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How healthy and sustainable is the Dutch housing mix? Measuring and comparing the theoretical housing market balance of Dutch regional housing markets

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Housing and its distribution over groups of households dominates debates on urban socio-spatial justice. Amsterdam even received the label ‘Just City’ as the large stock of social housing in the core of the city is said to increase societal equity. Within the Netherlands, however, the Greater Amsterdam housing market is perceived to be the most dysfunctional. As the discussion is fed by highly political and ideological perspectives, it is difficult to assess at face value how balanced the housing mix of a housing market is and to what extent it meets the community’s needs. Consequently, it is difficult to inform politicians about strategies that contribute to a healthy and sustainable housing mix and address the lack of affordable housing which is high on urban policy agendas worldwide. In an attempt to go beyond ideological and political discussions, the aim of this interdisciplinary paper is to develop a metric to measure and compare the theoretical balance of housing markets across regions and across groups of households based on income. The metric will be applied to the case of the Netherlands. The findings of the theoretical model show that large-scale provisions for low-income households may not always result in an improved housing market balance.

Keywords: housing demand; housing market; just city; urban planning; housing policy

Introduction

Housing – as one of the basic necessities of life – and its distribution are often central in debates on urban socio-spatial justice. Providing enough affordable housing and establishing an ideal mix of housing relative to the community’s needs is a top priority on urban political agendas worldwide (Addison, Zhang, & Coomes, 2013; Bratt, Stone, & Hartman, 2013). Consequently, the balance of housing markets receives much attention in literature. Until now, the international debate is predominately based on qualitative research and data concerning the share of social rented housing or points at the impossibility for key workers to afford to buy in a housing market (e.g. Raco, 2008). Methods to quantify and/or compare housing markets’ balance, however, are lacking in social science literature as well as economics literature. To address this gap in literature, this interdisciplinary paper aims to develop a metric to measure and compare the theoretical balance of housing markets across groups of households and across regions.

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The case of the Netherlands, with 40 regional housing markets, stands central in this paper. The decision to use the Netherlands is inspired by the discrepancy between the internationally praised status of the Amsterdam as a ‘Just City’ with a just housing market, and its citizens and politicians various perspectives of the Greater Amsterdam housing market – including the adjacent cities and suburbs – as being dysfunctional and imbalanced. Those urban scholars and practitioners that point to the ‘just’ housing market of Amsterdam, in which citizens are treated appropriately and the distribution of housing is seen as a basic necessity, emphasize Amsterdam’s large stock of social rented housing in the city’s core (over 50% of the total stock) that according to them offers substantial social benefits and increases equity (Fainstein, 2010; Gilderbloom, Hanka, & Lasley, 2009; Novy & Mayer, 2009).

Yet, citizens and decision-makers contest this view for three reasons. Firstly, they point – with respect to social rented housing – at the notoriously long waiting lists that limit the accessibility of social rented housing (Kadi & Musterd, 2014). In the City of Amsterdam, the wait times are on average 11.5 years for a social housing unit, which ranges from 8 years in less popular neighborhoods to 14 years in the city center (Municipality of Amsterdam, 2013). Everyone that meets the minimum 18-year-old age criterion and has an NL or EU citizenship or another legal residence status can subscribe to the waiting list. There is no means test for admission to the waiting list, but to be eligible for social rented housing, a household should earn less than €34,911 at the moment of unit allocation.

The waiting averages, however, represent great variation between new entrants with only a few years of accumulated wait time and, for example, senior citizens households that move after 40 years from family-sized units to ones designed for the elderly without stairs. In the remainder of the Greater Amsterdam housing region the wait time is much shorter, and as in Amsterdam, many people on the waiting list already occupy a social rented unit. The waiting list can, to an extent, be seen as the rent controlled system’s equivalent to the price of housing as found in a situation of market equilibrium. For unit allocation, income is not relevant as long as it is below the allowed maximum, but it is the household with the longest waiting time that will be offered the unit first.

Secondly, the perception of a just housing market is contested by stressing that the social rented housing stock is slowly declining, due the combination of urban restructuring policies which emphasize owner-occupied housing and the demolition of deteriorated social housing units (Aalbers, 2004). Although, recent research shows that these demolition and restructuring processes have had a small positive effect on the livability in the most disadvantaged neighborhoods (Sociaal Cultureel Planbureau, 2013), many agree with scholars who argue that this moves in a ‘wrong direction’ (Fainstein in De Vries & Van Dongen, 2011, but see also Uitermark, 2009; Van Gent, 2013). They claim that these neoliberal processes have led to gradual residualization of the social housing stock and have made the housing market more ‘unjust’ for low-income households. Kadi and Musterd (2014, p. 4), on the other hand, emphasize the positive effect of the long waiting lists mentioned above as this has resulted in many middle-income households still residing in social rented housing, preventing residualization.

Thirdly, and from a different perspective, it is emphasized that – due to recent institutional changes of the housing market – the housing market is not imbalanced for low-income households but there are growing numbers of middle-income households that experience increasing difficulties in finding affordable housing (Jonkman & Janssen-Jansen, 2014; Kromhout, Smeulders, & Scheele-Goedhart, 2010). A recent change in regulation, based on EU competition policy, to ban state aid to social

landlords has been said to seriously undermine the housing options for lower–middle and middle-income households in the Netherlands, while options for the low-income households increase (Priemus & Gruis, 2011). In 2015, a household must earn less than €34,911 to be eligible for a social rented housing unit. The majority of middle-income households do not have access to social rented housing because their income is too high, while the non-regulated private rented sector remains small and often too expensive for these households as they often require an income level of over €50,000. CECODHAS (2010, p. 1) warned that half a million of the modest middle-income households in the Netherlands are in danger of falling into this gap. The provisions for low-income households on the housing market therefore seem to redirect problems to those that do not even qualify for these provisions. Middle-income households seem to become either crowded out of the housing market altogether or forced to take more risk and become an owner-occupier, provided that they meet the criteria for home-ownership. Mortgage underwriting is relatively strict and the owner-occupied sector is highly competitive (Neuteboom & Brounen, 2011). These housing market problems are not restricted to the Greater Amsterdam region but are observed across the Netherlands. Yet, there are some indications that this problem is not territorially balanced but manifests increasingly in the larger cities due to the higher competition in these markets (Eskinasi, De Groot, Van Middelkoop, Verwest, & Conijn, 2012; Kromhout et al., 2010). The Greater Amsterdam housing market is a national policy priority as the mismatch between housing need, demand and supply is perceived to reduce economic potential. However, it is unclear how a better and healthier housing mix would look, let alone how such a balanced mix would be delivered.

This article does not address these issues but aims to develop a metric to – at least theoretically – assess the balance of the Dutch housing market. The metric is developed in order to gain more insights into the problem of the imbalance and into what extent this varies between groups of households and between the 40 housing market regions. Given the many highly political and ideological perspectives, it has proven to be too difficult to assess at face value how balanced the mix of housing is in a housing market. Moreover, it is hard to understand the consequences of the changes to the institutional setup and housing policies for the housing market balance within the current transformed financial–economic context. Increasing housing for the low-income households might have, at least in some regions, resulted in increased imbalance for the middle-income households. This problem of middle-income households has also been addressed in international literature (Chakrabarti & Zhang, 2014; Hananel, 2014; Jacobs & Manzi, 2013; Raco, 2008), yet again without an objective way to measure and compare housing market balance between different regions and groups.

This paper attempts to address this knowledge gap by developing a more objective metric. Taking the Netherlands as a case, the metric quantifies the theoretical balance of the 40 Dutch housing markets (statistical units on NUTS-3 level) for different income groups while making housing markets' balance comparable between regions. As such, this paper examines to what extent housing market provisions for low-income households influence the market balance for other households. The metric calculates each individual household's access to housing within its regional market. This then enables an assessment of the extent in which efforts to find a better housing mix creates a 'mobility trap': a situation where accessibility problems are transferred towards other income groups overtime. Using the four most recent editions of the Dutch Housing Survey, commissioned by the Dutch Ministry of Infrastructure and the Environment, this paper further evaluates how recent institutional and economic changes have impacted

the Dutch housing market balance over the past decade. Finally, this paper reflects on how this metric could be applied in international comparative research.

The next section presents background information on urban theories of adequate housing alongside further details on the changes in the institutional setup and the metric to contextualize this paper's aim to assess housing market balance.

Background information on adequate housing and the 'Just City'

Social justice – and socio-spatial justice – has often been used to advocate for governmental intervention through subsidies and regulation. The concept of justice is value laden and has a moral and economic basis. Since the 60s, theoretical emphasis has been on the consequences for disadvantaged groups in relation to devising policies for housing and urban regeneration (Campbell, 1996; Fainstein & Fainstein, 1986; Harvey, 1973; Jacobs, 1961; Logan & Molotch, 1987). The model of the so-called 'Just City' is a city in which public investment and regulation would produce equitable outcomes rather than support those already well off (Fainstein, 2010, p. 3, see also Harvey, 1973). Fainstein (2010, p. 36) asserts in her book *The Just City*:

For the most part, urban policies, which are typically under the control of pro-growth regimes, have favored the well off over the disadvantaged. Instead, pro-equity regimes would require that the distributional outcomes of programs be measured in terms of (a) who benefits from them and (b) to what extent? A pro-equity program favors the less well off more than the well-to-do. That is, it should be redistributive, not simple economically but also, as appropriate, politically, socially and spatially.

Here, the well-off and the disadvantaged groups are mainly defined by their income. Within the Just City policy discourse, the housing of low-income households is one of the dominant elements (Gilderbloom et al., 2009; Novy & Mayer, 2009). It is assumed that these households will face the most difficulties accessing the urban housing markets, whereas higher income groups have the power to buy their way into the city (Uitermark, 2009, p. 357). Theorists like Davidoff (1965) called on planners to work for the benefit of the least well-off groups, rather than play the role of impartial technicians in order to produce greater justice within the constraints of the capitalist political world economy. One of the three pillars to achieve equity in Fainstein's Just City Theory require all public decisions to ensure that both material and nonmaterial benefits derived from public policy do not favor those who are already prosperous. It is, however, hard to quantify and measure the effects of policies and to determine which group is the least well-off in a city, particularly when the other two pillars – diversity and democracy – are also taken into account to evaluate existing and potential institutions and programs. Fainstein (2010) argues that democratic participation in urban governance and an integrated, diverse population are crucial for realizing a Just City. Even in a country like the Netherlands, with a relatively large social rented housing sector, equity and diversity may be under pressure, according to her.

Urban restructuring policies aim to achieve a more balanced socio-spatial mix and seek to increase the diversity and thus socio-spatial justice (Ferrari, 2012). This often implies the selling off or the demolition of social housing and the construction of more expensive rental and owner-occupied housing in neighborhoods with many social rented units. This is often seen as a neoliberal policy (Van Gent, 2013). In the Netherlands, this has resulted in new but less social stock being developed in the urban redevelopment locations. Competing strains of literature show that restructuring policies and their

effects are complex and contestable (Ferrari, 2012). Many authors have criticized the urban restructuring and urban renewal policies for their negative effect on the stock of the social rented sector (Dol & Kleinhans, 2012; Van Gent, 2013). Some authors (Schutjens, van Kempen, & van Weesep, 2002, p. 649) even claim that ‘a narrower range of opportunities for households with low incomes is the inevitable effect of this policy change’ towards urban restructuring in the Netherlands. Schutjens et al. (2002) and Uitermark (2009) fear for a residualization of the social rented sector, where they foresee that the vacated dwellings are so unappealing that only low-income households without a better alternative, after spending years on waiting lists, would reoccupy them. They claim the housing policies of the last decades are unjust as the position of low-income households – the least well off – on the housing market deteriorates. Van Gent (2013) is also concerned about the – perceived – decline of lower income housing in Amsterdam, but also acknowledges the problems of accessibility to housing for low- and middle-income groups whose positions similarly degrade. Although he claims that ‘upper middle-income groups have greater opportunities in the Amsterdam housing market’ (Van Gent, 2013, p. 13), he also indicates that these groups often remain in social housing for which they previously qualified for when they had a significantly lower income. According to Kadi and Musterd (2014), this prevents residualization and might provide a more socio-spatial mix. Yet, it does worsen the situation of those least well off.

In Amsterdam, this results in a paradoxical situation in which there are long waiting lists on the one hand and on the other a social rented sector that is larger than the number of households that qualify for access to it. This imbalance keeps many minds; some perceive it as ‘unjust’ for low-income households who cannot enter the social rented market because the units are occupied, while others perceive it as ‘unjust’ for households that pay a low rent relative to their income that, if forced to move, have no alternatives except to leave the city.

Competitive notions of the housing market balance exist, as do different opinions on how to improve the balance of a housing market and for whom. Concurrent to housing market access issues for low-income households, concerns surround the available supply of affordable housing relative to the created value of the inherent competitiveness of a unit on a certain location, as opposed to focusing on the policy interventions aiming to attract highly skilled, young and professional workers emerge (Raco, 2008). The provision of affordable and adequate housing, accessible to low- and middle-income households is seen as one of the major challenges for European cities (European Union, 2011).

The Dutch constitution defines housing as a fundamental social right (Dutch Constitution, article 22.2). This implies that the government is responsible for the promotion of adequate housing.¹ As a result, the national and local governments promote adequate and affordable housing, but do not directly provide housing. The question then lies in what adequate housing entails, and how can its availability and accessibility be assessed.

Definitions of adequate housing vary overtime. Concepts of appropriateness and affordability are often used to operationalize the notion of adequacy. Household composition has also long determined the appropriateness of housing. For a long time, it meant that a two-person household had a two-room apartment and three-person household had a three-room apartment, etc. (Uitermark, 2009, p. 353). Emphasis was put on affordability of housing only much later.

Affordability means something different to different people (Quigley & Raphael, 2004). Haffner and Heylen (2011) provide a review of the concept of affordability and

different definitions. In the model presented in this paper, income and wealth are taken as a starting point for defining affordability. Although literature exists on how the affordability of housing can be measured for households (e.g. Haffner & Boumeester, 2010), a good index for measuring the accessibility of a city and the theoretical balance of its housing market remains unclear. Such an analysis differs from earlier research that focuses on households and the affordability of dwellings, as this matches all households in a city region with the available dwellings. A paper on the accessibility of the Dutch owner-occupied sector by Neuteboom and Brounen (2011) provides a starting point for such an index. However, the organization of the Dutch housing market, with a large and non-competitive social rented sector, requires modifications to this approach.

Institutional factors affecting housing markets' balance in the Netherlands

The Dutch housing market is characterized by an unusually large social rented housing sector. Thirty-two percent of the housing in the Netherlands belongs to the social housing sector (e.g. Pittini & Laino, 2011; Scanlon & Whitehead, 2007). There is, however, some misunderstanding of what exactly is considered to be the social rented sector. In the Netherlands, it is categorized as all units with a rent below the liberalization level (currently around €700). Social rented housing often is provided by landlords. In general, two types of landlords can be distinguished: housing associations and private landlords. Both housing associations and private landlords often offer both regulated (social rented housing) and liberalized (market) housing. The number of private landlords is small and strongly heterogeneous, comprised of individuals owning a few dwellings or large institutional investors. The majority of the social rented housing units are provided via housing associations. Housing associations fulfill social functions, such as providing housing for vulnerable households, in exchange for financial and legal privileges allocated by the Dutch Governments (Blessing, 2012).

Tables 1 and 2 summarize key statistics of the Dutch housing market, including the owner-occupied sector. Housing markets operate on a city-regional level and, based on the data, the housing markets of Greater Amsterdam and Zeeuws-Vlaanderen diverge the most. The Greater Amsterdam region is found to have the highest housing demand in the Netherlands, while Zeeuws-Vlaanderen has the lowest. These regions will be used to exemplify the relationship between access and housing policies aimed at improving the housing market balance.

As mentioned above, social rented housing in the Netherlands is regulated. This implies that only a limited rent level increase is possible. The regulation of housing will be described in more detail, once price differences for dwellings across sectors and regions have been explored in Table 2.

Housing prices in the owner-occupied sector are considerably higher in Greater Amsterdam and considerably lower in Zeeuws-Vlaanderen, compared to the national average, thereby confirming these regions as reference regions. In the regulated rented sector, representing the vast majority of all rented housing, price levels are quite comparable between both regions following, among other reasons, the centrally governed price regulation. High- and low demand therefore does not translate in high- and low prices in the rented sector. As the data show, prices are even higher in a low-demand area, mostly because the units are larger. The market share of liberalized housing is very small, especially in low-demand areas, making interpretation of the prices difficult. As the data show, the liberalized housing in Zeeuws-Vlaanderen is more expensive than in Greater Amsterdam, but again these units are significantly larger and more luxurious.

Table 1. Market shares of housing market sectors in the Netherlands, 2002–2012, national average, high-demand area (Greater Amsterdam) and low-demand area (Zeeuws-Vlaanderen).

	2002			2006			2009			2012		
	Market share (%)	Regulated (%)	Market share (%)	Regulated (%)	Market share (%)	Regulated (%)	Market share (%)	Regulated (%)	Market share (%)	Regulated (%)	Market share (%)	Regulated (%)
The Netherlands	53	–	55	–	58	–	59	–	–	–	–	–
Owner-occupied												
Social rented	38	97	36	97	34	97	32	97	32	97	32	95
Private rented	9	82	9	81	7	73	9	73	9	73	9	73
Greater Amsterdam	31	–	35	–	38	–	41	–	–	–	–	–
Owner-occupied												
Social rented	50	97	47	98	46	96	43	96	43	96	43	93
Private rented	18	85	19	80	15	73	16	73	16	72	16	72
Zeeuws-Vlaanderen	73	–	71	–	73	–	75	–	–	–	–	–
Owner-occupied												
Social rented	21	98	23	100	22	99	20	99	20	99	20	96
Private rented	6	99	6	94	5	89	5	89	5	89	5	80

Table 2. Price of housing in the Netherlands, by regional housing market sector, 2002–2012, national average, high-demand area (Greater Amsterdam) and low-demand area (Zeeuws-Vlaanderen).

	2002		2006		2009		2012	
	Rent (€, monthly)		Rent (€, monthly)		Rent (€, monthly)		Rent (€, monthly)	
	Value (× € 1.000)	Regulated Liberalized	Value (× € 1.000)	Regulated Liberalized	Value (× € 1.000)	Regulated Liberalized	Value (× € 1.000)	Regulated Liberalized
The Netherlands	225	335	280	377	279	398	272	436
Greater Amsterdam	248	312	309	347	316	380	311	420
Zeeuws-Vlaanderen	145	325	217	361	200	385	190	432

The general findings seem robust in comparison to other data in the Netherlands, which has shown that rental prices of liberalized rented dwellings have declined and stabilized since the 2008 financial crisis, while regulated rents have been increasing with inflation during the entire period (Pararius, 2013). This is a result of the extensive governmental interference in the market.

There are two important institutional factors to consider in order to understand the characteristics of the housing market, as presented in Table 1, which translate access to the housing market. The first being the rent price regulation and tenant protection in the rented sector, and the second being the credit lending and underwriting criteria in the owner-occupied sector.

Rent price regulation

The Dutch rental sector is strongly regulated. Landlords are not free to set rental rates for dwellings, scoring less than or equal to 142 points on an administrative valuation system based on the characteristics of the dwelling (e.g. size, number of rooms), the neighborhood and the quality of the unit. Rental rates for dwellings above this score threshold may be set at the discretion of the landlord. Yet, as the quality points indicate a maximum rent level but not a minimum, landlords can decide to lease a dwelling with a lower rent. In the case of a dwelling being rented out below a certain rent level (€710 per month as of 2015), the rental contract and therefore the dwelling is regulated and subject to all rent price regulations, including a maximum annual rent increase determined by the Dutch Government. Thereby, roughly 90% of all rented housing is regulated (Table 1), with the percentage being higher for housing associations than for private landlords. The share of liberalized dwellings is increasing incrementally as rents may be liberalized upon vacancy, provided the unit scores satisfactory quality points.

Access to regulated housing is based on income, for which households with a gross annual income in excess of €34,911, as of 2015, are no longer eligible. If the income of the household is below this level, allocation of a unit takes place based on waiting list time. Another aspect of the regulation is tenant protection, whereby temporary contracts are not allowed, except for students. Furthermore, rental contracts may typically not be revised and depending on the rent level, annual increases are capped by the government. This implies that once a household occupies a regulated rented dwelling, there are few legal recourses to make them leave, even when their income situation no longer justifies access to regulated rental housing.

Underwriting criteria in the owner-occupied sector

The most important institutions in the owner-occupied sector relate to the underwriting criteria in mortgage lending. Banks have been urged by the government to set up an agreement on mortgage lending criteria for consumers since 2007, stating the rules regarding maximum loan-to-value (LTV) and loan-to-income (LTI) ratios. Several revisions have since taken place, thereby gradually reducing the maximum LTI ratio. Prior to the agreement, mortgages of up to six times the gross annual income were regularly issued. A documented explanation by the bank is now required. Banks have become stricter with respect to adhering to the stated lending criteria overtime and given increasing awareness of international financial risks. Since the start of the global financial crisis in 2007/2008, households may find mortgage applications rejected that would have previously been approved.

There are some exceptions and relevant institutional changes that have taken effect recently, however, they fall outside of the scope of this paper. The government legalized income-based rent adjustments as per July 2013; which is beyond the span of the above data-set. In addition, there is one exception to the ban on temporary contracts for rented dwellings which only applies to owner-occupiers who, given the current financial crisis, may rent out their dwelling for a fixed period of time if it cannot be sold on the owner-occupied market. Furthermore, housing associations are allowed to distribute a maximum of 10% of their dwellings outside of the normal allocation system. This share of the stock may then be used for households with an income slightly above the income boundary, but also for emergency housing for households that would have had nowhere else to go, such as homeless teen mothers or people with psychiatric issues. Finally, in order to stimulate repayment, the government restricted mortgage interest deductions on new mortgages to annuity or linear mortgages only. Non-amortizing mortgages are still available; however, demand has fallen given the unfavorable fiscal treatment. Even though this measure does not affect the maximum debt capacity of first-time buyers, it does affect their monthly payments and possibly their housing decisions.

The combination of the institutional structure of the rented sector and the large market share of housing associations decreases access to rented housing and to the social rented housing sector in particular. Whereas limited access to social rented housing might be desirable, its side effect of limited availability of rental housing is not. In practice, preferred social rented units are available only after a long queue on the waiting list. For new entrants, this is perceived to be problematic as they must divert to places with shorter waiting lists and end up in units which do not match their housing preferences. But the same is true of middle-income households that cannot afford to buy large estates in the best areas of cities.

The outcome of recent changes in the owner-occupied sector is, however, ambiguous because of recent price decreases. Due to housing prices decreasing at a faster pace than the debt capacity, starter households have a relatively better position on the housing market than before the crisis. Meanwhile, the pressure on more prudent lending may have negative effects on those households that have entered the market at its peak. They often find themselves confronted with potential residual debts if they moved out of their house, while their restricted access to finance would decrease their future access to the housing market.

Measuring the imbalance of housing markets

This paper describes a model to assess the theoretical balance of the Dutch housing markets. Until now, methods to quantify and/or compare housing markets' balance across groups of households and across regions lack in literature. Developing insights and a metric to compare this theoretical balance between housing markets may help, overtime, to create an understanding of housing market imbalances.

In an ideal situation there will be a balance between the community's needs for housing, the demand and the supply. In a perfectly balanced housing market situation, there will be one dwelling at the right price for each household at all times. As the needs for housing, the demand and the supply are all dynamic; ideally the balance should adjust to changing circumstances. Although a perfect balance at all times may be utopic, insights in what level of balance – at least theoretically – exists and how this develops overtime as a result of changing policies and financial circumstances will improve the understanding of specific housing market situations. The model used in this

paper is based on quantitative data on the number of housing units and their prices, and the number of households and their income and equity.

In the model, for analytical purposes, all households within a region are removed from their current dwellings. This, of course, can only be done theoretically to measure the balance; it will and can never happen in reality due to vested interests, ownership, regulation, rent protection, etc. However, it is a successful means to assess the balance between housing needs, demand and supply. After being all – theoretically – taken from their dwelling within a single region, these households are then released and left to compete with one another for all dwellings except for the social rented housing stock, unless they are eligible for access (thus have a gross income $>€34,000$). Households compete for housing with their income and their housing wealth. Those with more income and wealth have more options and fewer competitors: these households are assumed to have the best access to the housing market. The number of housing options given a household's income and wealth is then counted and compared to the number of households that would be able to outbid them for those dwellings in a competitive setting. A region specific ratio is added to households with access to the social rented sector that compares the number of available social rented dwellings to the number of households eligible. Since the social rented sector is not competitive, households do not compete for these dwellings within the model. Locational preferences are not included. This paper thus evaluates households' opportunities on the housing market in a closed system. Changes in the size of the market or the number of households, therefore, only indirectly affect the outcome. Only radical changes in household and market composition would affect the estimated metric. Since results by Vermeulen and Rouwendal (2007) indicate supply is highly inelastic in the Netherlands and household characteristics do not change radically within a city region, it is expected that the metric will not be strongly affected and therefore gives a reliable indication of the changes in market accessibility for household groups.

Regional differences are expected to occur as a result of a differing composition of the housing stock as well as differing characteristics of households. It is expected that in highly attractive areas, such as Amsterdam, the lowest income households would be relatively well protected against exclusion, given the existing policies and the comparison between the relatively large stock of social housing available and eligible households. However, it is also expected that stronger mechanisms preventing exclusion, i.e. more social rented housing for target groups, would result in a more compromised position for middle-income households. Finally, it is expected that the previously described changes in the housing market, specifically increased restricted access to mortgage financing and the decrease of housing prices, worsen the position of middle-income households.

The measure for the accessibility of a housing market is thus calculated as follows:

$$acc_{x,y} = \frac{\sum_y A}{\sum_y C} + S_{x,y} \times B_y \quad (1)$$

where $acc_{x,y}$ is the accessibility metric of household x in market y : in the numerator the total number of accessible dwellings A is given and in the denominator the total number of unique competitors C is given. A and C only apply to market sectors with competitive allocation. $S_{x,y}$ is an indicator of whether or not household x in market y is allowed access to the social rented sector. B_y is the regional ratio between the number of dwellings available for social rent and the number of households eligible for social rented

housing. The value of $acc_{x,y}$ is therefore restricted to be between zero and infinity: $0 < acc_{x,y} < \infty$. In the presentation of results, the natural logarithm of $acc_{x,y}$ has been taken for scaling purposes only. This causes the presented results to take on values below 0.

The number of accessible dwellings, A , is the sum of all dwellings in the private rented sector that a household could afford and all dwellings in the owner-occupied sector it could finance. Whether a household can afford a private rented dwelling is a matter of income only. Typically, a prospective renter needs to earn five times the monthly rent to be eligible for the dwelling, even when the landlord is a housing association. Therefore, private rented dwellings are accessible for household x if:

$$A = \begin{cases} 1 & \text{if } 0.2 \times I_x \geq R_{z_p} \\ 0 & \text{if } 0.2 \times I_x < R_{z_p} \end{cases} \quad (2)$$

$R_{z(p)}$ is the gross rent of private rented dwelling z_p . Households are thus assumed to have access to a private rented dwelling if the rent of the unit is less than or equal to 20% of the gross household income.

An owner-occupied dwelling may be accessible to low-income households if they have sufficient equity. Unfortunately, there is little data on non-housing equity available. It has therefore been assumed that households that hold non-housing equity would choose not to invest that equity in housing. All equity built up in the owner-occupied dwelling as a result of amortizations, and price development is assumed to be used for reinvestment in owner-occupied housing. This assumption is in line with fiscal stimuli to roll over built up home equity and adequately describes households' housing investment behavior (Schilder, 2012). Apart from housing equity, the maximum mortgage, given income, has been estimated. The sum of both determines the total debt capacity. Every dwelling below this debt capacity is assumed to be accessible for the household.

$$\begin{cases} 1 & \text{if } D_x \geq V_{z_o} \\ 0 & \text{if } D_x < V_{z_o} \end{cases} \quad (3)$$

where D_x is the debt capacity of household x , $V_{z(o)}$ is the value of owner-occupied dwelling z_o . Earlier, it has been described how debt capacity, and specifically mortgage lending, are subject to institutional changes. Debt capacity is therefore calculated as follows:

$$D_x = \begin{cases} E_x + 6 \times I_x & \text{if } t = 2002 \\ E_x + 6 \times I_x & \text{if } t = 2006 \\ E_x + M_x \times I_x & \text{if } t = 2009 \\ E_x + M_x \times I_x & \text{if } t = 2012 \end{cases} \quad (4)$$

E_x is the amount of housing equity of household x . In the years 2002 and 2006, the income is simply multiplied by six as banks were willing to lend up to six times the gross income. In 2009 and 2012, the income is multiplied by M_x , which is a multiple from a table that depends on income and the mortgage interest rate. The multiple in 2009 is always lower than six, particularly so for households with lower incomes. In 2012, the multiple is reduced even further. *Ceteris paribus*, household debt capacity thus decreased between 2002 and 2012.

In (1), $S_{x,y}$ gives the eligibility of household x to social housing. As explained earlier, eligibility to social housing is determined by income. Under recent pressure from EU regulation, housing associations are required to distribute their social dwellings to

households with an income below €34,911. Prior to this, housing associations already rented out the majority of their housing to this specific group of households. Therefore, an older income boundary has been used; the boundary for the (now aborted) social health insurance program is used as an index to estimate eligibility in later waves of the data. This results in an income boundary that in 2012 is slightly higher than €34,000. The slightly higher income boundary does justice to the fact that housing associations may provide up to 10% of their housing to higher income households. As waiting lists vary greatly within the housing market region and includes households moving from one social rented unit to another if their preferences change, the waiting lists' data are not useable or useful for the purpose of the paper. In the working model, households that are not eligible for social housing do not have access to a social rented unit.

$$S_{x,t} = \begin{cases} 1 & \text{if } I_{x,t} \leq \text{€}29.864 \times hi_t \\ 0 & \text{if } I_{x,t} > \text{€}29.864 \times hi_t \end{cases} \quad (5)$$

$I_{x,t}$ is the gross annual household income and hi_t is the household income index. The household income index from statistics Netherlands is used to calculate the maximum income boundary for social housing for all years covered by the data.

The metric described in (1) is used to estimate the accessibility of 40 city-regional housing markets for all individual households in the Netherlands in four waves of the Dutch 'Housing Needs Survey' (Ministry of Infrastructure and the Environment, 2012; Ministry of VROM, 2002, 2006, 2009). The subsequent waves of the Housing Needs Survey cover 2001/2002, 2005/2006, 2008/2009, and 2011/2012. This results in a combined data-set containing information on almost 231,000 households. The Housing Needs Survey uses the 40 NUTS-3 level regions as its statistical unit.

The surveys are conducted by the ministry responsible for housing among a representative sample of households every four years prior to 2006 and every three years since. The surveys contain data on all matters related to housing: tenure, tax-assessed property value, year of most recent move, mortgage debt, rent and so on. Furthermore, the surveys contain detailed information on the household demographics as well: age, composition, level of education, income and more. The richness of the data combined with the frequency of the survey makes it a solid data-set for analyzing households' opportunities in the housing market. Essential but sensitive data, such as household income and taxed savings, are matched to the data-set from the Dutch tax authority.

Results

Assessing the – theoretical – balance in the 40 Dutch housing markets through the development of a metric stands central to this paper. The accessibility is measured at individual household levels, given wealth and income. Furthermore, it is shown how recent changes in the housing market have affected housing market balance. The focus here lies on two specific changes. First, the impact of decreasing debt capacity on housing market accessibility is studied by comparing the 2009 wave to earlier waves. In the 2009 wave, housing prices were at a peak and households were for the first time subjected to the banks' credit lending agreement, as described earlier. Market accessibility is then estimated for the 2009 wave using both the old and the new credit lending criteria. The next change studied relates to the global financial crisis. Banks in the Netherlands seem to experience more difficulty in refinancing outstanding mortgage debt and are therefore restricting new debt. Households with potential residual debt after

selling their current home are especially confronted with not receiving new mortgage offers (and are thus forced to stay in their current dwelling). This is modeled in the 2012 wave by denying any mortgage debt to households with negative home equity. The changed housing market accessibility of households given this assumption is then compared to earlier waves.

Housing market balance across Dutch regional housing markets

Income is determinant to a household's access to the housing market. Lower income households have access to social rented housing, while higher income households do not. The higher income households, on the other hand, have better access to competitive markets. A general picture of housing market accessibility is now given, summarized by income groups according to expectations.

Figure 1 shows the average accessibility aggregated over all individual households in the Netherlands. It follows clearly from Figure 1 that middle-income households in particular have relatively poor access to housing markets and that the markets are thus imbalanced. Housing market accessibility is relatively low, especially in the fifth and sixth income decile. Households in these income groups have no access to the social rented sector and have little debt capacity given their relatively small income. The same pattern is found in all waves of the Housing Needs Survey. The clearly worsening housing market accessibility for middle-income households in the waves of 2009 and 2012 is discussed later.

First, the city-regional differences in accessibility will be examined. In particular, the focus will be on one high demand area, Greater Amsterdam, and one low demand area, Zeeuws-Vlaanderen. The results are given in Figure 2.

There are several conclusions to be drawn based on Figure 2 with respect to housing market balance. Firstly, it becomes clear that the Greater Amsterdam market is balanced in the sense that social housing provisions keep the area relatively accessible to lower-income households. Compared to the low-demand area of Zeeuws-Vlaanderen, the high-demand Greater Amsterdam housing market is much more accessible for low-income households. One must keep in mind that this is a theoretical balance, based on the quantity of social rented housing units relative to the amount of eligible households. The common practice of long waiting lists cluttering Amsterdam's social rented sector

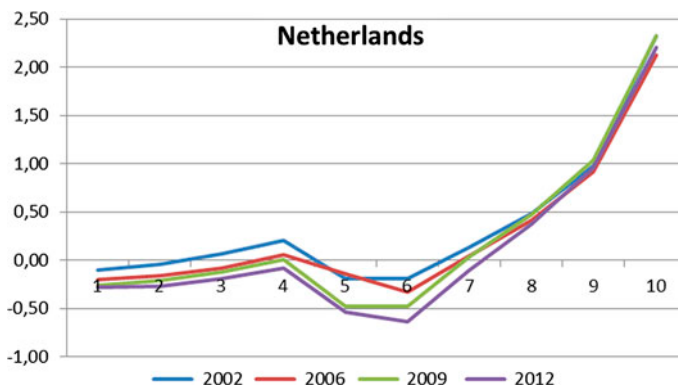


Figure 1. Housing market accessibility in the Netherlands, by income decile, per year.

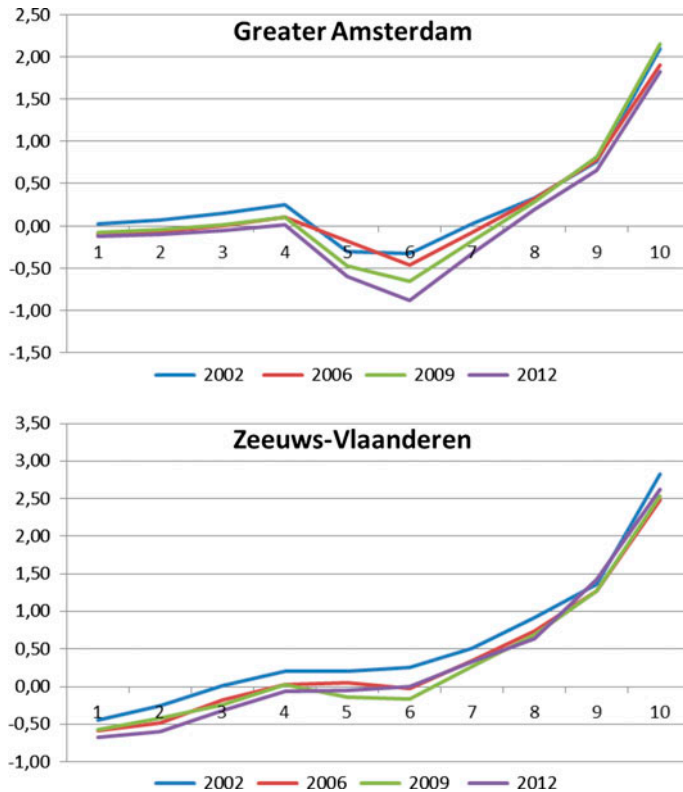


Figure 2. Housing market accessibility in Greater Amsterdam and Zeeuws-Vlaanderen, by income decile, per year.

indicates that the actual access is a different story. For the aim of this paper – to measure and compare the theoretical balance of housing markets – these waiting lists are not relevant. But based on the data, it is safe to conclude there is no absolute shortage of social rented sector housing, but that it may not be as effectively used as is assumed. A second interesting finding is that a squeeze can be observed with middle-income households in high-demand areas: accessibility strongly decreases as access to social rented housing is no longer available to the households. In the low-demand area, with far less social housing, the squeeze for middle-income households is virtually non-existent and the situation is more balanced. The squeeze in high-demand areas occurs as a result of larger demand for housing combined with the supplies' minimum price elasticity, and thus, high prices. Middle-income households therefore become caught between inaccessible social housing on the one hand and too few options in the competitive sectors on the other hand. Providing market access for low-income households therefore seems to displace any access problems instead of solving them, which should be taken into account in housing policies that may have different effects in different regions. In the low-demand area, where prices are lower, social housing does not create such a shift in problems. The balance therefore seems to be under greater pressure in high-demand urban areas and provisions for low-income households simply displace problems to the first group of households that is not protected by social housing policies.

Restricted LTI and housing market balance

In order to minimize systemic risks, credit lending has been reduced since the introduction of the banks’ code of conduct for mortgage lending in 2007. The most important change introduced with the code of conduct was a stricter LTI ratio. Prior to this, banks were relatively free to accept or deny mortgage applications. The introduction of the code forced banks to ‘comply or explain.’ The debt capacity for households in the wave of 2009 has been calculated both under the new regulation and under the previous regime. The outcome of this exercise gives an illustration of the extent to which stricter credit constraints impact housing market accessibility.

Figure 3 shows that credit constraints have indeed reduced housing market accessibility for all households. The households most strongly affected are, however, the middle-income households. This is shown in Figure 3 as the larger difference between the actual accessibility and the alternative accessibility in the absence of stricter underwriting. The decreasing accessibility as a result of stricter underwriting criteria for mortgages confirms the idea that for some time, middle-income households have been able to obtain housing by taking on more risk via buying owner-occupied housing. Middle-income households are therefore more dependent on their debt capacity and the housing prices in the owner-occupied sector than other groups. This is the result of the social rented housing sector being inaccessible and the rented private housing sector being non-existent. For the highest income deciles, the introduction of the code of conduct makes no difference: the maximum available loan relative to income has not changed as a result of the code. For the lowest income groups, differences in accessibility, if present, are marginal. This is simply a reflection of the fact that these households are largely dependent on social rented housing for their access to the housing market.

Global financial crisis, residual debt and housing market balance

The global financial crisis has made both credit lenders and households more aware of the risks involved with investing in housing. In the Netherlands, house prices have dropped roughly 20% in real terms between the waves of 2009, around the peak of the market, and 2012, during a market decrease. Many households have a so-called

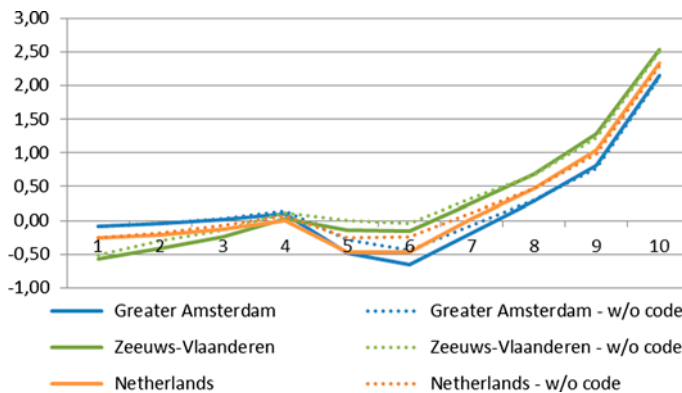


Figure 3. Housing market accessibility after the introduction of the banks’ code of conduct, by income decile, for the Netherlands, Greater Amsterdam and Zeeuws-Vlaanderen, with and without (w/o) code.

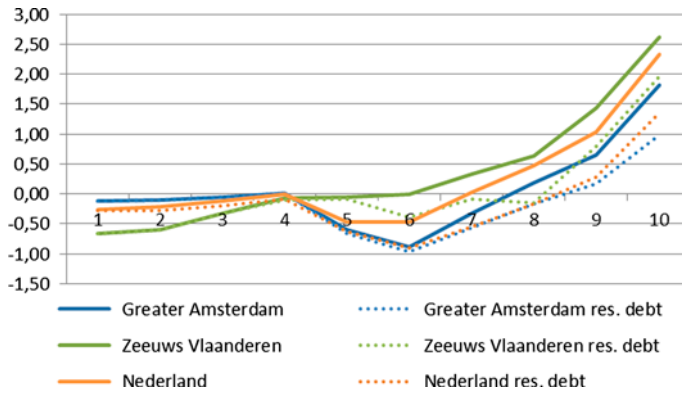


Figure 4. Housing market accessibility after restricted LTI ratios, by income decile (with and without residual debt), for the Netherlands, Greater Amsterdam and Zeeuws-Vlaanderen.

underwater mortgage: the value of the dwelling in a normal transaction would be insufficient to repay the outstanding mortgage debt. In theory, it is allowed to refinance the residual debt in addition to fully financing a new dwelling. Mind that in this situation, the total LTV ratio in such a case exceeds 100% as both the new dwelling and the residual debt need to be fully financed with debt. In practice, however, this appears to be far more complicated. In order to see how the crisis is affecting housing market accessibility, given mostly anecdotal evidence, it has been assumed that households with an underwater mortgage no longer qualify for mortgages. This seems like a strong assumption. However, households are required to repay the residual debt at an accelerated speed; the payments on this debt are taken from the income before estimating the new debt capacity. In practice, an average amount of residual debt decreases debt capacity to such an extent that a new dwelling could no longer be financed. The results of restricted access to mortgage finance are given in Figure 4.

The financial crisis seems to mostly affect higher middle-income households and up. The general picture shown is that all income groups that obtain housing in competitive sectors have decreased access to the market. This is the result of the fact that average access per income group is presented; for individual households without an underwater mortgage, accessibility obviously increases as there are fewer competitors. An interesting finding compared to earlier results is the impact that the financial crisis has had on low-demand areas. Decreasing accessibility for middle-income households is found in these regions, in contrast to earlier results. This pattern of the impact of the crisis is similar to that observed in e.g. Greater Amsterdam, whereas the restricted LTI introduced with the code of conduct did not cause such an effect. This is due to the fact that the financial crisis, unlike the changes in credit lending standards, has had different effects for different household groups.

Discussion and conclusion

The driving aim of this paper was to develop a metric to quantify the theoretical balance of housing markets and compare this balance between different regions and different groups overtime. The metric has been applied to the case of the Netherlands with its 40 housing markets. The exercise proved that the theoretical model is helpful to gain more

insights in the variation in balance of the housing markets for different households groups across one country. It increases the understanding about the effects of institutional changes overtime for different groups, but also sheds light on where the most pressing problems are to be found and gives an indication of the causes. These insights could be helpful in the debate on the direction of housing market interventions. Furthermore, this method will also enable more inclusive international comparative studies on housing market balance that could stimulate the furtherance of the literature in this area of urban studies that receives increasing attention.

With respect to the case of the Netherlands, the findings show – in line with Fainstein (2010) – that the housing market of Greater Amsterdam is healthy and ‘just’ in terms of providing access to decent quality housing in the city. It is, however, simultaneously apparent that the measures taken to ensure the balance for low-income groups have had a number of side effects that raise questions to the efficiency of these measures and therefore the balance and sustainability of the housing market as a whole. This is illustrated by the strong decrease in market accessibility of households that are not eligible for social rented housing, in particular for the so-called key workers that are increasingly recognized in literature to be important for cities as well. Compared to the other housing market regions in the Netherlands, the housing market of Greater Amsterdam is thus also the least balanced if all households are taken into account. While the large share of social rented housing stock has a very positive impact on the accessibility of low-income households, in this model another – and large – group of middle-income households are left out in the cold. Of course in reality they still occupy a part of the social rented stock, which eventually decreases the accessibility of the households that are eligible for social housing. Although, Kadi and Musterd (2014) argue this prevents residualization, others point out that the least well-off suffer from this. On average, the income of these middle-income groups is inadequate to efficiently compete in the private sector. Especially in housing markets with high demand, which includes not only Greater Amsterdam, but also Greater Utrecht, these households are forced into either overly expensive privately rented housing or into more risky owner-occupancy. The smaller price gap between the social rented sector and owner-occupied sector in low-demand areas results in a far smoother transition from the social rented housing sector into the private sectors. In that sense, the housing mix in these areas is healthier and more sustainable than in high-demand areas.

Before the financial crisis, Dutch mortgage lending was very liberal from an international perspective with LTVs over 100% and LTIs over 600%. Households with an income just above the eligibility boundary for social rented housing could therefore find a dwelling in the owner-occupied sector. During the current crisis, house prices dropped while awareness of the risks involved with owner-occupancy has increased. This has resulted in a number of changes in policy and credit lending practices that affect the housing market and its accessibility, but eventually also the balance. The estimated accessibility metric enables the comparison of the housing market balance with the balance had the changes not taken effect. These manipulations indicate that during the financial crisis accessibility for low-income households remains guaranteed, thereby reconfirming the balance of Dutch housing markets in general and the Greater Amsterdam market in particular. The results also suggest that the position of the middle-income households, which began with the weakest position on the housing market as shown by the data, worsened much more than the position of any other household group. One may therefore conclude that housing policy in the Netherlands, and the recent changes therein to improve the housing market balance, is only successful at shifting

accessibility issues, rather than creating market-wide balances and that the housing policies have very different effects for different regional housing markets.

Despite the limitations of the model to compare the theoretical balance and the changes therein, these are intriguing findings for all those involved in the delivery of (new) housing and the development of housing policies aimed to provide a more healthy and sustainable housing mix. It offers a new perspective that lacked until now. Further research needs to focus on the policy implications for national, regional and local policy and to add new perspectives in the normative debates on healthy and sustainable housing mixes. For this, the model should also be refined with data on the actual effectiveness of the distribution of housing in the social rented market as well as the private rented market. For further research, it will be interesting to see whether the same trends are true for other countries, and to compare housing market balances and the policies designed to improve them from an international perspective.

Disclosure statement

No potential conflict of interest was reported by the authors.

Note

1. This article in the constitution reads: ‘Bevordering van voldoende woongelegenheid is voorwerp van zorg der overheid’ (the promotion of adequate housing opportunities is subject of government care).

References

- Aalbers, M. (2004). Promoting home ownership in a social-rented city: policies, practices and pitfalls. *Housing Studies*, 19, 483–495.
- Addison, C., Zhang, S., & Coomes, B. (2013). Smart growth and housing affordability: A review of regulatory mechanisms and planning practices. *Journal of Planning Literature*, 28, 215–257.
- Blessing, A. (2012). Magical or monstrous? Hybridity in social housing governance. *Housing Studies*, 27, 189–207.
- Bratt, R., Stone, M. E., & Hartman, C. (2013). Why a right to housing is needed and makes sense: Editors’ introduction. In J. R. Tighe & E. J. Mueller (Eds.), *The affordable housing reader* (pp. 53–71). London: Routledge.
- Campbell, S. (1996). Green cities, growing cities, just cities? *Journal of the American Planning Association*, 62, 296–312.
- CECODHAS. (2010). Half a million households in the Netherlands excluded: Social housing organizations want EU decision overturned. In *EU News That Matters For Social Housing* (pp. 1–3). Retrieved December 29, 2014, from http://www.radian.co.uk/images/stories/PDFs/news_events/radian_cecodhas_newsflash_may10.pdf
- Chakrabarti, R. & Zhang, J. (2015). Unaffordable housing and local employment growth: Evidence from California municipalities. *Urban Studies*, 52, 1134–1151.
- Davidoff, P. (1965). Advocacy and pluralism in planning. *Journal of the American Institute of Planners*, 31, 103–115.
- De Vries, M., & Van Dongen, J. (2011). *Interview with Susan Fainstein: ‘Things are really going in the wrong direction’*. Retrieved December 2, 2014, from <http://www.asapnetwork.nl/?p=1099#more-1099>
- Dol, K., & Kleinhans, R. (2012). Going too far in the battle against concentration? On the balance between supply and demand of social housing in Dutch cities. *Urban Research & Practice*, 5, 273–283.

- Eskinasi, M., De Groot, C., Van Middelkoop, M., Verwest, F., & Conijn, J. (2012). *Effecten van de staatssteunregeling voor de middeninkomensgroepen op de woningmarkt* [Effects of state support for middle incomes households on the housing market]. The Hague: PBL.
- European Union. (2011). *Cities of tomorrow, report*. Brussels: European Union.
- Fainstein, S. S. (2010). *The Just City*. Ithaca, NY: Cornell University Press.
- Fainstein, S. S., & Fainstein, N. I. (1986). Regime strategies, communal resistance, and economic forces. In S. S. Fainstein, N. I. Fainstein, R. C. Hill, D. R. Judd, & M. P. Smith (Eds.), *Restructuring the city: The political economy of urban redevelopment* (2nd ed., pp. 245–280). New York, NY: Longman.
- Ferrari, E. (2012). Competing ideas of social justice and space: Locating critiques of housing renewal in theory and in practice. *International Journal of Housing Policy*, 12, 263–280.
- Gilderbloom, J. I., Hanka, M. J., & Lasley, C. B. (2009). Amsterdam: Planning and policy for the ideal city? *Local Environment*, 14, 473–493.
- Haffner, M. E. A., & Boumeester, H. J. F. M. (2010). The affordability of housing in the Netherlands: An increasing income gap between renting and owning? *Housing Studies*, 25, 799–820.
- Haffner, M., & Heylen, K. (2011). User costs and housing expenses. *Towards a more Comprehensive Approach to Affordability*, *Housing Studies*, 26, 593–614.
- Hananel, R. (2014). Can centralization, decentralization and welfare go together? The case of Massachusetts Affordable Housing Policy (Ch. 40B). *Urban Studies*, 51, 2487–2502.
- Harvey, D. (1973). *Social justice and the City*. Baltimore, MD: Johns Hopkins University Press.
- Jacobs, J. (1961). *The death and life of Great American Cities*. New York, NY: Modern Library.
- Jacobs, K., & Manzi, T. (2013). New localism, old retrenchment: The “Big Society”. *Housing Policy and the Politics of Welfare Reform, Housing, Theory and Society*, 30, 29–45.
- Jonkman, A., & Janssen-Jansen, L. (2014). The ‘squeezed middle’ on the Dutch housing market: How and where can it be found? *Journal of Housing and the Built Environment*. doi:10.1007/s10901-014-9420-7
- Kadi, J., & Musterd, S. (2014). Housing for the poor in a neo-liberalising just city: Still affordable, but increasingly inaccessible. *Tijdschrift voor Economische en Sociale Geografie*, 2014. doi:10.1111/tesg.12101
- Kromhout, S., Smeulders, E., & Scheele-Goedhart, J. (2010). *Tussen wal en schip: Twee deelstudies naar de gevolgen van de 90%-norm* [Between two stools : Two studies on the effects of the 90% norm]. Amsterdam: RIGO.
- Logan, J. R., & Molotch, H. L. (1987). *Urban fortunes: The political economy of place*. Berkeley: University of California Press.
- Ministry of VROM (2002). *Woonbehoefte Onderzoek 2002* [Housing needs survey 2002]. The Hague: Ministry of VROM.
- Ministry of VROM (2006). *Woonbehoefte Onderzoek 2006* [Housing needs survey 2006]. The Hague: Ministry of VROM.
- Ministry of VROM (2009). *Woonbehoefte Onderzoek 2009* [Housing needs survey 2009]. The Hague: Ministry of VROM.
- Ministry of Infrastructure and the Environment (2012). *Woonbehoefte Onderzoek 2012* [Housing needs survey 2012]. The Hague: Ministry of Infrastructure and the Environment.
- Municipality of Amsterdam. (2013). *Basismeetset 2012*. Amsterdam: Municipality of Amsterdam.
- Neuteboom, P., & Brounen, D. (2011). Assessing the accessibility of the homeownership market. *Urban Studies*, 48, 2231–2248.
- Novy, J., & Mayer, M. (2009). As ‘Just’ as it gets? The European City in the ‘Just City’ discourse. In J. Connolly, P. Marcuse, J. Novy, I. Olivo, C. Potter, & J. Steil (Eds.), *Searching for the Just City: Debates in urban theory and practice* (pp. 103–119). London: Routledge.
- Pararius. (2013). *Huurprijsontwikkeling op Pararius.nl, tweede kwartaal 2013* [Price development of rents on pararius.nl, second quarter 2013]. Retrieved December 29, 2014, from http://mobile.pararius.nl/images/news/130702_%20BIJLAGE%20Huurprijsontwikkeling%20vrije%20sector%20Q2_%202013.pdf
- Pittini, A., & Laino, E. (2011). *Housing Europe review: the nuts and bolts of European social housing systems*. Brussels: Cecodhas Housing Europe’s Observatory.
- Priemus, H., & Gruis, V. (2011). Social housing and illegal state aid: the agreement between European Commission and Dutch Government. *International Journal of Housing Policy*, 11, 89–104.

- Quigley, J. M., & Raphael, S. (2004). Is housing unaffordable? Why isn't it more affordable? *Journal of Economic Perspectives*, 18, 129–152.
- Raco, M. (2008). Key worker housing. *Welfare Reform and the New Spatial Policy in England, Regional Studies*, 42, 737–751.
- Scanlon, K., & Whitehead, C. (2007). Social housing in Europe. In C. Whitehead & K. Scanlon (Eds.), *Social housing in Europe* (pp. 8–33). London: London School of Economics.
- Schilder, F. P. W. (2012). *Essays on the economics of housing subsidies, Tinbergen Institute Research Series*. Amsterdam: Tinbergen Institute.
- Schutjens, V. A. J. M., van Kempen, R., & van Weesep, J. (2002). The changing tenant profile of Dutch social rented housing. *Urban Studies*, 39, 643–664.
- Sociaal Cultureel Planbureau (2013). *Werk aan de wijk, Een quasi-experimentele evaluatie van het krachtwijkenbeleid* [Developing the neighborhood: A quasi experimental evaluation of the deprived neighborhoods policy]. The Hague: SCP.
- Uitermark, J. (2009). An in memoriam for the just city of Amsterdam. *City*, 13, 348–361.
- Van Gent, W. P. C. (2013). Neoliberalization, housing institutions and variegated gentrification: How the 'Third Wave' broke in Amsterdam. *International Journal of Urban and Regional Research*, 37, 503–522.
- Vermeulen, W., & Rouwendal, J. (2007). *Housing supply and land use regulation in the Netherlands* (Tinbergen Institute Discussion Papers 07-058/3). Amsterdam: Tinbergen Institute.