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Abstract
Major post-industrial cities across Europe and other contexts are marked by growing social-spatial inequalities, with housing liberalization and gentrification limiting low-income households’ housing options. We investigate changes in the residential moves of different low-income households (working poor, low-to-middle incomes, and unemployed). These moves represent the nexus where issues of displacement, exclusion and housing affordability come to the fore. This paper focuses on Amsterdam and Rotterdam and the 2004-2013 time period with the 2008 global financial crisis as a key turning point. It finds relatively crisis-resistant trends of gentrification in the tight Amsterdam housing context and an accelerating suburbanization of poverty during the post-crisis bust. In contrast, in Rotterdam cyclical trends are more dominant with gentrification slowing down post crisis. However, the suburbanization of poverty is multifaceted and differs between low-income groups. In both cities, a growing group of working-poor households remains highly urbanized, predominantly moving to the urban periphery and employing coping strategies to find housing. Low-to-middle incomes and unemployed households increasingly move to the surrounding urban regions, particularly to higher-density satellite towns. Thus, this paper highlights the diverse nature of gentrification and the suburbanization of poverty, between and within cities.

Keywords: Gentrification, suburbanization of poverty, displacement, global financial crisis, housing

1 Introduction
Over the course of decades many cities have experienced profound changes regarding their population’s class composition. Overall, major post-industrial cities have arguably become not only more middle class – “professionalized” (Hamnett, 1994; Butler et al. 2008) – but also more divided along socio-economic and/or class lines (“polarized”) as is for example reflected in rising socio-economic segregation levels across European capital cities (Tammaru et al. 2016). Furthermore, as cities’ class maps are redrawn, urban poverty also shifts – it may for example “suburbanize”, moving away from inner city milieus towards more peripheral boroughs, often post-war modernist estates, or inner suburbs (Hulchanski, 2010; Hedin et al. 2012; Zwiers et al. 2015; Cooke & Denton, 2015). Although these changing divisions are the product of various drivers, welfare state retrenchment and accompanying economic liberalization play an important part. These policy shifts are inter alia reflected in the sale of social-rental housing and gradual reductions in rent controls and tenant protection – ultimately making economic resources more important in determining housing and neighborhood outcomes. In many cases, expanding
gentrification and the associated (direct or exclusionary) displacement of low-income residents are the spatial expression of these tendencies towards liberalization. Indeed, state-led gentrification has become emblematic of neoliberal urban and housing policies that seek to remake the city according to the preferences of the middle class and capital (Smith, 2002; Peck & Tickell, 2002; Harvey, 1989).

In this paper we investigate changes in the social-spatial layout of cities by focusing on one crucial dimension, the spatial dimensions of (urban) poverty. We investigate changes in Amsterdam and Rotterdam (The Netherlands) during the 2004-2013 period. Rather than elaborating on more static existing poverty concentrations, we target the residential moves of low-income residents and changes therein. We consider residential moves as particularly important because this is where displacement, exclusion and issues of housing accessibility or affordability become most apparent. Furthermore, what “happens” to urban poverty and where it goes are especially pertinent questions in the face of gentrification becoming the modus operandi in many (inner) cities. We illuminate these issues by addressing the extent to which structural urban conditions as well as cyclical conditions impact urban social processes. We will start with the question what the overarching trends are of residential mobility of low-income residents (RQ1):

**RQ1:** How and to what extent are the moving patterns of (different groups of) low-income residents subject to changes over time?

The outbreak of the 2008 global financial crisis is a crucial event that plays a key role in re-articulating existing inequalities and forging new ones. Yet, it is as of yet unclear how this plays out in urban space – specifically in relation to urban poverty. Various patterns are possible: both the boom and bust period – respectively preceding and following the crisis outbreak – may be marked by substantial shifts in urban poverty but changes may also accelerate or slow down. Alternatively, trends occurring during the boom period may be reversed and annihilated during the bust period. More specifically, the boom period preceding the crisis was in the Dutch context – as in many other settings – marked by substantial housing liberalization and the formation of a housing bubble, already placing constraints on housing affordability and accessibility, producing increasingly divided social-spatial outcomes (Musterd & Van Gent, 2016). Furthermore, during boom periods gentrification generally also progresses most vigorously – while the process slowed down during previous busts (Hackworth & Smith, 2001; Hedin et al. 2012). The global financial crisis, however, exacerbated inequalities and had a profoundly negative effect on the housing position of various population groups, particularly the growing group hit by unemployment,
precarious employment situations, or household debt. This growing group faces decreasing access to homeownership (Forrest & Hirayama, 2015) and depends on a shrinking affordable social-rental sector. At the level of the neighborhood this may have several consequences. The most affordable neighborhoods in an urban-regional system may increasingly serve relatively low-income residents – amplifying already existing trajectories of neighborhood decline (Zwiers et al. 2016). Alternatively, neighborhood upgrading may also impede, contributing to de-gentrification (Lees & Bondi, 1995). We formulate the following sub question regarding the cyclical trends:

RQ2: How do (changes in) patterns of low-income residential moves differ between boom and bust periods, respectively preceding and following the outbreak of the global financial crisis?

Amsterdam and Rotterdam represent two cities with rather different historical pathways, contributing to different economic profiles. While Amsterdam indeed represents a city that has successfully made the transition to a post-industrial economy, Rotterdam struggles to leave its industrial legacy behind (Burgers & Musterd, 2002). Consequently, Rotterdam’s housing market is considerably more relaxed than the tight and expensive Amsterdam one, and gentrification remains a more marginal and scattered phenomenon in Rotterdam (Hochstenbach & Van Gent, 2015). As a result, we would expect that there is more stability regarding the residential moving patterns and destination areas of low-income residents in Rotterdam, while changes are likely to be more prominent in Amsterdam. Yet, despite substantial differences regarding housing demand and housing prices the housing tenure composition is roughly the same in both cities with almost half belonging to the social-rental stock. We address the between city differences with the following sub question:

RQ3: How do (changes in) patterns of low-income residential moves differ between a relatively successful and a relatively struggling city?

So, in short, this paper is about investigating how low-income residential moving patterns in urban space have changed over time – through different boom and bust periods – and how these patterns and changes differ between structurally different cities.

2 Spatial dimensions to urban inequality

To gauge how and to what extent low-income residential moving patterns change over time, it is imperative to situate these changes within broader debates regarding the economic structure of
cities and the global connectedness of cities as well as debates regarding shifting social-spatial urban inequalities.

Influentially, it has been argued that global economic restructuring has a profound effect on the social-economic population composition of major cities (Sassen 1991). As finance and highly specialized service industries concentrate in these cities, so do their highly paid managers and workers. Concomitant to this shift, Sassen posits, is an increase in the number of low-skilled and low-paid jobs, often in industries serving a higher-income clientele (e.g. domestic workers, and jobs related to leisure and consumption). The outcome is a polarization of the social and economic structure of these cities’ populations as both the high-end and low-end jobs increase. Alternatively, Hamnett (1994) has argued that the occupational structure of major cities is professionalizing rather than polarizing, which entails that these cities are becoming more middle class overall through a gradual replacement of the traditional working classes by an expanding middle class (Hamnett, 2003; Butler et al. 2008). Professionalization is an outcome of the shift towards a post-industrial society which has led many traditional (semi-skilled or unskilled) working class occupations to become less important or obsolete, while the number of middle-class professions has grown. The professionalization thesis is coupled to on overarching trend of replacement of one class by another, for example following the ageing of the traditional working classes. This thesis has in recent years been criticized for employing a static perspective regarding class structures and inequalities, equating a decline in traditional working class occupations with an overall replacement of the working class by middle class fractions (Watt, 2008; Davidson & Wyly, 2012; 2015). The overall shift towards more “middle class” occupations may ignore the emergence of new inequalities and class oppositions. One trend is the growth in precariously (self) employed workers in sectors that are traditionally considered middle class but earning relatively low wages and often employed on temporary contracts. Another trend is that new social-spatial dividing lines are forged, for example through the intergenerational transmission of wealth (Hochstenbach & Boterman, 2015). Recent evidence suggests that major cities – like Amsterdam – are currently experiencing trends towards greater social polarization (Van der Waal, 2010; Maloutas, 2007; Musterd & Van Gent, 2016).

On top of these structure-related changes the 2008 Global Financial Crisis and housing-market downturn have had a disruptive impact on the housing trajectories of a range of different population groups. Notably, the financial crisis and consequent institutional reforms have made access to owner occupancy more uneven and restricted (Forrest & Hirayama, 2015) and the
overall number of sales and sale prices have plummeted in post-crisis years (Van der Heijden et al. 2011; Ronald & Dol, 2011). Particularly for low-income households, those in a precarious employment situation, and younger age cohorts access to homeownership has dwindled and rent burdens in the (often private) rental sector have increased. Yet, many of these trends towards increasing inequalities regarding housing position were already in place before the financial crisis set in and should arguably be seen as a consequence of the commodification and financialization of housing and real estate (Dewilde & De Decker, 2015; Forrest & Hirayama, 2015).

Structural processes such as social polarization and professionalization, as well as the disruptive impact of the global financial crisis have a profound impact on the social-economic composition of cities, and as such also have a spatial expression. A recent study of various major European (capital) cities shows that as inequalities are on the rise during the early 21st century, most cities also showed growing segregation levels, further fuelled by government retrenchment in specific domains and liberalization (Tammaru et al. 2016). Particularly households high on the social-economic ladder increasingly isolate themselves from other population groups and withdraw in relatively homogeneous environments (Atkinson, 2006). Yet, despite an overall positive correlation between social-economic disparities and social-spatial divisions, the actual spatial outcomes differ between contexts. Increasing polarization and inequalities may also co-exist with decreasing levels of segregation or social-spatial divisions (Hamnett, 2001; Maloutas, 2007). Through, among other things, neighborhood gentrification and the introduction of more expensive owner-occupied housing in previously low-status areas often as part of social mixing strategies, actual segregation levels may decrease. This can create more fine grained maps of class fractions and class inequalities. While this – at least temporarily – suppresses spatial divisions, it does pose a negative influence on the housing options and affordability for lower income residents for example through rent increases or the sale of social-rental housing. It is to be expected that the relation between social-economic and spatial divisions is more robust in more liberal societal and housing contexts (Reardon & Bischoff, 2011) while stronger welfare state arrangements may suppress spatial inequalities for example through tenure mixing at low spatial scales (Musterd & Ostendorf, 1998).

3 Gentrification, displacement and a suburbanization of poverty

One of the main ways through which social-economic inequalities are expressed in urban space is gentrification, even if this is not directly visible in greater social-spatial divisions. While individual neighborhoods may become or remain more mixed due to gentrification, the aggregate
effects at a higher scale may instead be the opposite. As gentrification has morphed into a mainstream process and extends far from the urban core into neighborhoods previously deemed unlikely candidates for gentrification (Hackworth & Smith, 2001), low-income residents are increasingly confined to those areas left untouched by gentrification. Particularly in tight urban housing markets, this implies that gentrification amplifies trends of already decreasing affordability and accessibility in specific areas, while other areas see increasing and stronger concentrations of urban poverty (Musterd & Van Gent, 2016).

An important way through which gentrification contributes to deepening social-spatial divisions is displacement. Yet, the extent to which displacement occurs as a consequence of gentrification has been subject to substantial academic debate in recent years. Proponents of the professionalization thesis argue that neighborhood gentrification is primarily the result of class replacement, suggesting that displacement – though it may still occur – is a rather limited phenomenon (Hamnett, 2003; Butler et al. 2008). Other academic debates have been primarily concerned with the distinction between direct and indirect forms of displacement. While gentrification may not necessarily lead to heightened levels of out-migration among low-income households (a proxy for displacement) (Freeman & Braconi, 2004; Freeman et al. 2015), it still excludes low-income newcomers from moving in (Newman & Wyly, 2006; Slater, 2009). Importantly, low-income households may overcome increasing barriers by taking on higher rent burdens or employing coping strategies when moving to find affordable housing, e.g. through doubling up with relatives, friends or other people (Wiemers, 2014) or by accepting precarious housing arrangements (Huisman, 2015). While this might lend access to neighborhoods that would otherwise be unattainable – e.g. due to gentrification – it could in turn be used as evidence for a lack of exclusionary displacement despite the potentially destabilizing impact on housing and life course trajectories (cf. Newman & Wyly, 2006; Davidson, 2009).

Debates regarding the salience and extent of direct or indirect displacement need to be situated within the context of the highly regulated Dutch urban housing markets. Here, as a consequence of the large social-rental stock, extensive tenant protection and rent regulation (for example, sitting residents' rents can only be increased incrementally and within limits set by the state), direct displacement is likely to be limited. On the other hand, indirect exclusionary displacement is likely to be relatively prominent in the Dutch context. The sale and liberalization of social-rental dwellings, in combination with steep price increases in the private rental and owner-occupied sectors, contribute to a decrease in the share of dwellings affordable and accessible to
lower-income residents in gentrifying neighborhoods (Van Gent, 2013). Long and growing waiting lists, low turnover rates and tenure conversions limit the availability of social-rental housing. While insiders are able to retain relatively low housing costs, outsiders face decreasing options and rising rent burdens (Kadi & Musterd, 2015). This in turn makes it more feasible for social tenants to stay put, again contributing to fewer social-rental dwellings coming available which further sharpens the insider-outsider differentiation.

The outward expansion of gentrification away from the inner city into other, mostly adjacent, neighborhoods is accompanied by parallel outward shifts of poverty concentrations into the urban periphery or inner-suburban spaces. This “suburbanization of poverty” (Hulchanski, 2010; Randolph & Tice, 2014; Cooke & Denton, 2015) represents a significant break from previous periods where poverty was first and foremost an inner city problem and reflects the growing cleavage between a gentrifying and increasingly exclusive urban core and a disadvantaged “filtering” periphery (Skaburskis & Nelson, 2014; Hedin et al. 2012). These shifts are generally gradual and take place over a longer period of time, as many areas are also marked by high levels of stability (Zwiers et al. 2015) due to non-moving residents and selective mobility patterns that tend to reproduce neighborhood status (Hedman et al. 2011; Musterd et al. 2016).

4 The welfare state, housing liberalization and state-led gentrification

Welfare state arrangements exert a considerable influence on (changes in) residential mobility patterns, particularly through housing. Housing position and social class are mutually constitutive of one another. That is, class and income shape housing outcomes, but housing also (re-)shapes class divisions (Aalbers & Christophers, 2014). Tenure plays an important dividing role in this regard and through the spatially uneven distribution of different tenure forms, social relations and social inequalities are projected on and reproduced through urban space (Harvey, 1985). Therefore, housing policies concerning tenure mix, access to homeownership and acceptable rent levels can play a key role in determining the magnitude of social-spatial divisions. Strong welfare regimes like the Dutch have typically invested heavily in housing policies to reduce social-economic disparities produced by market forces and to minimize social-spatial divisions (Musterd & Ostendorf, 1998). This was done through the provision of relatively affordable social-rental housing, but increasingly also through the expansion of homeownership as a social and ideological project which would give lower-middle income households the chance to
purchase a dwelling with expected individual and societal benefits (Forrest & Hirayama, 2015; Ronald, 2008). Yet, this social project was gradually replaced with a more neoliberal project of homeownership (Forrest & Hirayama, 2015). This shift entails that access to owner occupancy has increasingly become confined again to financially well-off households (in terms of income, labor-market security, but notably also financial assets), with less privileged households increasingly unable to enter an owner-occupied sector that has vastly expanded over decades. One market and policy response is to expand the private-rental sector which in Dutch urban contexts is increasingly characterized by higher rents, higher levels of flexibility, and deregulation of the rental sector.

Apart from housing policies, the shift towards more neoliberal urban policies is also expressed in the rise of state-led gentrification. Although state involvement in gentrification is not a new phenomenon (Van Weesep, 1994), it has become more pronounced in the process’ third wave form (Smith, 2002). Under more neoliberal conditions governments pursue gentrification for a range of different reasons. Financial and competitive imperatives exist to selectively invest in “winner areas” (Harvey, 1989). State-led gentrification is in this sense an emblematic strategy to enhance the competitiveness and marketability of cities and urban regions in their quest for capital investment and the middle classes (Hackworth & Smith, 2001; Peck & Tickell, 2002; Peck, 2005). Alternatively, state-led gentrification also serves as a strategy to disperse poverty concentrations and ultimately control and manage deviant spaces (Uitermark et al. 2007).

The global financial crisis has a deep impact on local and national policies. Austerity measures lead to further cuts in the provision of social services, including social-rental housing. These cutbacks force local states and liaised semi-private institutions (notably housing associations) to be more selective in the services and projects they continue and which they discontinue. This might imply that urban restructuring in less popular areas as well as the construction of new social-rental dwellings might be cut, while prestige or high-end projects may be pushed through in name of the urban competition fostered by austerity (Peck, 2012). Similarly, housing liberalization may be refocused towards up-market or gentrifying neighborhoods since it is there that selling off social housing is most profitable, while urban renewal in the cheapest neighborhoods may stall. This would ultimately contribute to a further spatial concentration of social-rental housing as well as social-spatial divisions. On the other hand, stalling housing sales may also slow down housing liberalization patterns, preventing a further decline in social-rental housing (Zwiers et al 2016).
5 Data and methods

This paper focuses on (changing) patterns of low-income moves and economic boom-bust patterns in two structurally different cities. In order to do so, we use long-term secondary data on both cities’ housing markets in combination with highly detailed longitudinal register data from the Social Statistics Database (provided by Statistics Netherlands). Register data allow us to define different low-income groups in a very precise way and monitor their moving patterns for the 2004-2013 period. We define a move as a change in address taking place during a given year and measure the (neighborhood) outcome on the 1st of January the next year. Although we investigate all individual years, we specifically focus on the neighborhood outcomes of 2004, 2008 and 2013 which respectively are the earliest time point in our data, the last pre-crisis point with peaking house prices, and the most recent time point, still a crisis “year”. We focus on the post move destination.

We primarily distinguish between three types of low-income households: unemployed households, and employed households with either a very low or a low-to-middle income. Since it is possible that a household is composed out of both employed and unemployed individuals we define household employment status on the basis of the most important source of income (in Euros). We define employed households with a total annual gross income below €19,095 as very low income (“working poor”) and those with an income between €19,095 and below €34,085 as low-to-middle income. These thresholds correspond respectively to 110% of the minimum wage (for full time employment) and the maximum income to be eligible for social-rental housing. The latter threshold is also more or less the modal Dutch household income.

We only include population aged 25-65 as to focus on the working age population (excluding retired households and young people whose income may not reflect socio-economic status). Households are only included when the oldest member falls within these age-brackets and is not a student. Because household composition changes over time, we define a household as moving when at least one of the 25-65 year old members has moved. Institutional households and households moving to an address where more than 10 households are registered are excluded. These groups generally reflect special household types.

Regarding the destination area we focus on Amsterdam, Rotterdam and both cities’ urban regions. We construe a broad typology based on the geographical distinction between the urban center, the urban periphery and the surrounding region. For Amsterdam, the border between
central and peripheral neighborhoods roughly corresponds to the city’s ring road and IJ river. In Rotterdam, the central neighborhoods are mostly bounded by the New Meuse river (although parts of the south bank are also included), the ring motorway to the north and east, and the municipal border to the west. The municipal border marks the distinction between urban periphery and surrounding region. This broad definition suffices to chart general shifts in low-income households’ moving patterns. Elsewhere, we have shown that the center-periphery divide closely approximates an upgrading-downgrading divide between neighborhoods in both cities (Hochstenbach & Van Gent, 2015): most gentrification neighborhoods can be found in both cities inner rings. In a subsequent step, we map the percentage point changes in moving patterns between 2004 and 2013 to give a highly detailed overview of spatial variation. These maps thus chart changes over both a pre-crisis boom and a post-crisis bust period. Per year we calculate what share of moving households is low-income – employed or unemployed. We have conducted these analyses for individual neighborhood types as well as the broader categories of central city, peripheral city and surrounding region. We are particularly interested in identifying changing moving patterns over time that relate to changing patterns of affordability and accessibility.

Furthermore, we also investigate the tenure outcomes of the different low-income groups per neighborhood type. We do not only distinguish between social rent, private rent and owner occupancy, but also use “home-sharing” as an additional category, which entails that multiple households are registered at one address. Although this is not a tenure in itself – sharing may occur in all tenure forms – we suggest identifying sharing as a coping strategy is more insightful than measuring the underlying tenure. Due to data availability, we can only investigate tenure outcomes for the most recent years. Therefore, we will focus on the tenure outcomes for 2013. Furthermore, in both cities for about 6% of the addresses no information on tenure is available. This percentage is higher in inner-city neighborhoods where the older housing stock is not as well registered (around 10%).

6 Results

Urban housing policies and boom-bust patterns

It is important to situate low-income households’ moving patterns within the specific urban and regional housing contexts. Both Amsterdam and Rotterdam currently focus on expanding homeownership, a policy focus that has gained traction since the mid-1990s and that stands in
sharp contrast with both cities’ long-standing legacy of providing affordable social-rental housing (Aalbers, 2004; Uitermark, 2009). The expansion of homeownership is integral to municipal gentrification strategies in an attempt to attract and keep hold of middle- and higher-income residents (Van den Berg, 2012; Doucet, 2013; Van Gent, 2013) and has led to a substantial change in tenure composition. At the turn of the century, owner occupancy made up 15% of the Amsterdam housing stock, while by 2013 this share had increased to 28% (Table 1). During the same period, homeownership increased from 22% to 35% in Rotterdam. On the other hand, the social-rental sector gradually decreases in size, through tenure conversions and through urban restructuring where rental dwellings are demolished and make way for owner-occupied dwellings. The size of the social-rental sector is reduced in order to cut spending, but also serves as a strategy to change the population composition of specific neighborhoods (social mixing). Since access to social housing is limited to lower-income residents, conversion to free-market owner-occupied or rental housing is considered a prerequisite to align the housing stock with the actual as well as desired middle class population (Van Gent, 2013). While the expansion of the owner-occupied sector enabled a growing group of lower-middle income households to purchase a dwelling, it has also increased the importance of economic capital in shaping social-spatial outcomes. Only the cheaper segments of the owner-occupied sector were affordable to lower-middle income (prospective) homebuyers, limiting their options to the lower-status neighborhoods. Consequently, tenure conversions to owner occupancy selectively spur upgrading processes in already up-market areas while facilitating socio-economic downgrading in neighborhoods where market processes facilitate downgrading (Boterman & Van Gent, 2014).

Nevertheless, social-rental housing remains the largest tenure form in both cities (Table 1). Yet, actually decreasing accessibility of this housing tenure may be better judged by looking at allocations by housing associations. For instance, in Amsterdam the number of social-housing allocations via the official allocation system decreased over 36% between 2007 and 2014 (AFWC, 2015) following housing liberalization and stagnating residential mobility as tenants stay put. In Amsterdam and Rotterdam the share of social-rental dwellings has decreased in both the central and peripheral neighborhoods, reflecting governmental strategies that seek to facilitate gentrification processes through tenure conversions in central neighborhoods to accommodate the new middle classes, and simultaneously aim to establish a new social mix in disadvantaged neighborhoods through urban restructuring (Uitermark & Bosker, 2014; Teernstra, 2015). Table 2 only includes both cities. Additionally, in the surrounding Amsterdam region, the owner-occupied sector represent 57% of the total stock (in 2013), while social-rental and private-rental housing make up 30% and 13% respectively (CBS, 2013). In the surrounding
Rotterdam region the share of owner-occupied dwellings stands at 55% vis a vis 35% social rental and 10% private rental (in 2013; CBS, 2013).

Table 1. Tenure composition of Amsterdam and Rotterdam 2000-2013. Source: data provided by OIS Amsterdam and OBI Rotterdam; own adaptation, available upon request.

<table>
<thead>
<tr>
<th>City</th>
<th>Area</th>
<th>Year</th>
<th>Social rental</th>
<th>Private rental</th>
<th>Owner occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>Total</td>
<td>2000</td>
<td>54.4</td>
<td>30.7</td>
<td>14.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>53.4</td>
<td>26.9</td>
<td>19.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2008</td>
<td>50.2</td>
<td>23.9</td>
<td>25.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2013</td>
<td>46.2</td>
<td>25.6</td>
<td>28.1</td>
</tr>
<tr>
<td></td>
<td>Central</td>
<td>2000</td>
<td>45.4</td>
<td>41.4</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>45.1</td>
<td>36.5</td>
<td>18.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2008</td>
<td>42.8</td>
<td>32.4</td>
<td>24.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2013</td>
<td>39.9</td>
<td>33.3</td>
<td>26.9</td>
</tr>
<tr>
<td></td>
<td>Peripheral</td>
<td>2000</td>
<td>69.4</td>
<td>13.2</td>
<td>17.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>68.3</td>
<td>11.0</td>
<td>21.3</td>
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<tr>
<td></td>
<td></td>
<td>2008</td>
<td>62.6</td>
<td>9.9</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2013</td>
<td>56.6</td>
<td>13.4</td>
<td>30.0</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Total</td>
<td>2000</td>
<td>57.3</td>
<td>21.2</td>
<td>21.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td>54.6</td>
<td>20.8</td>
<td>24.6</td>
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<tr>
<td></td>
<td></td>
<td>2008</td>
<td>49.9</td>
<td>18.9</td>
<td>31.1</td>
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<tr>
<td></td>
<td></td>
<td>2013</td>
<td>46.9</td>
<td>18.5</td>
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<td>2013</td>
<td>48.3</td>
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<td>16.2</td>
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<tr>
<td></td>
<td></td>
<td>2013</td>
<td>46.6</td>
<td>15.2</td>
<td>38.2</td>
</tr>
</tbody>
</table>

As an increasing share of both cities’ housing stock is commodified, it becomes more susceptible to economic patterns of boom and bust. Figures 1 and 2 chart the longer term trends regarding the numbers of dwellings sold and the average sale prices in Amsterdam and Rotterdam. These trends show that the boom period preceding the financial crisis, in combination with housing liberalization, led to a substantial increase in the number of housing sales in Amsterdam, peaking in 2007 with 10,489 sales, while in Rotterdam this boom did not lead to substantially more housing sales (Figure 1). Yet, after the beginning of the crisis the number of sales showed a sharp decrease up until 2013 in both cities. This suggests that while the boom period had little impact on housing sales in Rotterdam, the bust period certainly did. Between 2013 and 2014 a
remarkable jump in the number of sales was recorded, establishing a new record high in Amsterdam and signalling the beginning of a new housing boom period. Similar boom-bust patterns are apparent in the average sale prices (Figure 2), showing that between (the first quarter of) 2004 and 2008 average sale prices rose by 33% in Amsterdam, from €237,000 to a record high of €314,000. During the same period, average sale prices in Rotterdam increased some 20%, from €160,000 to €193,000. Price increases during this period are the product of relatively favorable mortgage lending conditions including high loan-to-value ratios and low interest rates during this period, and the structural tax deductibility of mortgage interest as part of wider governmental strategies to push homeownership (see Aalbers, 2011). Especially high prices in Amsterdam reflect the city’s increasingly tight housing context due to considerable population growth. Yet, in the wake of the global financial crisis house prices – like the number of sales – steeply dropped: 18% in Amsterdam and 14% in Rotterdam between the first quarters of 2008 and 2013; but subsequently increased again. Boom-bust patterns appear stronger in Amsterdam’s tight housing context than in Rotterdam’s more relaxed context. Figure 3 uses real-estate values to further unravel variegated developments in housing prices in different urban and regional areas, showing that the pre-crisis boom particularly affected central Amsterdam. It also clearly shows how real-estate values are substantially lower in Amsterdam’s periphery than in the surrounding region, although long-term trends signal the urban periphery catching up with the region. In Rotterdam, in contrast, housing values are highest in the region, with both central and peripheral Rotterdam scoring substantially lower.

While these figures demonstrate the boom-bust rhythms in both cities in great detail, it is important to consider to what extent housing sales and sale prices influence residential moving patterns of low-income households. As highlighted, the pre-crisis period was one of expanding homeownership and relatively lenient lending conditions. This enabled groups of lower-middle incomes to purchase a dwelling, especially in more affordable areas and the more affordable Rotterdam context. Particularly in central Amsterdam prices are generally high and increased swiftly during the pre-crisis period as a consequence of intense gentrification, pricing out lower-middle income residents from the owner-occupied sector. Yet, it should be taken into consideration that in both cities large groups of lower-income residents cannot and will not enter homeownership, also due to the existence of a relatively large de-commodified rental stock in urban areas. In post-crisis times price drops may enable some households to buy, but the dominant development is that decreasing sales and more restricted mortgage lending practices
that privilege “prime” households (see Forrest & Hirayama, 2015) reduce the post-crisis access to homeownership.

Figure 1. Number of (existing) dwellings sold per year 1995-2014 in Amsterdam and Rotterdam (cities). Source: Statistics Netherlands, CBS Statline (2015); own adaptation.

Figure 2. Average sale price of dwellings per quarter 1995-2015 in Amsterdam, Rotterdam (cities) and the Netherlands. Source: Statistics Netherlands, CBS Statline (2015); own adaptation.
Low incomes’ changing moving patterns

So how have low-income households’ residential moving patterns changed during these pre- and post-crisis periods in Amsterdam and Rotterdam? Before specifically zooming in on residential moves, Table 2 shows per city and region what percentage of all (included) households belongs to the different low-income categories as defined above. It shows that both cities host a larger percentage of low-income households than the regions, although this share decreased between 2004 and 2013 – with only “working poor” households increasing in share. In contrast, all low-income categories shares increased in the cities’ surrounding regions for the 2004-2013 period. This suggests that the effects of the financial crisis are mainly visible in both surrounding regions, although the data also show that these different trajectories were already in place before the onset of the crisis. Differences between Amsterdam and Rotterdam, and between the cities and their regions are linked to the occupational structure of local populations. Not only are unemployment levels structurally higher in Rotterdam, but a larger share of the employed population are active in lower-skilled sectors (CBS, 2015). These are specifically the sectors where employees are most hit by the crisis: during the 2008-2013 period the number of residents in lower-skilled jobs decreased with roughly 15,000 in Rotterdam (25,000 in the surrounding Rotterdam region) and 7,000 in Amsterdam (and 19,000 in the surrounding Amsterdam region). In contrast, in Amsterdam almost half of the employed residents have high-skilled jobs (category...
4), and their number grows constantly between 2003 and 2013, also during the years. Also in Rotterdam and both surrounding regions these employment groups increased considerably before and after the onset of the crisis, though at a slower pace than in Amsterdam. In 2013 the highest-skilled employment group constituted some 34% of the employed population in Rotterdam, and 30% in both cities’ surrounding regions. These general employment data highlight that Amsterdam’s occupational structure is to a larger extent professionalized and continues to professionalize and grow, while Rotterdam is hit by the decreasing demand for lower-skilled jobs contributing to greater increases in unemployment. This may also imply that Rotterdam’s employment structure is more susceptible to economic cycles.

Table 2. The three low-income population groups as share of the total population (and their aggregated total share) per area for 2004, 2008 and 2013. Data: Social Statistics Database, own adaptation.

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Working poor</th>
<th>Low-to-middle</th>
<th>Unemployed</th>
<th>Total low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>2004</td>
<td>5.9</td>
<td>11.9</td>
<td>16.5</td>
<td>34.3</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>5.6</td>
<td>11.3</td>
<td>14.9</td>
<td>31.8</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>7.0</td>
<td>11.0</td>
<td>14.9</td>
<td>32.9</td>
</tr>
<tr>
<td>Surrounding Amsterdam region</td>
<td>2004</td>
<td>2.2</td>
<td>7.0</td>
<td>6.5</td>
<td>15.7</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>2.2</td>
<td>6.9</td>
<td>6.2</td>
<td>15.3</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>3.1</td>
<td>7.7</td>
<td>7.1</td>
<td>18.0</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>2004</td>
<td>3.4</td>
<td>10.9</td>
<td>19.1</td>
<td>33.4</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>3.5</td>
<td>10.6</td>
<td>16.5</td>
<td>30.6</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>4.6</td>
<td>10.5</td>
<td>18.0</td>
<td>33.1</td>
</tr>
<tr>
<td>Surrounding Rotterdam region</td>
<td>2004</td>
<td>1.9</td>
<td>6.9</td>
<td>7.8</td>
<td>16.6</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>1.9</td>
<td>7.0</td>
<td>6.9</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>2.6</td>
<td>7.7</td>
<td>8.5</td>
<td>18.9</td>
</tr>
</tbody>
</table>

Changes become most visible by zooming in on residential moves, when households are directly faced with housing constraints. Figure 4 charts for Amsterdam’s center, periphery and surrounding region what percentage of (in-) moving households belong to the different low-income groups and how this has changed during the 2004-2013 period. In a general sense, these data highlight the importance of analyzing these different low-income groups separately, rather than as one broad low-income category. It shows that “working poor” households (earning less than 110% of the minimum full time wage) mainly move to/within the city, as opposed to the region. In the pre-crisis period their share slightly decreased in central Amsterdam, contrasting trends in the urban periphery and surrounding region where their share showed a slight increase. After the onset of the crisis, however, the share of working-poor residents increased across all areas, although most substantially in the urban periphery (from 6.4% in 2008 to 10.6% in 2013). Notably, also in central Amsterdam their share increased during the post-crisis period (from 7.6% to 10%). It should be taken into account that the working poor are a rather diverse group,
encompassing those who are structurally low paid as well as self-employed people and recent labor-market entrants (e.g. graduates). The financial crisis and related austerity measures have contributed to an increase in persons in temporary and/or precarious employment, particularly among younger cohorts (Aasve et al. 2013).

The other low-income working households – those earning more than 110% of the minimum full time wage but less than the social-rent cap – show different moving patterns. In the boom period their share decreased most substantially in central Amsterdam (from 13.3% to 11.4%), while also decreasing somewhat in the periphery. In contrast, already during the boom period their share increased in the region, although this increase accelerated after the beginning of the crisis while remaining relatively stable in the city’s central and peripheral neighborhoods. Consequently, as of 2013 the share of low-middle income employed households among movers is higher in the surrounding region than in central Amsterdam. Regarding unemployed households, by far the largest share is found in the urban periphery, reaching 16.6% in 2005. Yet, also due to large-scale restructuring there was a steep decrease in unemployed households moving to/within the periphery during the boom period as well as the first two years after the financial crisis began. Interestingly, during the bust period the share of unemployed households showed a strong increase in the region and from 2009 also in the urban periphery. Contrasting cyclical trends, their share more or less stabilized in central Amsterdam before again decreasing between 2012 and 2013.

Overall, these data highlight a gradual shift of poverty away from the city, particularly the center, towards the region. An overarching “suburbanization of poverty” comes to the fore that progresses despite being influenced by boom-bust rhythms. In central Amsterdam, the share of all low-income categories decreased during the pre-crisis boom period. Particularly the number of unemployed households moving to central Amsterdam has decreased, likely due to diminishing accessibility and availability of social-rental housing. The subsequent economic downturn did not lead to a post-crisis increase in lower-income households, except for the growing group of working poor households. The suburbanizing trend itself is multi-faceted, with the region experiencing the strongest relative increase in low-income households. Furthermore, already in pre-crisis times the region experienced increases in working poor, and low-to-middle income households, while experiencing a below average decrease in unemployed households. In contrast, Amsterdam’s urban periphery shows more variegated patterns, depending on time period and low-income group. Interestingly, the share of low-to-middle-
income households increases especially in the urban region, while in the urban periphery the share of working poor households grows disproportionally signaling a different (housing) orientation of these different groups.

Figure 4. Share of low-income residents as percentage of total movers per destination area 2004-2013 in the Amsterdam region. Source: SSD, own adaptation.

In Rotterdam we see similar patterns regarding the direction of changes, although these are not as marked as in Amsterdam (Figure 5). Here, the share of working poor households remained relatively stable during the pre-crisis period while it increased for all areas after the crisis began: in central Rotterdam their share increased from 6.5% in 2008 to 8.6% in 2013. In the other areas the percentage point increases were more or less similar. Consequently, throughout the 2004-2013 period the share of working poor households remained highest in central Rotterdam. Regarding the other low-to-middle income households there is a slight move away from central Rotterdam which mainly occurred during the pre-crisis boom period and remained stable throughout the post-crisis period, dropping below the overall urban and regional average in 2013. The biggest increase of low-to-middle income households is in the region, from 10.7% in
2004 to 12.3% in 2013, almost matching the share in the central city. Interestingly, this increase mainly occurred during the post-crisis bust period, contrasting a trend of relative stability during the pre-crisis period. In peripheral Rotterdam the share of lower income employed households remained rather stable through time, with boom and bust trends more or less cancelling each other out. As a consequence, already during the boom period the share of low-to-middle income households in Rotterdam’s peripheral neighborhoods surpassed the share in the central city, due to decreases in the latter area.

The share of unemployed residents among movers is structurally higher in Rotterdam and its surrounding region than in Amsterdam. While this share quickly decreased during the pre-crisis boom, the post-crisis years saw a return to 2004 levels although variation between areas exists: the region experienced an increase between 2004 and 2013 from 9.4% to 11.9%, while the central city an overall decrease from 16.4% to 15.4%. These different trajectories mainly formed during the boom period when unemployment shares decreased most substantially in the central city (-4.7 percentage points between 2004 and 2008) and least in the region (-1.3). In the post-crisis period all three areas show highly similar increases of 3.7 to 3.9 percentage points. This suggests that the pre-crisis upgrading patterns in the central city are not as robust as in Amsterdam and are to a greater extent subject to cyclical trends.
These trends are mapped onto both urban regions to further highlight spatial variations and nuances between postcode tracts (Figure 6a-f). For each of the three low-income groups these maps compare their share among movers in 2013 with their share in 2004 – showing percentage point changes. The maps illuminate how patterns of change differ across neighborhoods, but most specifically also how they differ between working poor, low-to-middle income, and unemployed households. By comparing 2004 and 2013, these maps depict changing patterns that combine pre- and post-crisis trends.

For the Amsterdam urban region it clearly shows that, in fact, in all tracts in the urban periphery the share of working-poor households among movers increased (6a). In addition, also in the inner-ring neighborhoods various tracts saw an increase, particularly in the (often-gentrifying) nineteenth and early-twentieth century belts surrounding the city center. Also in the region the share of working-poor households among movers increased for most tracts, although often at a slower pace and mostly in higher-density satellite towns like Almere, Zaandam and Haarlemmermeer. In contrast, the share of low-to-middle income households among the movers
decreased in most tracts in Amsterdam’s central city and trends in the urban periphery are variegated across different tracts (6b). While increases also occur in the satellite towns, it shows a more general increase in the region, including lower-density suburban tracts and Amstelveen, a relatively middle-class city bordering Amsterdam. The starkest shifts are among the unemployed households though (6c), as the share of unemployed households among the movers decreases across Amsterdam bare some exceptions. Instead, particularly the new town Almere as well as Purmerend and Wormerland see a strong increase of unemployed households among movers. While such satellite towns were for a long time typical (lower-) middle class milieus, these maps show they increasingly cater to different low-income groups.

In the Rotterdam region the working poor are strongly urbanized: Figure 6d shows the actual number of working poor households that move to tracts outside the city are often very low (<10 per year). An exception is Schiedam: this city directly borders Rotterdam to the west and sees substantial increases of working-poor residents, especially in pre-war neighborhoods with a large share of (often low-quality) private-rental dwellings. Within Rotterdam, increases generally concentrate in neighborhoods in the west (Delfshaven) where the housing stock is dominated by cheap rental dwellings. Strong increases are also found in low-status neighborhoods on the city’s south bank, particularly in those neighborhoods where the controversial “Rotterdam Law” is enforced since 2006. This law forbids unemployed newcomers to settle in these neighborhoods. Consequently, the cheap rental stock mainly attracts households that are employed but have a (very) low income. Regarding the moving patterns of low-to-middle income households we see generally decreasing shares in Rotterdam’s central city and gentrification hotspots (Katendrecht) as well as higher-status peripheral tracts (Hillegersberg). Increases can be found in peripheral tracts in the city (e.g. Prins Alexander) and bordering higher-density areas (e.g. Capelle a/d IJssel). For unemployed households we see similar patterns, with the strongest increases in Prins Alexander as well as in tracts in the surrounding region (e.g. Hellevoetsluis, Lansingerland).
Figure 6a.

Figure 6b.
Figure 6c.

Figure 6d.
Figure 6c.

Figure 6f.
Figure 6a-f. Percentage point (pp) change in the share of working poor (Figure 6a & 6d), low-to-middle (6b & 6e) and unemployed (6c & 6f) households among (in-)movers per postcode tract between 2004 and 2013. Source: Social Statistics Database, own adaptation. Base map: IRIS international.

Despite clear overall trends of a suburbanization of poverty and decreasing accessibility and affordability of inner-city environments, the findings also highlight important differences regarding the moving patterns of the three different low-income groups. We further unravel these different patterns by focusing on these groups’ housing-tenure outcomes in relation to neighborhood outcomes (Figure 7). Tenure mixing and the provision of de-commodified housing can lend an important counterweight to structural and cyclical trends impacting housing affordability and can sustain housing accessibility for lower incomes despite gentrification. Tenure outcomes are the result of the housing-market structure and the size of the different tenures in the different areas, but also reflect households’ housing position, opportunities and constraints.

In all areas in both cities working poor households disproportionately move to dwellings which they share with at least one other household: for example, 61% of the working poor households moving to/within the Amsterdam periphery move into shared housing arrangements. This likely is the consequence of coping strategies that allow these households to find housing and also forms a tentative explanation as to why a relatively large share of working poor households is able to move into gentrifying inner-city neighborhoods. To a lesser extent they move to social- or private-rental housing while homeownership is generally out of reach. The low-to-middle income households also often settle in home-sharing arrangements, but are overall more likely to move to (independent) rental housing. Furthermore, a considerable portion of this group moves into owner-occupation – although this share is relatively low in central Amsterdam (9%), reflecting generally high housing prices (Figure 3). The more affordable owner-occupied stock in Amsterdam’s surrounding region and in Rotterdam overall offers a larger group of lower-middle income households the opportunity to buy. Unemployed households generally depend on social-rental housing and only very rarely move into homeownership (2% or 3% per area), suggesting that these households have a weaker housing-market position than the two employed low-income groups. The fact that they are heavily overrepresented in the social-rental sector indicates that these households may generally be in a more structural low-income position compared to the other groups who may be more socially mobile.

Although these data do not give insight into preferences, they do generally point at the importance of social-rental housing for allowing low-income households to continue to move to
areas that would otherwise be unaffordable. Sharing as a coping strategy to overcome issues of affordability and accessibility also plays an important role in facilitating low-income households’ access to housing, although this mainly applies to working poor households. Long average waiting times for social-rental housing in Amsterdam (over nine years, but longer in popular areas) make such coping strategies a necessity to gain access, especially in the face of decreasing affordability of the private-rental sector. While such coping strategies may suppress social-spatial inequalities, they do highlight more general issues of housing accessibility and affordability – partly the consequence of gentrification processes and housing liberalization.

Comparing the two cities, it is interesting to note that a larger share of low-income households moves into owner-occupancy or social-rental housing in Rotterdam. This reflects that the owner-occupied sector is in relative terms slightly larger in Rotterdam and prices substantially lower, while waiting times for social-rental dwellings are on average 3.5 years, well below the Amsterdam average.

Figure 7. Tenure outcomes per low-income group per area in Amsterdam and Rotterdam, in 2013. Data: Social Statistics Database, own adaptation.
7 Discussion and conclusion

Major cities across Europe and other contexts are marked by growing social-spatial inequalities, often taking the form of expanding gentrification processes and a related suburbanization of poverty towards urban peripheries and suburbs (Hedin et al. 2012; Randolph & Tice, 2014). These growing social-economic and social-spatial inequalities are, among other things, the consequence of economic restructuring, policies of housing commodification and governmental strategies pushing gentrification. The outbreak of the financial crisis, the following economic collapse and related austerity measures have further amplified already existing trends towards greater inequalities (Tammaru et al. 2016). This paper has investigated a key aspect of changing social-spatial inequalities: the residential moving patterns of low-income households. We suggest that although residential moves do not necessarily drive neighborhood change (Hochstenbach & Van Gent, 2015), they do form the nexus where issues of displacement, exclusion, housing affordability and housing accessibility come to the fore and thus deserve specific attention.

Regarding low-income households’ residential moves it is important to note that there is not one uniform trend in both cities and in both (pre- and post-crisis) times, nor is there one uniform trend for the different types of low-income households. Rather, residential moving patterns have changed in different ways in both cities under the influence of the global financial crisis. This conclusion will not answer the main research questions on moving patterns (RQ1), boom-bust differences (RQ2) and between-city differences (RQ3) separately, but will rather integrate the answers into a cohesive overview.

Gentrification and a suburbanization of poverty in many ways represent a long-term reversal of fortunes for inner-city areas vis à vis peripheral and suburban areas, and these patterns have survived several economic boom and bust cycles. Although this paper has only investigated one boom and one bust period it may be expected that as housing is liberalized and social-rental dwellings converted into owner occupancy, the impacts of financial crises and housing-market fluctuations become greater. It is important to consider the changing role of urban politics in relation to these housing-market shifts. As more market-oriented urban policies are rolled out, not in the last place state-led gentrification (Peck & Tickell, 2002; Smith, 2002), older policies that mitigate social-economic divisions are gradually eroded. Urban policies cast inner cities as the “natural” location to accommodate the actual and desired growth of new middle class residents flocking to the city. Another effect is that it has become normalized that financial resources come to play a greater role in determining who lives where (Uitermark, 2009; Van
Thus, lower-income households are increasingly confined to a shrinking social-rental sector or, in some cases, affordable segments of the owner-occupied sector, as well as to low-status or declining neighborhoods.

Yet, these inequalities may not directly be expressed in increasing levels of segregation because gentrification processes have led to the introduction of more middle-class residents in previously low-status inner cities (Musterd & Van Gent, 2016). This paper shows that the moving patterns of different types of low-income households change in different ways under these conditions of housing liberalization, through both boom and bust periods. In general, the existing social-rental sector continues to mitigate the exclusionary effects of gentrification. Notably, although the urban has become more gentrified and housing less affordable and accessible, we also see a steep rise of urban working-poor households. Following Sassen (1991) these findings suggest a large and growing group of working-poor residents remain integral to cities’ economic structures despite overarching patterns of professionalization. Although their incomes are very low these households are able to negotiate access to otherwise unaffordable or inaccessible housing, for instance through coping strategies. Furthermore, among the working-poor households are also precariously (self)employed often younger households. This hints at new inequalities that cut through traditional class boundaries and which may be the consequence of current labor-market restructuring, but also of intergenerational disparities and the growing importance of intergenerational support in acquiring housing (Forrest & Hirayama, 2015) especially in relatively up-market neighborhoods (Hochstenbach & Boterman, 2015).

During previous economic crises gentrification processes generally slowed down or reversed towards de-gentrification (Hedin et al. 2012; Hackworth & Smith, 2001; Lees & Bondi, 1995). We find that the 2008 Global Financial Crisis also influenced gentrification processes in Amsterdam and Rotterdam. In Amsterdam, gentrification proved not to be immune to the financial crisis, as housing price drops were steepest in the central gentrifying areas. It is in these areas that housing-market boom-bust rhythms are strongest. Yet, changing housing prices do not necessarily lead to similar social-economic changes in population composition (Teernstra & Van Gent, 2012). This is also reflected in our study which shows that while the share of all low-income household types – working poor, low-to-middle income, and unemployed – decreased substantially in the central city during boom times, their share did not increase again during the post-crisis period. Gentrification is in this regard relatively crisis resistant as exclusion appears to continue in post-crisis central Amsterdam.
Patterns in Rotterdam differ somewhat from those described above. Although Rotterdam’s central neighborhoods are overall also experiencing processes of gentrification and socio-economic upgrading, these trends are more in relative terms than in Amsterdam. More specifically, gentrification appears more prone to cyclical trends in Rotterdam: during the boom period central Rotterdam saw above average decreases in the influx of low-income households, but these were almost cancelled out during the subsequent bust period. Hence, in Rotterdam’s more relaxed housing context gentrification processes, with regards to housing prices as well as residential mobility patterns, do wax and wane during boom and bust times. A particularly large difference between Amsterdam and Rotterdam exists regarding unemployed households among movers. While post-crisis trends in Amsterdam show relative stability and even a further decrease in the central neighborhoods, Rotterdam’s crisis trends show substantial increases across the board. These differences need to be viewed in the light of both cities’ different economic structures (Burgers & Musterd, 2002). Employment in lower-skilled manual labor decreased in both Amsterdam and Rotterdam, but in Rotterdam these jobs are relatively more important. Particularly these jobs are faced with a longer-term structural decline through a professionalization of the workforce (Hamnett, 1994; Butler et al. 2008), but are also heavily impacted by cyclical patterns of decline contributing to a further decline in lower-skilled jobs. In contrast, employment in higher-skilled jobs is on the rise in both cities but especially in Amsterdam, which relates to the city’s position in international economies (Tammaru et al. 2016).

A suburbanization of poverty runs parallel to inner-city gentrification in both investigated cities, although this shift has specific pre- and post-crisis dimensions and is substantially stronger in Amsterdam. Here, poverty already suburbanized during the pre-crisis period but accelerated post 2008. Particularly those areas that already showed relatively negative trends are the ones that are worst hit by the crisis. Furthermore, as Amsterdam hosts several higher-education institutions and has relatively strong service and financial sectors it is ensured of a yearly influx of students, graduates and higher-educated workers in general despite the crisis. To some extent this also goes for Rotterdam, but especially in both surrounding regions these pull factors are more absent. Consequently, especially higher-density satellite and new towns become the destinations for lower-income households.

Overall, this paper has combined a broad perspective regarding housing trends with highly detailed data on the residential moving patterns of different types of low-income households. In
doing so, we illuminate how these moving patterns change considerably under different boom-bust conditions and in the face of housing liberalization. Gentrification and a concomitant suburbanization of poverty represent forceful processes in the tight Amsterdam housing context. They are processes that continue over time, during both boom and bust periods, although cyclical economic trends do mediate the impact of these trends on residential outcomes. In contrast, in Rotterdam overall cyclical trends exert the main influence on the existence and moving patterns of low-income households. Here, the geography of these trends is subtly nuanced by more limited and scattered forms of gentrification and regional downgrading.

Acknowledgements

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References


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1 To give an example: Movers’ neighbourhood outcomes of 2004 are the outcome of a residential move taking place anywhere during 2003. It is possible households moved several times, in which case we only measure the last outcome/destination.

2 All incomes are corrected for inflation to the 2013 level.
Since 2011 90% of rent-regulated social-rental housing has to be allocated to households with an income below the official threshold. For some household types this threshold stands at some €38,000 (subject to yearly fluctuation) but for the sake of clarity we will stick to this threshold.

We use stable four-digit postcode tracts to map changes. The average number of included households per postcode area is roughly 2400. Postcode areas with less than ten observations for a specific income category are excluded from these specific analyses to meet privacy requirements.

We define moving as changing address, which may also occur within a neighbourhood.

In this paper, we distinguish between social and private rent. Social-rental dwellings are owned by housing associations while private rental is owned by private landlords. This, in itself, does not imply that a dwelling is either rent controlled (with a monthly rent below €700, subject to yearly changes) or liberalized. Yet, dwellings owned by housing associations are mostly rent controlled, although a small but increasing share is liberalized. Similarly, a large share of the private-rental stock is rent controlled, although this share is shrinking fast.

These are allocations of “affordable” dwellings eligible for tenant subsidies. Although the allocation system is the dominant way through which social-rental dwellings are allocated, some dwellings are allocated through other ways (e.g. directly by the housing association).

The large number of sales in 2014 is also due to a temporary tax exemption rule, which allowed parents to transfer up to €100,000 tax free to their children to assist in the purchase of a dwelling, coming to an end. As of 2015 the maximum amount is €52,752. This led to a run on apartments, especially in Amsterdam, during the final months of 2014, although overall high numbers of sales continue through 2015.

We use real-estate values rather than sale prices here for reasons of data availability. Real-estate values differ from sale prices in various important ways. First, all dwellings are assigned a real-estate value, including generally cheaper rental dwellings. Second, real-estate values are determined with a time lag since they are partly based on housing sales that took place up to two years ago. Boom-bust rhythms are hence also recorded with a lag.

Statistics Netherlands groups job types in four categories regarding skill level (ISCO classification). We colloquially refer to the lowest two sectors as lower-skilled jobs (see CBS, 2015).

Note that the year represents the address on January 1st of the year after moving.