper. Competition in these housing market areas also appears to be very high. Especially around the big cities (G4), competition appears to be extremely high. Together with Utrecht, the housing market areas in North and South Holland have the highest competition.

In these regional submarkets, both quantitative shortages and relatively low accessibility appear to play a role. In Rotterdam, it is mainly quantitative shortages that determine the starting position of first-time buyers. Towards the North of the country, accessibility still appears to be high more often. Within Friesland, competition seems to be considerable.

Former tenants

The distribution of the affordability ratio in Figure 9.3 shows a clear picture. The lowest affordability is experienced by households in the housing market areas within North and South Holland and Utrecht. The average affordability ratio is 78 per cent. Towards the North, high levels of affordability are perceived more often. Eastern and Southern Netherlands, on the other hand, have relatively average affordability. The greatest competition is also experienced in the aforementioned housing market areas. The comparison with regional competition shows the same picture as among direct entrants.

The lowest accessibility is experienced by households in the housing market areas within North and South Holland and Utrecht. In this respect, Rotterdam is again an exception with high affordability. This submarket is mainly characterised by a quantitative housing shortage. In other words, house prices in this submarket can still rise further while around Amsterdam and Utrecht the ceiling has been reached. Towards the north, accessibility seems to be higher due to the absence of such strong competition as is present in the Randstad.

9.6 Conclusions

It was assumed, that the accessibility of the housing market for first-time buyers could be derived from the demographic and socioeconomic characteristics of the different distinguished households on the one hand, and the prevailing housing market conditions on the other. In this, these housing market conditions are always the result of the demand exercised, combined with the (local) supply. The accessibility model therefore runs along two lines: affordability and competition. The interaction between the two indicators provides the picture of accessibility.

The model results show that both direct entrants and former tenants have low accessibility. Most of this low accessibility is due to a quantitative supply deficit. This is evidenced by the high affordability of households and the high competition experienced. That this affordability is so high appears to be mainly due to falling mortgage rates and increased income. At the same time, there appeared to be an increased proportion of unsuccessful buyers (18 per cent) in housing demand. Compared to previous years, this share has increased. Access to the housing market thus appears to be largely dependent on income. In the lower price brackets in which unsuccessful buyers exercise housing demand, competition appears to be too high.

The time series analysis shows that the quantitative shortage has consistently increased since 2009. The halt in housing production as well as the decline in housing transactions (see chapter 4) contributes to this. At the same time, the share of households that do not experience accessibility problems from high accessibility (high affordability & low competition) has increased. This appears to be particularly prevalent in the northern parts of the country. The geographical distribution shows that among both direct entrants and former tenants, the greatest accessibility problems are experienced in the large cities within the Randstad region.

Chapter 10
The sucess rate of first-time buyers

10.1 Introduction

Under the conceptual model (Figure 3.1), it was noted earlier that the WoON does not offer the possibility to directly compare both realised demand and potential demand of households. Therefore, in the past chapters, when describing the bivariate relationships between demand for (starter) owner-occupied housing on the one hand and the various characteristics of households and their housing situation on the other, this distinction has always been maintained. To this end, therefore, no statements have been made about the relative relationship between the exercised demand and the realised demand of the individually distinguished households. The ratio between those who have recently moved and those who want to move (households inclined to move) gives the probability of moving.

However, career/lifecycle theory assumes that the outcome of the moving decision process is influenced by the set of demographic and socioeconomic characteristics of the household and characteristics of the current living situation. The analyses showed that the intra-relational differences between these characteristics and households in the two distinct initial housing situations are significant. Based on this, it can be expected that the probability of a household managing to move into an owner-occupied dwelling is a result of the position taken based on these characteristics, as well as the regional submarket in which the household exercises the desire to move. With this, residential mobility as included in the conceptual model can be tested.

This chapter answers the eighth and also final sub-question of this study, as formulated in chapter one: *In what way has the (regional) success rate of first-time buyers developed in the period 2015-2021 and to what extent can the success rate be explained by the relevant (household characteristic) factors?*

To unravel this complex of factors, multivariate analyses of success rates can be performed using decision trees (CHAID) and a logistic regression model. These forms of multidimensional cross-tabulation analysis are suitable for identifying demand-side and supply-side segments that differ significantly in the probability of moving to an owner-occupied house.

To keep the results of the model as economical as possible, a CHAID analysis is performed beforehand. This form of contrast group analysis aims to describe the variable to be explained, the probability of success, as sparingly as possible using pre-selected independent variables (factors). In other words, which variables determine the greatest variance in the success

rate of individual households? Section 10.2 elaborates on the operationalisation of both the CHAID analysis and the logit[1] model. Section 10.3 explains the success rate of separately direct entrants and former tenants after which a time analysis of the previous period(s) is shown in section 10.4 Section 10.5 discusses some geographical differences after which the chapter concludes with a conclusion in section 11.6.

10.2 The adopted methodology

It can be inferred from the sub-question that the developments in the success rate over the applied research period 2015-2021 will be studied to retrace the most determining factors based on individual household characteristics and housing characteristics. Before the analyses, as mentioned in section 10.1, can be carried out, a combined data file based on the WoON files used needs to be created. It was decided not to include the present WoON years 2009, 2012 and 2015 in this analysis because there are too many missing values on several relevant variables, making a meaningful analysis impossible. For instance, the literature studied (Goetgeluk, 1997) shows that the moving motive (primary or secondary action move) exerts a major influence on the success rates of households. However, this variable is not consistently present in the various WoON files mentioned.

For the two separate WoON years, a two-part selection was made of, on the one hand, the recently moved households and, on the other hand, the households willing to move. To this end, the operationalisation of both household groups was retained as established in the previous chapters.
For those willing to move, following Goetgeluk (1997) and others, it is chosen to make an additional assumption in the selection that represents the level of activity in the housing market. For this purpose, only households are selected that indicate that they will immediately 'go after a house' when a suitable house becomes available. This excludes 'exploratory' households from the probability of success determination.

Eventually, two data files were formed with both the recent movers and the movers with respondents each from the periods 2015-2021. Before the two data files can be merged, the variables to be included in the analysis have to be selected.
As indicated, the chances of success can be derived from the ratio between the realised demand of those who have recently moved and the potential demand of those who have moved. These probabilities vary for the regional housing market submarkets, depending on the scarcity in the region concerned. Indeed, in the more relaxed markets, the success rate is higher. The success rate thus indicates the supply-demand relationships in the housing

1 Some authors distinguish between logistic regression models and logit models. The term 'logit model' is then used in those cases where all variables in the explanatory model are categorical. When one or more variables are measured at a higher level of measurement, one speaks of a logistic regression model. However, both models are very similar, which is why other scholars tend to omit the distinction between them.

Table 10.1 The variables used in the CHAID analysis of direct entrants (excluding disposable income and 1-parent households) and former tenants

Variables				
Household composition (H)	1	singles	3	familes
	2	cohabitants	4	1-parent families
Age head of household (L)	1	up to 25 years	3	35-44 years
	2	25-34 years	4	older than 45 years
Disposable income (I)*	1	< 20.000 euro	4	40.000 - 50.000 euro
	2	20.000 - 30.000 euro	5	50.000 - 60.000 euro
	3	30.000 - 40.000 euro	6	> 60.000 euro
Purchase price dwelling (A)**	1	< 220.000 euro	3	280.000 - 340.000 euro
	2	220.000 - 280.000 euro	4	> 340.000 euro
Urbanity of the municipality	1	very strongly urban	4	Little urban
	2	Strongly urban	5	Non-urban
	3	Moderately urban		
Housing type (WS)	1	single-family house	2	multi-family house
Moving motive (V)	1	Primaire action	3	Other reason
	2	Secundaire action		

source: WoON 2018, 2021 (own edit)

* Household income (price level 2020), deflated to prior years by the average percentage change in the CAO wage.

** Housing purchase amount (price level 2020), deflated to prior years by the average percentage change in the owner-occupied housing price

market, i.e. the situational aspects of moving behaviour. The probability of moving also varies with moving urgency. Households wishing to enter the owner–occupied market from a secondary action move will search more intensively and be more willing to settle for less attractive offers. Their probability of moving within a given period will therefore be higher. Finally, the odds are influenced by individual household characteristics. Higher–income households will have better chances in the housing market.

From various studies on moving behaviour (Goetgeluk et al. 1991 & Goetgeluk 1997), it has become clear, that there is often a certain discrepancy between a household's potential

demand and the eventually realised demand. Indeed, the (regional) actual supply and price of desired housing (the housing market conditions) may lead to final housing choices, which differ from the original housing preferences. An example of this was mentioned earlier: the influence of action relocation. However, the actual substitution cannot be traced from the WoON because no disaggregation is present on the (probability of) acceptance of available supply.

Table 10.1 shows the variables that are expected to influence the success rate. It also takes into account the consistency of the variable in both realised moves and desired moves. The number of classes for each variable was derived from the trade-off between, on the one hand, the desire not to limit the number in advance and, on the other hand, the methodological assumptions for working with multidimensional cross-tabulations (cell filling).

The probability of moving depends on the moving motive, the availability and accessibility of (regional) supply and individual household characteristics based on demographic and socioeconomic characteristics. The moving motive can be traced directly from the WoON for both those who recently moved and those with a desire to move. For the availability and accessibility of supply, either the current dwelling or the desired dwelling was chosen. A distinction by housing type was chosen. Indeed, during the Twostep clustering, it already appeared that households distinguish themselves by this.
For the regional breakdown, a subdivision is used by the different levels of urbanity. This was decided for the sake of cell filling. The limited size of the WoON makes it impossible to make statements at the local housing market level. Section 10.5 will return to this in a broader perspective. The choice of individual household characteristics is limited to household income and (expected) household composition. Chapter 7 indicated that income data are not available for potential direct entrants. Therefore, this variable relates only to former tenants and as such is not included in the modelling of direct entrants.

Two techniques were applied to quantify the influence of the explanatory variables on the success rate: a CHAID analysis and the logit model. The former analysis technique aims to arrive at a categorical reduction of the different variables involved in the logit model. This also excludes variables that do not influence the success rate. The logit model is applied to identify the relationships between the probabilities for each subgroup.

10.2.1 CHAID - selecting the most explanatory variables

Using a CHAID analysis (Kass, 1979), the structure of a multidimensional cross table can be visualised in a decision tree. This form of contrast group analysis constitutes an exploratory technique that leads to the reduction of variables and categories of the explanatory variables. The latter in particular is important to reduce the broad categorisation of the variables shown in Table 10.1.

The CHAID analyses are performed on both the merged analysis file and the two individual data files. However, because the results of the CHAID analyses are used as input for the logit analysis by period, an unambiguous selection of both variables and the categories within them needs to be made. Therefore, based on the CHAID analysis results, a classification of categories within the relevant variables was sought that for both periods are considered to make substantive sense.

Direct entrants

For direct entrants, the demographic characteristics household composition and age of the household head are found to be associated with the probability of moving into owner-occupied housing. Merging the categories within the age of the household head results in two groups. This creates a group 'up to 25 years' and a group '25 years and older'. The household composition appears to remain unchanged. The lack of socioeconomic characteristics among direct entrants means that these characteristics cannot be included in determining the success rate.

In all individual sub-analyses, regional dispersion is also found not to contribute. From the housing characteristic-related variables, the purchase price appears to exert an influence on the success rate. In addition, house type appears to influence the determination of the success rate. The influence of purchase amount is weaker than age and household composition. The significant influence of demographic characteristics on the success rate of first-time buyers in a general sense was previously found in research by Goetgeluk (1977), among others.

The household's moving motive turns out to be the strongest determining factor in determining the probability of success. The moving motive thus constitutes an important reason for succeeding or not succeeding in the owner-occupied housing market. Wishing to move out of secondary action motives (e.g. cohabitation, work and/or financial reasons) yields different success rates than wishing to move out of dissatisfaction with the current house.

Former tenants

Of the demographic characteristics of former tenants, both for the total period and in the individual WoON periods, household income and the moving motive always emerge as the most important factors. The categorisation by income classes does vary somewhat between the distinguished households. The categorical classification is therefore different for secondary action movers. Household composition is not included in the tree diagrams. It turns out that the income classes indirectly characterise the household composition: single persons occur for the most part in the lower income classes. When income is omitted, the importance of household composition increases.

Household income emerges as the main explanatory socioeconomic variable in all sub-analyses. Therein, the variable 'composition of income' is also found to distort the results when added. This highlights the difference between one- and two-income earners.

Table 10.2 The variables used after the CHAID analysis of direct entrants

Variables direct entrants				
Household composition (H)	1	singles	3	families
	2	cohabitants		
Age head of household (L)	1	up to 25 years	2	25 years and older
Purchase price dwelling (A)*	1	< 280.000 euro	2	> 280.000 euro
Moving motive (V)	1	Primary motive	2	Secondary motive

source: WoON 2018, 2021 (own edit)

* Property purchase amount (price level 2020), deflated to previous years

Table 10.3 The variables used after the CHAID analysis of former tenants

Variables former tenants				
Household composition (H)	1	singles	3	families
	2	cohabitants	4	1-parent families
Purchase price dwelling (A)**	1	< 280.000 euro	3	> 340.000 euro
	2	280.000 - 340.000 euro		
Disposable income (I)*	1	< 20.000 euro	4	40.000 - 50.000 euro
	2	20.000 - 30.000 euro	5	50.000 - 60.000 euro
	3	30.000 - 40.000 euro	6	> 60.000 euro
Urbanity of the municipality (S)	1	Very strongly urban	3	Moderate to non urban
	2	Strongly urban		
Housing type (WS)	1	Single-family house	2	Multi-family house
Moving motive (V)	1	Primary motive	3	Other motive
	2	Secondary motive		

source: WoON 2018, 2021 (own edit)

* Household income (price level 2020), deflated to prior years.
** Property purchase amount (price level 2020), deflated to previous years.

Of the dwelling characteristics, the dichotomous distribution of dwelling type is found to hold in all analyses. The regional distribution as used is also included in the tree diagrams. Therein, the categorical classification differs slightly. The moderate- to non-urban municipalities are more often grouped.

Households' moving motives are found to be the second strongest determinant of success rates, after household income. With this, the results show a strong parallel with previous Dutch research (Goetgeluk, 1997) in which the moving motive is put forward as an important argument for whether or not households succeed in the (owner-occupied) housing market.

10.2.2 Logit model - explaining the success rate

A logit model is a form of log-linear regression based on multidimensional cross-tabulations. In effect, this makes it a form of linear regression. The dependent variable in the analysis is the logit: the logarithm of the ratio of the number of movers (*v*) to the number of movers (*z*). Transforming to the logit leads to the possibility of estimating an additive function (10.1). Additive means adding up the parameters. After estimating the parameters, the estimated odds ratio (*v/z*) can be calculated by taking the inverse function (*exponential function*) of the additive function (10.2). Therefore, the logit model also provides the possibilities on the probability of success *P(v)* (10.3).

$$logit = \ln\left(\frac{\sum \text{verhuisden}}{\sum \text{woningzoekenen}}\right) = 2 * \sum \text{ parameters van de variabelen} \qquad (10.1)$$

$$\frac{v}{z} = e^{2*\sum \text{ parameters van de variabelen}} \qquad (10.2)$$

$$P(v) = \frac{\sum \text{verhuisden}}{\sum \text{verhuisden + woningzoekenden}} = \frac{e^{2*\sum \text{ parameters van de variabelen}}}{1 + e^{2*\sum \text{ parameters van de variabelen}}} \qquad (10.3)$$

The logit model calculates whether explanatory variables statistically affect the probability of success. It starts with a model in which the probability of moving is estimated by employing all variables. This creates a saturated model in which the difference between the model estimate and the actual moving probability equals zero.
By systematically zeroing the variables of interest, the individual influence on the success rate can be determined. The variable is then expected to not influence the success rate. The aim is to describe the success rate as 'sparingly' as possible.

The ratio between the observed and estimated success rate indicates the 'fit' of the estimated model. This is expressed as the log-likelihood ratio. For each explanatory variable, the

parameters indicate the influence of a category. A positive value also indicates a higher-than-average moving probability. Conversely, a negative value indicates a lower-than-average expected probability of moving.

10.3 The explanatory model for the success rate

Initially, the logit analysis based on the WoON2021 was performed to establish the (strength) of the relationships between the demographic and socioeconomic characteristics of households, housing characteristics of the housing situation, regional influences and the moving motive on the one hand, and the success rates on the other. Here again, the distinction between direct entrants and former tenants was maintained.

10.3.1 The direct entrants

The CHAID analysis shows that the decision tree structure differs significantly for direct entrants who go to live alone (singles) compared to those households that go to live together (cohabitants). The size of families is found to lead to problems regarding cell filling. Therefore, a narrower success probability model was constructed for the latter group. The exploratory results have not been included for simplicity.

The model output in table 10.3 shows that urbanity of residence and housing type do not affect the probability of moving of direct entrants. The logit model shows that the probability of moving is most strongly influenced by the moving motive. Having to move because of starting a working career (secondary action-move) causes the moving probability to be higher than when the move is initiated from the need to modify the home or living environment (primary action-move).

The influence of individual factors on the probability of moving appears to be greater among cohabitants than among singles. In other words, there appears to be greater diversity among cohabitants who (wish to) move directly into the owner-occupied housing market. Age appears to have the greatest influence on the success rate. As one gets older, the probability of moving into owner-occupied housing increases. In the 17–25 age group, the probability of buying is lower than average. The influence of purchase amount is greater among singles. Thus, it appears that the demand for houses up to €280,000 (price level 2020) in 2021 significantly exceeds the number of realisations. This low probability of success in the lower purchase segment translates into a negative parameter. Therefore, as the (desired) purchase amount exceeds €280,000 (price level 2020), the probability of moving into an owner-occupied house increases.
Singles have the lowest average success rate. In 2021, only 22% of all single people wanting to move house can actually buy a house. Among cohabitants, the chances of moving are higher.

Table 10.3 The parameters of the Logit model for direct entrants in 2021

variable	singles	cohabitants	families*
constant	-0,35	-0,34	0,51
Age head of household (L)			
17-25 years	-0,25	-0,37	
25 years and older	0,25	0,37	
Purchase price dwelling (A)			
< 280.000 euro	-0,21	-0,17	
> 280.000 euro	0,21	0,17	
Moving motive (V)			
Primary action motive	-0,29	-0,36	-0,90
Secondary action motive	0,29	0,36	0,90
Average succes rate	**0,22**	**0,42**	**0,78**

* Not significant at the 0.05 level.
** Simplified due to cell fill.

source: WoON 2021 (own edit)

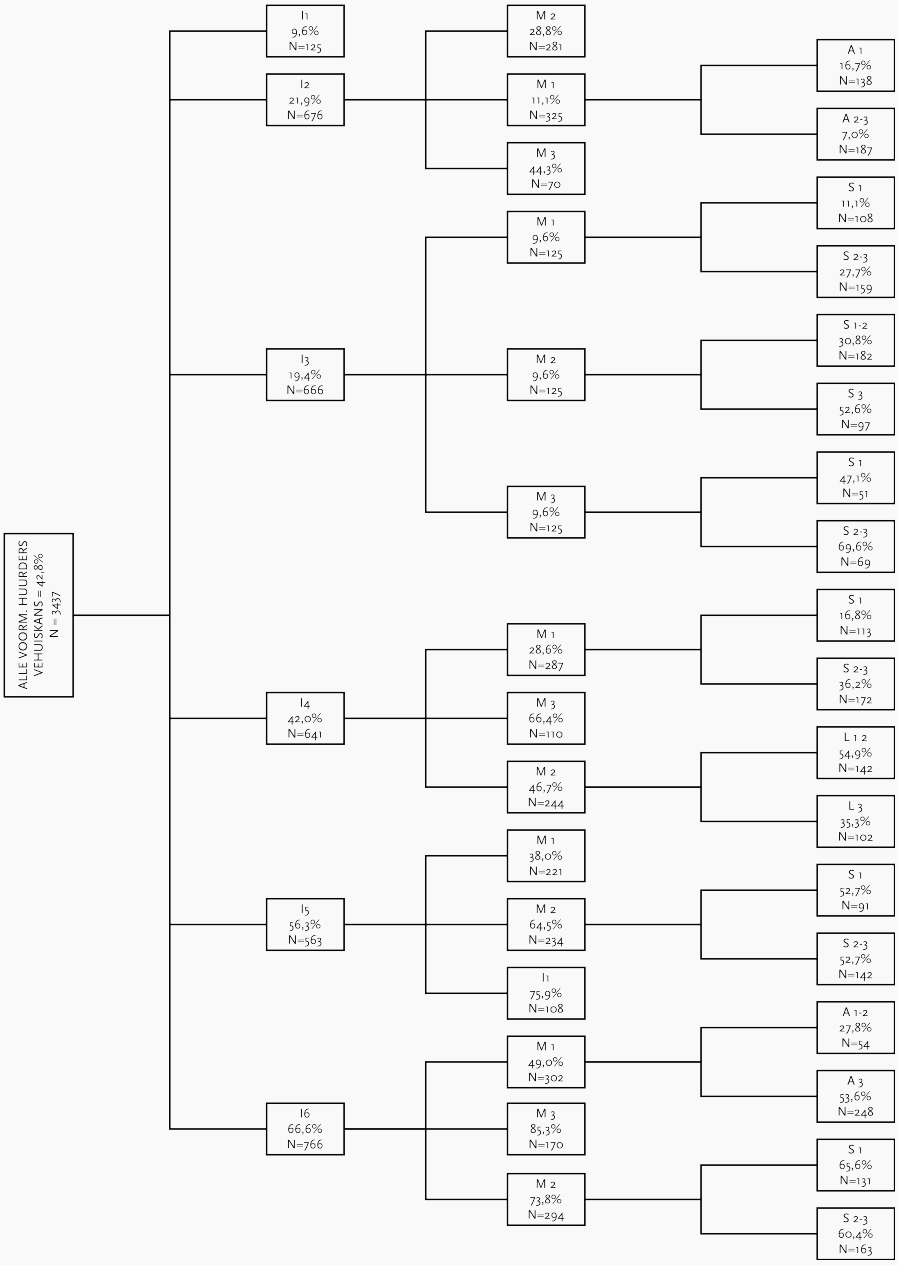
singles modelfit: Lr=4.48 | Df=4 | P=0.35 | N=579
cohabitants modelfit: Lr=3.39 | Df=4 | P=0.49 | N=593
families modelfit: Lr=0.00 | Df=0 | P=0.00 | N= 82

More than 4 in 10 (future) cohabitants who move directly into the owner-occupied housing market succeed. Because of cell filling, it does not appear possible to construct a logit model for families. The size of the group is simply too small. However, the moving motive again appears to have a strong effect on the success rate. The average success rate of families also turns out to be very high. The lowest success rates are for those looking for an owner-occupied house up to €280,000 with an age up to 25 years and wishing to move from a primary motive.

10.3.2 The former tenants

The exploratory CHAID analyses show that the tree diagram of former tenants is considerably more complex than that of direct entrants. Consequently, the results of these analyses are discussed before the logit models are constructed. Again, the outcomes have been used to simplify the models.
Figure 10.1 shows the outcome of the CHAID in a tree diagram. On average, it shows that over 43 out of 100 movers move during the period 2015 – 2021. But the average moving probability is not representative of all former tenants. The tree diagram shows that the moving motive very much determines the probability of moving. Three groups are therefore distinguished by moving motive. Within each group, further differentiation can be made by income, purchase amount, urbanity and housing type (form). The differentiation by moving motive is prepared as such:

Figure 10.1 The moving probability of former tenants according to the CHAID analysis in 2015 - 2022



source: WOON 2018, 2021 (own edit)

- **Primary moving motive**
  The (desire to) move to an owner-occupied housing out of a desire to change one's home and/or living environment or out of a desire to live independently.

  This group makes up over four in 10 households of the total group. Of these, about 27 out of every 100 movers move. The probability of moving also depends on income, purchase amount, urbanity and housing type.

- **Secondary moving motive**
  The (desire to) move to an owner-occupied house because of a work, financial and/or household-related motive such as cohabitation/divorce or family ties.

  A move is a more necessary condition for this group of buyers. It appears that over 46 out of every 100 house seekers move to an owner-occupied house. By size, this group of former tenants is as large as households with a primary moving motive. Moving from a secondary moving motive is also found to be strongly influenced by the urbanity of the search area. In addition, income, purchase amount and house type again appear to play a role.

- **Other moving motives**
  This group of movers did not give a reason for moving. However, the share of this group is small; about one-sixth of the total group of movers. The average probability of moving, on the other hand, appears to be high. Over 68 out of 100 house seekers move to an owner-occupied house.

Because of cell filling, it proved impossible to construct a logit model for the individual household types, as used in the previous chapters, that also distinguishes by moving motive. Based on the exploratory analyses, it was therefore decided to distinguish by income form.
It appears that single-earner on the one hand and dual-earner on the other proxy for income form. As income increases, the probability of success also increases (see Figure 10.1). In addition, the distinct household groups can also be traced back from this breakdown. The singles and other households belong to single earners. The cohabitants and families belong to the two earners. In this way, a success rate model can be formulated for the different households that is also statistically sound.

The primary action motived moves
The CHAID analysis shows that the group of households with a primary moving motive is strongly differentiated by income type. The one-earners thus differ from the two-earners. Tables 10.5 and 10.6 show the model outcomes of the one-earner and two-earner households, respectively.

Table 10.5 shows that the former single-earner tenants (the singles and other households) have a low success rate. This is evident from both the constant and average success rate of the

Table 10.5 The parameters for the Logit model for former tenants as single earners with a primary action motive in 2021

SINGLE EARNERS	parameter		parameter
constant	-0,58		
Disposable income (I)		Disposable income x urbanity level	
to €40.000 euro	-0,52	to €40.000 × very strongly urban	0,11
more than €40.000 euro	0,52	to €40.000 × strongly urban	-0,11
Level of urbanity (S)		to €40.000 × non urban	-0,01
Very strongly urban	-0,28	from €40.000 × very strongly urban	-0,11
Strongly urban	0,12	from €40.000 × strongly urban	0,11
Moderately - non urban	0,15	from €40.000 × non urban	0,01
Purchase price dwelling (A)			
up to 280.000 euro	-0,23		
280.000 - 340.000 euro	-0,21		
more than 340.000 euro	0,44		
Average succes rate			**0,14**

source: WoON 2021 (own edit)

Modelfit: Lr=9.20 | Df=10 | P=0.51 | N=300

total group. Out of every 100 households, 14 move to owner-occupied houses. Interestingly, the form of housing does not matter in this segment. The moving probability increases sharply as income rises. Households with an income of up to €40,000 (price level, 2020) have a lower than average success rate. For households with a household income greater than €40,000, the success probability increases by over 23%. The moving probability also increases significantly when the focus is on the more expensive owner-occupied houses (over €340,000). In the lower purchase price brackets, the success rate appears to decrease. The explanation for this probably lies in the greater competition for this type of home and the supply. In large cities (very urban), the success rate is significantly lower than in other municipalities. The difference between very urban municipalities and non-urban municipalities seems to be minimal.
One interaction appears to contribute substantially to the explanatory power of the model. Namely, the relationship between household income and urbanity.
The model results for dual earners are more complex. For example, Table 10.6 shows that housing type explains part of the success rate and there are two interactions that contribute greatly to the success rates. Only 35 out of every 100 house seekers moved. This makes the overall success rate significantly higher than among single-earners.

The direction of the parameters corresponds to single-earners, whereby the strength of the individual categories is greater. In particular, urbanisation and purchase amount explain a large part of the success rates. The moving probability also increases when a multi-family house (storey house) is requested. A possible explanation lies in the competition on the

Table 10.6 The parameters of the Logit model for former tenants as dual earners with a primary action motive in 2021

DUAL EARNERS	parameter		parameter
constant	-0,38		
disposable income (I)		urbanity x purchase price	
to 40.000 euro	-0,56	v. strongly urban × to 280.000	0,19
more than 40.000 euro	0,56	v. strongly urban × 280.000 - 340.000	-0,20
level of urbanity (S)		v. strongly urban × more than 340.000	0,01
Very strongly urban	-0,44	strongly urban × to 280.000	-0,12
Strongly urban	0,13	strongly urban × 280.000 - 340.000	0,27
Moderately - non urban	0,32	strongly urban × more than 340.000	-0,16
purchase price dwelling (A)		non urban × to 280.000	-0,07
To 280.000 euro	-0,58	non urban × 280.000 - 340.000	-0,07
280.000 - 340.000 euro	0,03	non urban × more than 340.000	0,15
more than 340.000 euro	0,55	purchase price x housing type	
housing type (WS)		to 280.000 × single-family h.	0,23
Single-family house	-0,37	to 280.000 × multi-family h.	-0,23
Multi-family house	0,37	280.000 - 340.000 × single-family h.	0,14
		280.000 - 340.000 × multi-family h.	-0,14
		more than 340.000 × single-family h.	-0,37
		more than 340.000 × multi-family h.	0,37
Average succes rate			**0,35**

Modelfit: Lr=11.95 | Df=13 | P=0.53 | N=332

source: WoON 2021 (own edit)

market for single-family houses. A clue to this lies in the interaction between the purchase price and house type. The probability of success for households looking for a single-family house in the high segment (more than €340,000) is significantly lower than the probability for an expensive multi-family house. So there seems to be housing substitution. In other words, far fewer households move to single-family houses in the higher segment as to multifamily houses within the expensive owner-occupied segment.

The second interaction effect reveals differences in the geographical distribution of supply/demand ratios in the submarkets by municipal size. For instance, it turns out that moving into any price range housing in the big cities is always associated with a lower success rate than the highly urban municipalities and the non-urban municipalities. This means that finding housing in the G4 is a difficult task. In particular, the 280,000 – 340,000 housing class appears to be associated with a significantly higher success rate outside the G4. Due to these differences in availability and accessibility, substitution of housing preferences will take place and consequently more households will leave for the peripheral (highly urban) municipalities.

The secondary action motivated moves

A similar proportion of single-earners wish to move to an owner-occupied house from a secondary moving motive, compared to primary action movers The average success rate is higher in this respect. On average, 25 out of 100 movers move to an owner-occupied house. However, the logit model differs significantly from the primary action movers. For instance, the housing type appears to influence the success rate and interactions play a bigger role.

Table 10.7 shows that single-earners with a secondary moving motive find it harder to move into a house for sale when they have an income of up to €30,000. The positive influence of higher income on the probability of moving is also not surprising. Interestingly, the individual effect of purchase amount does not appear to be significant at the 5% level, while the interaction with household income does contribute strongly to the explanatory power. Importantly, households with an income of up to €30,000 seeking a house between €280,000 – €340,000 have a significantly lower success rate than households with the same income seeking a more expensive owner-occupied house. The competition for this type of house appears to take place mainly with the higher-income households. The success rate of households with a household income above 30,000 euros towards such a property is significantly higher.

Housing form appears to contribute to the success rate to some extent. Again, single-family houses appear to be more difficult to access. This indicates a shortage of this housing type. Choosing multi-family houses (flats) therefore increases the success rate. Particularly in large cities, the interactions show that moving into a single-family house is almost unachievable. As urbanity decreases, the probability of success for a single-family house increases.

Once again, very highly urbanised areas (the four big cities) appear to have a lower success rate. Low-income households are at an extra disadvantage in this respect. Still, relatively more households succeed in the big cities than in the non-urban areas when they have an income of up to 30,000 euros. The interaction between household income and urbanity contributes strongly to this. It turns out that households that succeed in a highly urban area are relatively more likely to receive a (higher) amount of money donated by their parents.

Finally, a three-part interaction appears to have a significant share in the overall explanation for the success rates. There is an interaction effect between urbanity, purchase amount and housing type. In particular, this appears to reinforce the picture outlined earlier: moving into a single-family house in big cities becomes almost impossible when not and income exceeds €30,000 and one is willing to pay more than €340,000. The cheaper single-family homes are simply not there. Priemus' 'Iron Law' seems to live up to its name here: current housing is not current. The demand for cheaper single-family houses is considerable but these houses are almost not occupied.

The logit model for two-income earners is very simple. This is mainly due to both the high success rate and the income distribution. On average, 59 out of 100 households move to an owner-occupied house. Thus, these households have the highest average success rate. The fact that the average success rate is so high is also reflected in the positive direction of

Table 10.7 The parameters for the logit model for former tenants as single earners with a secondary action motive in 2021

SINGLE EARNERS	parameter		parameter
constant	-0,65		
Disposable income (I)		Stedelijkheid × woningtype	
to 30.000 euro	-0,38	very strongly urban × single-family h.	-0,38
more than 30.000 euro	0,38	Very strongly urban × multi-family h.	0,38
Level of urbanity(S)		Strongly urban × single-family h.	0,06
Very strongly urban	-0,19	Strongly urban × multi-family h.	-0,06
Strongly urban	0,20	Moderately-non urban × single-family h.	0,32
Moderately - non urban	-0,01	Moderately-non urban × multi-family h.	-0,32
purchase price dwelling (A)		Urbanity × income × housing type	
To 280.000 euro (low)	*-0,08**	V. str. urban × low price × s.f.	0,06
280.000 - 340.000 euro (middle)	*-0,10**	V. str. urban × low price × m.f.	-0,06
more than 340.000 euro (high)	*0,18**	V. str. urban × middle price × s.f.	-0,34
Housing type (WS)		V. str. urban × middle price × m.f.	0,34
Single-family house	-0,13	V. str. urban × high price × s.f.	0,28
Multi-family house	0,13	V. str. urban × high price × m.f.	-0,28
disposable income × urbanity		Str. urban × low price × s.f.	0,10
to 30.000 × very strongly urban	*0,07**	Str. urban × low price × m.f.	-0,10
to 30.000 × strongly urban	*0,15**	Str. urban × middle price × s.f.	0,20
to 30.000 × moderately - non urban	*-0,22**	Str. urban × middle price × m.f.	-0,20
from 30.000 × very strongly urban	*-0,07**	Str. urban × high price × s.f.	-0,31
from 30.000 × strongly urban	*-0,15**	Str. urban × high price × m.f.	0,31
from 30.000 × moderately - non urban	*0,22**	Non urban × low price × s.f.	-0,17
disposable income × purchase price		Non urban × low price × m.f.	0,17
to 30.000 × to 280.000	0,20	Non urban × middle price × s.f.	0,14
to 30.000 × 280.000 - 340.000	-0,24	Non urban × middle price × m.f.	-0,14
to 30.000 × from 340.000	0,04	Non urban × high price × s.f.	0,03
from 30.000 × to 280.000	-0,20	Non urban × high price × m.f.	-0,03
from30.000 × 280.000 - 340.000	0,24		
from 30.000 × from 340.000	-0,04		
Average succes rate			**0,25**

Modelfit: Lr=16.33 | Df=14 | P=0.29 | N=310

source: WoON 2021 (own edit)

the model constant. Remarkably, the purchase amount does not matter. However, this is not entirely unexpected. High household incomes mean that every price category of housing is, in theory, attainable. However, it does appear that the success rate for households with an

Table 10.8 The parameters for the logit model for former tenants as dual earners with a secondary action motive in 2021

DUAL EANERS	parameter		parameter
constant	0,43		
Disposable income (I)		Housing type (WS)	
to 60.000 euro	-0,21	single-family house	-0,18
more than 60.000 euro	0,21	multi-family house	0,18
Level of urbanity(S)			
Very strongly urban	-0,22		
Strongly - non urban	0,22		
Average succes rate			**0,59**

source: WoON 2021 (own edit)

Modelfit: Lr=4,15 | Df=3 | P=0.245 | N=283

income of up to 60,000 euros is significantly lower than those with higher incomes.
The parameters do not show an unexpected picture. Again, it appears that moving into single-family houses is associated with a lower success rate. This again confirms the quantitative housing shortage. Urbanity was found to be distinguishable by two categories only, with no difference between highly urban areas and moderately urban areas. Relocations toward large cities, on the other hand, still have a lower success rate.

The other action motivated moves
The last group of households to be distinguished by motive of moving appear to constitute about one-fifth of all households in terms of size. The exploratory analysis therefore shows that this group cannot be further subdivided by income form. This would make its size too small and lead to problems concerning cell filling.
The results of the logit model in table 10.9 show on average 47 out of 100 movers manage to move into an owner-occupied house. Here, the probability of success depends largely on the level of household income. Households with a purchase price of up to 30,000 euros have a significantly lower success rate than households with an income of over 50,000 euros. In this respect, the purchase amount appears to play some role. The more expensive houses seem to be occupied relatively more often than the cheaper houses. Again, such a parameter points towards a scarcity of houses with a lower purchase amount.

10.4 The developments over time

In addition to explaining the success rate from a set of household characteristics, an attempt is also made to describe the trends in the success rate over the period from 2015 to 2021. Following on from the logit model established in the previous section for households in the most recent period, developments in the relative influence of different parameters can be

Table 10.9 The parameters for the logit model for former tenants as one- or two-income earners with another action motive in 2021

SINGLE/DUAL EARNERS	parameter		parameter
constant	-0,19		
Disposable income (I)		Purchase price dwelling (A)	
to 30.000 euro	-0,52	Up to 280.000 euro	-0,17
30.000 - 50.000 euro	0,06	meer dan 280.000 euro	0,17
more than 50.000 euro	0,46		
Average succes rate			**0,47**

Modelfit: Lr=1,07 | Df=2 | P=0.59 | N=316

source: WoON 2021 (own edit)

estimated for the period ahead. Thereby, differences in the strength of a parameter indicate increased or decreased importance.

To answer this part of the sub-question, a time dimension was already added to the home purchase amount and household income earlier in the determination of the relevant variables. This not only makes the results consistently comparable over time but also allows the set of explanatory factors to be kept constant. Whether or not they contribute to explaining the success rate then constitute results in themselves. For the sake of brevity of the chapter, the comparison tables are included in Annex 6. Successively, direct entrants and former tenants are discussed.

10.4.1 The direct entrants

Table B10.1 shows the analysis results for direct entrants by sub-period. A comparison of the model data shows that the explanatory model estimates the probability of moving into an owner-occupied house better in the second period studied (2018-2021). The *log-likelihood* ratio of the success rate model in the first period is higher among both singles and cohabitants.

The logit model of the current period shows that, on average, 37 out of every 100 single direct entrants move into owner-occupied houses. This has reduced the success rate by over 15 per cent compared to the most recent period. The influence of different factors has also changed. The age of the household head has become more important, as well as the moving motive. The influence of purchase amount on the success rate does not seem to be present here. The purchase class in which housing demand was exercised did not affect the success rate. In other words, the success rate in each price segment was the same. In the most recent period, cheaper owner-occupied houses in particular have become less accessible.
The chances of success for cohabitants also fell in the same period. On average, the probability of moving into a house for sale decreased by 7 per cent. Individual factors appear to contribute

less strongly to the shifts in success rates. Thus, there appear to be less pronounced differences in success rates depending on the moving motive, the purchase price and/or the age of the household head. Again, the influence of purchase amount is less pronounced in the preceding period. However, the lower house price range was already less accessible. Remarkably, the moving motive had a lesser influence in the first period. This made the owner-occupied market more accessible to house hunters who expressed a desire to buy from one of the two moving motives.
The logit model for families in 2018 shows that the average success rate has increased by 10%. Thereby, the role of the moving motive has also increased significantly. The average success rate of households wishing to move into an owner-occupied house from a primary moving motive has deteriorated significantly in recent years.

10.4.2 The former tenants

The discussion of the shifts over time for former tenants follows the same order in the previous section. In it, model outcomes are first discussed for the one- and two-earners with a primary moving motive, followed by the secondary moving motives and finally the other moving motives. For all models relating to the 2015/2018 period, the *log-likelihood* ratio is higher. Thus, the explanatory power of the model appears to be weaker.

The primary action motivated moves
The model results of single-earner households show an interesting picture. On average, 17 out of every 100 moving households move to owner-occupied houses. This makes the success rate 3% higher than now. The variables affecting the success rates in 2021 all turn out to contribute minimally to the success rate. A cross-table analysis therefore shows that the average success rates of households within each category differ minimally. Table B10.2 shows the comparison results. The only factor that slightly affects the success rate appears to be urbanity. Moves to a very highly urban municipality have a lower success rate. Compared to the more recent period, however, this influence is considerably smaller. The influence of the other factors (and interactions) are minimal and not significant at the 0.05 significance level.
It thus appears to be the case that in recent years there has been a stronger difference in the success rates of single-income earners with a primary moving motive. Despite the decrease in absolute success rates, high earners in particular appear to have higher success rates. At the same time, houses up to €280,000 are less likely to be successfully occupied in 2021. In particular, it is the higher-income households with a purchase amount from the €340,000 mark that have higher success rates.

The logit model for dual-earners in the 2015/2018 period is found to have a similar level of complexity as the model for the most recent period. The success rate is also higher. On average, 41 out of every 100 potential transferees move to an owner-occupied house. This meant the moving probability was 6% higher.

Table B10.3 shows that the parameters vary widely. Broadly speaking, segmentation between categories increased for all factors. In addition, it appears that housing type did not influence the success rates. Households with an income of up to EUR 40,000 did have lower success rates than higher–income households, but these differences were smaller. The importance of a high income in being able to succeed has therefore increased significantly in recent years. Households that exercised their housing demand in the big cities also faced lower chances of success in 2015/2018. In recent years, these chances have deteriorated further. The influence of the purchase amount shows an interesting development. On the one hand, the chances of finding a cheaper owner–occupied house deteriorated significantly, possibly due to the quantitative shortage and increased competition. On the other hand, the chances of buying a house between 280,000 to 340,000 euros were higher in the previous period. Today, the chances of succeeding appear to be higher in the more expensive homes from €340,000 onwards. Demand for the middle segment also appears to have increased significantly in recent years.
Only one interaction still appears to make a significant contribution to the success rates of former tenants. The direction of the parameters thereby appears to be reversed. It follows that especially in the very highly urbanised municipalities, the success rate of houses priced between EUR 280,000 – 340,000 was significantly higher in 2015/2018. At the same time, the success rates of the same type of houses in the less urban areas worsened little in recent years.
Since housing type did not contribute to the success rate, the interaction with purchase amount appears to be insignificant. The direction of the parameters was reversed at the time. Single–family houses were in different price ranges and to varying degrees, higher success rates during the 2015/2018 period.

The secondary action motivated moves

The results of the logit model for single–earners with a secondary moving motive in the 2015/2018 period show the same set of factors and interactions as in the later period. On average, 37 out of 100 house seekers move to an owner–occupied house. The probability of moving to an owner–occupied house was significantly higher in the period under review.

Table B10.4 shows that the influence of different factors changed to varying degrees over the period studied. It also shows that the purchase amount of the house had a significant contribution to the explanation of the success rate. The housing type is again found not to contribute to this explanation. The influence of household income changed little, the parameter values show. Households with an income of up to EUR 30,000 had lower success rates than those with higher incomes. The urbanity of the municipality also had small differences. The probability of buying a house in a big city is lower than average but has not changed.
The influence of the purchase amount of the house on the probability of success seems to be reversed. In the 2015/2018 period, it was mainly the cheaper owner–occupied houses up to €280,000 within which the probability of success was highest. In the 2018/2021 period, it was the more expensive homes from €340,000 onwards within which most relative moves

can take place. Demand for cheaper owner-occupied houses thus appears to have increased much more strongly while supply lags.

Two interactions between two factors were found to be significantly related to the success rate. The three-part interaction is no longer significant due to the relationship of housing type. For the income classes up to 30,000 euros, the probability of finding a house to buy was found to be especially enhanced when looking for a house up to 280,000 euros. In particular, houses between 280,000-340,000 euros were difficult to access for this group. This accessibility has further deteriorated in recent years. In addition, the chances of success for households looking for housing up to 280,000 have decreased. For high-income households, the low-cost segment also proved less accessible in 2015/2018. In particular, the middle segment has become more accessible to this group, as well as the high-end segment.
Finally, the interaction between housing form and urbanity appears to be significantly related to the probability of success. The probability of finding a single-family house in a highly urban municipality has never been very high during the period studied. It has deteriorated slightly further in recent years. Especially in non-urban municipalities, single-family houses appear to be accessible. This accessibility appears to have changed little.

The second and also last group of households with a secondary moving motive are dual earners. The rather simple explanatory model as it applies to 2018/2021 turns out to explain the prior period more poorly. This is mainly due to the high success rate of this group. On average, 79 out of 100 households asking for a house move to an owner-occupied house.
Table B10.5 shows that the influence of housing type and urbanity were not significant in the 2015/2018 period. There appears to be a minimal negative influence of high urbanity on success rates. In particular, household income was found to explain the difference in success rates. Households with an income of up to 60,000 euros were found to experience a slightly lower probability of buying a house in the process.

The other action motivated moves
The explanatory model for the success rate of households wishing to buy a house from another motive proved very straightforward in the period under review. This is not entirely surprising; for instance, 92 out of 100 house hunters were found to succeed in buying a house. The constant within the model is therefore the largest explanatory factor. Finally, it appears that the remaining 8 out of 100 inquiring households that did not manage to buy a house are explained by lower household income. The model representation is therefore omitted for simplicity.

10.5 The regional differences

Based on the model results, it appears that there has been a strong variability in success rates between degrees of urbanity. The results suggest that the chosen classification is too coarse.

Indeed, the 'moderate to non-urban' category covers most of the Netherlands. To provide insight into the regional chances of success for former tenants and direct entrants, a finer spatial segmentation was chosen.
The COROP housing market area was chosen as the starting point for the regional classification. This is used to estimate regional success rates. The results are used to describe the development relative to the period before. Priemus (1984) argued earlier that the moving motive influences the size of the housing market area. For instance, changes in working career (secondary motive) are more often found to be associated with an increased moving distance.

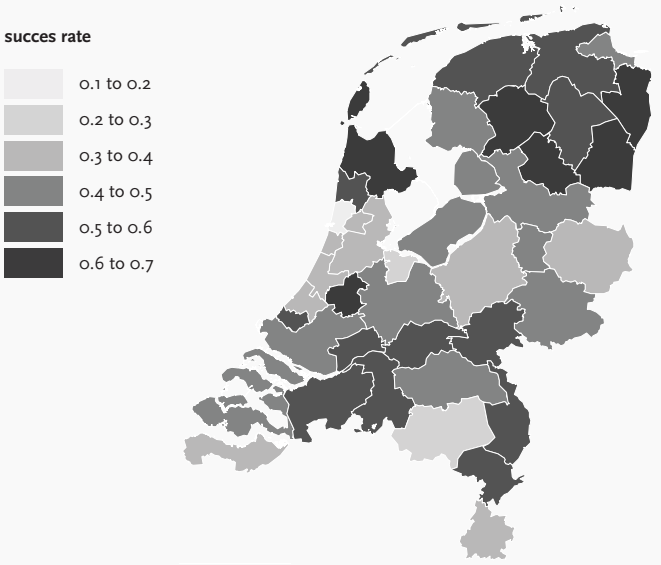
Unlike the previous paragraphs, the focus is not on the logit but on the success rate. However, this success rate is created in the same way as in the previous paragraph: it is the ratio between the number of households that moved and the total group that was looking for housing. Because of the extensive regional breakdown, problems with cell filling arise when the breakdown by moving motive and/or income form is used. Therefore, only the breakdown by inflow segment is used for the two periods studied. The two-dimensional cross-tabulation analysis for these households (COROP × moving probability) shows that each cell is filled with at least 3 respondents. Given the overall size of the analysis group, this is considered sufficient. Unlike the CHAID analysis, for the probability of success estimation, the use of grossing-up factors is now possible. The analysis results are therefore augmented with the relative uplift factor for the recently moved and move-up households. The remainder of the section deals successively with the success rate of direct entrants and former tenants.

The direct entrants
Figures 10.2 and 10.3 show the success rates for the different regional submarkets as well as the change in success rates over the periods studied. On average, 48 out of 100 house seekers moved to a house for sale in 2018. In the subsequent period, 38 out of 100 inquiring households turned out to move into a house for sale. Thus, the average success rate is already decreasing significantly. The regional distribution shows that the decrease varies greatly by COROP area.

In 2018, direct entrants were found to have a higher-than-average success rate, especially in the north of the country. In particular, COROP areas in Groningen, Friesland, Drenthe Overijssel and the Kop van Noord-Holland had a high success rate. The lowest chances were already experienced in the submarkets within the Randstad region at the time. In particular, the Greater Amsterdam area, the Gooi region and the agglomerations along the west coast have a low average success rate between 0.3 and 0.4. With this, the regional distribution does not show an odd picture. The Northern provinces have always had a higher success rate compared to the more urbanised areas in the Randstad region.

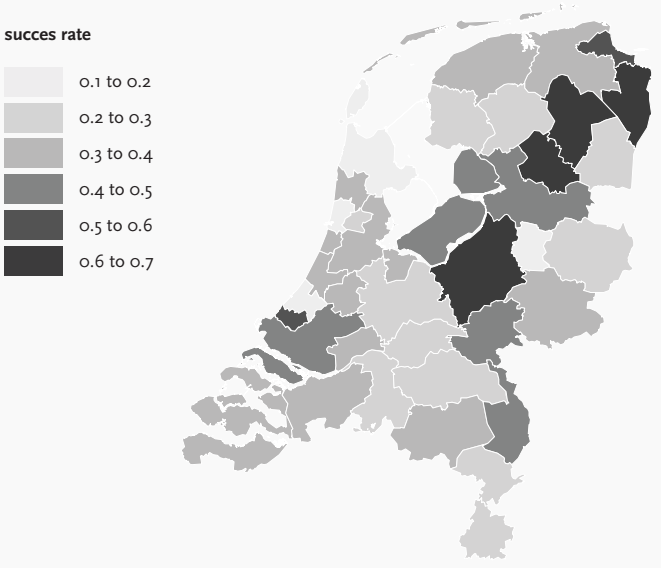
In the subsequent period 2018/2021, the success rate decreases significantly in most distinguished housing market segments. This appears to be mainly due to an increase in demand. The number of house seekers, relative to the number of successful applicants,

Figure 10.1 The regional moving probability of direct entrants, by COROP area, in 2018



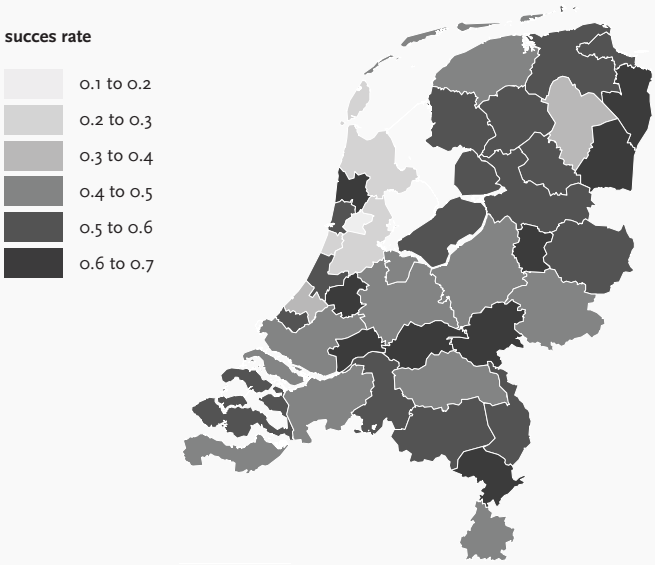
source: WOON 2018 (own edit)

Figure 10.2 The regional relocation probability of direct entrants, by COROP area, in 2021



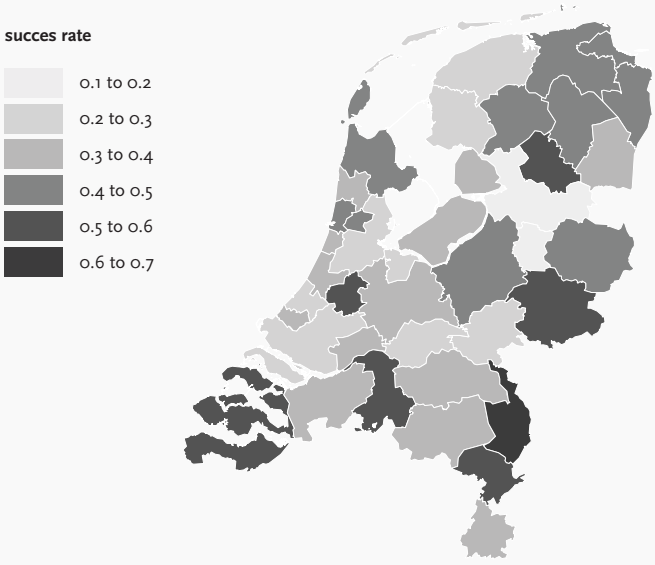
source: WoON 2021 (own edit)

Figure 10.3 The regional moving probability of former tenants, by COROP area, in 2018



source: WOON 2018 (own edit)

Figure 10.4 The regional moving probability of former tenants, by COROP area, in 2021



source: WoON 2021 (own edit)

has increased sharply in most housing market areas. The various housing market areas in Groningen/Drenthe and the Veluwe still appear to have a high success rate. The largest decrease is visible in Central Netherlands. Particularly in the provinces of North and South Holland, direct entrants appear less and less likely to buy a house. The success rate in most housing market areas in North Holland is around average.

Based on the model results of urbanity, the large cities within it appear to have a significantly lower success rate. In contrast, the surrounding residential areas have a higher success rate. Depending on the moving motive, the probability of moving into an owner–occupied house in a large city (very highly urbanised area) in housing market areas with a low to average success rate has become almost impossible for direct entrants in recent years.

The former tenants

Figures 10.4 and 10.5 show that the chances of success of the group of people moving on from the rental sector into the owner–occupied market have deteriorated in most regional submarkets in recent years. On average, 45 out of every 100 housing–demanding households moved into an owner–occupied house in 2018. In the following years, this proportion decreases to only 32 out of 100 housing seekers. The decrease in success rate is thus over 13 out of 100 households, or 13%. The average success rate over the period studied was found to be 38.5%. This deviates from the success rate shown in Figure 10.1 for all those moving on. Due to the use of markup factors, the success rate appears to deviate slightly. For instance, the absolute share of house seekers relative to recent movers, appears to be slightly higher.

In the 2015/2018 period, former tenants appeared to have fairly good chances of moving into a house for sale. The northern housing market areas for the most part had a success rate higher than average in this respect. The housing market areas in North Holland clearly differ from the rest of the Netherlands. In particular, Greater Amsterdam and the Kop van Noord–Holland already had a success rate of between 0.2 and 0.3 at the time. This meant the average success rate was already more than 20% below the Dutch average. The differences visible between the various housing market areas appear to be mainly due to the degree of urbanisation and/or the lack of moves to the less urban residential areas.

In the most recent period, most pass–through buyers' chances of success in the regional submarkets fell sharply. Again, the northern submarkets in Groningen and Drenthe have a higher than average success rate. Twente and the hinterland also appear to have high success rates. The largest decrease is noticeable in the central and western Netherlands. The success rates in Amsterdam do not appear to have fallen any further. After all, these were already low. However, the model analysis does show that the type of housing concerned (by characteristics) has changed considerably. For instance, it turned out that it was mainly the more expensive houses that were occupied more often than average. The South Holland housing market area saw the biggest drop in average success rate. Especially in larger cities like Rotterdam and The Hague, the chances of buying a house appeared to have decreased the most.

10.6 Conclusions

It was assumed that the success rate of households depends on the moving motive, the availability and accessibility of the (regional) supply and individual household characteristics based on demographic and socioeconomic characteristics. This research design is operationalised to a set of variables available in the WoON for both house involved and desired house and respective households. To simplify the complexity of factors, a CHAID analysis was conducted for both direct entrants and former tenants prior to the modelling approach. This revealed that the success rate was largely determined by the moving motive.

For direct entrants, it turned out that because of cell filling, segmentation by moving motive and household composition was not possible. Therefore, the moving motive was included as a sub-variable in the logit model. The model results showed that age, purchase amount and moving motive best explained the probability of success. Thereby, the secondary (more compelling) moving motive was found to lead to a higher probability of success. The lower age groups have a lower than average success rate, as well as households looking for a cheaper owner-occupied house. The demand for cheaper owner-occupied houses has thereby increased sharply while the number of moves has not changed. The time analysis shows that the success rate has become increasingly dependent on the purchase price in recent years.

The results of the CHAID analysis for the total group of former tenants are more complex. It turned out that the success rate for these households is strongly determined by the moving motive and household income. However, the size of the household group did not allow for both a breakdown by moving motive and household composition. The income form (one- or two-earner) did appear to allow for this. Singles and other households belong to the one-earner group. Cohabitants and families fall under the two-earners.

The logit models for success rates of one- and two-income earners with a primary moving motive on the one hand and a secondary moving motive on the other are very different.
The results show that the group of house seekers wishing to move from a primary moving motive accounts for about 42 per cent of all house seekers. Over 39 per cent of house seekers wish to move from a secondary moving motive. Only a small proportion of 19 per cent exercise a housing demand from another reason.

Those moving from a primary moving motive appear to have a low success rate. This is also not unexpected. Relocations from a primary motive usually only take place when a suitable supply arises. A low success rate therefore means that there is little suitable supply for this group of demanders. The model outcomes were not very complex. For the most part, differences in the success rate can be traced to income and the urbanity of the municipality. For dual earners, it turned out that the housing type also affects the success rate. Single-family houses are less accessible. The shifts in time show that for these households, income and purchase amount have become more important. The probability of success has also decreased in this respect.

Secondary action moves have a higher success rate. The logit model for the single-earners turned out to be very complex with many interactions at play. Thus, there appear to be large differences in success rates among this group of demanders. These interactions in particular have a major impact on the final success rate. Single-family houses have a low success rate. This success rate appears to decrease further when a house is sought in an urban area and/or with a low purchase price. Dual earners succeed significantly more often. The model is therefore very simple. Again, household income, purchase amount and urbanity influence the success rate. The time analyses show that housing type and income have become more frequent major factors.

The influence of urbanity suggested large differences between regional submarkets. Consequently, the regional distribution of the success rate for both direct entrants and former tenants shows that lower success rates are experienced particularly in the Randstad region. In addition, the success rate appears to have deteriorated significantly over time.

Chapter 11
Conclusions

11.1 Introduction

This final chapter presents the conclusion of the findings from this study on the position of first-time buyers in the housing market and how they act within it. It then extracts the recommendations for promoting the starting position of first-time buyers. To this end, it first repeats the research question formulated as well as the sub questions formulated.

Answering the individual sub-questions is central to section 11.2. Section 11.3 then finally answers the main question. From these main and partial conclusions, a list of recommendations is then drawn up which, based on the results found, can contribute to strengthening the position of first-time buyers within the Dutch housing market.

11.2 Answering the sub questions

How have social shifts and housing market-related changes within the Dutch owner-occupied housing market in the period from 2001-2021 affected the position of first-time buyers?

The answer to the first sub-question is twofold. Before addressing the positional developments of first-time buyers, social shifts and housing market-related changes are first set out.

The number of households increased by about 13 per cent over the past 16 years. In doing so, this increase was found to be greater than the net population growth. A large proportion of households are in fact increasingly single-person households in the age categories relevant to the demand for starter homes. With this, the individualisation that characterises our society seems to be continuing, further increasing the absolute size of housing-seeking households. This demand for housing has varied in size over the past two decades. Particularly during the credit crisis, demand for owner-occupied housing appeared to decline sharply and any desire to move was postponed. Meanwhile, the housing market looks different. Demand has more than recovered. Yet not all households benefited equally from the economic recovery. Families often experienced a larger development in income compared to singles and cohabitants. In addition, the household income of homeowners turned out to develop more strongly than the household income of tenants. With this, there thus appears to be a gap between buying and renting based on income and a sorting out of more promising households from the rental sector towards the owner-occupied market takes place.

In addition to income, as a result of the growth in home ownership, home equity has played an increasing role in the development of the socioeconomic position of households. In particular, this growth in home equity in recent years has been due to capital gains from home ownership. Consequently, this excess equity has begun to play a more important role in the housing market behaviour of young households wishing to start in the owner-occupied market, thus indirectly influencing the position.
On the supply side, quantitative shortages appear to be the main issue. Sharply declining housing production combined with societal shifts have resulted in an accumulated housing shortage of 279,000 houses by 2021. Construction policy reforms mainly facilitated construction in the middle and high end. On the other hand, tax reforms did not promote home ownership. The shift in focus towards financial risks resulted in tightening income requirements (LTI) and lending conditions (LTV).
Developments in purchase prices are decent, to say the least. The average purchase price will be over €430,000 in 2022: double the amount since the low point in 2013. This price development has mainly been due to low mortgage interest rates and expanded lending standards in recent years. In particular, second income has started to count for a larger share in the maximum mortgage.

On balance, these social shifts, and the changes with regard to housing market policy have resulted in a significantly increased demand for owner-occupied houses. Developments in the position of first-time buyers are mainly along these lines: the restrictive nature of LTV/LTI norms, housing costs and increased competition. The widening in lending standards appear to have mainly favoured high-income households over the past few years. Households wishing to start in the owner-occupied market appear to be disadvantaged as they tend to have modal incomes. This skewing in borrowing capacity puts them at a competitive disadvantage. This position is also further weakened by the increased share of equity that can be used by first-time buyers. First-time buyers tend to rely on mortgage loans to finance home ownership. The financing ceiling then appears to lead first-time buyers mainly towards the cheaper homes. However, competition around these houses has increased sharply in recent times. On the one hand, this increased demand is due to the general demand growth for owner-occupied houses; on the other hand, first-time buyers are confronted with private investors. The liberalisation of the rental market has meant that renting out homes has become an interesting investment opportunity.

How did the composition of the housing market segment of starter homes evolve both by housing characteristics and occupant characteristics during the period from 2009-2021, and what regional differences exist in this development?

In answering the second exploratory sub-question, a comparison between (households in) owner-occupied houses and the other housing market segments in the total housing stock as it occurs in 2021 has been made in each case. Next, a time analysis compared the owner-occupied housing market segment with previous periods. These analyses distinguished

between starter homes and regular homes. Here, starter homes are defined as 'all independent owner-occupied houses with a purchase value of at most – in the relevant period – applicable upper limit for which the house falls within NHG standards'.

Based on this definition, it appears that an increasingly different proportion of the total owner-occupied housing stock can be counted as belonging to the starter segment. In 2021, the housing market segment of starter homes (with a purchase value of up to €300,000) constitutes about a quarter of the total housing stock. This share appears to have remained constant over the past years. However, the number of removals to this type of house appears to have declined, as well as the relative share of first-time buyers within this housing segment. Both in absolute and relative terms, fewer first-time buyers are buying a house in the starter segment.

The segment differs from the other housing market segments by house type and house size, and the houses, therefore, belong to the bottom of the housing hierarchy. About 50 per cent belong to terraced and corner houses with up to four rooms. The characteristics of starter homes have changed little in recent years. Thus, the prevailing NHG limit has not led to substantial shifts in the set of houses. Changes in the homes concerned by first-time buyers are then mainly due to the prevailing supply and/or the shift in housing preferences.
First-time buyers living in starter homes comprise about 5 per cent of the stock. This share is lower for first-time buyers who moved into a regular house, a meagre 4 per cent. Thus, the share of first-time buyers has decreased significantly (-30 per cent) in absolute terms. Based on the demographic and socioeconomic characteristics of these households, it can be concluded that they are mostly in the first phase of the household cycle. In addition, these households have already managed to achieve an average socioeconomic position. Nevertheless, living in starter homes is nowadays more reserved for higher-income households. The increase in single people is also strongly reflected in demographic characteristics.

The geographical distribution shows that relations of starter homes are most overrepresented in municipalities with at least 100,000 inhabitants. Especially in North and South Holland, proportionally more starter and regular homes are occupied by owner-occupiers.

In what way can first-time buyers be differentiated on the basis of their demographic and socioeconomic characteristics and (characteristics of) the owner-occupied dwellings?

Career/lifecycle theory assumes that a household's moving decision is (partly) determined by its position in the household and labour market cycle and within the housing market. The choice to buy a house can then be derived from the demographic and socioeconomic factors of households. The household classification used so far where first-time buyers were considered as an overall group was found to have a high degree of diversity in demographic and socioeconomic characteristics. Therefore, a finer-grained distribution of different households based on the range of household characteristics as well as the characteristics of

the housing units involved was developed. This has also maintained the distinction in influx segment.

To arrive at a statistically sound distribution of households, a clustering algorithm was used. Since the bulk of the factors involved in this clustering are categorical in nature, this algorithm needed to be able to form household clusters based on categorical variables. The TwoStep clustering algorithm proved to be the most suitable for this purpose.
Before the households could be subdivided, the variables involved had to be simplified. This involved excluding or merging categories within variables that do not contribute to determining the variance in the data. The merging and/or exclusion of variables was done on the basis of a Categorical Principal Components Analysis (CATPCA). The final selection of variables and categories was found to be able to determine about 80 per cent of the total variance in the data for households from both entry segments.

The CATPCA results show that for both direct entrants and former tenants, there is strong household differentiation based on the factors of interest. For direct entrants, two demographic characteristics, two socioeconomic characteristics and three housing characteristics are found to account for the largest variance. For the former tenants: two demographic characteristics, two socioeconomic characteristics and two housing characteristics account for almost 80 per cent of the variance. The TwoStep cluster analysis showed that housing characteristics contributed little to household sorting. It was therefore decided to include only dwelling type in the cluster analysis.

In the end, three household clusters emerged for the direct entrants: singles, cohabitants and families. For former tenants, four households can be distinguished: singles, cohabitants, families and other households

How has the demand for (starter) owner-occupied houses in the Netherlands developed in terms of size and nature in the period 2009-2021 and what regional differences exist in this development? What influence do market conditions and moving motives have on the demand for (starter) owner-occupied houses?

The (developments in the) position of first-time buyers can be derived, among other things, from the demand exercised. In doing so, both realised demand and potential demand can be studied. Indeed, when realised demand is significantly higher than potential demand, this gives a different picture of the position of first-time buyers than when the reverse is the case. Thereby, to study demand, the household groups have been used as identified in chapter 6.

The impact of housing market conditions can be clearly seen in the evolution of the size of realised demand for owner-occupied houses. In the most recent period, the total realised demand covers 202,000 households. As such, the share of realised removals has decreased by 15 per cent compared to the previous period. The share of direct entrants and former

tenants is 40 per cent and 60 per cent, respectively. Former tenants contributed a larger share. These households moved into owner-occupied houses relatively less often in recent years. Within total residential mobility, the share related to first-time buyers has also declined sharply.

Potential demand has also consistently exceeded realised demand over the period under review. Around 58 per cent of the potential demand for owner-occupied housing comes from households living in rented accommodation. This demand is found to be four times higher than realised demand. Thus, the total demand for owner-occupied houses has increased by over 13 per cent in the most recent period. With both the decline in total removals and the increase in demand for owner-occupied houses from first-time buyers, the overall position of first-time buyers appears to have deteriorated.

When developments in demand for owner-occupied housing are put into market perspective, an interesting picture emerges among both direct entrants and former tenants. The share of direct entrants entering the rental market increased slightly. At the same time, the share of households asking for rental housing decreased. Such a development strongly suggests residential substitution involving a forced choice of renting. Indeed, in an accessible market, this ratio would be equal to 1. When the share of households that end up moving into rental housing exceeds this share in demand, external factors influence housing choice. For direct entrants, the ratio is now 1.26. For former tenants, the difference appears to be less present. The ratio of potential mobility to realised mobility is 1.03.

The comparison of demand types for individual household groups indicates a deterioration in the position of singles. Partly as a result of individualisation, the proportion of single people has increased sharply. However, the demand of these households for owner-occupied houses appears to have increased by over 80 per cent in the most recent period. The overall inflow has remained the same. With this, there is a relative deterioration. Cohabitants and families experience a lesser increase in demand. There, a decline in realised removals in particular appears to lead to a worsened position.

Within the regular segment, the overall demand of different households was found to have decreased. This decrease was found to be larger than the decrease in households moving out. Thus, within the housing segment of owner-occupied houses more expensive than EUR 300,000, there appears to be no deterioration.

Among former tenants, overall residential mobility decreased among all distinguished households. The decline among singles is the largest at over 35 per cent. Over the entire period studied, the inflow into the starter segment has never been so low. At the same time, demand has risen sharply in the starter segment. Again, a strong increase is visible among singles. This group of households has therefore seen the sharpest deterioration in their position in recent years. Cohabitants experience the biggest decline after that.

The influences of private investors were not found to be measurable in the WoON. However, it can be argued that with the decline in the share of owner–occupiers involved in all moves (36 per cent) compared to an increasing share of owner–occupiers in desired moves (44 per cent), competition from other households has become stronger.

The nature of the demand for (starter) owner–occupied houses is elaborated by 'who' (characteristics of households), 'what' (characteristics of owner–occupied houses) and 'why' (the motives to move).
Differences in realised demand and potential demand explain which households will move in. Trends in the nature of demand give an indication of the extent to which the starting position of different households has changed.

Households entering the market as direct entrants are at the beginning of the household and labour market cycle. A clear majority are in the 25–34 age group. This shows a shift towards the upper end of the age distribution compared to previous periods. The socioeconomic position acquired in this respect is mostly average.

Holding the housing market position constant, households wishing to move into an owner–occupied house tend to be in a slightly earlier phase of the household cycle than those actually moving to such a house. The 'up to 25 years' age group is heavily overrepresented in this. A higher age, therefore, seems to be a prerequisite to succeed in the owner–occupied market. Thereby, both income and equity share can obviously be expected to increase. The lack of socioeconomic information for these households means that no empirical evidence can be provided.

Those entering from the rental sector tend to be at a slightly later stage of the household cycle. Thus, households up to 25 years of age appear to be almost non–existent. The proportion of households is also significantly higher. Indeed, household formation goes hand in hand with a more stable stage in life. In socioeconomic terms, these households also occupy a higher position. Here, the breakdown by housing market segment shows that households with higher incomes (from 2 times modal) mainly succeed in the regular owner–occupied segment.

A comparison with the potential demand of the households in question shows an outpouring by socioeconomic characteristics. On average, demand households have lower incomes (as of yet). Age appears to play less of a role. For single people, most of the demand is exercised by households with incomes below modal. These households rarely succeed in buying a house. Half of the actually moving singles do so with an income up to one and a half times modal. For cohabitants and families, most households that successfully move into a house for sale earn at least up to twice modal. As income rises, the chances increase significantly. Within the mainstream segment, an income of at least 2 times modal appears to be a hard requirement.

Thereby, among both direct entrants and former tenants, there seems to be a segregation of households with a strong socioeconomic position. Consequently, a comparison with previous years shows that the dichotomy in socioeconomic characteristics of moving and relocating households has increased significantly recently. In addition, it appears to be relatively more often higher-income households (towards modal) that manage to secure a house for sale. Thus, although the absolute and relative demand for owner-occupied houses has increased, the households that actually occupy owner-occupied houses appear to have slightly decreased in size and also occupy a stronger socioeconomic position.

The second part of the nature of demand concerns 'what' is demanded. This involved looking at both the housing units in question and the housing units desired by different households in both influx segments. Large differences in the relative share of certain housing types and/or characteristics between the two demand types indicate differences in accessibility.

Among direct entrants, intermediate houses and flats seem to be particularly desirable. As the household career progresses, the demand for intermediate houses increases. With this, an owner-occupied flat often seems to go along with the earlier stages within this career. Over 7 to 8 in 10 households exercise this housing demand in the €200,000 to €300,000 price range. Within the regular segment, terrace houses are also the most sought-after. The distribution of the houses in question shows that different households manage their housing demand in different ways. Without taking substitution into account, households looking for a terraced and/or detached houses succeed less often. The share of corner houses increases. The biggest differences occur in the purchase price. Desired more expensive homes are rarely occupied by households in the starter segment. In contrast, the cheaper houses in the €150,000 – €250,000 price range are increasing in share. Within the regular segment, the 'cheaper' houses also appear to be involved more often.

The characteristics of the dwellings demanded by former tenants are again found to relate, for the most part, to terraced houses and apartments. Again, it appears that the demand for terraced houses increases as a household advances in its household career. More than half of the demanded houses in the starter segment turn out to be above €250,000. In the regular segment, homes from €400,000 onwards appear to be mostly desired. It can be seen from the houses in question that mid-terrace houses are occupied relatively less often. Among singles and cohabitants, the share of moves to flats is increasing. The purchase price category also decreases and more houses in the €150,000 euro to €250,000 euro price range are occupied. In the regular segment, mid-terrace houses are being moved into more often than desired. These are also more often the cheaper houses up to €350,000 euro.
The ratio between the two demand types for owner-occupied houses shows that single-family houses are less frequently occupied than desired. The share of multifamily houses is increasing to varying degrees in this respect. This applies mainly to singles and couples in the starter segment. Thereby, the purchase amount of the realised dwelling always decreases compared to what is desired. Households can therefore pay less than initially assumed.

The third part of the nature of the question concerns the 'why'. In this, a distinction can be made between primary moving motives and secondary moving motives. Here, the results appear to correspond to the expectation based on the theory. The secondary moving motives more often win out over the primary motives. The reason for this concerns the urgency of the motive. Secondary moving motives are more compelling.

Households within the direct entrants appear to want to move into owner-occupied housing for different reasons. Singles mostly enter from a primary motive (wanting to live independently). Cohabitants and families mostly act from secondary motives (living and or working together). Former tenants show a similar picture. The share of primary action moves is lower in the realised inflow. The actual move on to the owner-occupied sector is thus more often the result of a secondary moving action. Moving to make a forward step in one's housing career has thus become more difficult.

The decision to (want to) move to an owner-occupied house partly depends on the supply side: a particular desire to move can only be realised when the right housing supply is available. The geographical distribution of the realised demand for owner-occupied houses differs from the existing stock of owner-occupied houses in a number of areas.
As for realised demand, it is proportionately much more focused on the more urban municipalities (by population) and the G4. In these larger cities, the discrepancy between demand and supply of owner-occupied houses is therefore the greatest.

In what way did the housing-related housing expenditure of first-time buyers in the Netherlands develop in the period 2009-2021 and how is home ownership financed?

The total housing expenditure of first-time buyers is the result of a sum of various charges related to home ownership and tax benefits. Setting the net housing costs (gross housing costs - tax benefits) against income yields the housing expenditure ratio. When total housing costs (net housing costs + ancillary expenses) are mirrored against income, the living expenditure ratio emerges. Both quotas provide insight into the financial position of first-time buyers.

Trends in both the housing expenditure ratio and the living expenditure ratio show an initially positive picture. As a result of falling mortgage interest rates, gross housing expenditure (repayment + interest), compared to the previous period(s), has fallen sharply. At the same time, households in the owner-occupied housing market have seen a sharp rise in incomes in recent years. The combination between lower expenses and higher incomes means that for both direct entrants and former tenants, the average housing expenditure ratio has fallen.

Against this income development of households in the owner-occupied sector, there is the skewing of incomes, as discussed in Chapter 4. This has further worsened the position of households that have experienced weaker income growth. These include households in the rental sector. There thus appears to be a sorting out of disadvantaged households

with, increasingly, higher incomes. Such a development in the socioeconomic position of households was shown earlier in Chapter 7.

The regional distribution of relative housing costs (where these are related to living surface area), shows an unambiguous picture. Among both direct entrants and former tenants, substantially higher housing costs are experienced in the G4. The difference between the G4 and the rest of the Netherlands ranges between a conservative 20 per cent, to an excessive 100 per cent. With this, the level of housing expenditure by municipal area (G class) and part of the country follows the distribution of exercised (potential) demand. In places where a larger share of demand is agglomerated, housing expenditure is higher. Thus, higher demand leads to higher housing costs. After all, housing is also more expensive.

In recent years, the ratio between (wanting to) buy and (wanting to) rent has been constantly changing. Particularly in the last 3 years, in the period from 2018, buying has become more conducive than renting privately for several households. The cause of this appeared to be twofold. On the one hand, the lowering of mortgage interest rates has meant that the total monthly costs households spend on their mortgages have become lower. On the other hand, rents in the private sector have risen sharply in recent years due to the housing shortage.
The fact that first-time buyers are more likely to want to make the move to an owner-occupied house when it is more financially conducive than a house in the rental segment is evidenced by the total demand exercised as identified in Chapter 7.

Partly due to the decrease in housing costs within the owner-occupied segment in the most recent period compared to the rental market, the potential demand for (starter) owner-occupied houses is increasing unabated. Nevertheless, Chapter 7 showed that the realised demand for owner-occupied houses exercised by different households did not increase. The current relatively low cost of living compared to private renting makes buying more attractive. At the same time, the relative demand for owner-occupied houses, especially among single people, has also increased significantly. However, supply lags behind that demand. As a result, the net inflow of first-time buyers appears to be stagnating compared to the previous period, and households are relatively more often choosing (out of necessity) to rent.

The proportion of own money by means of a donation appears to have increased sharply in recent years when financing is built up. This still almost always requires a mortgage. Over 90% of households, therefore, appear to finance their homes mostly from a mortgage. Direct entrants, in both housing segments, receive a financial contribution from parents to varying degrees. Accordingly, households that once received a donation are more likely to realise a more expensive house with lower housing costs than households that did not receive a donation. Among former tenants, a larger proportion receives a donation. Again, this results in a higher purchase amount and lower expenses.

In what way has the accessibility of the owner-occupied housing market for first-time buyers in the Netherlands developed in the period 2009-2021 and what regional differences are there?

It was assumed, that the accessibility of the housing market for first-time buyers could be derived from individual household characteristics and resources on the one hand (as assumed in the career/lifecycle theory), and the prevailing supply/demand relationships in the housing market on the other. In it, this relationship between supply/demand can be derived from the demand exercised, combined with the (local) supply. The prepared accessibility model, therefore, runs along two lines: affordability and competition. The interaction between the two indicators provides a picture of accessibility.

The model results show that both direct entrants and former tenants have low accessibility. Most of this low accessibility is due to a quantitative supply deficit. This is evidenced by the high affordability of households and the high competition experienced. That this affordability is so high appears to be mainly due to falling mortgage rates and increased income. At the same time, there appeared to be an increased proportion of unsuccessful buyers (18 per cent) in housing demand. Compared to previous years, this share has increased. Access to the housing market thus appears to be largely dependent on income. In the lower price brackets in which unsuccessful buyers exercise housing demand, competition appears to be too high.

The time series analysis shows that the quantitative shortage has consistently increased since 2009. The halt in housing production as well as the decline in housing transactions (see chapter 4, among others) contributes to this. At the same time, the share of households that do not experience accessibility problems from high accessibility (high affordability & low competition) has increased. This appears to be particularly prevalent in the northern parts of the country. The geographical distribution shows that among both direct entrants and former tenants, the greatest accessibility problems are experienced in the large cities within the Randstad.

In what way has the (regional) success rate of first-time buyers developed in the period 2015-2021 and to what extent can the success rate be explained by the relevant household characteristics?

The retrospective nature of the WoON makes it possible to compare the housing preferences of house seekers with the housing choices of those who have recently moved. The share of recent movers among all house seekers is called the success rate. In the light of theory, the success rate should depend on the moving motive, individual household characteristics and resources, and supply/demand relationships in the housing market. Chapter 7 and chapter 8, among others, discussed these factors in detail. Therein, it was previously concluded that these factors have not only changed over time but can also explain part of the discrepancy between realised demand and potential demand. These variables are therefore included in a

multivariate analysis in which the dependent variable is the probability of moving to an owner–occupied house within two years (success rate).

The explanation of the success rate was found to have large differences between different household groups. This showed that the success rate of direct entrants was fairly easy to explain. The model results showed that the secondary (more compelling) moving motive leads to a higher success rate. Lower age groups have a lower–than–average success rate, as well as households seeking cheaper owner–occupied housing. Time analysis shows that the role of the purchase price has increased significantly in recent years. The negative parameter for cheap owner–occupied housing shows there is a quantitative shortage of this type of housing. In this, it mainly concerns single–family houses.

The results of the CHAID analysis for the total group of former tenants are more complex. It turned out that the success rate for these households is strongly determined by the moving motive and household income. Accordingly, according to these two variables, a four–way split was made among the former tenants.

Moves from a primary moving motive appear to have a low success rate. This is also not unexpected. Relocations from a primary motive usually only take place when suitable supply arises. A low success rate, therefore, means that there is little suitable supply for this group of demanders. The model outcomes were not very complex. For the most part, differences in the success rate can be traced to income and the urbanity of the municipality. For dual earners, it turned out that the housing type also affects the success rate. Single–family houses are less accessible. The shifts in time show that for these households, income and purchase amount have become more important. The probability of success has also decreased in this respect.

Secondary action moves have a higher success rate. The logit model for the single–earners turned out to be very complex with many interactions at play. Thus, there appear to be large differences in success rates among this group of demanders. These interactions in particular have a major impact on the final success rate. Single–family houses have a low success rate. This success rate appears to decrease further when a house is sought in an urban area and/or with a low purchase price. Dual earners succeed significantly more often. The model is therefore very simple. Again, household income, purchase amount and urbanity influence the success rate. The time analyses show that housing type and income have become more frequent major factors.

The influence of urbanity suggested large differences between regional submarkets. Consequently, the regional distribution of the success rate for both direct entrants and former tenants show that lower success rates are experienced particularly in the Randstad. In addition, the success rate appears to have deteriorated significantly over time.

11.3 Answering the research question

The main question of this study is: *What is the position of first-time buyers in the Dutch housing market and how has this position developed from 2009 to 2021?*
This makes the answer to the main question twofold. First, the developments in the position of first-time buyers are discussed. Then, from the findings, a number of recommendations are made to improve the position.

Theory & background developments
Every move to an owner-occupied house is preceded by a desire to move. This desire to move involves three aspects; the choice of renting or buying, the choice of when to move and the choice of the amount of housing services (Priemus, 1984). The position that households occupy in the career/lifecycle ultimately determines the desired residential mobility and, consequently, the realised mobility. Moving motives play an important role in this. On the one hand, these provide insight into the nature of the move, and on the other, a picture of the market can be formed.
There is no doubt that the starting position of first-time buyers has changed in recent years. Underlying this are various social shifts (socioeconomic and demographic). These changes, therefore, influence the desired residential mobility.

Over the past two decades, the individualisation of households appears to have become particularly significant. The increase in single-person households increases the demand for housing. This increase in households appears to be mainly in the younger age category. Consequently, the majority of them are starters. In other words; there are more and more (owner-occupied) starters. In addition, there appeared to be an increased imbalance in incomes. Among households, cohabitants in particular showed the largest relative income development. On the contrary, singles had the least. Households in the owner-occupied market experienced a larger income development. This seems to have increased the difference between 'insiders' and 'outsiders'. The owner-occupied housing market is increasingly reserved for higher incomes. Third, the importance of equity has grown substantially in recent years. This wealth creation has mainly been due to price developments in the owner-occupied segment. The created surplus value is often used by people moving on to a more expensive house. This has worsened the starting position of first-time buyers.

The starter segment & first-time buyers
The exploratory housing market survey showed that the starter home segment has seen little change over the years, despite shifts in NHG limit. These houses mainly belong to the lower end of the housing hierarchy. The existing housing stock consists mainly of mid-sized mid-terrace houses. The starters living in these houses did change. This mainly appears to involve general ageing. Individualisation is also visible with a strong increase in the proportion of singles. The proportion of families has decreased over the years. In socioeconomic terms, starters increasingly appear to be highly educated. Especially in the regular segment.

Building on the career/lifecycle model, it was assumed that the position of households differs based on demographic and socioeconomic characteristics and the entry segment (direct entrant or former tenant). Based on the analysis results, this indeed appears to be the case. For instance, the total inflow of direct entrants appears to have developed less negatively (–7 per cent) than that of former tenants (–23 per cent), relative to all removals. The position of former tenants deteriorated more. The share of first–time buyers (from both entry segments) has declined in recent years from 55 per cent to 36 per cent. So first–time buyers are finding their way into the owner–occupied housing market to a lesser extent.

The demand in the starter segment

From the demand for (starter) houses, a number of developments in the position can be noted. For instance, it appears that potential demand has always been greater than realised demand in all periods. Demand has therefore always exceeded supply. In the most recent period, it also appears that the share of forced moves into the rental market, has increased. The potential demand for rental housing has fallen sharply among both direct entrants and former tenants. In other words, first–time buyers increasingly have a desire to buy but more often choose compulsorily to rent. In terms of through–flow, this is a negative development. For direct entrants in particular, the (potential) demand for starter homes exceeds the realised demand. Among former tenants, it is both the starter segment and the regular segment that have the greatest scarcity.

At household level, within the direct entrants, it is mainly the cohabitants who experience the biggest decrease in moves to owner–occupied houses. They more often opt for rented housing. Among former tenants, a decrease appears to be noticeable in all distinguished households. Singles and cohabitants decline the most.

The developments in the position of first–time buyers (in the starter segment) appear to be marked by a number of demographic and socioeconomic characteristics. For instance, among singles the age category '25–34 years' has increased in recent years, as has the share of highly educated people with an income up to 1.5 times modal. This indicates an ageing and enrichment of singles. A similar pattern is discernible among cohabitants. Income among these households appears to fall mainly in the range 2 to 3 times modal. Households are on average older, less educated and have incomes up to 2 times modal. Developments in the position of these households are less pronounced. In the regular segment, the share of highly educated people increases significantly as well as income.

A comparison with demand shows that especially young households (up to 25 years) with lower income and education, exercise housing demand. So there is a sorting out of promising households to the owner–occupied housing market. This has always been the case, but in recent years this difference has increased. In particular, the position of low– to middle–income households has worsened considerably.

Regarding the demand for housing, apartments appear to be particularly frequently involved. Demand for this housing type, especially among single people, has also consistently

exceeded supply. As a household progresses in the household cycle, the demand for mid-terrace houses increases. For this, supply also often lags behind demand. Especially in the regular segment, this appears to be the case. Compared to the housing stock, the demand of first-time buyers for mid-terrace houses and flats appears to deviate especially among single people. The demand for flats is substantially higher than the supply in the stock. In addition, living in a flat appears to be mainly a steppingstone to a terraced house.

The regional distribution shows that in the G4 in particular, the share of potential demand significantly exceeds supply. Most first-time buyers are looking for a house in a big city. This desire goes along with the position in the labour career. On average, first-time buyers still find some passage in the market, but to a lesser extent than demand. Here again, income level appears to play an important role. Particularly in inner-city areas, the housing demand of first-time buyers does not match the supply very well.

Partly due to falling mortgage rates and rising incomes, relative affordability – the housing expenditure ratio – appears to have improved in recent years. Average housing expenditure has fallen for both direct entrants and former tenants (and the various households that belong to them). A break in the trend can be observed in the desired housing expenditure of potential first-time buyers. A large proportion of households indicate their willingness to bear higher housing expenditure. However, for most households, the desired purchase amount is lower. In previous periods, the desired housing expenditure was actually estimated below the realised expenditure. The fact that today more households are willing to bear higher expenses increases the pressure on the market. After all, there are more households looking for a home with an adequate income. This is especially true for households in the starter segment.

Average housing expenditure appears to be well above the rest of the Netherlands in the G4. This is not entirely unexpected; it was previously found that demand was also significantly higher in the G4. There seems to be a simple supply-demand relationship. High demand and little supply makes prices rise. Regarding the position of first-time buyers, it is only the high-income earners who stand a chance. This was also evident from the demand earlier.

Most of the financing structure for home ownership is made up of mortgages. This concerns only annuity and linear mortgages in the starter segment. Mortgages with a part interest-only are still slightly more common in the regular segment. Compared to previous years, mortgage types have become considerably more austere. At times of low-interest rates, annuity mortgages are quite conducive to building equity, as more repayments are made.
Besides the mortgage, an increased proportion of first-time buyers appear to have received a donation in recent periods. On average, 25 per cent receive a financial contribution. The average donated amount varies somewhat but is mostly less than €25,000 in the starter segment. Being able to buy or not buy a house in the regular segment appears to be accompanied by a substantial donation for more than half of all house purchases. Thus, the donation exemption appears to be a modest but effective contribution in the majority of starters.

Accessbility & succes rate

Housing market accessibility is derived from household characteristics on the one hand, and prevailing housing market conditions on the other. The constructed accessibility model, therefore, runs along two lines: affordability and competition. The interaction between the two indicators provides a picture of accessibility.

The model results show that both direct entrants and former tenants have low accessibility. This low accessibility is majorly the result of a quantitative supply deficit. This is evidenced by the high household affordability and high competition. At the same time, there appeared to be an increased proportion of unsuccessful buyers (18 per cent) in housing demand. Compared to previous years, this share has increased. In other words, one in five potential first-time buyers is forced into renting. In fact, this share is higher, as the number of potential owner-occupiers delaying the desire to move has also increased.

Thus, access to the housing market again appears to be largely dependent on income. In the lower price brackets in which unsuccessful buyers exercise housing demand, competition appears to be too high. The characteristics of unsuccessful buyers show that these households differ mainly on income.

The time series analysis shows that the quantitative shortage has consistently increased since 2009. The standstill in housing production as well as the decline in housing transactions contributes to this. In the northern parts of the country, accessibility problems seem to be less prevalent. The geographical distribution shows that among both direct entrants and former tenants, the greatest accessibility problems are experienced in the large cities within the Randstad.

The increase in the quantitative shortage (in the big cities) is also reflected in the success rates of first-time buyers. This assumed that the success rate of households depends on the moving motive, the availability and accessibility of (regional) supply and individual household characteristics. In recent years, therefore, the success rate of all households deteriorated (to varying degrees).

For direct entrants, moving motive and income in particular appear to be able to determine the likelihood of success. Higher incomes and a secondary (more compelling) motive result in a higher probability of success. The importance of purchase amount has also increased. The quantitative shortage manifests itself mainly in the category up to €280,000. Households looking for such property (especially singles) experience the greatest decline in position.

Former tenants have a higher degree of complexity. Multiple factors play a role in determining the probability of success. Broadly speaking, the degree of urbanity, income, purchase amount and housing type determine the probability of success. Here, high urbanisation (G4), low income (although often middle-income), low (desired) purchase amount and demand for a single-family house result in the lowest success rate. The regional distribution shows that the Randstad in particular has the lowest success rate.

11.4 Recommendations

The conclusion shows that the position of first-time buyers has deteriorated, especially in the most recent period. This deterioration is largely due to changes in the composition of demand and the (social) context of the housing market.

Among other things, these changes determine the success rate and accessibility. In addition, the position of different households appears to have evolved to varying degrees. With regard to strengthening the position, a number of solution directions can be recommended.
These solution directions concern the perceived bottlenecks and the available instruments with regard to improving this position. In doing so, the recommendations also provide a basis for future research.

The quantitative housing shortage appears to be the biggest limiting factor for most households. This is evident both from studying realised and potential demand, and from the accessibility model. The success rate model showed that owner-occupied houses up to the NHG limit in particular are the most tight. In the Netherlands, housing supply follows demand poorly (Cavalleri et al. 2019). This not only increases housing scarcity in times of rising demand, but also makes for more erratic price movements. A better match between supply and demand improves the position of first-time buyers. A general widening of the housing stock is therefore evident. Based on the analysis results, some specific recommendations can be drawn up.

Building to demand
Potential demand often turns out not to match the regional housing stock. When the desired housing is not available, substitution is more likely to occur. In particular, the availability of suitable housing supply turns out to be the biggest obstacle for first-time buyers. The fact that affordability played less of a role is mainly the result of low interest rates. In particular, it appears that the demand for (inner-city) apartments and (outer-city) terraced houses exceeds the share of these houses in the regional stock. Broadening the stock specifically to meet the needs of first-time buyers is conducive to inflow. This could involve looking more specifically at the housing characteristics demanded. The research found that apartments with an area of up to 90 m^2 and up to 3 rooms were particularly highly sought after. Terraced houses up to €355,000 with a surface area of 90-120 m^2 are most in demand among cohabitants and families. This will answer the vast majority of demand from first-time buyers (both direct entrants and former tenants)

Responding to the high competition
The quantitative housing shortage appears to vary considerably across the Netherlands. The greatest competition for housing is experienced in the Randstad and, more specifically, the very strongly urban municipalities. These include the COROP areas: (large) Amsterdam, Zaanstreek, Utrecht, Rijnmond, agglomeration The Hague and Delft & Westland. These housing market

areas, therefore, have the greatest quantitative demand. The focus of construction projects should therefore be on increasing the housing stock in the highly urbanised municipalities. To stimulate this construction task, a plan income tax could be considered: a tax on the increase in the value of land that occurs with a change of use. This makes it easier for municipalities and property developers to negotiate with each other.

Stimulate the rental market as an alternative

Demand for owner-occupied housing has risen dramatically in recent years. Especially from 2018, a doubling in housing demand among single people is visible. Mainly, demand for rental housing among these households appears to have declined. The survey results show that buying has often been more conducive than renting for these households. Making renting attractive for single-person households in particular removes a significant portion of the total demand for owner-occupied housing. Such demand reduction can only be realised with sufficient supply in the private rental sector. It is therefore recommended to explore ways to grow the available private rental housing stock through active and stimulating rental policy.

Explore personalised lending criteria

As households progress in the household and labour market cycle, income increases. This is especially true for the highly educated. The characteristics of the householsd in the potential demand show that the relative share of households with good income prospects has contintuously risen over the years. Effectively widening borrowing capacity based on income perspective provides more room for young households to move into owner-occupied housing (Boelhouwer, 2015a, 2015b). This could also include individualising the NIBUD income criteria. This involves income tests based on the expected development in net disposable income instead of household type based on gross income. Both the presented results as former research (Boelhouwer, 2015a, 2015b) show that under current conditions, there are possibilities to better optimise lending criteria, specifically for first-time buyers rather than all homeowners.

Promote the use of NHG

The National Mortgage Guarantee appears to be used by first-time buyers in the starter segment in only 60 per cent of all mortgage applications. At the same time, the proportion of homes in the stock that can be counted as belonging to the starter segment has declined sharply to 46 per cent. Promoting the use of the NHG, especially at a time of rising mortgage interest rates, is an appropriate means of strengthening the position of first-time buyers. To this end, reducing the premium to zero per cent and increasing the NHG limit to the average sale price could be considered.

Chapter 12
Discussion and limitations

12.1 Introduction

Research on the (Dutch) housing market is far from finished. This is evident just from the many ideas that could not be expressed in this thesis. This chapter focuses on the process and the research results. It will discuss successively how these results came about and the limitations that emerged along the way, both in terms of operationalisation and that related obstacles. The chapter concludes with section 12.3 which sets out the implications for future research.

12.2 Research limitations

Theoretical constraints

The theoretical framework for this study relies on Priemus' (1984) career/lifecycle theory. To date, this theory appears to largely explain household moving behaviour. However, social shifts over the past 40 years mean that there are necessary updates to be made in both the household cycle and the working career. These additions to the theory were partly addressed in the setting of the theoretical framework (Hooimeijer and Linde, 1988; Mulder 1993).
The social shifts in recent decades mean that there has been greater diversity among households. The more recent literature on moving behaviour therefore puts such developments (across career paths) into perspective. Beer & Faulkner's (2011) comparison comparing moving behaviour in the 21st century with the 1980s therefore confirms the more rapidly changing demographic and socioeconomic conditions of the current era. The term *housing career* should therefore give way to *housing transitions*.

Such a change in approach in which housing market position is related to the life course of households and different outcomes in housing transitions would provide a more modern basis for examining the position of households, and more specifically first-time buyers, within the rapidly changing housing market. However, such concepts have not yet been sufficiently operationalised into a concrete theory in the literature (Beer and Faulkner, 2011).

Empirical limitations

The Woononderzoek Nederland (WoON) provides insight into the composition of households, the housing situation, housing preferences, housing costs and moving behaviour. This makes the WoON one of the most comprehensive surveys of the Dutch (owner-occupied) housing market. For the research on the position of first-time buyers, three limitations emerged. The lack of a direct link between recently moved and moving inclined households creates a

discrepancy between *stated preference* and *revealed preference*. As such, changes in housing preferences due to changes in household characteristics and/or housing market conditions cannot be directly compared. The moving desire (housing desire) of moving inclined households thus differs from those who have recently moved due to, among other things, lack of information regarding their own position (where, for instance, their chances are estimated higher) within the given market. Determining the success rate in chapter 10 is therefore in fact a determination of the probability of moving. 'Succeeding' can then be seen as successfully moving into the proposed home.

In addition, the retrospective nature of the WoON surveys makes it necessary to look back at a previous period. Especially at the time of rapidly changing circumstances, recommendations should take into account the social context. One cannot escape making assumptions then. The recommendations in this study should therefore be seen in the zeitgeist of 2021 and interpreted as such. The limitation of the research to the owner–occupied housing market leaves the interrelational nature of the market (interaction between renting and buying and the importance of flow) somewhat underexposed. The research shows that the interaction between the two markets plays a major role in the overall position of first–time buyers in the owner–occupied housing market.

Model–based constraints
The analysis model in Chapter 9 has some operational limitations. Namely, the determination of the competition indicator depends on the scale level at which the calculation was done. Thereby, in the later housing files, due to the lack of a consistent scale, a different measurement level was used. As a result, the determination of the competition indicator will differ slightly. It was also found that mortgage interest rates play a significant role in determining affordability. The assumptions made in later WoON years therefore largely determine affordability. A contrast analysis showed that the affordability of owner–occupied houses decreases drastically for first–time buyers under current interest rates.

12.3 Implications for future research

The interpretation of the solution directions are mainly policy issues. Recommendations for future research are addressed to the public system. First, this study should explore ways to implement the recommendations from this study. A study mirroring the recommendations with national housing policy (see MVRO, 2022) would therefore provide interesting policy insights.

The recommendations also focus on the perceived barriers related to demand. More specifically, the mismatch in this demand. These include proposals to widen the available supply for NHG and individualise lending standards. Although both solution directions can be expected to contribute to a larger available housing supply for first–time buyers, this

study does not examine the effects of such measures. Future research on the effects of the proposed solution directions should therefore not only identify the social effects but also take into account the prevailing market conditions. As the accessibility analyses previously showed that first-time buyers experience a greater decline in affordability when interest rates rise, the effects of the recommended solution proposals are particularly of interest for the studied households of first-time buyers.

The literature showed that concrete statistical models for the position of first-time buyers are lacking. A second recommendation for future research therefore focuses on forming further updated accessibility models where the influences of different forms of financing and mortgage interest rates can be compared. Understanding the positional development of first-time buyers under current interest rates provides insight into the expected position. Such research could reflect the positional changes of households under different scenarios. Such a follow-up study is in line with Beer & Faulkner's (2011) theory.

Finally, future research should focus on the practical functioning of first-time buyers in the housing market where, among other things, housing (desire) substitution could be investigated. Such research could contribute to the influences of market conditions on the position of first-time buyers. This could also examine the relative influence of market conditions on households. As such, rather than making use of the quasi-longitudinal data that WoON provides, a more accurate stated and revealed preference method research can be performed with the longitudial housing mobility modules from WoON when provided. Previous research by Dol and Boumeester (2016) has shown that such data can provide more accurate knowledge on the position and residential mobility (in terms of substitution) regarding various household groups.

Glossary

Affordability indicator: This indicator is one of two indicators that define accessibility. The indicator is set to the number of owner–occupied houses offered, in a given time frame and region, that are affordable to a specific household. As affordability standard, 35% of disposable monthly income that may be spent on net housing expenditure has been used.

Additional housing expenses: The expenditure on energy and water and the expenditure on levies and taxes of the Publicly Owned Bodies (OPL).

Competitiveness indicator: The number of households also active in the same market, at the same time, for which the same (set of) housing is affordable. This indicator is one of the two indicators that measure accessibility.

Direct entant: Households that have moved into an independent, ordinary owner–occupied dwelling from a non–independent living situation in the past two years.

First–time buyer: A first–time buyer is someone who is buying a house for the first time, regardless of whether they are doing so from a rental home or their parental home.

Fiscal effect: The amount of tax that owner–occupiers can deduct in income tax for the balance of the mortgage interest paid and the owner–occupied home forfait (the amount owner–occupiers have to add for income tax purposes).

Former tenant: Households that have moved from a rented, ordinary independent living situation into an independent, ordinary owner–occupied dwelling in the past two years.

G4 (G–class): The 4 big cities: Amsterdam, Rotterdam, The Hague and Utrecht. The G4 and the G40 together form the G44: The cities covered by the Large Cities Policy (GSB).

Gross housing expenditure: The sum of the gross mortgage expenditure and additional fixed expenses (building insurance, property tax owner's share and ground rent) minus any government contribution in the form of a premium (hardly occurs anymore).

Household composition: Distinction by single–person and multi–person households, with the latter subdivided into (married) couple without children and family with children.

Household disposable income: VROM uses net disposable household income. This is the income from employment, profit and income from benefits and social insurance (pension, alimony c.q. welfare payments). Living expenses are not included. Income therefore excludes rent allowance received and mortgage interest deduction.

Housing market area: The area within which housing demanders are generally willing to move, without unacceptable loss of social and cultural contacts or change of employment.

Loan-To-Value (LTV): The percentage in which the loan amount is set against the value of the collateral.

Loan-To-Income (LTI): The income test that indicates how much you are allowed to borrow relative to your income. In the owner-occupied segment, the standard is set by the NIBUD.

Moving households (movers): a household moving within the Netherlands. Before and after the move, the household is the main occupant of a dwelling. The previous dwelling is available to new residents after the move.

Moving inclined households: Households that decide or possibly want to move within two years, or indicate that they want to move but cannot find anything.

National mortgage guarantee NHG: The National Mortgage Guarantee (NHG) is the guarantee households can get when taking out a loan to buy or remodel a home.

Net housing expenditure ratio: Net mortgage costs of owner-occupiers expressed as a percentage of net household income. The tax benefit, the owner-occupied home forfait and purchase premium are incorporated. Equity invested in the home is not taken into account. This quote is calculated per household.

Net living expenditure ratio: Net housing expenditure plus OPL levies and expenditure on utilities as a percentage of net household income.

Public sector bodies (OPL): The levies that municipalities and water boards impose on both owners and users of residential property, such as OZB, cleaning levy, sewerage charge, pollution levy, resident's surcharge and pay-as-you-go levy.

Potential demand: The number of moving inclined households wishing to move into an independent dwelling in the owner-occupied segment within two years.

Realised demand: the number of recently moved households that moved into a house in the (starter) owner-occupied segment.

Regular segment: The stock of ordinary independent owner-occupied houses with a minimum purchase value of the NHG limit applicable in the analysis period.

Single-family house: Also called a ground-bound dwelling. Types range from terraced house and corner house to semi-detached, villa and manor house.

Starter: Household starting in the housing market, sometimes used as starting only in the owner–occupied or rental sector.

Starter segment: The stock of ordinary independent owner–occupied houses with a maximum purchase value of the NHG limit applicable in the analysis period.

Success rate: the relationship between the number of recent movers and the number of moving inclined households in a given period.

References

Aalbers, M. (2008) The financialization of home and the mortgage market crisis. *Competition & Change*, 12(2), pp. 148–166

Aalbers, M., Hochstenbach, C., Bosma, J., Fernandez, R. (2020). The Death and Life of Private Landlordism: How Financialized Homeownership Gave Birth to the Buy-To-Let Market. *Housing, Theory and Society*, 1–23.

AFM. (2021). Koopstarters op de woningmarkt. Hypothecaire financiering en de rol van studieschuld en consumptief krediet. *Autoriteit Financiële Markten.*

Algemene Rekenkamer (2022). Aanpak woningtekort. *Algemene Rekenkamer.*

Beer, A. & Faulkner, D. (2011). Housing transitions through the life course. Aspirations, needs and policy. *Bristol: The Policy Press*

Boelhouwer, P. (1988). De verkoop van huurwoningen; de overdracht van woningwetwoningen aan bewoners en gevolgen voor de volkshuisvesting. *Geografisch Instituut Rijksuniversiteit Utrecht*.

Boelhouwer, P. (1999). Koopprijsontwikkeling in internationaal perspectief. *DGVH*. Utrecht.

Boelhouwer, P., Haffner, M., Neuteboom, P., Vries, P. (2004). House prices and income tax in the Netherlands: an international perspective. *Housing Studies*, 19(3), 415–432.

Boelhouwer, P., Boumeester, H., Van der Heijden, H. (2006). Stagnation in Dutch housing production and suggestions for a way forward. *Journal of Housing and the Built Environment,* 21(3), 299–314.

Boelhouwer, P. & Hoekstra, J. (2009). Towards a Better Balance on the Dutch Housing Market? Analysis and Policy Propositions. *European Journal of Housing Policy*. 9. 457–475.

Boelhouwer, P.J. & Schiffer, K. (2015a). Kopers verdienen meer! Naar een evenwichtige toepassing van de NIBUD normen. *Delft University of Technology.*

Boelhouwer, P. J. & Schiffer, K. (2015b). Kopers komen te kort! Naar een evenwichtige toepassing van de LTV normen. *Delft University of Technology.*

Boelhouwer, P. & Schiffer. (2016). Naar een hervorming van de woningmarkt: Niets doen is geen optie. *OTB*.

Boelhouwer, P. (2016). Financiële instituties verantwoordelijk voor scherpe prijsdaling. *Real Estate Research Quaterly*, 15(1), 42–51.

Boelhouwer, P. (2017). The role of government and financial institutions during a housing market crisis: a case study of the Netherlands. *International Journal of Housing Policy*, 591–602.

Boelhouwer, P. (2018). Het woonbeleid, over tien jaar een nieuw parlementair onderzoek? *De Helling*, 15–19.

Boelhouwer, P. & van der Heijden, H. (2018). Wat is er aan de hand met de woningmarkt? *Vastgoedrecht (Zutphen)*, 2018 (6), 125–131.

Boelhouwer, P. & Schiffer, K. (2019). De meerwaarde van de eigen woning: geef starters een kans! Analyse en oplossingsrichtingen. *Delft University of Technology.*

Boelhouwer, P. (2020). Woningmarktbeleid leidt tot uitsluiting van middeninkomens en vraagt om forse aanpassingen in het woonbeleid. *OTB*.

Boelhouwer, P., Boumeester, H., van der Drift, R. (2022a). Geen teken van een speculatieve bubbel op de woningmarkt. *Economisch Statistische Berichten*, 107, 93–98.

Boelhouwer, P., Boumeester, H., van der Drift, R. (2022b). De overheid kan en moet aan het werk voor een gezondere woningmarkt. *Economisch Statistische Berichten*, 107, 93–98.

Boelhouwer, P. & van der Heijden, H. (2022). De woningcrisis in Nederland vanuit een bestuurlijk perspectief: achtergronden en oplossingen. *Bestuurskunde*, 31(1), 19–33.

Boon, M. & Koning, M. (2019). Koopstarters op de woningmarkt. *Economisch instituut voor de bouw.*

Boumeester, H. (2004). Duurdere koopwoning en wooncarrière: Een modelmatige analyse van de vraagontwikkeling aan de bovenkant van de Nederlandse koopwoningmarkt. *Delfte Universitaire Pers.*

Boumeester, H. & Dol, C. (2016). Eigenwoningbezit en flexibilisering van de arbeidsmarkt. *Real Estate Research Quarterly*, 2016.

Briene, M., van Ossenbruggen, E., & Hek, M. (2021). Risks on the Dutch housing market: Putting the Dutch housing market into European perspective. *Nederlandse Vereniging van Banken.*

Brounen, D. & Neuteboom, P. (2006). De veranderende positie van de starter op de Nederlandse koopwoningmarkt. *Tijdschrift voor Politieke Economie*, 27(6), 108–125

Bryman, A. (2012). Social research methods. Oxford, United Kingdom: *Oxford University Press.*

Cats, R. (2017, 6 october). Stef Blok: Ik ben de eerste VVD'er die een heel ministerie heeft doen verdwijnen! *FD*.

Centraal Bureau voor de Statistiek. (2017). Worden we individualistischer? *CBS.*

Centraal Bureau voor de Statistiek. (2022a). Bevolkingsgroei. *CBS.*

Centraal Bureau voor de Statistiek. (2022b). Bevolkingspiramide. *CBS*.

Centraal Bureau voor de Statistiek. (2022c). Bevolkingsteller. *CBS.*

Centraal Bureau voor de Statistiek. (2022d). Huishoudens nu. *CBS.*

Coalitieakkoord (2022). Omzien naar elkaar, vooruitkijken naar de toekomst. *Coalitieakkoord VVD, D66, CDA, CU.*

Conijn, J. & Mantel, M. (1989). De markt voor duurdere huurwoningen. *Delftse Universitaire Pers*.

Conijn, J. & Achterveld, W. (2012). Verhuurderheffing en corporaties. Een financiële analyse. *Amsterdam: Ortec Finance*.

Davies, R. & Pickles, A. (1991). An analysis of housing careers in Cardiff. *Environment and Planning*, 629–650

De Groot, C., Erken, H., Van Harn, E. (2021). Woningtekort en lage rente stuwen de huizenprijzen verder op. *RaboResearch*.

Deurloo, M., Dieleman, F., Clark, W. (1987). Tenure choice in the Dutch housing market. *Environment and Planning*. 763–781

DNB. (2021). Meer verpakte leningen van verhuurhypotheken. *De Nederlandse Bank.*

Dol, C. & Boumeester, H. (2016). (Koop)starters voor en tijdens de crisis op de Nederlandse woningmarkt. *Delft University of Technology.*

Elsinga, M. (1995). Een eigen huis voor een smalle beurs: het ideaal voor bewoner en overheid? Volkshuisvestingsbeleid en Bouwmarkt. *Delftse Universitaire Pers*. Dissertatie.

Elsinga, M. & Conijn, J. (2001). Woonuitgaven en woonkosten van huishoudens. Volkshuisvestings beleid en Woningmarkt. *Delft (Delftse Universitaire Pers).*

Elsinga, M., de Jong Tennekes, M., van der Heijden, H. (2011). Crisis en woningmarkt. *Onderzoeksinstituut OTB*.

Everaers, P. & Dieleman, F. (1993). Van huur naar koop: levensloop en omstandigheden op de woningmarkt. *Statistisch Magazine*, p. 43–52.

Gallin, J. (2006) The long-run relationship between house prices and income: Evidence from local housing markets. *Real Estate Economics,* 34(3), p. 417–438

Gallin, J. (2008) The long-run relationship between house prices and rents. *Real Estate Economics,* 36(4), pp. 635–658.

Gelbard, R., Goldman, O., and Spiegler, I. (2007). Investigating diversity of clustering methods: an empirical comparison. *Data Knowledge*(63), 155–166.

Goetgeluk, R. (1992). Zoek- en Substitutiegedrag op de woningmarkt. Deelrapport 1: De effectiviteit van de vraag in het licht van het verhuismotief, de mogelijkheden en de beperkingen op de woningmarkt. Rapport 137a. *STEPRO*.

Goetgeluk, R., Hooimeijer, P., Dieleman, F. (1992). The effectiveness of housing search: the role of motives for moving and housing market adjustment. *European Cities, Growth and Decline.* Den Haag

Goetgeluk, R. (1997). Bomen over wonen. Woningmarktonderzoek met beslissingsbomen. *Utrecht (Faculteit Ruimtelijke Wetenschappen Universiteit Utrecht)*. Dissertatie.

Graham, E. (1985). Problems of modelling intra-urban migration. Espace, Populations, Societies. *Migrations et urbanisation – Migrations and cities*. 215–222.

Grob, S. (2005). Hypotheekrenteaftrek in perspectief. *Economisch Statistische Berichten,* p. 103.

Groot, S., Bani, M., Barendregt, E., Bezemer, D., Blom, M., Boelhouwer, P. J., Bokeloh, P. (2022). Economisch perspectief voor een grondige renovatie van de woningmarkt. *ESB* 23, p. 127.

Haffner, M., Boumeester, H., Dol, K., Goetgeluk, R. Neuteboom, P. (2006). Woonuitgaven in Beeld. *Onderzoeksinstituut OTB*.

Hoaglin, D., Iglewicz, B., & Tukey, J. (1986). Performance of Some Resistant Rules for Outlier Labeling. *Journal of the American Statistical Association*, 81(396), 991.

Hoaglin, D. & Iglewicz, B. (1987). Finetuning some resistant rules for outlier labeling. *Journal of American Statistical Association, 82, 1147–1149*

Hochstenbach, C. & Van Gent, W. (2018). Betaalbaar wonen verder weggedrukt: De sociale en ruimtelijke implicaties van de Woningwet 2015.

Hooimeijer, P. & Linde, M. (1988). Vergrijzing, individualisering en de woningmarkt. *Utrecht*.

Hoekstra, J., & Boelhouwer, P.J. (2014). Falling between two stools? Middle-income groups in the Dutch housing market. *International Journal of Housing Policy*, 14, 301–313.

Jolliffe, I. & Cadima, J. (2016). Principal component analysis: a review and recent developments. Philosophical Transactions of the Royal Society A: *Mathematical, Physical and Engineering Sciences*, 374, 20–65.

Kass, G. (1980). An exploratory technique for investigating large quantities of categorical data. *Applied Statistics*, 29(2), 119–127.

Kendig, H. (1984). Housing careers, life cycle and residential mobility: Implications for the housing market. *Urban Studies*. 271–283.

Kinghan, C., McCarthy, Y. & O'Toole, C. (2019). How do macroprudential loan-to-value restrictions impact first time home buyers? A quasi-experimental approach. *Journal of Banking & Finance*.

Kuipers, B., Schüller, S., Steenbeek, O. (2006). Lage inkomens en jongeren profiteren van hypotheekrenteaftrek. *Economisch Statistische Berichten*, 360–362

Langenberg, H. & Jonkers, W. (2022). Achtergrond bij de huizenprijsstijgingen vanaf 2013. *Centraal Bureau voor de statistiek.*

Lee, C. & Reed, R (2014). The Relationship between Housing Market Intervention for First-Time Buyers and House Price Volatility. *Housing Studies*, 29(8), 1073–1095.

Linting, M., Meulman, J, Groenen, P., van der Kooij, A. (2007a). Stability of nonlinear principal components analysis: An empirical study using the balanced bootstrap. *Psychological Methods,* 12(3), 359–379.

Linting, M., Meulman, J., Groenen, P., Van der Koojj, A. (2007b). Nonlinear principal components analysis: Introduction and application. *Psychological Methods*, 12(3), 336–358

Linting, M., & Van der Kooij, A. (2012). Nonlinear Principal Components Analysis With CATPCA: A Tutorial. *Journal of Personality Assessment*, 94(1), 12–25.

Lloyd, S., 1982. Least squares quantization in PCM. *IEEE Transactions on Information Theory*, vol. 28(2), 129–137.

Marwijk, R., Pellenbarg, M., de Ruiter, J. (2014). Starters op de koopwoningmarkt. *Kadaster*.

MBE. (2021). Monitor Koopwoningmarkt. Derde kwartaal 2021. *MBE*
MBE. (2022). Monitor Koopwoningmarkt. Tweede kwartaal 2022. *MBE*

Ministerie van Financiën (2001). Beschikking van de Minister van Justitie van 28 december 2000, houdende plaatsing in het Staatsblad van de tekst van de Wet inkomstenbelasting 2001, *Den Haag (SDU)*.

Ministerie van Volkshuisvesting en Ruimtelijke Ordening. (2022). Nationale Woon en Bouwagenda en het Programma Woningbouw. Rijksoverheid. *Ministerie van Binnenlandse Zaken en Koninkrijksrelaties*.

Mulder, C. & Hooimeijer, P. (1995). Moving into owner–occupation: compositional and contextual effects on the propensity to become a home–owner. *Netherlands Journal of Housing and the Built Environment*, 10(1), 5–25.

Mulder, C. (1993). Migration dynamics: a life course approach, oktober. Amsterdam. *Thesis Publishers*. Dissertatie.

Mulder, C. & Hooimeijer, P. (1995). Moving into owner–occupation: compositional and contextual effects on the propensity te become a homeowner, *Netherlands Journal of Housing and the Built Environment*, 10, nr. 1, pp. 5–25.

Musterd, S. (2020). De oorzaken en gevolgen van de penibele situatie van starters op de woningmarkt. Platform woonstarters: *Amsterdam University Press*

Neuteboom, P. & Brounen, D. (2008). De effectiviteit van de hypotheekrenteaftrek. *Economische Statistische Berichten*, p. 120–121

Neuteboom, P. & Brounen, D. (2010). Assessing the Accessibility of the Homeownership Market. *Urban Studies*, 48(11), 2231–2248.

Oskamp, A. (1997). Local housing market simulation: a micro approach. *Thesis Publishers*.

Plegt, M. (2021). Verschillende typen koopstarters door de jaren heen. *Kadaster.*

Priemus, H. (1984). Verhuistheorieën en de verdeling van de woningvoorraad. *Delft (Delftse Universitaire Pers).*

Priemus, H., de Jong, M. & Wassenberg, F. (1994). Exogene invloeden volkshuisvesting. Grondslagen voor strategische beleidsvorming. *Delftse Universitaire Pers.*

Priemus, H. (1989). The owner-occupied market in the Netherlands. *Housing Finance International*, 4–12.

Priemus, H. (2012). Public mortgage guarantee: instrument to cope with impacts of the financial crisis on the owner-occupied housing market evidence from the Netherlands. *Journal of Housing and the Built Environment*, 28(2), 345–362.

Priemus, H. (2014). Is the landlord levy a threat to the rented housing sector? The case of the Netherlands. *International Journal of Housing Policy*, 14(1), 98–106.

Rossi, P. (1995). Why families move; a study in the social psychology of urban residential mobility. *Glencoe (Free Press).*

Schilder, F. & Conijn, J. (2013) Restschuld en het functioneren van de koopwoningmarkt. *ASRE Research paper*, 2013-02.

Saunders, P. (1990). A nation of home owners. *Londen (Unwin Hyman).*

Tarne, R. , Bezemer, D., Theobald, T. (2022). The Effect of Borrower-Specific Loan-to-Value Policies on Household Debt, Wealth Inequality and Consumption Volatility: An Agent-Based Analysis, *Journal of Economic Dynamics & Control.*

Tu, Q., de Haan, J. & Boelhouwer, P. (2016) The mismatch between conventional house price modeling and regulated markets: Insights from The Netherlands, *Journal of Housing and the Built Environment*, pp. 1–21.

van der Harst, F. & de Vries, P (2019). Kopen om te verhuren: Onderzoek naar veranderingen in eigendomsverhoudingen op de woningmarkt. *Kadaster*.

van der Heijden, H. & Boelhouwer, P. (2018). Wat is er aan de hand met de woningmarkt? *Vastgoedrecht* (*Zutphen*), 2018, 125-131

Vereniging Eigen Huis. (n.d.). Aflossingsvrije hypotheek voor starters. *Vereniging Eigen Huis*.

Verheul, W. & Hobma, F. (2022). Institutionele ruimte voor wonen: de woningcrisis en achterliggende systeemkwesties op de agenda. *Bestuurskunde*, 31(1), 318.

Vlak, A., Middelkoop, M. van, Schilder, F., & Eskinasi, M. (2017). Perspectieven voor het middensegment van de woningmarkt. Verkenning van maatregelen ter bevordering van het aanbod. *Planbureau voor de leefomgeving.*

VROMraad. (2007). Keuzes in het wonen. November. *Den Haag: VROMraad.*

Wegwijs. (2022). Aflossingsvrij blijft de meest voorkomende hypotheekvorm. *Wegwijs*.

Wet Chw (2010). https://wetten.overheid.nl/BWBR0027431/20200101

Wet WonW (2015). https://wetten.overheid.nl/BWBR0005181/20200314

Wisman, H., & De Vries, P. (2020). Moeilijke tijden voor koopstarters op de woningmarkt. *Kadaster*.

Appendices

Annex 1

Results of the CATPCA analyses

Figure B6.1 Screeplot for determining the number of components (dimension) based on the eigenvalue (baseline = 1) for the CATPCA of direct entrants.

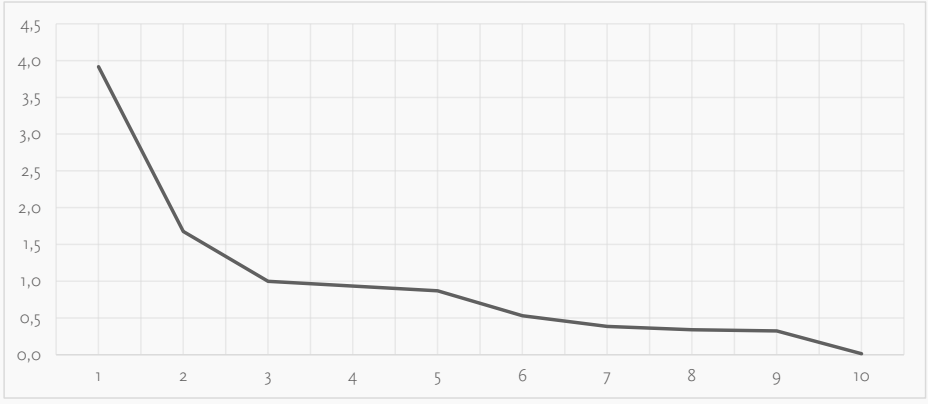


Figure B6.2 Screeplot for determining the number of components (dimension) based on the eigenvalue (baseline = 1) for the CATPCA of former tenants.

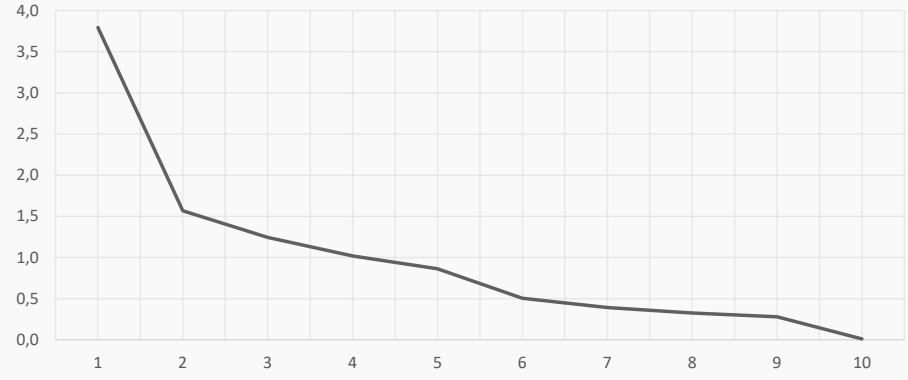


Table B6.1 Total explained variance for direct entrants of principal components (after VARIMAX rotation) in two dimensions BEFORE model optimisation for direct entrants.

	centroid coordinates			total (vector coordinates)		
	1	2	mean	1	2	total
household composition	.771	.203	.487	.764	.171	.934
household size	.743	.177	.460	.742	.151	.893
disposable income	.703	.083	.393	.694	.003	.696
nature of income	.640	.101	.370	.638	.089	.727
living area	.360	.249	.305	.359	.247	.606
housing type	.339	.198	.268	.338	.196	.534
purchase price	.331	.268	.299	.328	.264	.593
age head of household	.002	.282	.142	.000	.282	.282*
construction year	.033	.170	.102	.032	.170	.201*
source of income	.032	.106	.069	.022	.104	.126*
Total	**3,20**	**2,19**	**2,70**	**3,17**	**2,12**	**5,29**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Table B6.2 Total explained variance for former tenants of the principal components (after VARIMAX rotation) in two dimensions BEFORE model optimisation for former tenants.

	centroid coordinates			total (vector coordinates)		
	1	2	mean	1	2	total
household composition	.788	.189	.488	.779	.133	.911
household size	.758	.192	.475	.746	.112	.858
disposable income	.987	.979	.983	.619	.000	.619
nature of income	.695	.099	.397	.695	.094	.789
living area	.361	.264	.312	.352	.250	.602
housing type	.268	.188	.228	.360	.276	.736
purchase price	.339	.162	.251	.334	.158	.492*
age head of household	.004	.356	.180	.000	.356	.356*
construction year	.084	.109	.096	.081	.107	.188*
source of income	.023	.102	.062	.018	.101	.118*
Total	**4.30**	**2.64**	**3.47**	**3.88**	**1.49**	**5.37**

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Annex 2

Derivation of the variables in WoON

Table B7.1 Derivation of nature of source of income of households by WoON variables over the period 2009-2021.

```
if bronhkw=2 and partner=1 and bronpar=1 verdieners=1.
if bronhkw=2 and partner=1 and bronpar=3 verdieners=1.
if bronhkw=2 and partner=1 and bronpar=4 verdieners=1.

if bronhkw=1 and partner=1 and bronpar=2 verdieners=1.
if bronhkw=3 and partner=1 and bronpar=2 verdieners=1.
if bronhkw=4 and partner=1 and bronpar=2 verdieners=1.

if bronhkw=2 and partner=0 verdieners=1.

if bronhkw=2 and partner=1 and bronpar=2 verdieners=2.

if bronhkw=1 and bronpar=1 verdieners=3.
if bronhkw=1 and partner=0 verdieners=3.

if bronhkw=1 and bronpar=3 verdieners=4.
if bronhkw=3 and bronpar=3 verdieners=4.
if bronhkw=3 and bronpar=4 verdieners=4.
if bronhkw=4 and bronpar=1 verdieners=4.
if bronhkw=4 and bronpar=3 verdieners=4.
if bronhkw=4 and bronpar=4 verdieners=4.

if bronhkw=4 and partner=0 verdieners=4.
if bronhkw=3 and partner=0 verdieners=4.

variable labels verdieners “aard en inkomstenbron huishouden” .
value labels verdieners 1 eenverdiener
2 tweeverdieners
3 geen inkomen
4 geen inkomen uit arbeid.
```

Table B7.2 Derivation of expected household composition after moving of moving inclined households by WoON variables over the period 2009-2021.

```
if (Verh < 4 and Samhhnv = 1) samhhnv5 = Samhh5.
if (Verh < 4 and Samhhnv = 2 and ggroothh = 1) samhhnv5 = 1.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 1) samhhnv5 = 2.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 2) samhhnv5 = 3.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 3) samhhnv5 = 3.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 4) samhhnv5 = 2.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 5) samhhnv5 = 4.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 6) samhhnv5 = 4.
if (Verh < 4 and Samhhnv = 2 and Toekhh = 7) samhhnv5 = 5.

variable labels samhhnv5 “toekomstige huishoudsamenstelling”
value labels samhhnv5
1 ‘Eenpersoonshuishouden’
2 ‘Paar’
3 ‘Paar + kind(eren)’
4 ‘1-oudergezin’
5 ‘Niet gezinshuishouden’.
```

Annex 3
The search actions and barriers

In addition to the moving motives, the WoON also provides insight into the searches that relocating households perform on the housing market. Section 7.5 presented the picture that single people mostly (wish to) move out of a primary-action move. For cohabiting households, this appears to be a secondary-action move in most cases, in contrast to family households which often also exercise their desire to move for another reason. In addition, it is expected that primary-action removals will be postponed more often due to the nature of the moving motive and current market conditions.

Based on this, it is expected that move-seeking households exercising their demand from a primary move action will want to make few concessions and be active in the housing market for relatively longer. Of already active households in the owner-occupied housing market, some indicated for what reason(s) they have not yet been able to move into an owner-occupied house and what concessions they are willing to make. As the response rate for the relevant questions is lower, the figures have been extrapolated to the survey population.

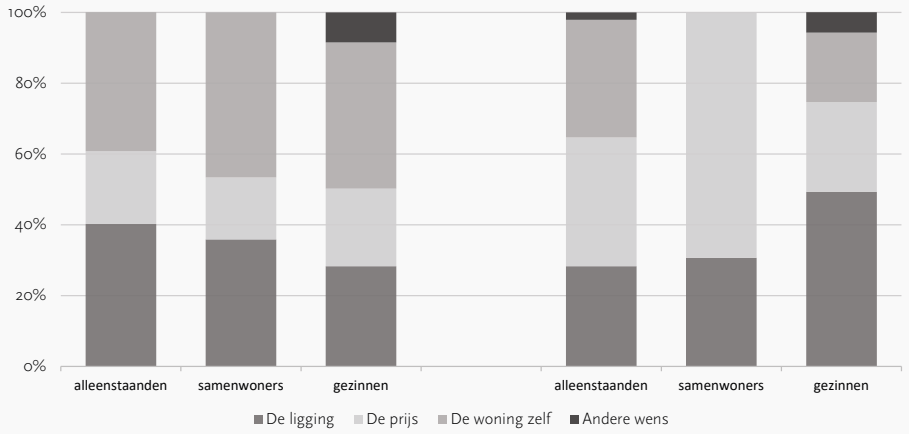
Direct entrants

Figure B7.5 shows the first and second priorities that move-loving households place on the search for a house to buy, respectively. It shows that in 2021, households willing to move mainly put location and housing characteristics as their first priority. The purchase price appears to be of less importance in this respect. Among future family movers, the relative importance of living environment appears to decrease to 28%. The second prioritisation shows an increasing share among all move-in buyers in the importance of the purchase price. Location appears to be the second most important priority among prospective families.

Among all households, the location of the potential owner-occupied house proves to be an influential factor. For instance, an average of 50% of all move-in prospective direct entrants are found to be looking for an owner-occupied house within the same residence. Any concessions households are willing to make are largely (45%) limited to the residential area. In addition, four in 10 households say they are willing to buy a house in a surrounding residence. A small proportion (10% to 15%) say they would not move at all.

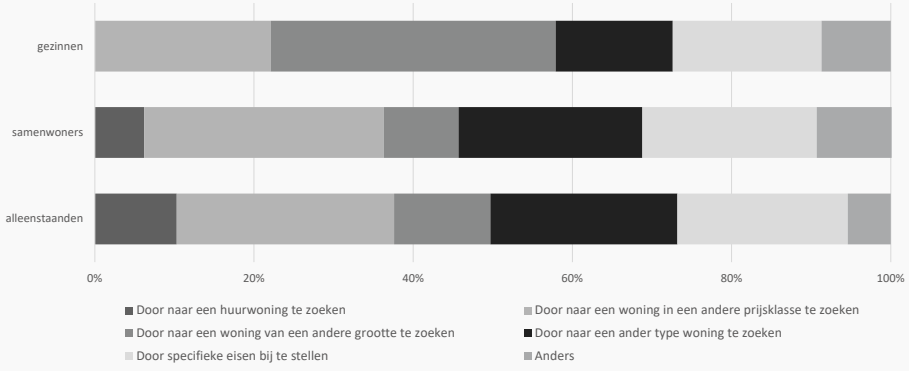
The purchase price of the desired house to buy seems to play an important factor especially in the second priotisation. The house itself seems to be most substituted in this. Unlike singles and cohabitants, families appear to consider location more important for the time being. This seems to be mainly due to the presence of (young) children for whom a child-friendly living environment is often desired.

Figure B7.5 Prioritisation in housing choice of moving inclined direct entrants in the Netherlands by first (left) and second (right) priority, in 2021



source: WOON 2021 (own edit)

Figure B7.6 Possible concessions in housing choice of movin inclined direct entrants in the Netherlands by starter type, in 2021, as percent of total



source: WOON 2021 (own edit)

Besides the relative importance of different aspects of the house in the searches, these households are also asked whether and to what extent they are willing to make concessions on their housing requirements. The picture in Figure B7.6 shows that single people are to a greater extent willing to make more concessions when it comes to housing choice. Over 10% appear to be willing to move into a rented house and thus postpone their desire to buy. Subsequently, the purchase price appears to be the first concession. Cohabitants also show

a great willingness to make concessions on the purchase price. They are also more willing to adjust specific requirements. Family buyers appear to be the least willing to make concessions.

Developments in search and priotisation of direct entrants have seen little change over time. Broadly speaking, housing (characteristics) within the second priority appear to have become less important among all households. In contrast, possible concessions in housing type have seen greater change. Notably, the proportion of households that would move into a rental property is decreasing by more than half since 2015. Hence, willingness in previous period was significantly higher than now. The willingness to look for a house in a different price range seems to substitute the lost willingness to move to a rental house.

Former tenants

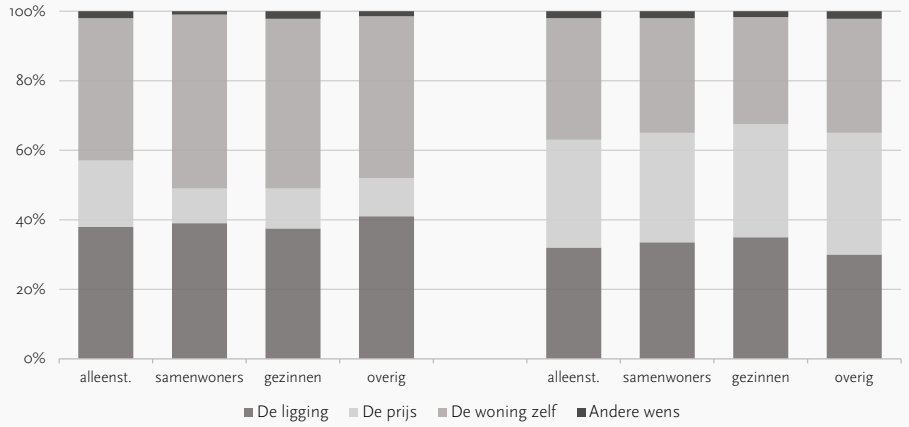
The priotisation of housing choice influencing factors as stated by moving–loving former tenants appears to correspond to the direct entrants for the different distinguished household groups. Within this fact, two differences stand out. On the one hand, housing characteristics appear to occupy a (slightly) larger share in the first priority of all households. In doing so, price seems to lose some relative importance. As with direct entrants, the share of households that put house price as their second priority increases. Among all distinguished household groups, price therefore occupies one–third of the total priotization.

Section 7.5 showed earlier that among move–loving former tenants, work accounts for a significant part of the part secondary action move. Especially among singles (25%) and cohabitants (19%), work constitutes an important motive for wanting to move. In addition, living environment (primary action) was also found to be an important factor among all moving households. Both motives are intrinsically location–related. Within the recently moved households, the relative share of 'current living environment' within primary–action removals also appears to have increased. This seems to explain the prioritisation of location within housing choice. The same reasoning appears to apply to housing characteristics and house price. Among the group of people willing to move, price appears to be an important motive for wanting to move (63% on average among all households). Among recent movers, the share of households that moved for financial reasons appears to have decreased significantly. Despite financial reasons mostly underpinning the desire to move, priority appears to be given to location and housing characteristics.

The importance of housing characteristics in the choice of an owner–occupied house is also evident from the willingness to make concessions. Figure B7.8 shows that all distinguished households (in both segments) have the highest willingness to make adjustments in housing choice by modifying specific requirements, such as a garden or the state of maintenance. Not unexpectedly, the subsequent concession appears to be the price range of the house.

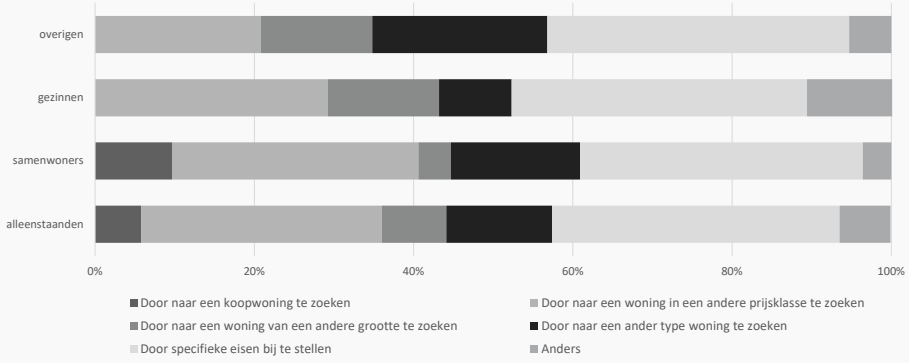
An analysis over time shows that in the period 2009–2015, the proportion of households perceiving housing as "too expensive" was significantly lower. In particular, the suitability of

Figure B7.7 Prioritisation in housing choice of moving inclined former tenants in the Netherlands by first (left) and second (right) priority, in 2021



source: WOON 2021 (own edit)

Figure B7.8 Possible concessions in housing choice of movin inclined former tenants in the Netherlands by starter type, in 2021, as percent of total

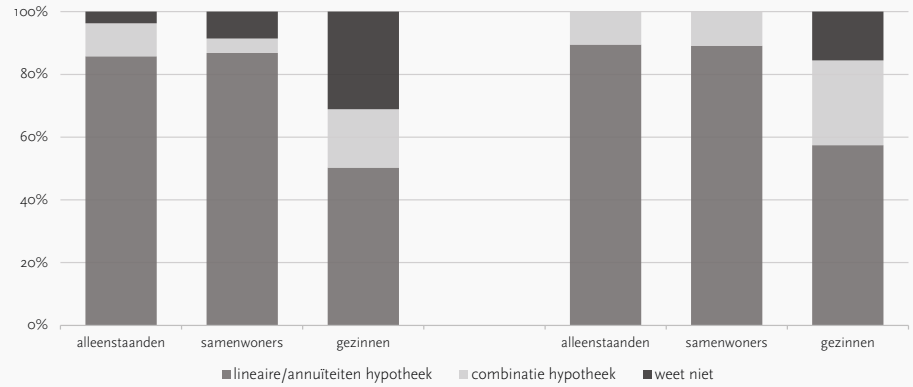


source: WOON 2021 (own edit)

supply appeared to be the biggest barrier. From 2015 onwards, the share of all households willing to move that reported finding housing price too expensive seems to increase significantly. In the period 2018–2021, this share seems to have doubled again relatively.

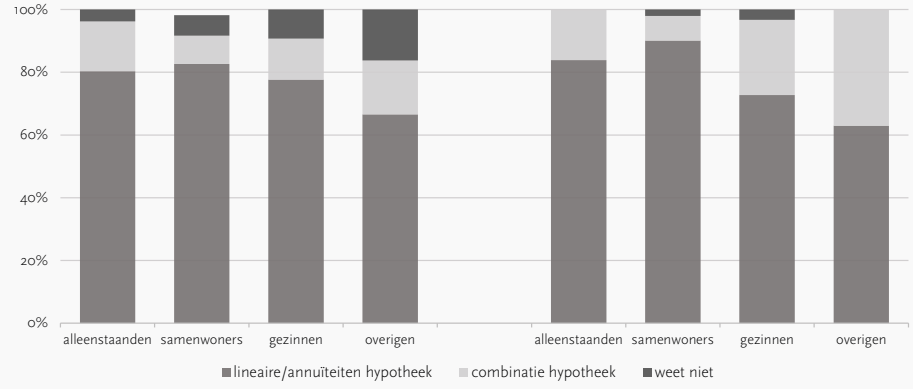
Annex 4
The chosen form of mortgage

Table B8.3 The chosen mortgage form of direct entrants in the starter segment (left) and the regular segment (right) in 2021.



source: WoON 2021 (own edit)

Table B8.4 The chosen mortgage form of former tenants in the starter segment (left) and the regular segment (right) in 2021.



source: WoON 2021 (own edit)

Annex 5
The accessibility analyses for households

Table B9.1 The affordability indicator and competition indicator for direct entrants in 2021.

	starter segment			regular segment		
	singles	cohabitants	families	singles	cohabitants	families
affordability ratio						
mean	.93	.95	.98	.56	.96	.81
median	.96	.96	.99	.39	.99	.99
variance	.01	.00	.00	.11	.00	.11
competition indicator						
mean	1.08	1.11	1.15	1.57	1.37	1.70
median	1.12	1.15	.93	1.38	1.57	1.25
variance	.05	.13	.09	.93	.08	1.66

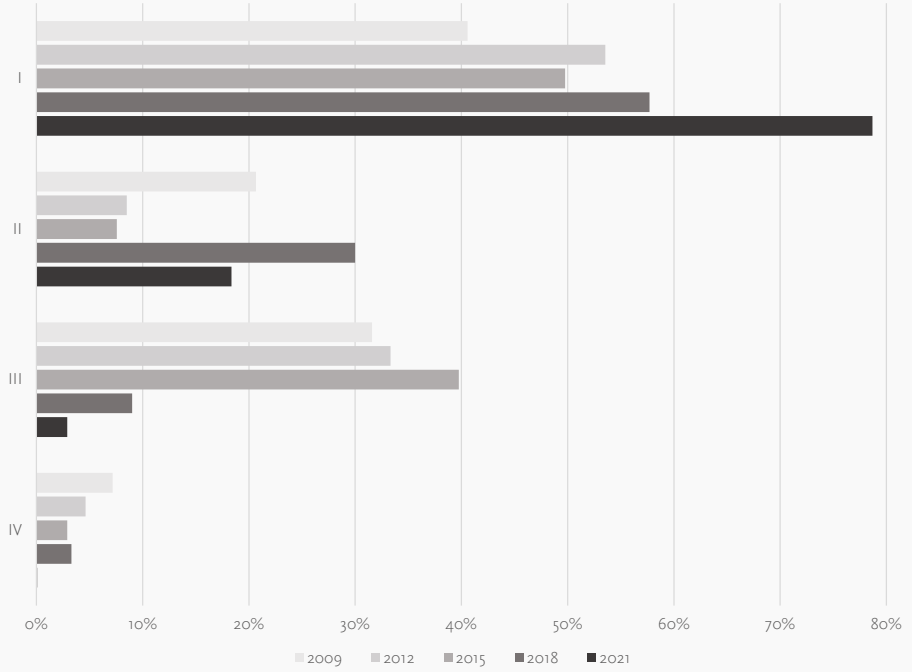
source: WoON 2021 (own edit)

Table B9.2 The affordability indicator and competition indicator for former tenants in 2021.

	starter segment				regular segment			
	singles	cohab.	families	others	singles	cohab.	families	others
affordability ratio								
mean	.81	.97	.92	.94	.96	.97	.98	.96
median	.99	.98	.95	.96	.98	.99	.99	.98
variance	.11	.00	.01		-	-	-	-
competition indicator								
mean	1.70	1.25	1.25	.99	1.27	1.37	1.51	1.31
median	1.25	1.26	1.26	1.11	1.37	1.49	1.52	1.51
variance	1.66	.07	.05	.05	.06	.07	.01	.07

source: WoON 2021 (own edit)

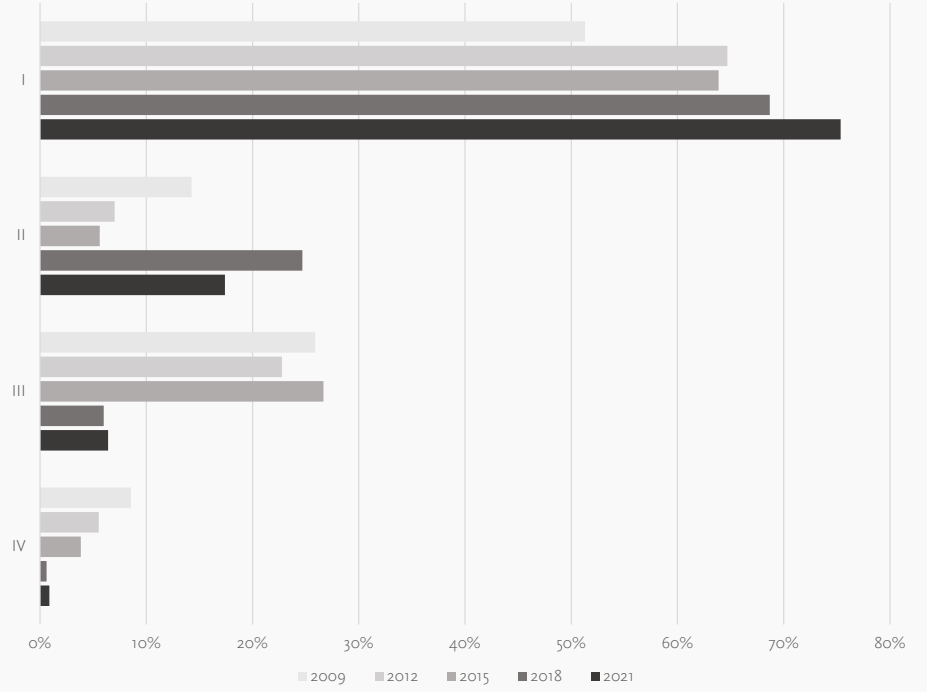
Figure B9.1 The shifts over time of the four distinct market conditions for direct entrants over the period 2009-2021.



I. Quantitative housing shortage
II. High accessibility
III. Low accessibility
IV. Qualitative housing shortage

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Figure B9.2 The shifts over time of the four distinct market conditions for former tenants over the period 2009-2021.



I. Quantitative housing shortage
II. High accessibility
III. Low accessibility
IV. Qualitative housing shortage

source: WoON 2009, 2012, 2015, 2018, 2021 (own edit)

Annex 6

Shifts over time in the succes rate

Table B10.1 The shifts over time of the logit model parameters for direct entrants in the period 2015 - 2021.

variabel	singles		cohabitants		families	
	2018	**2021**	**2018**	**2021**	**2018**	**2021**
constant	-0,17	-0,35	-0,19	-0,34	0,33	0,51
Age head of household (L)						
17-25 years	-0,29	-0,25	-0,29	-0,37		
older than 25 years	0,29	0,25	0,29	0,37		
Purchase price (A)						
up to 280.000 euro	*0,00**	-0,21	-0,09	-0,17		
more than 280.000 euro	*0,00**	0,21	0,09	0,17		
Moving motive (V)						
Primary motive	-0,32	-0,29	-0,24	-0,36	-0,17	-0,90
Secondary motive	0,32	0,29	0,24	0,36	0,17	0,90
Average succes rate	**0,37**	**0,22**	**0,49**	**0,42**	**0,68**	**0,78**

source: WoON 2018, 2021 (own edit)

Table B10.2 The shifts over time of the parameters of the logit model for former tenants as single earners from a primary moving action in the period 2015 - 2021.

SINGLE EARNERS	**2018**	**2021**		**2018**	**2021**
constant	-0,73	-0,58			
Disposable income (I)			Income × urbanity		
up to €40.000 euro	*-0,07*	-0,52	up to €40.000 × very str. urban	*0,06*	0,11
more than €40.000 euro	*0,07*	0,52	up to €40.000 × strongly urban	*-0,08*	-0,11
Urbanity (S)			up to €40.000 × non urban	*0,02*	-0,01
Very strongly urban	*-0,13*	-0,28	more than €40.000 × very str. urban	*-0,06*	-0,11
Strongly urban	*0,00*	0,12	more than €40.000 × strong urban	*0,08*	0,11
Non urban	*0,13*	0,15	more than €40.000 × non urban	*-0,02*	0,01
Purchase price (A)					
Up to 280.000 euro	*0,04*	-0,23			
280.000 - 340.000 euro	*0,06*	-0,21			
more than 340.000 euro	*-0,09*	0,44			
Average succes rate				**0,17**	**0,14**

source: WoON 2018, 2021 (own edit)

Modelfit: Lr=9.20 | Df=10 | P=0.51 | N=300

Table B10.3 The shifts over time of the parameters of the logit model for former tenants as dual earners from a primary moving action in the period 2015 - 2021.

DUAL EARNERS	**2018**	**2021**
constant	-0,25	-0,38
Disposable income (I)		
up to €40.000 euro	-0,11	-0,56
more than €40.000 euro	0,11	0,56
Urbanity (S)		
Very strongly urban	-0,30	-0,44
Strongly urban	0,08	0,13
Non urban	0,22	0,32
Purchase price (A)		
Up to 280.000 euro	-0,25	-0,58
280.000 - 340.000 euro	0,22	0,03
more than 340.000 euro	0,03	0,55
Housing type (WS)		
single-family dwelling	*0,02*	-0,37
multi-family dwelling	*-0,02*	0,37

	2018	**2021**
urbanity x purchase price		
very str. urban × up to 280.000	-0,16	0,19
very str. urban × 280.000 - 340.000	0,08	-0,20
very str. urban × more than 340.000	0,08	0,01
strong urban × up to 280.000	0,12	-0,12
strong urban × 280.000 - 340.000	-0,20	0,27
strong urban × more than 340.000	0,08	-0,16
non urban × tot 280.000	0,04	-0,07
non urban × 280.000 - 340.000	0,12	-0,07
non urban × more than 340.000	-0,16	0,15
purchase price x housing type		
up to 280.000 × s.f.	*-0,07*	0,23
up to 280.000 × m.f.	*0,07*	-0,23
280.000 - 340.000 × s.f.	*0,03*	0,14
280.000 - 340.000 × m.f.	*-0,03*	-0,14
more than 340.000 × s.f.	*0,04*	-0,37
more than 340.000 × m.f.	*-0,04*	0,37
average succes rate	**0,41**	**0,35**

Modelfit: Lr=25,55 | Df=17 | P=0.83 | N=440

source: WoON 2018, 2021 (own edit)

Table B10.4 The shifts over time of the parameters of the logit model for former tenants as single earners from a secondary moving action in the period 2015 - 2021.

SINGLE EARNERS	2018	2021
constante	-0,51	-0,65
Disposable income (I)		
up to 30.000 euro	-0,31	-0,38
more than 30.000 euro	0,31	0,38
Urbanity (S)		
very strongly urban	-0,19	-0,19
strongly urban	0,15	0,20
non urban	0,04	-0,01
Purchase price (A)		
Up to 280.000 euro (low)	0,19	*-0,08*
280.000 - 340.000 euro (middle)	-0,14	*-0,10*
more than 340.000 euro (high)	-0,05	*0,18*
Housing type (WS)		
single-family house	*-0,05*	-0,13
multi-family house	*0,05*	0,13
disposable income × urbanity		
up to 30.000 × very urban	*-0,12*	*0,07*
up to 30.000 × strongly urban	*0,10*	*0,15*
up to 30.000 × non urban	*0,02*	*-0,22*
more than 30.000 × very urban	*0,12*	*-0,07*
more than 30.000 × strongly urban	*-0,10*	*-0,15*
more than 30.000 × non urban	*-0,02*	*0,22*
disposable income × purchase price		
up to 30.000 × up to 280.000	0,17	0,20
up to 30.000 × 280.000 - 340.000	-0,09	-0,24
up to 30.000 × more than 340.000	-0,08	0,04
> 30.000 × up to 280.000	-0,17	-0,20
> 30.000 × 280.000 - 340.000	0,09	0,24
> 30.000 × more than 340.000	0,08	-0,04

	2018	2021
urbanity × housing type		
very str. urban × single-fam.	-0,32	-0,38
Very str. urban × multi-fam.	0,32	0,38
strongly urban × single-fam.	0,02	0,06
strongly urban × multi-fam.	-0,02	-0,06
non urban × single-fam.	0,30	0,32
non urban × multi-fam.	-0,30	-0,32
urbanity × income × housing type		
v. str. urban × low price × s.f.	*0,11*	0,06
v. str. urban × low price × m.f.	*-0,11*	-0,06
v. str. urban × middle price × s.f.	*-0,04*	-0,34
v. str. urban × middle price × m.f.	*0,04*	0,34
v. str. urban × high price × s.f.	*-0,07*	0,28
v. str. urban × high price × m.f.	*0,07*	-0,28
Str. urban × low price × s.f.	*-0,11*	0,10
str. urban × low price × m.f.	*0,11*	-0,10
str. urban × middle price × s.f.	*0,05*	0,20
str. urban × middle price × m.f.	*-0,05*	-0,20
str. urban × high price × s.f.	*0,06*	-0,31
str. urban × high price × m.f.	*-0,06*	0,31
non urban × low price × s.f.	*0,00*	-0,17
non urban × low price × m.f.	*0,00*	0,17
non urban × middle price × s.f.	*-0,01*	0,14
non urban × middle price × m.f.	*0,01*	-0,14
non urban × high price × s.f.	*0,01*	0,03
non urban × high price × m.f.	*-0,01*	-0,03
Average succes rate	**0,37**	**0,25**

Modelfit: Lr=16.33 | Df=14 | P=0.29 | N=310

source: WoON 2018, 2021 (own edit)

Table B10.2 The shifts over time of the parameters of the logit model for former tenants as dual earners from a secondary moving action in the period 2015 - 2021.

DUAL EARNERS	**2018**	**2021**		**2018**	**2021**
constante	0,56	0,43			
Disposable income (I)			Housing type (WS)		
up to 60.000 euro	-0,15	-0,21	single-family house	-0,01	-0,18
more than 60.000 euro	0,15	0,21	multi-family house	0,01	0,18
Urbanity (S)					
Very strongly urban	-0,03	-0,22			
strongly - non urban	0,03	0,22			
Average succes rate				**0,74**	**0,59**

source: WoON 2018, 2021 (own edit)

Modelfit: Lr=4,15 | Df=3 | P=0.245 | N=283