Andreas Alm Fjellborg

Housing tenure and residential mobility in Stockholm 1990-2014
In this thesis the links between housing tenure, income and selective, segregation generating, residential mobility are explored. The development of these links is analysed against the background of housing regime changes in Stockholm between 1990 and 2014. Housing policy changes in Sweden, and Stockholm, promote ownership through, for instance, housing tenure conversions and the tax-system. What this development means for residential mobility trends and may mean for ethnic and economic segregation is explored in three articles. **Paper 1** contrasts two time periods and provides an analysis of residential mobility and economic sorting. It is shown that the socioeconomic composition of movers is relatively stable over time while the increasingly owner dominated housing market in Stockholm contributes to stronger socio-spatial residential patterns through the strengthened economic sorting of movers across the whole income scale. **Paper 2** has a focus on ethnic and socioeconomic differences in out-mobility from poor neighbourhoods. The findings indicate that foreign background residents are dependent upon housing wealth and income to be able to leave poor neighbourhoods when they move, while the Swedish background group has a variety of resources at their disposal when they move. **Paper 3** analyses how housing tenure affects moving, and movers' destinations, in neighbourhoods with high concentrations of non-western foreign-born residents in Stockholm. By comparing two cohorts (1993-2000 and 2001-2008) it is analysed how this relationship develops over time. Housing tenure and income do not seem to be pivotal for who moves, but increasingly important for where movers end up. Results display ethnic differences and how the changing housing market in Stockholm reproduces ethnic segregation. Two main conclusions from the thesis are that (i) the changing housing regime in Stockholm produces stronger economic sorting of movers – this has been affected by the geographically, socioeconomically and ethnically uneven gains from the housing market transformations experienced over the last three decades. (ii) The residential mobility patterns and the economic stratification of residential mobility opportunities that the reconfiguration of Stockholm’s housing market gives rise to increases the economic, political and social marginalization of neighbourhoods characterized by low income levels and high shares of foreign-born residents. Combating ethnic segregation is today even more closely related to the socioeconomic differences between the foreign-born and native-born parts of the population.

**Keywords:** Residential mobility, Housing tenure, Stockholm

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To Johanna, Vera, Sixten and Nils
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_Uppsala November 2018_
List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

I. Alm Fjellborg, A. (manuscript): Residential mobility and spatial sorting in Stockholm 1990-2014: The changing importance of housing tenure and income

II. Alm Fjellborg, A. (manuscript): Leaving poor neighbourhoods – the role of income and housing tenure

III. Alm Fjellborg, A. (manuscript): Out-mobility from Stockholm’s foreign-born concentration neighbourhoods – a study of two cohorts

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## Contents

Preface .............................................................................................................. 17

Introduction ................................................................................................... 19
  Aim and research questions ................................................................. 23
  Outline of the thesis ........................................................................... 24

Research context ............................................................................................. 26
  The housing stock .............................................................................. 27
  Swedish housing policy in transition ................................................. 33
  House prices, rents and access to housing in Stockholm ................. 37
  Segregation in Stockholm ................................................................. 40
  ... and the policy response ............................................................ 44

Theoretical embedding ................................................................................. 47
  Why households move ...................................................................... 47
  Housing tenure and residential mobility ......................................... 51
  Why ain’t we living together? Theories on the process of segregation ................................................................. 56
  Economic segregation .................................................................... 56
  Ethnic segregation .......................................................................... 59

Methods ........................................................................................................... 63
  Introduction ......................................................................................... 63
  Data and key variables .................................................................... 63
  What is a neighbourhood? .............................................................. 66
  Individualized neighbourhood using Equipop .................................. 73
  Mobility and neighbourhood – an empirical exploration of neighbourhood operationalizations ............................... 74
  Geographical scale and statistical modelling .................................... 80

Summary of the papers .................................................................................. 82
  Paper I ............................................................................................... 82
  Paper II ............................................................................................. 83
  Paper III ........................................................................................... 84
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concluding summary and future research</td>
<td>87</td>
</tr>
<tr>
<td>Economic segregation</td>
<td>87</td>
</tr>
<tr>
<td>Ethnic segregation</td>
<td>89</td>
</tr>
<tr>
<td>Operationalizing the <em>neighbourhood</em></td>
<td>91</td>
</tr>
<tr>
<td>Policy implications</td>
<td>93</td>
</tr>
<tr>
<td>Svensk sammanfattning</td>
<td>98</td>
</tr>
<tr>
<td>Delstudier</td>
<td>101</td>
</tr>
<tr>
<td>Slutsatser</td>
<td>105</td>
</tr>
<tr>
<td>Bibliography</td>
<td>111</td>
</tr>
<tr>
<td>Appendix I</td>
<td>124</td>
</tr>
<tr>
<td>Appendix II</td>
<td>126</td>
</tr>
</tbody>
</table>
List of tables and figures

Table 1. Population by tenure and type, Sweden and Stockholm 1990-2014 ................................................................. 29
Table 2. Summary of housing policy development in Sweden 1930-2014 ....................................................................... 35
Table 3. Ethnic and economic residential segregation in the Stockholm region, selection of research output ................. 43
Table 4. Residential mobility from poor neighbourhoods, working-age population (20-63 years old) between 2006 and 2008 ... 75

Figure 1. Map of Stockholm County ............................................. 15
Figure 2. Ratio of population in co-op to rental housing in metropolitan areas in Sweden between 1990 and 2011 ....... 30
Figure 3. Conversions from rental to co-op housing in Stockholm County 1991-2011 ............................................................... 31
Figure 4. Map displaying location of conversions from rental to co-op housing, 1990-2013 ......................................................... 32
Figure 5. Mean price per square metre, co-op housing 2005-2016 38
Figure 6. Share of the population in the three main tenure forms by ethnic background categories and disposable income deciles, 1990 and 2013 ................................................................. 44
Figure 7. Map of Stockholm, change in share of co-op housing units among the 3200 nearest neighbours in each coordinate square 1990-2014 ................................................................. 50
Figure 8. Annual share of stayers by tenure form in Stockholm County 1990-2013, total population age 20-64 ................. 53
Figure 9. The share of rental housing in DeSO neighbourhoods, Stockholm 2008 ................................................................. 71
Figure 10. The share of rental housing in k-500 neighbourhoods, Stockholm 2008 ................................................................. 72
Figure 11. Equipop growth pattern using grid data ....................... 73
Figure 12. Selected OLS regression results, individual-level determinants on neighbourhood poverty levels after move. k-nn operationalizations ................................................................. 78
Figure 13. Selected OLS regression results, Neighbourhood context determinants on neighbourhood poverty levels after move. k-nn operationalizations ................................................................. 78
Figure 14. Selected OLS regression results, individual-level
determinants on neighbourhood poverty levels after move.
Pre-defined operationalizations ............................................. 79

Figure 15. Selected OLS regression results, neighbourhood context
determinants on neighbourhood poverty levels after move.
Pre-defined operationalizations ............................................. 79

Figure 16. Maps of poor neighbourhoods. Top left k-500, Top right
k-1000, bottom left k-2000, bottom right k-4000.................. 124

Figure 17. Maps of poor neighbourhoods, top left DeSO, top right
Basområden, bottom SAMS ................................................. 125

Cover: Fidelí Sundqvist, *Suitcase town*. 
Map of Stockholm County

Figure 1. Map of Stockholm County
Preface

Why ain’t we livin’,
livin’ together
Instead of being so
so far apart

This is a study scrutinizing the links between housing tenure, income and selective, segregation generating, residential mobility. It will offer increased knowledge on the role of individual determinants, income and housing tenure, for residential mobility outcomes in a changing housing market. The findings discussed are important for researchers interested in the role of housing regimes for residential mobility. Furthermore, the insights provided are important for the formation of housing policies addressing the process of segregation.

On the 5th of July 2016 the Swedish Prime Minister, Stefan Löfven (Social Democrats), presented the government’s programme to counteract segregation (Swedish Government 2016). In the government’s policy programme there is a suggestion to increase the municipalities’ right to decide what type of housing tenure forms are to be built in the development of neighbourhoods (Swedish Government 2016:5). This suggestion may be understood as providing municipalities with a tool to increase housing tenure mix. Since 1975, when housing tenure mix policies first was introduced in Sweden (Bergsten and Holmqvist 2007, SOU 1975:51), the focus of Swedish housing policy has changed dramatically. Sweden has gone from a mass-model in the realm of housing towards selective policies targeting the most marginalized households and neighbourhoods. This has included increased promotion of market-based housing on the expense of affordable rental options. There is a need to understand the role of housing tenure and income for processes of residential mobility against the backdrop of housing regime changes in Stockholm between 1990-2014. Insights provided in this thesis contribute to our understanding about the links
between the macro level, increased shares of market provision of housing and micro level household reactions, restrictions and housing outcomes. Sweden’s governments continued concentration on marginalized neighbourhoods and neighbourhood mix reflect Hall (2002). He argues that after a century of focusing on how to plan cities, the problem of how to make life better for those who are the most vulnerable still persists. This thesis aims at providing some insights necessary for perusing this objective.
Introduction

Political decisions to increase the share of owned housing have led to privatization of social and public housing throughout Europe over the last forty years (e.g. Elsinga et al. 2014). Owned housing tenures, in Sweden tenant-owned cooperative housing units (Bostadsrätt; co-ops) (often in multi-family housing) and homeownership (in single-family units) housing are traded on the open market, restricting entrance to them according to income level or accumulated household wealth. In Stockholm\(^1\), a large part of the rental housing segment has been transformed into co-ops (Bergsten and Holmqvist 2013). Drudy and Punch (2002) argue that a system with market provision of housing leads to increased levels of economic segregation. This is probably because income levels impose limitations to housing consumption, and because potential profits from selling a dwelling could enable housing consumption in accordance with the households’ preferences. Cheshire (2012:17) writes:

> Poor households cannot choose to play polo, nor buy private healthcare. That is because they are poor and polo and private healthcare are expensive. Strangely this rather obvious insight does not seem to translate into our discussions about neighbourhood segregation or how cities generate (and distribute) welfare.

The above quote suggests a rather causal relationship between income and residential location. The possibility to enter a specific neighbourhood increasingly depends on household income when growing shares of housing units are traded on the open market. The second aspect of the quote is how private capital accumulation in housing is distributed – how cities generate and distribute welfare. Smith (2015) argue that capital gains from housing does not

\(^1\) The geographical delimitation for the empirical contributions is Stockholm County (see Figure 1). When referring to Stockholm (or Greater Stockholm), it is done with reference to Stockholm County. When referring to other geographical units it is explicitly stated, e.g. Stockholm municipality.
generate wealth, or security, for those who needs it the most but that the capital gains are skewed towards those who already has much. The type of housing tenure a household disposes of could therefore impose restrictions, or enables choice in the housing market. These advantages are not evenly distributed, partly due to geographical variations in pricing of housing units.

The main contributions of this thesis are the findings displaying the consequences of large political reforms, as the once carried out in the 1990s in Sweden. How market reforms affect patterns of residential mobility and, in turn how they may affect levels of economic (class) and ethnic segregation.

In this thesis, one of the key processes upholding and reshaping segregation is studied, i.e. residential mobility. The text provides insights into how housing tenure and income shape residential mobility patterns, and also new insights into how the impact of these factors has changed over time. The empirical focus is on individual level determinants and processes that help us understand what underpins the macro level development of residential mobility trends and segregation in Stockholm, Sweden.

In Stockholm, economic segregation is rising beyond what could be expected from analysing the development of income inequality across several European capital cities (Tammaru et al. 2016). A strong impact from the housing market structure provides a plausible explanation for increased economic segregation through the process of residential mobility.

How the housing stock composition affects ethnic minorities' possibilities on the housing market is unclear. It seems likely that the reconfiguration of Stockholm’s housing market also affects processes of ethnic segregation, not least because ethnic minorities have lower income levels (Statistics Sweden 2016) and are underrepresented in the owned housing tenure forms (Andersen et al 2015). Nielsen and Hennerdal (2017) nevertheless show that the level of ethnic segregation is stable in Stockholm. However,

---

2 In this thesis and in many other Swedish research contributions, ethnic groups are based on individual level data on country of birth. The categorizations made in this thesis follow conventional categorizations in Swedish research. Swedish background means born in Sweden having at least one Swedish-born parent, foreign background means born outside Sweden or in Sweden having two foreign-born parents. In some studies the broad foreign background category is divided into different parts. The category non-western foreign-born is those born in South America, Africa and Asia who have moved to Sweden. In the empirical contributions in this thesis the categorization foreign background, foreign-born and non-western foreign-born are used.
increased concentration of some ethnic minority groups (Malmberg et al. 2018, Amcoff et al. 2014) suggests a growing differentiation within the broad foreign background category. There are probably underlying processes of increased socioeconomic sorting within the foreign background group that partly explains the lower ethnic segregation between native and foreign-born residents within the same income bracket (Andersson and Kährik 2015). The changes to the housing market have increased the share of the population in owned housing but this development is ethnically and socioeconomically selective. This highlights the uneven access to housing alternatives across a range of housing tenures that could be important for understanding the process of ethnic segregation in Stockholm. In the thesis I show how income and housing tenure affect the mobility patterns of the native majority population and the foreign background minority group differently. The findings suggest a stronger dependence on financial resources when navigating the housing market for the foreign background group.

The aim with this thesis is to contribute to our understanding of the process of (economic and ethnic) segregation in relation to housing stock composition through studying the development of residential mobility in three studies. The thesis makes these contributions by means of longitudinal analysis of the development of residential mobility in the capital region of Sweden between 1990 and 2014.

In the first study, the thesis engages with the changes to the process of economic residential sorting across the whole income spectrum through analysing mobility destinations of the total population of Stockholm. Second, the thesis studies determinants of residential mobility in poor neighbourhoods with a focus on the varying impact of housing tenure and income between those with Swedish and those with foreign background. The third study discusses neighbourhoods with high shares of non-western foreign-born residents, focusing on the changing impact from housing tenure and income on residential mobility, and how different ethnic subpopulation groups’ mobility patterns develop over time.

Following research results on the effects of income inequality on social and spatial mobility (Nieuwenhuis et al. 2017, Reardon and Bischoff 2011). I focus on the effects of housing tenure and income for spatial sorting of residential movers. This text engages with concepts related to selective residential mobility, i.e. the imbalances of residential mobility flows that reinforce, reproduce or counteract ethnic and economic segregation. In doing so, this research ties into

It should be recognized already here that residential mobility may contribute to a range of processes of compositional changes of neighbourhoods, not necessarily related to increased economic and ethnic segregation. For example neighbourhood social upgrading through residential mobility is good from the point of view of increasing social mix in distressed neighbourhoods. Such processes, if continued could result in gentrification if the income levels of in-movers continue to rise and low-income people are priced out of a neighbourhood. There may also be conflicting goals between individuals’ housing and spatial careers and the segregation levels of an urban area. Middle-class individuals may of course strive for living in neighbourhoods that match their preferences for amenities, but such individual housing trajectories may run contrary to societal aims of mixing population groups in various neighbourhoods. In this thesis studies are carried out in order to understand how the housing market may contribute to the spatial sorting of movers, and in turn how it may affect economic and ethnic segregation patterns. Naturally, what may be interpreted as socioeconomic flight out from low-income neighbourhoods in relation to processes of segregation may also be interpreted as housing and spatial careers when focusing on an individual household’s trajectory. Systematic differences in residential mobility and subsequent mobility destinations nevertheless bring insights into how segregation is reproduced, regardless of whether we focus on individual gains from private capital accumulation or on the reproduction of segregation.

Studies on the relationship between residential mobility outcomes and income may take two main paths to pursue such inquiries. A first way is to carry out international comparisons with similar data to understand how different welfare systems, housing markets or inequality levels influence socio-spatial mobility outcomes (e.g. Arbaci 2007, Nieuwenhuis et al. 2017, Tammaru et al. 2016). A second way is to carry out longitudinal studies of one country, region or city and compare different periods (Scarpa 2015, Lee 2017). This thesis is an example of the latter. To compare Stockholm of the 1990s with Stockholm of the 2000s is theoretically interesting. Such a comparison is effectively a comparison between a decade characterized by the recovery from a severe economic crisis and subsequent austerity policies in tandem with rising income inequality. The characteristics of the 2000s are
instead a steady, but in relation to the 1990s modest increase of income inequality, economic growth and in particular a clearly more dramatic reconfiguration of the housing stock. This study can then contribute to our understanding of why the levels of economic segregation are higher in Stockholm than would be expected from the levels of income inequality from earlier comparative research (Tammaru et al 2015). Furthermore, the thesis may add insights into how Sweden's political reforms of the 1990s have contributed to changes for the process of ethnic and economic residential segregation.

Aim and research questions

The main aim of this thesis is to scrutinize the link between segregation-generating residential mobility and the tenure composition of the housing stock. This contribution will provide insights into what happens to selective residential mobility as marketization of the housing stock take place. More specifically, I study the changing role of income and housing tenure as determinants of intra-urban residential mobility and mobility outcomes in Stockholm during the period 1990-2014.

I argue in this thesis that a market-based housing stock makes the dwelling (due to pricing, location and potential private capital accumulation) pivotal for the mobility outcomes, as is income when there are fewer affordable and accessible rental options. Given the development towards a housing market where housing allocation is increasingly dependent on household’s income level and wealth it is probable that we will see a divergence in the likelihood of who moves and where movers end up that is dependent on housing type and income levels.

All three papers presented in this thesis are dealing with various aspects of mobility flows. Apart from hopefully providing increasing knowledge on the impact of housing tenure on mobility flows, the findings serve as the foundation for drawing conclusions for planning and housing policy in relation to the political narratives of the benefits of owned housing and tenure mix.

A secondary contribution relates to methodological choices. The thesis makes use of rather new techniques to construct and delimit \textit{neighbourhood} units in quantitative social science research. Therefore, the second contribution aims to illuminate how alterations of the \textit{neighbourhood} unit affect the impact of
explanatory variables in quantitative residential mobility research. This is the focus of the methods chapter.

The first study is concerned with mobility flows and changes over 25 years in Stockholm, answering the question:

- How have income and housing tenure as determinants for households' intra-urban relocation and moving destination changed over time?

In the second paper a shorter time span is used. The study addresses the potential importance of owned housing in poor neighbourhoods for residential mobility outcomes. The questions asked are:

- To what extent does housing tenure affect out-mobility destinations from poor neighbourhoods for the Swedish and foreign background population?
- How does income affect Swedish and foreign background residents with regard to mobility and mobility destinations?

Policy makers often argue that a higher share of owned housing affects ethnic and social mix, increases choice, and lowers residential mobility frequencies in marginalized neighbourhoods. The third paper addresses these claims when answering the questions:

- How do housing tenure and income affect the risk of moving, and leaving, when living in neighbourhoods with high or moderate concentrations of non-western foreign-born, and how does it change over time?

Outline of the thesis

To frame the empirical studies, this introduction will continue with a section on housing policy that situates the development in Sweden in an international context. In the following, a discussion of theories of residential mobility and segregation sums up the main theoretical contributions relating to the aim of this thesis. Thereafter the methods section is presented. A discussion of the definition of neighbourhood and subsequent operationalization makes up an important part of this section. After this, the empirical chapters are summarized. Results are discussed in the final section of this
comprehensive summary with implications for the research field, future research and housing policy.
Research context

Some scholars argue that Sweden is moving towards having one of the most liberal housing markets in the western context (Hedin et al. 2012, Lind and Lundström 2007). But, large parts of the Swedish housing market are still regulated (Christophers 2013). The overarching changes in Stockholm argued to be important drivers for increasing levels of economic segregation are the increased rates of co-op housing on the expense of rental housing (see Table 1) (Andersson and Magnusson Turner 2014) and increasing income inequality (Scarpa 2015). The Gini-coefficient measured using earned income increased by 14.3 percent in the 1990s, and by an additional 2.3 percent between 2000 and 2014 in Stockholm (Stockholm Stad 2015).

The development of Stockholm’s housing market and the Swedish housing policy regime are connected to a broader development of housing policy across Europe. Arbaci (2007) argues that the housing systems of Western Europe are becoming more similar over time. The overarching trends of housing policies in Europe include privatization, welfare state cuts in provision of public or social housing since the 1980s, and changes to housing benefits.

Swedish housing policy has long been a pillar of the welfare state (albeit a wobbly one (Torgersen 1987)). The policy included, for large parts of the 1900s, general subsidy schemes and income-related housing benefits and interest rate subsidies to reduce risks for investors, financiers and households. The housing policy was guided by tenure neutrality that tried to even out household expenditures for housing consumption between the different housing tenure forms (Torgersen 1987). The neutrality was achieved by means of rent-control across all rental housing3, mortgage-cost tax deductions for the two tenure forms in the owner

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3 Bengtsson (2016) refrains from calling the Swedish system of rent-setting rent-control as it is not strictly a cap on rent-levels imposed by the state. Instead the system of rent-setting is a negotiation between the Swedish union of tenants and the rental companies.
segments, and subsidies for building costs for all housing tenure forms. Sweden has thus used both of the two broad types of interventions in the housing market: first, supply-side interventions by subsidizing housing construction, and second, demand-side interventions by subsidizing household costs. Since the economic crisis in the early 1990s state interventions have been reduced resulting in a system where housing production is driven by the households’ ability to pay, rather than by the housing needs of the population. This development may have important effects on the structure of the housing market, access to housing and how housing alternatives are distributed across the population and across the city.

The housing stock

Sweden has three dominating tenure forms: (i) homeownership in single-family housing, (ii) tenant-owned cooperative housing (co-op) and (iii) rental housing; the latter two are most often found in multi-family housing. The rental sector can be subdivided into privately and publicly owned parts. Municipality-owned public housing companies (MHCs) have traditionally had a major role in the housing system, and they still have, not least through the substantial volume of their housing stock. Rent levels are set according to a use-value principle effectively trying to eliminate large differences in rents between locations within the same local housing market. Instead, rent levels vary according to standard and size of the apartment. Rent levels are negotiated between the Swedish union of tenants and the rental companies. Until 2011, rents were negotiated locally between the MHCs and the Swedish union of tenants. Private rental companies were then obliged to follow the rent levels negotiated. Now, private rental companies are included in the negotiations. In 2006, so-called presumptionshyror were introduced to increase the building pace of new rental housing units. These were exempted from the use-value principle of rent setting and instead aimed for rent levels covering construction costs to make it profitable to build rental apartments. After a decade, rent levels were to be harmonized with the rest of the rental market. Between 2007 and 2013, about one-third of new production of

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4 The Swedish union of tenants and rental companies in Stockholm are implementing alterations to rent setting in Stockholm. They call them “Stockholm rents”, and these rents should also consider geographical location and local services as a factor for rent setting, and not primarily the building year as so far has been common (see www.hyregastforeningen.se)
rental units had these types of rents. In Stockholm, that adds up to about 3,000 units (Hyresgästföreningen 2013). Outcomes are uncertain with regard to who will move in and out of these units when rent levels are to be matched with the rest of the rental segment. This uncertainty stems from the extension of the presumptionshyra-system to fifteen years made in 2013 (SOU 2017:65).

Rental housing is usually allocated through a queuing system. MHCs have one queue, and the different private actors have their own queues. In recent decades, joint queues have been implemented, at least for parts of the rental housing stock. The average queuing time for rental apartments is around five years in some municipalities in the Stockholm County, in parts of central Stockholm around 18 years. Long queues for rental housing of course impose restrictions for the possibility to move within the rental segment. The system is by definition favourable for those who have had the chance of signing up for a queue slot early in life, typically native Swedes. This could affect the possibility for different population groups to navigate the Stockholm rental market.

Homeownership housing is bought and sold on the open market and mostly comprises single-family housing units. The co-op tenure is not widely found in other countries but have similarities with the co-op systems found in parts of the U.S. and leaseholds in the U.K. The co-op tenant owns the right to live in one apartment in the cooperative and may sell this right on the open market. The cooperative has theoretical power over entry for new tenants, but in practice, it is hard to deny a buyer membership in the cooperative. The co-op tenants share responsibility for maintenance of common elements (e.g. outdoor maintenance), and the tenants have individual responsibility for maintenance within their own units. Price levels on co-ops are high in Stockholm. The price per square metre in 2017 was higher in co-ops compared to homeownership housing (Svensk Mäklarstatistik).

Table 1 shows the share and numbers of the population in the different housing tenure forms and housing types in Sweden and Stockholm in 1990, 1998, 2006 and 2014.
### Table 1. Population by tenure and type, Sweden and Stockholm 1990-2014.

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<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
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<td><strong>Detached houses</strong></td>
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<tr>
<td>Homeownership</td>
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<tr>
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<td>4,391,052</td>
<td>52.7%</td>
<td>4,547,951</td>
<td>52.3%</td>
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<td>Co-op</td>
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<td>1.4%</td>
<td>179,559</td>
<td>2.1%</td>
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<td>Rental</td>
<td>124,945</td>
<td>1.5%</td>
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<td>1.4%</td>
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<td><strong>Multi-family housing</strong></td>
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<tr>
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<td>11.3%</td>
<td>1,020,526</td>
<td>11.7%</td>
</tr>
<tr>
<td>Rental</td>
<td>2,357,391</td>
<td>28.3%</td>
<td>2,448,125</td>
<td>28.1%</td>
</tr>
<tr>
<td><strong>Missing</strong></td>
<td>398,280</td>
<td>4.8%</td>
<td>378,823</td>
<td>4.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8,332,918</td>
<td>100.0%</td>
<td>8,698,175</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>%</th>
<th>1998</th>
<th>%</th>
<th>2006</th>
<th>%</th>
<th>2014</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Detached houses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>544,771</td>
<td>34.4%</td>
<td>585,615</td>
<td>33.4%</td>
<td>664,354</td>
<td>35.1%</td>
<td>736,914</td>
<td>34.0%</td>
</tr>
<tr>
<td>Co-op</td>
<td>18,374</td>
<td>1.2%</td>
<td>36,409</td>
<td>2.1%</td>
<td>31,826</td>
<td>1.7%</td>
<td>8,724</td>
<td>0.4%</td>
</tr>
<tr>
<td>Rental</td>
<td>23,112</td>
<td>1.5%</td>
<td>17,013</td>
<td>1.0%</td>
<td>11,576</td>
<td>0.6%</td>
<td>6,797</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Multi-family housing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-op</td>
<td>252,032</td>
<td>15.9%</td>
<td>317,254</td>
<td>18.1%</td>
<td>466,659</td>
<td>24.7%</td>
<td>678,892</td>
<td>31.3%</td>
</tr>
<tr>
<td>Rental</td>
<td>703,898</td>
<td>44.4%</td>
<td>745,585</td>
<td>42.5%</td>
<td>656,188</td>
<td>34.7%</td>
<td>639,785</td>
<td>29.5%</td>
</tr>
<tr>
<td><strong>Missing</strong></td>
<td>41,768</td>
<td>2.6%</td>
<td>50,882</td>
<td>2.9%</td>
<td>59,985</td>
<td>3.2%</td>
<td>95,781</td>
<td>4.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,583,955</td>
<td>100.0%</td>
<td>1,752,758</td>
<td>100.0%</td>
<td>1,890,588</td>
<td>100.0%</td>
<td>2,166,893</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: PLACE database author’s calculation.
Note: 2006 total population values are calculated as a mean of 2005 and 2007 as missing values in the housing tenure files are not included in the total population count for 2006.
For Stockholm in 2014, 34 percent of the population lived in single-family housing units with homeownership tenure. Multi-family housing with co-op and rental tenure accounted for 31.3 and 29.5 percent respectively. The share of the population in the three main tenure forms has been rather stable on a national level since 1990. When compared to the rest of the EU, Sweden is around 3-4 percent below the EU average in owner occupancy rates (i.e. both co-ops and homeownership) and has about 3-4 percent higher shares of rental housing (Eurostat 2018).

The compositional changes to Stockholm’s multi-family housing stock stand out in comparison with the rest of Sweden, and in comparison with other large cities. Figure 2 shows the shift in the ratio between the two multi-family housing tenures in Stockholm, Gothenburg and Malmö. In 2010 the number of co-ops surpassed that of rental housing in Stockholm.\(^5\)

![Figure 2. Ratio of population in co-op to rental housing in metropolitan areas in Sweden between 1990 and 2011](image)

Source: Boverket 2012, author’s calculation

*Figure 2. Ratio of population in co-op to rental housing in metropolitan areas in Sweden between 1990 and 2011*

The trend in Stockholm is mainly an effect of tenure conversions from rentals to co-ops. Figure 3 displays the annual rate of tenure conversions; between 1991, when tenure conversions became legal, and 2011, close to 122,000 apartments were converted. There are peaks around 2001 and 2010. These coincide with the shifts in political majority in Stockholm municipality. In 1998 to 2002, and between 2006 and 2010, a conservative/liberal coalition governed

\(^5\) Co-ops, as well as rental units, are not found solely in multi-family housing units (see also Table 1), but they are most commonly found there. When looking into statistics on housing tenure and housing types it becomes evident that the rise of the share of co-ops is almost entirely a multi-family housing phenomenon.
Stockholm municipality; from 2002 to 2006 and from 2010 to 2014, a Social Democratic/left coalition had the majority. The promotion of tenure conversions and restructuring of the Stockholm housing market is thus largely a project implemented by the conservative/liberal political parties in Stockholm.

About 74.3 percent of the converted apartments were located in central parts of Stockholm County (i.e. Stockholm municipality). That area held about 57 percent of Stockholm County’s total multi-family housing stock in 2011. In Malmö and Gothenburg, stock transfers are implemented in areas dominated by rental housing and at a much smaller scale than in Stockholm (Bergsten and Holmqvist 2013). The large-scale housing tenure conversions in Stockholm share similarities with the development of the stock-transfer programmes in other countries (for the U.K., see Cole and Goodchild 2000; for Amsterdam and Berlin, see Aalbers and Holm 2008; for the U.K., Netherlands and Germany, see Elsinga et al. 2014). Just like the “right-to-buy” scheme in the U.K., most tenure conversions in Stockholm have been realized in central and often attractive locations (see Figure 4). In the U.K., 1.8 million sales were realized between 1980 and 2014, leaving 1.67 million council homes in the U.K. (Murie 2015). Conversions (1990-2013) of rental to co-op housing (Figure 4) are concentrated to central Stockholm. This makes these areas increasingly inaccessible for parts of the population who have the preference for renting or for the
parts of the population lacking sufficient funds to buy into the co-op sector. Bolt et al. (2009) and van Kempen and Murie (2009) argue that more market orientation of the housing stock, through tenure conversions in attractive locations, produces the residual character of the remaining public or social housing units, which further concentrates low-income households in these parts of the city.

A smaller share of the rise in co-op units in Stockholm is due to new construction (+15,900 units between 1991 and 2014). Co-ops are the dominant tenure form in new constructions of multi-family housing units since 1995 in Stockholm. In Gothenburg, more co-ops
have been produced compared to rental units from 2008, and Malmö continues to produce more rental housing units, except for a few years in the late 2000s (Statistics Sweden 2018a). This shows that the Stockholm housing market will become increasingly characterized by owned housing tenure forms even if tenure conversions stop. Stockholm stands out from the rest of Sweden in terms of changes to the housing stock, with large changes to the housing tenure structure. Other metropolitan areas follow but at a much slower pace.

In Stockholm and across Sweden, there is a greater focus on building for an affluent urban population in order to attract a tax base of wealthier households (e.g. Holgersen 2017). This is done through both new construction and housing tenure conversions, which in Stockholm share resemblance with stock-transfer schemes in other countries. Stockholm presents a good case for studying how large housing market changes may impact mobility trends and individual’s residential mobility trajectories in an urban region.

**Swedish housing policy in transition**

In the 1930s the Swedish state started subsidizing housing production. The selective measures aimed at reducing crowding and improving housing standards for low-income families grew to incorporate a larger part of housing production after the Second World War. From the mid-1900s the state used subsidized loans with low interest rates as a means to increase the rate of building and keep costs for new and older buildings at a similar level (Boverket 2007:28). Even though housing production rose dramatically from the 1950s, housing was still in short supply and Sweden launched the “million homes programme”. The goal of building one million new dwellings over a ten-year period from 1965 succeeded. Alongside the expansion of housing construction subsidies, demand-side subsidies were introduced. The demand-side subsidies included both tenure-neutral housing benefits to low-income households and tax deductions for mortgage costs in co-ops and single-family housing. The state rent-cost subsidies for builders were abolished during the crisis years in the early 1990s due to spiralling state costs through high inflation and increasing rent levels (Wigren 1995). Table 2 summarizes the broad trends of housing policy development in Sweden. In Table 2 the larger shifts shown
from the 1990s are cuts to both demand-side and supply-side subsidies. This may of course affect levels of segregation and mobility in a variety of ways. Lower building pace, while geared towards the market clause, possibly affect the number of choices for movers and also drive prices upwards. Meanwhile, cuts in demand-side interventions like the housing benefits clearly weaken low income resident's ability to consume housing according to their needs.
<table>
<thead>
<tr>
<th>Period</th>
<th>Main problems</th>
<th>Segregation policy and problems</th>
<th>New and continued problems</th>
<th>Benefits and problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-1975</td>
<td>Low production rate and substandard housing for mainly low-income households</td>
<td>Segregation policy and problems (1935-1974) high levels of support cooperative housing, mortgage cost deductions for homeowners, growth of the society, and generalized low-income housing.</td>
<td>Low production rate and substandard housing for mainly low-income households</td>
<td>Housing production driven by low rent levels, skewed towards wealthier parts of the population, and experienced housing deficits.</td>
</tr>
</tbody>
</table>

Scocco and Andersson (2017) write that the restricted, and later abolished, production-side incentives have resulted in a housing production mainly driven by households' ability to pay. This ability has increased with rising disposable income levels and the low mortgage levels, which has been declining since the 1990s (Statistics Sweden 2018b, 2018c). The increasing income inequality however results in growing differences in the possibilities to pursue various housing alternatives.

When analysing the development of housing-related policies, Rolnik (2013) argues, focusing on the commodification of housing, that policies have effectively transformed housing from a social good to a means to accumulate individual wealth (Rolink 2013:1059). The idea is to ensure financial assets for the population and reduce their dependency on government aid. The ideological claim that homeownership is best for all (Rolink 2013) introduces low- and middle-income households to the mortgage lending market. By selling publicly owned housing to sitting tenants or through state-guaranteed loans for low-income families to enter owned housing (in Sweden, available from 2008, see Boverket 2014; for an overview of eight countries, including Sweden, see Elsinga, et al. 2009), private ownership of housing is promoted. A range of policies in the EU also promote owned housing, including the abolishment of interest rate ceilings, relaxation of credit controls and the end of restrictions on entry into mortgage markets (Ball 2005 in Rolink 2013). In Sweden the economic crisis in 1991-1992, with cuts to, and subsequent erosion of, government involvement in both the supply and demand of housing, marks the beginning of processes of ownership promotion in Sweden. The increased income inequality, in Sweden as in many other European countries but at various points in time, led to higher- and middle-income earners investing increasingly in housing as the “new model welfare state generally put individual property ownership in a more central position” (van Kempen and Murie 2009).

I argue that this development has the possibility to restrict entrance to large, and growing, segments of the housing stock for parts of the population not able to enter the mortgage lending

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6 Since the 1990s housing finance has increased dramatically, and in many countries representing between 50 and 100 % of GDP (Rolink 2013: 1059) in Sweden the total mortgage market mounted to 72 percent of the size of GDP in 2011 (Statistics Sweden 2018d 2018e).
market for various reasons – e.g. low income, discrimination and unemployment.

Even if Sweden has maintained the internationally criticized (OECD 2017) rent-negotiation scheme, the Presumtionshyror and the “Stockholm-rents” suggestion arguably is a step towards market rents. Proponents of marketization argue that the housing market is more effective under market rule (more owned housing and/or market rent levels) (e.g. Jones 2012:273-278, Friedman 2006) in that people will not live in houses or apartments that are larger than they need. Koliev and Lind (in Dagens Nyheter 2017) have also argued that an increased share of owners (achieved through government subsidies to low-income buyers) in the housing market could lower economic segregation. Critics of the marketization of housing provision argue that it results in an uneven distribution of resources and wealth (e.g. Cheshire 2007, Smith 2015), and that some locations and population groups are able to capitalize on the increasing prices while other groups and locations do not, effectively leading to larger socio-spatial divides (Harvey 2005, Brenner, Peck and Theodore 2010). Trends of increasing urban divides are visible in Stockholm and Andersson and Magnusson Turner (2014) argue that the reconfiguration of inner-city Stockholm contributes to geographically uneven development. This process limits low-income households’ housing choice, and contributes to the clustering of wealthier parts of the population as housing becomes market-based and increasingly expensive in some areas (see also Grundström and Molina 2016, Rodenstedt 2014, Holgersen 2017). When related to the aim of this thesis it remains to be seen how the development in Stockholm have affected the link between segregation-generating residential mobility, housing tenure and income.

House prices, rents and access to housing in Stockholm

Prices for co-ops have risen dramatically in Stockholm (Figure 5). The development is similar in other parts of metropolitan Sweden, although Stockholm has the most dramatic increase in co-op prices.
The increasing prices are not evenly distributed across Stockholm. All municipalities experience rising prices, but the traditionally high-income areas experience higher increases compared to other areas (see Svensk Mäklarstatistik). This makes residential mobility towards these more attractive areas progressively more difficult for large parts of the population that do not have a sufficient level of income or private capital accumulation in housing in other locations. The loss of rental housing units also raises barriers to entry into areas where tenure conversions have been widely implemented.

The co-op price development does not mean that renting is becoming gradually cheaper. Using data from Statistics Sweden, the Swedish union of tenants shows that, in relation to the consumer price index, rents are increasing, and they are increasing more than the costs for homeownership housing. Rising rent levels are predicted to increase the demand for owned housing (Sanchez and Andrews 2011), and so should a tax system favouring owned housing, as the Swedish system has been found to do (SOU 2014:1). The rising prices could affect residential mobility patterns, and one way of studying this is to seek knowledge on how income and housing assets (or housing tenure) affects residential mobility.

Several aspects could affect housing prices. First, high population growth may drive up price levels if the building pace is not meeting increased demand. The Stockholm population has gone up from 1.64 million in 1990 to 2.09 million in 2014. Yet, the housing units to population ratio in Stockholm have decreased from .49 housing units per person in 1990 to .46 in 2014. During the same period, no other county in Sweden saw a negative trend in the housing to
population ratio. In Boverket's (2016) survey, most Swedish municipalities say that they have a housing deficit. These estimations of a deficit could be due to both the low rates of housing production since the 1990s and ineffective use of the current housing stock, but probably it is a combination of the two. Escalating prices, longer allocation queues for rental housing, overcrowding and municipalities’ housing deficits have resulted in a political consensus on the need to increase housing production.

Öst (2017) proposes that Stockholm also could have problems of mismatch between housing types and the population. Some smaller changes in the composition of the housing stock may be detected. For example, there is a relative increase (1990-2013) of apartments with two and three bedrooms, 1.6 and 1.7 percent respectively (Statistics Sweden 1996, 2018f), whereas larger housing units with 6 or more bedrooms are decreasing as a share of the total housing stock in Stockholm. Demographic changes between 1990 and 2014 are not dramatic either, the share of the population aged 15-24 has decreased by 1.7 percentage points while the share of the population aged 5-14 and 55-64 have both increased by about 1.5 percentage points (Statistics Sweden 2018g). Household formation data reveals small changes between 1990 and 2014; there is a 3 percentage point decrease in couples without children and about a 1 percentage point increase in the other three categories, singles, singles with children and couples with children. There is, however, a notable increase in the share of 25- to 40-year-old couples without children (+4.5 percentage points). There is also an increased share of 50- to 60-year-olds in the category of couples with children (+6 percentage points) (PLACE database author’s calculation). The demographic shifts are likely a partial explanation for the higher prices on mid-sized apartments that are desirable for smaller families and younger couples without children.

Svensson (2017) argues that housing prices in Sweden are not increasing as much as could be anticipated from the low mortgage levels. He recognizes that price is partly driven by low supply, but largely it is also driven by increasing disposable income levels together with low mortgage levels. Since overall housing supply, housing type distribution and demographic composition of the population are relatively stable, the shifts outlined above

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7 Open source data from the Housing market survey is available at: https://www.boverket.se/sv/om-boverket/publicerat-av-boverket/oppna-data/bostadsmarknadsenkaten/
8 Note that these calculations are based on a sample of the population and thus include some level of uncertainty.
notwithstanding, it seems that a key driver for prices on the Stockholm housing market is favourable conditions for borrowing money.

This development ties into the discussion of effects of income inequality on economic segregation. Van Kempen and Murie (2009) argue that growing income inequality has been a direct driver of rising house prices. With higher income inequality, rising prices on co-ops, low availability of rental housing (with low vacancy levels Statistic Sweden 2018h), I argue that poorer residents may have difficulties in accessing housing alternatives in line with their preferences. The part of the population with low income levels needs to seek owned housing where they might afford it, or where rents are low. In Stockholm the rental sector is increasingly concentrated to fewer more peripheral neighbourhoods and low cost co-ops are often found in the least desirable neighbourhoods, thus the location of affordable rental housing is crucial for the level of economic segregation.

This makes Stockholm a particularly interesting case to study the processes of residential mobility with a focus on housing tenure. The next section discusses the development of residential segregation in Stockholm, and the policy responses.

Segregation in Stockholm…

Several recent studies of the development of ethnic and economic segregation in Stockholm (see Table 3) show that economic segregation is increasing while ethnic segregation is rather stable. There are, at least three, nuances in the stability of ethnic segregation and the increase in economic segregation that are important to highlight. First, ethnic segregation within income brackets is declining while measurements on the total population show stability of the geographical distribution of foreign-born residents. On a less detailed geographical level of scale, the isolation of some ethnic minority groups is strengthened. This development suggests that socioeconomic position is increasingly important for residential location. Secondly, Scarpa (2016) argues that economic segregation, the difference in income levels between neighbourhoods, is larger in Stockholm compared to Malmö and Gothenburg. Furthermore, he argues that the rise of between-neighbourhood income differences was due to rising income inequality in the 1990s. Scarpa proposes that the rise in economic
segregation during the 2000s was caused by increased sorting of movers. Third, using the dissimilarity index Andersson and Kährik (2015) showed how the wealthiest part of the population is the most concentrated across the period 1990-2010. They also documented a growing concentration of lower-income households during the 1990s, and a continuation and strengthening of the concentration of higher-income households during the 2000s.

In Stockholm, the rise of the Gini-coefficient for earned income was 14.2 percent in the 1990s and 2.3 percent in the 2000s (Stockholm Stad 2015). The growth of income inequality thus coincides with a period of increased concentration of low-income residents. The combination of how the economic resources are distributed in the population and the extent to which economic resources are critical for housing consumption affect residential settlement patterns, especially the clustering of wealthier parts of the population (Reardon and Bischoff 2011).

Hedin et al. (2012) argue that the “neoliberal housing politics have established market-governed housing provision” and led to increased polarization in the housing market through gentrification and low-income filtering. Hedin et al. (2012) show that during the crisis years (1991-1992) clustering of low-income households increased and during periods of growing economy increasing concentrations of high-income households became more prevalent. With regard to international comparisons, Marcińczak et al. (2015) show that Stockholm has a particularly high index of segregation among those in the highest income quintile. The concentration of low-income households is less strong. Marcińczak et al. (2015) conclude that the segregation levels in Stockholm are higher than would be expected from analysing income inequality levels across several European cities. The strengthened clustering of low-income households during the 1990s may be attributed to the dismantling of the housing policy interventions and uneven negative impact from the economic crisis. The large scale conversions of rental to co-op housing may be one aspect contributing to stronger economic segregation patterns in the 2000s.

How the changing housing tenure structure affects ethnic segregation is less clear. Ethnic minorities usually have lower income levels that could explain the underrepresentation of these groups in co-op and homeownership housing (Andersen et al 2015). Andersson and Kährik (2015) suggest a dual sorting process on the Stockholm housing market. Economic segregation rises while ethnic segregation when measured within income brackets is declining.
Findings also propose that there are signs of increased concentrations of foreign-born residents to certain neighbourhoods in the whole of Sweden (Malmberg et al 2018). From Figure 6 it is clear that the share of co-op owners and homeowners increase across the whole income scale, but that the increase is strongest in the higher income deciles in both the Swedish and foreign background groups. Notable is the sharp decrease of renters within all income deciles for the Swedish background group while there are smaller changes in the foreign background group when income is lower. This shows that not only many with low income have left the rental market and became co-op owners, but that this development is ethnically selective. This furthers the notion that the location of affordable rental housing options affects segregation, not only economic segregation but also patterns and processes of ethnic segregation.
### Table 3. Ethnic and economic residential segregation in the Stockholm region, selection of research output

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Type of measurement</th>
<th>Neighbourhood proxy</th>
<th>Categories</th>
<th>Conclusion</th>
<th>Reason for conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordström Skans and Åslund</td>
<td>2010</td>
<td>Exposure</td>
<td>SAMS</td>
<td>Foreign / Swedish background</td>
<td>Ethnic segregation increases between 1985 and 2006</td>
<td>Own-group preferences and economic differences. Most important increased immigration from non-western countries.</td>
</tr>
<tr>
<td>Amcoff, Östh and Niedomysl</td>
<td>2014</td>
<td>Isolation</td>
<td>k-nearest (n=12 to n= 12,800)</td>
<td>Foreign-born, non-western foreign-born, relative poverty (&lt; = 60% of national median income), relatively rich (&gt; = 140% of national median income)</td>
<td>Foreign-born and visible minorities increase in immigrant-dense neighbourhoods between 1995 and 2010. Segregation of rich and poor increase over time</td>
<td>Socioeconomic background factors together with high immigration.</td>
</tr>
<tr>
<td>Anderson and Kährik</td>
<td>2015</td>
<td>Dissimilarity index</td>
<td>SAMS</td>
<td>Disposable income quintiles, Swedish-background, non-western foreign-born and foreign background</td>
<td>Economic segregation increases for all income groups. Ethnic segregation within income brackets declines, especially for those with high income levels.</td>
<td>Restructuring of the welfare state provides fewer options for low-income households, including immigrants.</td>
</tr>
<tr>
<td>Scarpa</td>
<td>2016</td>
<td>Theil index</td>
<td>SAMS</td>
<td>Income quintiles</td>
<td>Economic segregation increases. During the 1990s due to rising income inequality in the population, and during the 2000s through economic sorting of population.</td>
<td>Income inequality translates into housing consumption patterns leading to segregation.</td>
</tr>
<tr>
<td>Aldén and Hammarstedt</td>
<td>2016</td>
<td>Exposure</td>
<td>SAMS</td>
<td>Foreign-born / Swedish-born</td>
<td>Ethnic segregation is mostly unchanged between 2000 and 2012.</td>
<td>The over-exposure is stable even if high immigration increases the concentration of immigrants. Labour market participation important for segregation.</td>
</tr>
</tbody>
</table>
The Swedish government’s (2016) reiteration of focus on the most marginalized neighbourhoods and housing tenure mix suggests an understanding of segregation as a problem with its solution primarily in the neighbourhoods suffering the most negative consequences of segregation. The desire to increase the share of

Source: PLACE database author’s calculations

*Figure 6.* Share of the population in the three main tenure forms by ethnic background categories and disposable income deciles, 1990 and 2013
owned housing in these neighbourhoods further seems to be based on the assumption that a native middle class would move into these housing units.

This contemporary policy focus displays similarities with the, starting in the 1980s, implemented area-based initiatives (ABIs) to counteract segregation or to tackle the negative effects of economic and ethnic segregation (for an overview see Palander 2006, Karlsson 2016). Several dissertations have focused on the possibilities that area-based policies could counteract segregation (e.g. Urban 2005, Holmqvist 2009, Palander 2006, Karlsson 2016). Segregation has not been dramatically affected, most probably due to the local character of the implemented policies (Andersson and Brämå 2004). The new additions include the clearer focus on the importance of the housing tenure structure, even if it is unclear in what ways increased shares of owned housing counter-act residential segregation.

Political response to increased ethnic and economic segregation in Sweden started to take form during the late 1970s (Andersson and Molina 1995, Danemark 1983). The state report “Bostadsförsörjning och bostadsbridag” [Housing production and housing benefits] (SOU 1975:51) argued that housing policy should be directed towards housing mix (tenure, size and type of housing) to improve individuals’ life chances and ensure a geographically equal demand for public services. The report also stated that the state should direct efforts to influence pricing of dwellings to ensure low-income families’ choice over where and how to live. These ambitions have gradually been eroded, and de-prioritised, as planners have only limited tools at their disposal for implementing housing mix agendas (Holmqvist 2009, Bergsten and Holmqvist 2007, Bergsten, 2010). Municipalities are instead increasingly preoccupied with the rate of new constructions rather than with the implementation of affordability mix. New construction in large Swedish cities has been found to increase tenure mix (Bergsten and Holmqvist 2013). But the newly constructed rental apartments in attractive locations in Stockholm have high rent levels (Loit 2014), so the planned social mix through tenure mix fails due to low affordability mix.

With continued increase in economic segregation levels and few affordable alternatives, social housing is debated in Sweden. Sweden has never had social housing, nor are any of the political parties advocating this type of housing. But the shift from a mass-model in the realm of housing provision and consumption to a selective
model is visible in that 237 of Sweden’s 290 municipalities use social rental contracts; subletting apartments sometimes with rent-guarantees by the social services for those who are without other housing alternatives (Boverket 2018).

For the continuation of a Swedish housing policy agenda to counter-act ethnic and economic residential segregation it is of pivotal importance to know more about how marketization of housing affects patterns of residential mobility. It is also of absolute importance to study how co-op and homeownership housing affects residential mobility by socioeconomic and ethnic background, in neighbourhoods characterized by low income levels and high concentrations of foreign-born residents.
Theoretical embedding

Why households move

This thesis is concerned with permanent residential mobility, i.e. the change of residence within the same city or urban area. Unlike long-distance moves, residential mobility does not necessarily have to involve changing workplace, social contacts or networks (Jones 1990:179-180). At first instance, the main understanding of the concept of residential mobility is that it is an adjustment of housing consumption in accordance with household needs, resources and preferences. This general starting point calls for a need to break down what these needs, resources and preferences consist of. Demographic aspects are central for an understanding of residential mobility, and they are important aspects to control for when modelling mobility to understand sorting according to income, housing tenure and ethnic background. Individual demographic micro-level factors are of importance but so are macro aspects of the demographic composition of Stockholm’s population. A growing part of the population belongs to younger two-adult households without children, which could be important for understanding mobility dynamics.

In 1955, Rossi published *Why families move* and introduced the individual life-cycle explanation for households' relocation. Rossi argued that with new stages (leaving their parents' home, when forming a family and having children) in the life-cycle, residential preferences will change and relocation is likely (see also Glick 1947). In more recent years there has been a broadening of the strong emphasis on demographic aspects, family formation and household dissolution to incorporate life events such as acquiring or losing jobs or entering university (Morris et al. 2016, Mulder 1996). Wolpert (1965) showed that residential (dis)satisfaction is one important component for residential mobility (see also Mustered et al 2017). Studies show that high population turnover in the neighbourhood increases the likelihood of leaving the neighbourhood (e.g. Feijten and van Ham 2009) and that demographic aspects impact the households satisfaction with the
dwelling (e.g. Clark and Onaka 1983, Dieleman 2001). As an extension of the life-cycle framework, to incorporate a broad range of individual housing trajectories, the life-course framework put emphasis on individual life- and housing trajectories as an important explanation for housing consumption choices (see Kendig 1984).

Households in various phases of their life-course, with different professional careers and income levels, will value different aspects of their neighbourhood (Feijten and van Ham 2009, Pinkster et al. 2014). A change of the neighbourhood composition may affect the households' attitudes towards the neighbourhood, and consequently changes in the household such as forming a family will affect the way the household values amenities (schools, cultural facilities or social amenities such as high status, safety or access to jobs) in their surroundings. Low quality schools might not give rise to moving desires until the household decides to have children, or until children approach school age.

Households act on moving desires if the “push and pull” (Knox and Pinch 2006) factors are sufficient and if they identify new housing alternatives in line with their preferences (Brown and Moore 1970, Mulder and Hooimeijer 1999). Furthermore, cultural and social preferences play a role for the desire, decision and realization of residential mobility (e.g. Clark and Huang 2003, van Ham and Feijten 2008). Kendig (1984) writes that when economic factors are controlled for in models of residential mobility, life-cycle aspects tend to lose explanatory power. This insight displays the importance of different population groups’ ability to act on preferences and that economic constraints may limit housing consumption. Residential mobility is not a simple matching process (Morris et al. 2016) but rather a negotiation between desires and constraints (Bolt et al. 2009).

The individual-level constraints are termed micro-level restrictions. Micro-level restrictions include economic resources, knowledge about the local housing market or the need for new schools for the children and perhaps the need to sell the current home (Bailey and Livingston 2007, Böheim and Taylor 2002). Macro-level aspects, on the other hand, include housing market supply, rent or housing cost along with the possibility to acquire mortgages. Different households experience various degrees of constraints and possibilities in relation to these micro and macro factors, which in turn affect the possibility to move home (Boschman et al. 2014, Coulter et al. 2011, De Groot et al. 2011). Discrimination is one such factor that more often affects families
with foreign background (e.g. Ahmed and Hammarstedt 2008 on the Swedish rental market). In the empirical contributions in this thesis the statistical models are pre-occupied with the micro-level aspects of housing tenure and income levels. However, these variables are not disconnected from macro-aspects influencing the impact of these variables on households' relocation.

Restrictions (e.g. based on economics and/or discrimination) not only affect the possibility to relocate in the first place but also affect where movers end up. Despite (or because of) varying preferences and constraints, households tend to move towards areas where the population matches their own characteristics in terms of family composition, social status and income (e.g. Boterman et al. 2010, Andreotti et al. 2013, Hedman et al. 2011). There is a strong connection between economic means and housing tenure choice, but the choice also depends on preferences for lifestyle, amenities and flexibility (Andersen 2011, Rossi 1955). With increased possibilities in Sweden to acquire housing mortgages, and a larger part of the younger population living as couples without children, this could drive up demand for housing in some segments, making it difficult for those experiencing larger restrictions in relation to acquiring mortgages to enter these segments of the housing stock. In a segmented housing market, where different types of housing units are located in different neighbourhoods, households seeking particular types of dwellings will likely end up living together in the same neighbourhood. For those with economic restrictions, the choice of neighbourhood will be a trade-off between the need for amenities and the need to have money left over after paying for housing to cover other consumption needs (Chesire 2007). The rational choice for a poor family is to seek cheap accommodation. If cheap accommodation is concentrated in a few neighbourhoods, the choice base of residential neighbourhoods will be limited. The structure of the housing market, a lack of tenure mix for instance, will therefore affect segregation in a city (Andersen et al. 2015). The housing stock transformations of Stockholm have made economic means an increasingly important aspect of housing market dynamics. This could result in increased economic and ethnic segregation if those who have more choice in their housing situation choose to cluster together.

It seems that the housing tenure and housing type mix play a key role for the demographic and socioeconomic population composition of neighbourhoods. People move to, avoid, or move away from areas, making neighbourhoods more or less mixed. The
role of residential mobility as a vital aspect of the segregation process seems evident. The impact of housing tenure on residential mobility also seems to be central for understanding the process of segregation.

The map in Figure 7 displays that the shares of co-op housing units are increasing in large parts of central Stockholm. This development may have consequences for which type of households that have the possibility to choose to locate in the central parts of greater Stockholm. The map also shows the reversed trend in some areas of urban Stockholm. Fewer co-ops in the neighbourhood may be due to housing tenure conversions of single-family housing units with co-op tenure to homeownership, or due to additional construction of housing with homeownership or rental tenure in these areas.

Figure 7. Map of Stockholm, change in share of co-op housing units among the 3200 nearest neighbours in each coordinate square 1990-2014
Housing tenure and residential mobility

Housing tenure and income levels are micro-level determinants for residential mobility. The distribution of income resources and the structure of the housing market’s tenure composition also are important macro-level aspects of residential mobility. This section explores residential mobility frequencies across various national contexts. It seeks to understand determinants of residential mobility in different housing tenure forms and the potential ways in which housing tenure could play an increasingly important role for residential mobility outcomes in Stockholm.

Among many policy makers, and the Swedish Property Federation (Fastighetsägarna), there is a widespread opinion that mobility in the Swedish housing market is too low. Increased mobility rates would render positive effects on entrance into the housing market for younger and foreign-born people, and allow for a more rational and effective use of the current housing stock (WSP 2015, Bergendahl et al. 2015). This might very well be the case, but the OECD (Sanchez and Andrews 2011) shows that Sweden has the third-highest share (23 percent) of movers within the OECD, based on a two-year estimate. In Sweden, 40.2 percent of the population moved during the five years prior to 2012, in Denmark, 34.4 percent moved, in Finland, 31.9, and in the U.K. 30.8 percent according to Eurostat (2015a). So the frequency of residential moves in Sweden is not problematically low in an international comparison; rather, it is high.

Potential problems with the level of residential mobility could lie in the development over time. In Stockholm, when including the population aged 20-64 in the three main housing tenure forms, the annual intra-urban residential mobility frequency fluctuates between 9.9 and 12.5 percent (average 11.6 percent) over the period 1990-2014 (PLACE author’s calculations). Two initial conclusions are that residential mobility frequencies are quite stable over time and that Sweden has high residential mobility when comparing internationally.

One explanation for the high residential mobility frequencies in Sweden could be the comparatively large rental sector. The share of movers is generally higher in rental housing compared to owner-occupied housing (Eurostat 2015a, Quigley and Weinberg 1977, van der Vlist et al. 2002, Rossi 1955). The correlation between European nations’ housing stock composition (share of owned dwellings) and mobility rates is strong (-.59), but some countries with a large rental sector, such as Germany and Austria, display low
rates of mobility relative to, for instance, the Nordic countries (Eurostat 2015a). In the Nordic countries, Norway has both a high mobility frequency (34.8 percent has moved the last five years prior to 2012) and a high share of owned housing (84.4 percent) (Eurostat 2015a, b). It is thus problematic to argue that a large rental sector in itself causes high residential mobility frequencies, especially considering that Sweden’s high residential mobility frequencies are largely driven by the comparatively high mobility in the owner segments rather than by high turnover in the rental segment (Eurostat 2015b).

Macro-level aspects important for mobility frequencies in owned housing are: easy access to mortgages, low transaction costs and a large increase in housing prices (van Ommeren and van Leuvensteijn 2005, Sanchez and Andrews 2011). These factors are found in Sweden, even though Boverket (2012) argues that transaction costs are problematic for mobility. These aspects not only affect mobility between owned housing tenure forms but also between owned housing and rental housing. There is an effect from rent levels also on the reverse type of mobility, from rental to owned housing. High rental costs increase the demand for owned housing forms, especially among younger residents, while older people are less affected (Özyıldırım et al. 2005). Findings from the OECD (Sanchez and Andrews 2011) indicate that rent-controlled rental housing reduces residential mobility.

If Sanchez and Andrews (2011) are right, Sweden’s rent-negotiation system applying to all rental housing should contribute to lowering residential mobility levels. This might very well be the case, but it should be stressed that residential mobility frequencies in rental housing in Sweden are estimated to be well above the EU average levels (Eurostat 2015b). Over time, Sweden has also witnessed increased costs for renting in relation to owning (Holmqvist and Magnusson Turner 2014, Boverket 2012, SOU 2014:1), which should drive up demand for owned housing.

Figure 8 breaks down the share of stayers in Stockholm (aged 20-64) by housing tenure. Residential mobility rates are stable, with a closing gap between renters and co-op owners. The 1991 economic crisis is clearly visible, showing the housing market crash and subsequent low mobility rates in the owner segments.

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9 An exception is the usage of *presumption rents* (market-level rents exempted from the use-value principle of rent setting) in parts of the new rental housing stock.
The convergence of mobility rates in rental and co-op housing is likely due to the sustained price increase on co-ops, making it a rather risk-free investment, fuelled further by easy access to low-cost mortgages and increasing rent levels. The changes over time are to some degree also mirrored in the annual residential mobility frequencies by income. Mobility frequencies within income deciles 1-3 are reduced over time in Stockholm from a mean of 16.1 percent in 1990-2001 to 15.4 percent between 2002 and 2014. Mid- (deciles 4-7) and high- (deciles 8-10) income earners have a marginal increase of mobility frequencies to 12 percent and 9.3 percent respectively. Those with lower income levels are still the most mobile part of the population, but the decreasing level of residential mobility could be due to difficulties in acquiring mortgages to buy into the expanding owner segments of the housing market, and fewer rental options restricts choice for those unable to buy.

Even though there are variations between countries in the frequency of residential mobility, local-level studies often find that higher shares of homeownership housing lower residential mobility frequencies (Shaly 2006). It is reasonable to believe that a household makes the investment in a single-family housing unit with care and that the investment is intended to be of value for a considerable period. Furthermore, Shaly (2006) argues that many of the positive outcomes of homeownership on neighbourhood stability (i.e. low mobility frequencies) are due to selection bias into this housing tenure, with most people having rather high incomes and a stable connection to the labour market, and intending to stay over a longer period of time.
Research on micro-level determinants for entry into homeownership shows that marital status (Raya and Garcia 2012) and life events (Magnusson Turner and Hedman 2014) are of importance. However, there are significant differences between those with Swedish background and foreign-born residents with respect to such life events (Magnusson Turner and Hedman 2014), and income is a less significant determinant for entrance into owned housing for foreign-born residents compared to natives across the Nordic countries (Kauppinen et al. 2016). Those with foreign backgrounds simply do not enter owned housing to the extent that could be expected from their income levels. This might be due to either preferences for renting or due to discrimination affecting their ability to get mortgages. There are also geographical components to consider. Ethnic minorities are more likely to buy into the owner segments in neighbourhoods with relatively few majority residents (Lee 2014) and in areas undergoing community reinvestment schemes (Spader and Quercia 2008). Natives and high-income households tend to leave such neighbourhoods. Even if a desire to live in owned housing exists, limited economic resources, discrimination and high house prices restrict entry for some groups (de Groot et al. 2011, Kauppinen et al. 2016, Magnusson Turner and Hedman 2014, Bråmå and Andersson 2010).

The Swedish social mix policy rests heavily on housing tenure mix. Mainly, this is done through conversions of rental to co-op housing and additional construction of co-op housing in rental-dominated neighbourhoods. Already according to Figure 8, it seems that this strategy is losing strength if the goal is to keep socioeconomically more resourceful residents in marginalized neighbourhood. Especially as mobility frequencies are increasing among mid- and high-income earners.

It seems plausible that the development of the Stockholm housing market generates increased possibilities for the middle-class to act on their housing preferences when the share of owned housing increases, and when prices rise. It also seems as owners are increasingly mobile in the housing market. This could mirror the need to embark on a housing career where households trade up step-by-step in order to be able to meet their respective housing preferences in a housing market characterized by growing price differences in various neighbourhoods. The development outlined above probably increases the demand for owned housing. The possibilities to act on the housing market may be diverging between those who have access to key institutions, networks and resources as
the changes in residential mobility frequencies among various income groups suggests. If access to mortgages is of growing importance for moving and where movers end up, residential mobility, and perhaps also neighbourhood attainment, will be progressively structured by the institutions providing these funds.
Why ain’t we living together? Theories on the process of segregation

This section will deal with various theoretical claims explaining the process of economic and ethnic segregation. The process here denotes residential mobility and does not include in situ development of neighbourhoods’ demographic, social or ethnic composition. Even if in situ changes are important (Bailey 2012), residential patterns of different population groups are largely dependent on mobility in the housing market (Schaake et al. 2014). The theories regarding different types of segregation (economic, ethnic) have followed similar paths of development, but they naturally differ in some respects. The following depiction will first focus on the process of economic segregation and thereafter on the process of ethnic segregation.

Economic segregation

Research on economic segregation follows three (i-iii) main theoretical developments. The first systematic studies on spatial segregation came from the Chicago School. Their (i) ecological approach suggested that residential patterns are a natural outcome of processes of invasion and succession – the gradual shift of neighbourhood population when older/wealthier/assimilated groups leave for other areas (e.g. Park et al. 1925). This process is argued to result in a divided city with zones or sectors dominated by one or a few social groups (e.g. Burgess 1925, Harris and Ullman 1945). One main criticism of the ecological approach, the behavioural approach, focuses on how preferences and choice influence human behaviour. The (ii) behavioural approach emphasizes the agency of households with respect to relocation, how households respond to housing stress, and changes in the household formation or in the neighbourhood, i.e. the approaches discussed in the life-cycle perspective of residential mobility (Rossi 1955) and later developed in the life-course perspective. Because preferences and constraints are tied to the household life-course and housing types are generally clustered together in different urban areas, spatial segregation is seen as a logical outcome of varying preferences (see van Kempen and Murie 2009). The ecological and behavioural approaches were criticized for their respective lack of focus on the impact that institutions have on households' possibilities to choose where to live. This criticism forms the argument for the (iii) institutional
approach. Key institutions include mortgage lenders, rental housing companies and government institutions (Wolpert 1965). The institutional approach underscores the importance of the resources households have to navigate the housing markets and how these resources affect housing outcomes. These include knowledge about housing markets and allocation rules for different housing tenures. With the institutional approach – and the focus on access to owned, municipality-owned, non-profit rented housing or state-owned housing – van Kempen and Murie (2009) identify a growing divergence between European and North American researchers’ focus on spatial segregation. The historically more common, and broad, interventions from states in the European context direct focus to agencies and the working of institutions and actors. In particular, the role of housing tenure receives attention, as large parts of the housing stock throughout Europe were distributed through mechanisms other than the market.

Besides, or as an extension of, the institutional framework, globalization and social polarization have recently received attention with regard to economic segregation. This recent development of theoretical arguments is rooted in a structural approach trying to understand how social class differences develop in contemporary (western) societies. Since the 1980s global liberalization and creation of free markets in the realm of housing and welfare have had impact on development in almost all western countries. Economic restructuring of the welfare state has included cuts in housing benefits and cuts of subsidies for building affordable housing and has led to conversions of social/public housing to privately owned housing (Arbaci 2007, Tammaru et al. 2016). In a study of the socio-spatial development of several capital cities in Europe, Tammaru et al. (2016) argue that the impact of globalization on income inequality (through social polarization, see Sassen 2001, or through professionalization, see Hamnett 1994) in tandem with welfare state withdrawal from redistributive policy produces contextually embedded social stratification. Together with the spatial separation of social or public housing, the restructuring of the welfare state renders stronger economic segregation patterns when the market becomes the main way to distribute housing (see van Kempen and Murie 2009, Tammaru et al. 2016). Tammaru et al. (2016) argue that the local contextual embeddedness is crucial for understanding the local variation of the impact of income inequality.
From reviewing the theoretical models on the process of residential economic segregation, I argue that residential economic segregation is a function of preferences and desires, mediated by economic resources and macro-level constraints and opportunities. How much weight is given to each of these fundamental aspects of sorting is a combination of individual possibilities and context. The development of Swedish welfare policy is characterized by a rollback of state intervention. There have been lowered supply-side interventions and cuts in demand-side interventions through eroding housing benefits, challenged principles of rent-negotiation, yet a somewhat maintained intervention for the owner sector through mortgage tax deductions are still in place. The growing income inequality is primarily an outcome of changed taxation rules on capital gains and the lower redistributive power of the welfare state, and it characterized the 1990s of Stockholm. The 2000s, on the other hand, are characterized by growth of the part of the housing market where allocation is mainly dependent on income levels and access to mortgages.

Nieuwenhuis et al. (2017) write that the main driver for economic segregation is the desire of higher social groups for specific neighbourhood types, leaving poorer residents in less desirable neighbourhoods and housing units (see also Reardon and Bischoff 2011 for a U.S. example). However, the welfare regime, housing policy and planning practices of a state have the potential to mediate the effects of income on housing outcomes (Tammaru et al. 2016). If housing consumption is dependent on household income, increased income inequality should render stronger and more durable economic segregation patterns (Musterd et al. 2017). Wind and Hedman (2017) also display that the capital gains from housing are unequally distributed across ethnic and socioeconomic groups. Harvey (2005) argues that there is a geographical dimension to the uneven development between nation, regions and within metropolitan areas.

With a move towards a selective housing policy and with the increased proportions of owned housing in Stockholm, the link between income and housing outcomes is strengthened. The first paper of this thesis highlights the role of the housing tenure form and income for the process of economic segregation. It may be concluded that theories on economic segregation are closely tied to (the structure of) state interventions in housing markets, at least during the past thirty years.
For now, a tentative claim is that, with fewer affordable rental options spread across Stockholm, economic segregation is increasing through stronger patterns of avoidance of low-income areas by those with higher income levels, due to preferences, and financial and institutional means to follow these preferences. Simultaneously there are fewer possibilities for low-income households to seek housing outside the most marginalized areas due to economic restrictions. The theoretical development of ethnic segregation research largely follows the development of perspectives on economic segregation. The following discussion highlights some of the main differences.

Ethnic segregation

Theories on ethnic segregation rest heavily on socioeconomic factors. The spatial assimilation model connects the spatial settlement pattern of foreign-born or ethnic minority residents, to their social and economic position. It is one of the main theories used to discuss ethnic segregation. In its simplest form, the spatial assimilation model predicts that foreign-born or ethnic minority residents will initially settle among people with similar experience. After experiencing assimilation into the new country, with increased labour market connections and an improved social position, ethnic minorities will move on and live in areas matching their new socioeconomic position (Massey 1985, Logan and Alba, 1993). Time in the new country and the assimilation, or integration, in various aspects of social life, are together with socioeconomic resources, seen as primary determinants of the settlement pattern of foreign-born residents.

Beyond the spatial assimilation theory, stressing the relation between socioeconomic resources and neighbourhood attainment, preferences for ethnic enclaves or ethnic clusters are discussed (Bolt and van Kempen 2010) within the framework of ethnic preference or own-group preference. Ethnic clusters could provide opportunities for social networks and services, which are valuable for foreign-born residents. Highlighting preferences for living in ethnic clusters runs contrary to the implicit assumption that all people desire to live in areas where the majority population resides. Research carried out to test this hypothesis shows that there are examples of own-group preferences among some minority groups (e.g. in the U.K. see Bowes et al. 2002) and certainly among the
white majority, as some U.S. studies show (Charles 2003, Ihlanfeldt and Scafidi 2004).

One type of constraint potentially facing ethnic minority households is discrimination. This is theorized within the *place stratification framework* (South and Crowder 1998, Bolt et al. 2008). Discrimination makes it hard for those exposed to it to seek housing in a desired location even if they have sufficient economic means to do so. Mortgage lenders (Aalbers 2005), real estate agents (Philips and Karn 1992, Molina 2015), and other government and municipal institutions (Musterd and De Winter 1998) may act in a discriminatory manner, affecting housing market outcomes. There are few studies on particular ethnic minority groups in Sweden. It is therefore unclear to what extent Sweden’s multi-ethnic neighbourhoods are best explained by reference to the *own-group preference theory* or with reference to the *place stratification theory* when analysing sorting beyond socioeconomic attributes. Bolt et al. (2008) point out that ethnic segregation cannot be explained with only reference to the spatial assimilation model stressing the socioeconomic differences between ethnic population groups. In Sweden, ethnic residential segregation cannot be fully explained with only socioeconomic variables, the life-cycle perspective, or choice. Discrimination based on race and ethnicity is an important part (Andersson and Molina 2003, Brämå and Andersson 2010, Molina 1997, Molina 2015), even if the spatial assimilation model has explanatory value (Andersen 2015).

In a study examining ethnic segregation in the Nordic capital cities, Andersen et al. (2015) connect a large part of ethnic segregation to the structure of housing markets. The authors argue that access to various tenure forms and the geographical distribution of these housing tenures impact the pattern of ethnic residential segregation. In Sweden, and many other countries, large parts of the public rental sector are found in larger housing estates, and with an over-representation of foreign-born groups in this tenure, patterns of ethnic segregation appear. Andersen et al.’s (2015) study draws on the *housing availability model*, which emphasizes how the availability of different housing types and tenures across different neighbourhoods affects patterns of ethnic segregation. In a housing market increasingly characterized by allocation through income, it is reasonable to believe that household income alongside the relation to mortgage lending institutions is becoming more important.

Andersen et al. (2015) argue that self-segregation partly causes the strong concentrations of foreign-born residents in certain
neighbourhoods, which potentially increases native out-mobility due to reluctance to live in these types of neighbourhoods. In Sweden, there is documentation showing that preferences for ethnic mix among natives exists, as natives do not generally express reluctance to live in neighbourhoods with a high share of foreign-born (Andersson et al. 2017). But, Schelling (1971) shows that even small variations in preference for own-group presence in the neighbourhood may create large-scale ethnic segregation. For instance, we may assume that in a completely native-dominated area some foreign-born residents will move in. They prefer living among a majority of natives. Some of the natives will move out, as they prefer an all-native neighbourhood. These vacancies are then filled with more foreign-born residents and then the threshold for the presence of foreign-born residents is reached for yet more natives. As this process proceeds, the ethnic character of the neighbourhood shifts over a rather short period of time (Bolt et al. 2008). Research on large-scale native out-mobility conceptualizes this process as white (or native) flight, directing the focus to the majority population.

**White flight and avoidance**

The white flight hypothesis states that a driving force for ethnic residential segregation and the reproduction of an ethnically segregated city is the flight-like behaviour of the majority population from areas where foreign-born/minorities population groups move in (Massey and Denton 1993, Galster 1990, Crowder 2000). Bråmå (2006a) identifies two bodies of (mainly North American) work on white flight: the macro-level studies focusing on the change in population composition in areas, and micro-level studies on the reasons why individuals leave these areas. The second line of work highlights how foreign-born concentrations are often seen as proxies for social problems, poverty or declining quality in public services. The flight can also be due to the, more or less explicit, dislike of the minority population.

Although the out-mobility of people from areas with large concentrations of ethnic minorities is of importance, studies on in-movers to neighbourhoods with high numbers of foreign-born residents, or ethnic minorities has accentuated the avoidance-like behaviour of the majority population. Avoided areas experience a lower inflow of majority residents compared to what is expected given the size of this group. One can say that the flight concept applies to areas experiencing a rise of the foreign-born population.
and the avoidance concept to the upholding of the segregation patterns (Hedman and Galster 2013). Both the flight and avoidance concepts focus on the majority population and how this group acts in the housing market. The theories are useful because they focus on the larger part of the population that, on average, has more resources to act according to housing and neighbourhood preferences.

It is likely that the preferences of the part of the population having resources to act on their housing preferences are a key driver for ethnic (and economic) segregation (Andersson 2013). The flight from, and avoidance of, neighbourhoods with high concentrations of foreign-born is also found to be driven by stigmatization and racial prejudice (Molina 1997 see also Waquant 2008, Peck and Tickell 2002). It should be noted that there are strong links between stigmatized neighbourhoods and the rest of the city through the process of residential mobility (e.g. Bailey and Livingstone 2008, Nieuwenhuis et al 2017). However, access to various housing alternatives and neighbourhoods is increasingly dependent on household income and assets, resources progressively distributed unequally between the native-born and foreign-born parts of the Swedish population. These trends together with strengthened price differences between different neighbourhoods, I argue - in the second and third paper in this thesis, have growing importance for the ethnic (and economic) segregation patterns in Stockholm when larger parts of the housing market are navigated with financial resources as the prime factor of sorting. This argument displays the hypothesis that ethnic segregation has an increasingly strong connection to the distribution of financial resources and access to key institutions (e.g. mortgage lending) when analysing the production and reproduction of ethnic segregation in the Stockholm context.
Methods

Believe me, it’s true
That we are counted can’t you see
We are the numbers you and me
Räisänen, T. (2010). Numbers

Introduction

In this thesis, the empirical focus is on the individual micro-level determinants (income and housing tenure) for residential mobility. This piece of research does not answer why some population groups tend to act differently from others. It answers whether or not there are systematic differences and, by exposing these systematic differences, highlights the distribution of potential constraints and possibilities shaping residential mobility across population groups.

This section introduces the methodological choices made for this thesis. The different empirical papers make use of a variety of methods to answer the particular research questions addressed. In each paper the choices made to answer each particular question is addressed. Therefore, this methods chapter starts with a short description of the data source used for this research, and the main part of this chapter will be devoted to the two main variables when studying intra-urban mobility and will address the definition of a move and, in particular, what the consequences of the operationalization of neighbourhood entail.

Data and key variables

Lately, an increasing number of longitudinal research designs preoccupied with change over time with regard to patterns and processes of segregation have been published (e.g. Hedin et al. 2012, Tammaru et al. 2016, Lee 2017). This thesis contributes to this research strand. The empirical papers make use of longitudinal
data that spans over long periods to understand the development of residential mobility processes and patterns creating and upholding segregation. Longitudinal register-based data sources are readily available for many researchers in Sweden (SFS2013:945).

Nearly all data in this thesis comes from Statistics Sweden. Public authorities are obliged to collect and annually submit data to Statistics Sweden (SFS2001:100). Researchers at universities can, under certain circumstances and at a cost, get access to these data sources. The department of Social and Economic Geography at Uppsala University has one of a few individual-level databases at universities across the country. The database (PLACE) contains information on every individual registered in the country. The current period covered is 1990 to 2014. PLACE contains a range of different variables; geographical information – coordinates, parishes, municipalities and county information; socioeconomic information – disposable income and other income measures such as salaries, tax information and capital gains. Demographic information includes births and deaths, family composition; individual country background – country of birth and information on parents’ country of birth. Housing data is available – the information on juridical form of ownership of the property, information on house types, taxation (which together gives information about the tenure forms) and location.

In this thesis, I use a geographical subset of the database delimited by the Stockholm County borders, i.e. Greater Stockholm (Statistics Sweden 2005). There are two main reasons for the geographical choices made. First Greater Stockholm constitutes a widely used definition for statistical aggregation within Sweden, and is often contrasted with Greater Gothenburg and Malmö. There are some problems associated with the Greater Stockholm definition in that it contains several different municipalities, and planning units, it contains several smaller cities that could be defined as their own units of analysis depending on the research carried out. It is, nevertheless, an integrated region and provides a good study case for this type of research. The second reason for using Greater Stockholm is that it is the region of the country with the largest shifts in the housing tenure structure. It is in the capital region where the policies of housing tenure conversions have been the most widespread. This makes the capital region a particularly

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10 When this dissertation started to take form, data was available from 1990 to 2010, except for housing variables, which were only available up to 2008. Updates have been made in 2015 and 2016.
interesting case for studying the changing impact of housing tenure and income for residential mobility and mobility outcomes.

The data used includes every individual that has resided in Stockholm in the years of each empirical study. The empirical papers make use of a variety of variables. One of the key variables is income, and disposable income is used. Disposable income comprises income after capital gains and taxes and is therefore a good measure of what individuals have to use for consumption (except accumulated wealth or savings). It is grouped into low income (deciles 1-3), medium income (deciles 4-7) and high income (deciles 8-10) for Greater Stockholm. This makes comparisons between the different income groups more fruitful as they are seen relative to each other, and since the topic of interest is intra-urban mobility, income levels are defined regionally rather than nationally. Given that the increased income differences in Sweden (OECD 2011) are mainly found to be driven by changes in capital gains and taxation (Björklund and Jäntti 2011), disposable income is a suitable income measure as, unlike salary income, it incorporates these sources.

A second key variable is housing tenure. The data contains the dwellings’ juridical form of ownership and type of housing unit. It is possible to distinguish between the three main tenure forms (homeownership, co-op and rental) with this information. It would have been useful to have access to the prices of dwellings. There is data on the taxation values of real estate; however, this data is not useful when estimating the price of an individual apartment in a co-op. The reason is that co-op apartments are part of a larger real estate asset (the cooperative’s total assets), and it is not possible to disaggregate the price to individual apartments using this data source.

A third set of key variables are ethnic groups. In the PLACE database information on individuals’ country of birth are available. In the papers the categories Swedish and foreign background, and non-western foreign born are used. Swedish background is defined as being born in Sweden having at least one Swedish-born parent, foreign background instead captures the group born outside Sweden or born in Sweden with two foreign born parents. The foreign background category is rather broad and in paper 3 it is divided into different parts. The category non-western foreign-born encompasses those born in South America, Africa and Asia who have moved to Sweden. The categorization stems from theoretical aims of the various papers. For instance, I argue that it is reasonable to try to
capture the group non-western foreign-born in a single category as to be able to estimate models capturing a group more likely to suffer from discrimination and experiencing racism because of the colour of their skin. Since the data source used only has information on country of birth, and parent’s country of birth, the categorization cannot be entirely accurate with respect to the aim of the categories created. Even if this is the case the choice has been made to try to analyse and understand systematic differences in residential mobility and mobility outcomes from these categories as it is important to show discrepancies, likely because of racism, for neighbourhood attainment. In doing such an analysis the definition and operationalization of the neighbourhood unit is of course central.

What is a neighbourhood?

Galster (2001) defines a neighbourhood as a “bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses”. Thus a neighbourhood concept should be operationalized with the spatial attributes important for the study; these can be structural (roads and houses), social (income or educational composition), demographic (age, family composition) and environmental (air pollution or noise). Following these straightforward words of guidance is hard. What is the spatial scale of interest and on what type of scale do processes take place? The choice of neighbourhood operationalization should be done with the research question in mind (Openshaw 1984, Sperling 2012, Galster 2001). Since this thesis is concerned with individual residential mobility, it is reasonable that the neighbourhood operationalization takes these individuals as a starting point. This section provides examples of how the neighbourhood concept has been operationalized in earlier research; it identifies benefits and drawbacks and presents how the operationalization of the neighbourhood has been done in this thesis.

Related to the problems of the structure of the urban area and how housing units are grouped together is how neighbourhood units are constructed. Indices are often used to measure the level of segregation (Wilson 1987, Massey and Denton 1993, Duncan and Duncan 1955). However, Östh et al. (2014) show how comparisons across cities, municipalities or countries may be difficult due to the inherent problem of the operationalization of neighbourhoods in indices. These problems also apply to studies on residential mobility.
Two main problems are identified: (i) the measures are aggregates of individual-level data to areas/neighbourhoods, and (ii) outcomes depend on, potentially arbitrary, borders of pre-defined neighbourhoods. The first problem is simply that the measures are not of individuals’ context but rather areas and their context, which makes segregation measures about neighbourhoods and not the people within them. Individuals are always at the centre of their own life-world, and fixed-neighbourhood entities often overlook this (Östh et al. 2014). Second (ii), there is the modifiable areal unit problem (MAUP) (Openshaw 1984, Fotheringham and Wong 1991).

MAUP consists of two (a,b) interlinked problems. The first (a) problem concerns the spatial scale, and the second (b) concerns zoning. The problem with spatial scales is most evident when smaller areal units are aggregated into larger and fewer spatial units. The results of statistical geographical analysis, or other geographical research, will depend on the scale chosen by the researcher. Second (b), there are problems with zoning. If the number of spatial units is constant, numerous sizes and forms of these areal units are possible. The ways in which this zoning is done will affect the statistical outcomes. The modifiable areal unit problem (MAUP) tells us that segregation will change with the detail of spatial scales used to calculate the indices showing segregation. Rezoning the pre-defined areas will give rise to new patterns even though the people have not moved (Wong 1997). For this reason, there is no straightforward way to compare measures of segregation between places as it is not possible to know if the segregation patterns are products of neighbourhood operationalization and the differences in these divisions across places, or caused by the actual population distribution (Östh et al. 2014). In a similar way there is no possibility to analyse what residential mobility entails, especially if a move is considered to be a change of neighbourhood unit. Are residential mobility outcomes then a product of the neighbourhood operationalization or an actual meaningful redistribution across space of the moving population?

Similarly, there is no way in residential mobility studies to make comparisons over time that determine whether residential mobility trends have been altered as the urban areas change but boundaries of neighbourhood units may be constant. New housing areas are built, others are rebuilt, the socioeconomic context of a given area may change or the neighbourhood boundaries may be redrawn.
Many Swedish studies use the spatial delimitation SAMS for operationalizing neighbourhoods (Bråmå 2008, Aldén et al. 2015, Bråmå 2006b, Bergsten and Holmqvist 2013, Hedman et al. 2011). For the Stockholm region, there were 879 SAMS areas with an average population of 2,174 in 2006. SAMS areas cover the whole country. In 2018, Statistics Sweden launched a new operationalization of neighbourhood units called DeSO (Demografiska Statistikområden (Demographic Statistical Areas)). There are 1,279 DeSO areas in Stockholm with an average population of 772, using data from 2006. Stockholm has also constructed Basområden, for planning and statistical purposes. There are 1109 areas and the average population was 877 in the Stockholm County in 2006.

Many international studies use census districts, electoral wards or similar spatial units (e.g. Crowder et al. 2011, van Ham and Manley 2012). Some studies use some sort of operationalization from spatial attributes, like major railways or the tenure composition (Andersen 2016). Fewer studies have had the possibility to access detailed coordinate data. In Sweden, it is possible to access data on 100 square metres covering the entire country.

Hedin et al. (2012), when discussing gentrification and filtering processes in larger metropolitan areas of Sweden, use coordinates (100 square metres) and try to capture the neighbourhood context by using data from the nearby squares on the grid. This gives them the opportunity to analyse each square with data on their neighbouring squares. Benefits in this study are that the neighbourhoods are population invariant, they cover equal geographical units, but they do not address different population structures, thus giving greater weight to mobility in scarcely populated areas. Some relief is brought by excluding very scarcely populated squares.

Haynes et al. (2007) try to capture units for research through expert delimitations from city officials, from respondents in areas and from maximized homogeneity in computer-based zoning designs with average populations of 2,500, 3,700 and 7,500 inhabitants in Bristol, U.K. They find that automatic zoning, with homogeneity as a clustering factor, might indeed be a good way to operationalize neighbourhoods. At the same time, individuals seem to describe and talk about neighbourhood in quite a different way, in terms of an average population size of 500. People seem to describe their neighbourhood as small, covering a limited spatial
distance. Respondents define their neighbourhood using a detailed geographical scale; probably this is due to micro-shifts in tenure forms, physical environment and housing conditions.

In a study comparing various neighbourhood operationalizations or geographical scales Andersson and Musterd (2010) use coordinate squares to operationalize *bespoke* neighbourhoods (an operationalization centred around each individual) alongside SAMS and municipality-level data when researching neighbourhood effects. They find that endogenous and exogenous effects are greater on the most detailed scale. The share of unemployed has a greater effect when using the SAMS area, which they attribute to stigmatization or other similar effects. In a Norwegian study, Brattbakk (2014) uses three scale levels to discuss neighbourhood effects on educational attainment. Similar to Andersson and Musterd (2010), he finds that the social composition at the largest district level has the highest impact on future educational attainment, probably because these larger areas capture the school districts, activity space and stigmatization of areas.

The operationalization of *neighbourhood* must have theoretical arguments, because no definition captures the *true* neighbourhood for all residents. Therefore studies using multiple-scales are useful to for the understanding of how geographical scale matters for the analysis and also to understand different processes operating at various scale levels. Recent advancements on neighbourhood operationalization let researchers define neighbourhoods from data on the closest neighbours (using no other attribute but spatial location). This *k*-nearest neighbour (knn) approach results in choices about *how many* is a sufficient or relevant *k*-number; Heynes et al.’s (2007) findings suggest a low *k*-number. In the same line of inquiry, one might argue that a neighbourhood has distance attributes, every individual’s neighbourhood can only stretch as far as 100, 500 or 1000 metres, for instance. The same type of question emerges: what spatial distance is relevant for the construction of a neighbourhood unit? Using a knn operationalization, a move is not primarily understood as an exit from a fixed neighbourhood entity and an entrance into a new one but rather a change of the individuals’ context in terms of their closest neighbours. This thesis’s empirical contribution adopts this operationalization of *neighbourhood*, i.e. a population-based measure for every individual in the data set. Each coordinate pair has a unique context and thus a unique *neighbourhood*. By looking beyond the aggregated statistics in pre-defined neighbourhoods it is possible to start talking about
bespoke neighbourhoods (Johnston et al. 2004, 2005, Davies and Hazelton 2010, Östh 2014). An analysis of residential mobility will more clearly focus on the change of context for individuals. With a more detailed and individualised analysis, studies may also take more variation in the built environment into account.

A problem with pre-defined census tracts or other planning units is that they may contain pockets of poverty or other pockets of tenure forms that on an aggregated scale enforce the spatial mix of tenure forms but on the ground have other connotations for those living in the areas (Sperling 2012, Haynes et al. 2007).

In relation to the research carried out in this thesis it should be recognised that housing tenure forms often are grouped together in various neighbourhoods in Sweden. In the maps (Figures 9 and 10) the share of rental housing units in DeSO neighbourhoods and at the $k$-500 nearest neighbour level are contrasted. What becomes evident in these maps is that there is of course a considerable overlap between the tenure structure when aggregated to pre-defined DeSO neighbourhoods and in a $k$-based approach. But there is inevitably an aggregation in the DeSO areas that obscures some of the nuances visible when studying the distribution of rental housing units in a detailed $k$-based approach. When mapping out the distribution of rental housing the distribution of where people live is also more clearly shown in the $k$-based map, while the DeSO map gives an impression of a similar population distribution across the whole map. The aggregation of data into pre-defined neighbourhoods does not take the distribution of the population into account.
Source: PLACE database, author’s calculations

*Figure 9.* The share of rental housing in DeSO neighbourhoods, Stockholm 2008
From the review above, it seems clear that results of statistical tests vary with the geographical scale (e.g. Andersson and Musterd 2010, Brattbakk 2014). This variation is expected from the MAUP literature (Openshaw 1984). Various neighbourhood operationalizations will be tested when modelling residential mobility below, including the individualized neighbourhood definition using Equipop software (Östh 2014). First, a description of how individualized neighbourhoods are constructed is necessary.
Individualized neighbourhood using Equipop

The Equipop software is used to construct neighbourhood variables with different numbers of neighbours. The program, developed by Östh (2014), makes it possible to calculate individualized neighbourhoods and neighbourhood context for large data sets. It has been used in various research texts (e.g. Östh et al. 2014, Östh et al. 2015, Hedman et al. 2013, van Ham et al. 2012). The program allows for calculating neighbourhood contexts for the closest neighbours with a $k$-threshold, set by the researcher. As it is possible to calculate neighbourhood contexts for any given $k$-level, it is possible to construct scalable neighbourhoods capturing the context for low and higher $k$-levels in a single neighbourhood operationalization (Andersson and Malmberg 2015). The detection of small-scale pockets of poor areas is easier with the use of a detailed geography, which aids understanding of nuances in residential mobility. These small-scale divisions in the built environment are possibly obscured with pre-defined neighbourhoods.

Equipop makes use of the coordinate square grid and incorporates the population of one square at a time. Figure 11 displays how the program works with grid data. First, it displays the starting coordinate square and the program then incorporates square one from the first quarter (Q1) then square one from the second quarter (Q2) and so forth until reaching the $k$-threshold.

![Equipop growth pattern using grid data](image)

*Figure 11. Equipop growth pattern using grid data*

Source: Based on Östh and Türk (forthcoming)
When the threshold is reached the program stops and returns the aggregated values needed to reach the $k$-threshold. In the PLACE database data is available at a 100 x 100 meter square grid and as an entire square is included at once, some overshoot of the $k$-threshold is common. Then the program moves on to make the calculation for the next coordinate square. The radius growth makes use of distance; however, when the fourth square is reached, two coordinate squares will have the same distance from $i$, and inclusion of 4a or 4b first is random.

When the spatial relationship between individuals and the closest neighbours define neighbourhoods, the definition should be based on the compositional characteristics of those closest neighbours. This is done with a method that makes use of the location of individuals and their neighbours - Equipop does exactly this. If the geographical distance is too large, the closest neighbours cannot be conceptualized as an actual neighbourhood. This is not too much of a problem in densely populated places and when the $k$-threshold is low, but it could be a problem when moving beyond the urban areas and into rural areas. Some relief comes with including a distance decay effect that values the impact of remote neighbours less than close ones (see Paper II); this is of marginal importance in Stockholm if the $k$-threshold is low.

Mobility and neighbourhood – an empirical exploration of neighbourhood operationalizations

Here, two simple empirical examples of the effects of the neighbourhood operationalization will be presented and discussed. First, outlined below are descriptive statistics on residential mobility from poor neighbourhoods in Stockholm. Seven ways to operationalize a neighbourhood, three of them pre-defined, are compared. A poor neighbourhood is defined as having two standard deviations above the mean share of poor residents (i.e. with less than 60 percent of median disposable income) among its working age population (age 20-63). The cut-off is rather strict but is illustrative for this type of exercise.\textsuperscript{11}

\textsuperscript{11} Further exploration using relaxed definitions for poor neighbourhoods (at $\frac{1}{2}$ and 1 S.D. above mean) are found in the Appendix to paper II with a somewhat different outcome variable than what is presented here.
Table 4 shows the number of individuals included in a sample with the above-mentioned cut-off points for poor neighbourhood at various spatial scales. In Stockholm in 2006 there were 975,000 inhabitants (aged 20-63), and at the k-500 level this means that approximately 4.5 percent of the total population lives in poor neighbourhoods, while 7 percent are included if the SAMS delimitation is used. In the k-based operationalization the total population increases with the population threshold for individualized neighbourhoods. More people are defined as living in poor neighbourhoods as the population-based operationalization of neighbourhood gets larger. This is related to the housing structure, and that a larger k-level approach the metropolitan mean, thus making the cut-off for what constitutes a poor neighbourhood less strict. This direct connection between population count and geographic scale is not found among the pre-defined neighbourhoods. Interestingly, a similar structure is found when analysing the type of neighbourhood a mover ends up in. In the k-based operationalization, a higher proportion of movers end up in similarly poor neighbourhoods as the k-level increases. Maps showing the geographical coverage of each neighbourhood operationalization are found in Appendix I.

In studies using pre-defined areal units, the borders will have an effect on the aggregated mobility flows, and smaller areas will render greater movement because shorter moves will more often be registered as moves, with the same logic, as segregation is greater when the spatial areas are smaller. Here, I have chosen to define a move as changing coordinates rather than exiting a neighbourhood and entering a new one. Some of the movers in the pre-defined neighbourhoods are probably moves within the same neighbourhood.

<table>
<thead>
<tr>
<th>Operationalization</th>
<th>N. coordinates / n:hood units</th>
<th>Average pop. size n:hood</th>
<th>Total pop. in poor n:hoods</th>
<th>Stay</th>
<th>From poor to other poor</th>
<th>From poor to non-poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>k-500</td>
<td>589</td>
<td>N/A</td>
<td>43,837</td>
<td>67.6</td>
<td>9.7</td>
<td>22.7</td>
</tr>
<tr>
<td>k-1000</td>
<td>607</td>
<td>N/A</td>
<td>44,614</td>
<td>68.2</td>
<td>10.5</td>
<td>21.4</td>
</tr>
<tr>
<td>k-2000</td>
<td>715</td>
<td>N/A</td>
<td>47,463</td>
<td>68.8</td>
<td>11.7</td>
<td>19.5</td>
</tr>
<tr>
<td>k-4000</td>
<td>962</td>
<td>N/A</td>
<td>54,024</td>
<td>68.9</td>
<td>12.9</td>
<td>18.1</td>
</tr>
<tr>
<td>DeSO</td>
<td>64</td>
<td>769</td>
<td>49,242</td>
<td>69.6</td>
<td>11.6</td>
<td>18.8</td>
</tr>
<tr>
<td>Basområde</td>
<td>42</td>
<td>1034</td>
<td>43,401</td>
<td>66.8</td>
<td>14.1</td>
<td>19.1</td>
</tr>
<tr>
<td>SAMS</td>
<td>37</td>
<td>1791</td>
<td>66,302</td>
<td>71.0</td>
<td>13.2</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Source: PLACE database author's calculations
Table 4 gives four insights. First, as the \( k \)-levels are increased the neighbourhoods will contain a larger population because the neighbourhood operationalisations more closely resemble the county average share of poor residents. Hence, the poverty threshold will be less strict in terms of the ratio of poor needed for the neighbourhood to be categorized as poor. Second, it shows that moves increasingly take place within or between poor neighbourhoods as the spatial scale increases. Third, the pre-defined neighbourhoods differ greatly in total population size. This is a sign of zoning effects and that the larger SAMS areas incorporate areas that are not categorized as poor neighbourhoods with smaller delimitations. Fourth, the Basområde operationalization represents an anomaly to the general pattern. For instance, the total population in poor Basområden is low, and a high proportion of movers move out to non-poor Basområden.

Below, selected OLS-regression results (Figures 12-15) are plotted from model runs with a data set containing every individual in Stockholm of working age 20-63 covering the period 2006-2008 (Selected model output tables are found in the Appendix II). The models make use of different neighbourhood operationalizations and the selected results show where (scale variable high to low shares of poor, i.e. disposable income below 60 percent of median income) movers end up. This will show how various neighbourhood definitions affect statistical modelling and the effect on the coefficients.

There is stronger explanatory power from individual-level variables when the geographical level is more detailed and more explanatory power among neighbourhood variables as spatial resolution is higher. This pattern does not generally apply to the pre-defined neighbourhoods. For instance, the ratio of high-income earners in the neighbourhood the mover leaves could be indicative of where the individual ends up, as people generally move between similar areas (Quillian 2002, Hedman et al. 2011). In all models, there is a negative impact on the outcome variable from the share of high-income earners in the neighbourhood a person leaves, as expected. The strength of this impact grows with geographical size. The effect of individual income has the reverse pattern. With more geographical detail, individual income becomes a stronger predictor of the outcome variable (share of poor in the neighbourhood). One interpretation is that a detailed geographical scale captures the small-scale physical structure of the built environment and price differences creating the stronger relation between individual income
and residential mobility trajectories. A less detailed scale obscures the nuances in the environment, of pockets of relative poverty or wealth in larger geographical areas. The spatial configuration of pre-defined neighbourhoods used in this example generally supports these findings from the $k$-based approach, but there are variations in the pre-defined neighbourhoods that are not expected if we assume that size is the only significant difference. Zoning seems to play a role, as is visible from the sum of squares. The sum of squares, i.e. the spread of data or the variability in the data, is dropping when the $k$ increases (see Appendix II). Notable is that at the $k$-4000 level the sum of squares are greater than at the $k$-2000 level. This is indicative of variations on various scale-levels in the built environment. There is small impact from this when analysing the relation between explanatory variables and the outcome variable in the regression models. The general pattern of sum of squares is because the neighbourhood definition approaches the region mean in terms of ratio of poor. Even if the sum of squares statistics follow the same logic for the pre-defined neighbourhood operationalizations the explanatory variables do not. The power of the explanatory variables differs greatly between various pre-defined operationalizations. Thus, zoning seems to play an important role in statistical modelling of mobility. We should note that the construction of these neighbourhood types differs in intent. Basområden are for planning purposes while DeSO areas, on the other hand, are intended to capture a neighbourhood that shares traits that bind them together.
Figure 12. Selected OLS regression results, individual-level determinants on neighbourhood poverty levels after move. k-nn operationalizations

Figure 13. Selected OLS regression results, Neighbourhood context determinants on neighbourhood poverty levels after move. k-nn operationalizations
Figure 14. Selected OLS regression results, individual-level determinants on neighbourhood poverty levels after move. Pre-defined operationalizations

Figure 15. Selected OLS regression results, neighbourhood context determinants on neighbourhood poverty levels after move. Pre-defined operationalizations
Geographical scale and statistical modelling

The neighbourhood definition used in the empirical parts of this thesis builds on population-based operationalizations of the neighbourhood by the use of $k$-nearest neighbours using the Equipop software. This technique has clear benefits when compared to pre-defined neighbourhood units. Many studies chose to define neighbourhoods or other spatial units of their research from official statistical units. Although these units make perfect sense in many respects – allowing for comparisons by different authors and often being used as a planning tool for cities and municipalities – it is unlikely that these units capture what residents perceive as a neighbourhood. Nor do pre-defined areas necessarily capture the spatial unit that is best suited for quantitative measurements of gentrification, segregation, mobility or accessibility. It is by no means necessary that the $k$-based individualized operationalization capture what is perceived as the neighbourhood. A $k$-based approach places the individual at the centre of their own urban context which increases the chances of capturing the neighbourhood, especially when the $k$-levels are kept low. One positive aspect with the $k$-nearest approach is the possibility to compare, or merge together, various spatial scales in one study. To compare smaller pre-defined neighbourhood operationalizations with larger ones may be problematic if these are not constructed with this specific intent.

In this chapter, I show that the spatial scale of a population-based measure has an impact on the control variables used. With a more detailed geographical scale individual-level variables have higher explanatory power, with higher $k$-levels a larger impact from the neighbourhood context variables are detected. This implies that a detailed spatial scale, in relation to residential mobility studies, could capture micro-shifts in the environment important for understanding the small-scale sorting of residential movers. This makes it a suitable operationalization for understanding the impact of income and housing tenure for individual housing and spatial trajectories. Furthermore, low $k$nn capture meaningful neighbourhoods for individuals (Haynes et al 2007), at least when discussing urban areas. Low $k$-levels may make population-based operationalization of neighbourhoods a less suitable option if the aim is to study, for example, effects of segregation, as some processes may have their roots in other (or multiple) geographical levels. Because pre-defined neighbourhoods do not follow the same logic based on size, it is reasonable to assume that zoning affects
outcomes when using these types of neighbourhood definitions. This could make them less appropriate when individual residential mobility trajectories are the concern for the study or when multiple geographical levels of scale are necessary in order to understand the research question.
Summary of the papers

Paper I

In this paper an analysis of residential mobility, and economic- and tenure-based sorting of movers in Stockholm over two periods is carried out. The first period, 1990-2001, covers a severe economic crisis with subsequent austerity policy and a dismantling of large scale subsidies to housing production and consumption. The second period, 2002-2014, starts with the first peak of tenure conversions in Stockholm thoroughly restructuring the housing tenure composition of the housing stock. With the use of a longitudinal full population data set, the paper finds that there is relative stability in the socioeconomic composition of movers but an increased economic sorting among those who move.

Some changes with regard to who moves are nevertheless detected. There are increased odds for moving among those with mid-income levels relative to other income groups, and an increase of odds for moving among co-op owners relative to those in other housing tenures.

The population with low income are increasingly likely to move to low-income neighbourhoods, while mid- and high-income earners increasingly end up elsewhere. Homeownership and co-ops in low-income neighbourhoods increasingly attract low-income residents. This is to some degree related to the lower share of rental housing across the city. But nevertheless shows the decreasing potential for housing tenure mix in rental-dominated low-income areas to attract middle-class in-movers. It is argued that the increasingly owner-dominated housing market in Stockholm produces stronger socio-spatial residential patterns through the economic sorting of movers across the whole income scale. This is strengthened by housing tenure and where these housing assets are located. In rental housing, it is found that the economic sorting of movers is less strong compared to the owner segments. Only within the rental housing segment is the share of low-income residents moving into neighbourhoods above the poorest increasing. This signals the potential in rent-controlled rental housing for increasing...
the alternatives for low-income residents to choose housing across the city. Policy addressing the low shares of rental housing throughout Stockholm is necessary if economic segregation processes are to be altered.

The four main conclusions are that (i) mid-income and co-op owners are increasingly likely to move compared to other income groups and tenure forms. One interpretation of this is that there are increased options in the housing market for these groups, changing preferences or a changing composition of the co-op owner group. (ii) Over time, co-op and homeownership owners and those with mid- and high income levels are less likely to move into low-income neighbourhoods. (iii) Low-income residents make up a larger share of in-movers to owned housing in low-income neighbourhoods, and (iv) it is increasingly within the rental segment that low-income households access housing in mid- and high-income neighbourhoods. These findings prompt two important policy conclusions. First, increased share of owned housing in low-income neighbourhoods does not attract the middle class and does not lead to less economic segregation. However, positive effects on an individual level are probable as those who enter these segments likely experience private capital accumulation and increasing possibilities to embark on a housing and spatial career. Second, an accessible and geographically spread rental housing stock is necessary if there is a political will to expand the choice of where to live in a city for those with lower income levels.

Paper II

This study contributes to our understanding of the role of socioeconomic background and housing assets for ethnic selective mobility. With the use of a full population data set covering every individual in the capital region of Sweden between 2006 and 2008, out-mobility and staying in poor neighbourhoods is analysed. The results show that housing tenure, and income status, matter more for the population with foreign background when analysing out-movers’ likelihood of leaving poor neighbourhoods. The findings indicate that those with foreign background are dependent on housing wealth and income to be able to leave poor neighbourhoods.

The results show that ethnic and socioeconomic selectivity of mobility shapes Stockholm’s poor neighbourhoods. This is in line
with earlier research findings (Bråmå 2006, Andersson 2013). The importance of flight by the socioeconomically resourceful and those with a Swedish background for segregation dynamics is underlined. In addition, in this paper it is shown that there is a stronger influence from high income for those with foreign background, compared to the Swedish background group, when analysing who leaves the poorest neighbourhoods. In contrast, findings for the Swedish background group show that lower income levels give rise to residential mobility. Thus, the traditionally mobile low-income group is moving when they belong to the native population group. This indicates the variety of resources that the native group has with which to navigate the housing market. Complementing earlier research findings, the results display the uneven impact of housing tenure for the process of selective residential mobility. These findings are robust across several alterations of the operationalization of poor neighbourhood.

However, when the criteria of what constitutes a poor neighbourhood are relaxed (lower concentrations of low-income earners) the benefits of owning a co-op for those with foreign backgrounds diminish. Instead, higher income levels are increasingly necessary to navigate the housing market and leave for non-poor neighbourhoods. When the threshold for poor neighbourhoods is relaxed, it is increasingly clear that the native part of the population is converting higher income into non-poor neighbourhoods, which the foreign background group are less interested in or able to do. The main conclusion is that owning a co-op increases the inclination for the foreign background group to leave poor neighbourhoods. This opportunity is stronger when discussing the poorest neighbourhoods. The Swedish background group is not restricted to the same extent by lower income levels as is the foreign background group. Consequences of these findings for housing policy are that choice in the housing market seems to depend on the entrance into co-ops for the foreign background group. If choice is currently available for those who own a co-op, increasing the choice of residential neighbourhoods for renters or increasing the share of co-op owners should be discussed.

Paper III

The third paper in this thesis is a study of the effect of income and housing tenure on residential mobility in neighbourhoods with high
and moderate concentrations of non-western foreign-born residents in Stockholm. By means of comparison between the non-western foreign-born, the Swedish and foreign background population groups divided into two cohorts (1993-2000 and 2001-2008), the paper provides an analysis of how income and housing tenure affect residential mobility between ethnic groups and how it develops over time. Attention is also given to the sorting of movers.

The findings are that the effects from housing tenure on moving are similar when comparing between neighbourhood types (the whole urban area, high concentration neighbourhoods and moderate concentration neighbourhoods), and that the differences between housing tenures are reduced between the cohorts.

Out-mobility destination data show that owning is important, and increasingly important, for moving towards areas where fewer non-western foreign-born residents live. There are benefits for individual housing owners, relative to renters, for spatial and housing careers. This conclusion builds on the finding displaying higher likelihood of moving into neighbourhoods with fewer non-western foreign-born residents for those who own their dwelling. This is the case for those with non-western foreign-born and foreign backgrounds in high concentration neighbourhoods. The co-op tenure is also an important determinant for the mobility of the native Swedish group in moderate concentration neighbourhoods, but less important for minority groups. The findings show increased economic sorting and the effects of greater residualisation of Stockholm’s suburban rental-dominated neighbourhoods with high concentrations of non-western foreign-born residents.

From the findings in this paper four conclusions are drawn. First, increasing similarities between the co-op and rental units, in terms of risk of moving, arguably bring into question the assumption that higher shares of co-op housing in high concentration neighbourhoods increase neighbourhood stability. Second, the impact of being a co-op owner on leaving high concentration neighbourhoods is stronger over time for those with foreign background, and especially the non-western foreign-born group. This second finding suggests that owned housing is increasingly important for the minority groups in order to extend housing choice alternatives, it also, and third, indicates that native Swedes have a variety of resources (e.g. queuing time in the rental allocation system, parental wealth, social networks or easier access to mortgages) with which to navigate the housing market. Fourth, in moderate concentration neighbourhoods, the positive influence of
owning before a move and leaving for areas with fewer non-western foreign-born residents is stronger within the native group.

The results show that a high income level is more important for the minority population compared to the native population when navigating the housing market. These results explain Andersson and Kährik's (2015) findings on lower segregation between natives and foreign-born groups within income brackets. The economic sorting is stronger over time and this also affects patterns of ethnic segregation. At the same time the results are somewhat alarming. Given that Nielsen and Hennerdal (2017) find no change in ethnic segregation levels in Stockholm over time when it is measured on the total population, the results presented here disclose the increased marginalization of the neighbourhoods in focus for this study. These neighbourhoods are gradually more dominated by minority groups, but these groups are also more often belonging to a low income group, who increasingly struggle to move beyond these neighbourhoods.

I argue that the contemporary housing market in Stockholm, and other housing markets moving towards increased provision through market mechanisms and fewer welfare state interventions in housing provision and consumption, produces residential mobility patterns increasingly characterized by economic stratification. In relation to the neighbourhoods in this study, this leads to stronger economic, political and social marginalization. It is arguably low-income foreign-born residents that suffer the most severe negative consequences of the development of the Stockholm housing market. The two policy implications from the findings are that (i) tenure mix is not necessarily wrong, but it has diminishing potential for ensuring neighbourhood stability (i.e. lowering residential turnover); and (ii) those with foreign backgrounds that are also co-op owners are, over time, increasingly likely to move out from high concentration neighbourhoods. This is not found in moderate concentration neighbourhoods. The lower ethnic selectivity of mobility destinations, and increased socioeconomic selectivity, proposes that economic factors are pivotal for exercising choice on the Stockholm housing market and that combating ethnic segregation is increasingly tied to the growing socioeconomic differences between native and (non-western) foreign background Swedes.
Concluding summary and future research

The overarching aim of this thesis was to scrutinize the link between segregation-generating residential mobility, housing tenure and income. This thesis displays systematic differences between income brackets, tenure forms and ethnic groups with regard to residential mobility and mobility outcomes. The findings point to increasing economic sorting, a stronger impact of the tenure form on neighbourhood attainment, and reduced, however large, differences between ethnic categories with regard to who moves and where movers end up. Plausible explanations for these findings are discussed in this section and related to future research endeavours that are necessary to continue analysing these trends.

Economic segregation

This thesis shows a process of enforced economic sorting through avoidance of low-income neighbourhoods by wealthier households. Thus displaying the process behind Reardon and Bichoff’s (2011) arguments about how increasing income inequality leads to economic segregation, and Drudy and Punch (2002) on the relation between marketization of housing and increasing levels of economic segregation. The preference among those with economic means seems to be for housing types and amenities that make them consume housing in locations where others from these groups live. Furthermore, it is shown in this thesis that there are constraints that restrict low-income households from entering wealthier neighbourhoods. This is an expected outcome given that higher shares of owned housing could restrict entrance to some areas for those who cannot afford to buy into these segments of the housing stock. There nevertheless seems to exist preferences among those with a low-income to move to higher-income areas as such moves are being realized within the rental housing sector. Economic constraints hinder low-income residents from realizing such moves within the owner segments of the housing stock. It thus seems that
an increasingly market-dominated housing stock restricts parts of the population from entering some types of neighbourhoods, and this affects mainly the low-income group.

Simultaneously, housing tenure and neighbourhood type before the move are more robust determinants of neighbourhood attainment over time. Earlier research findings suggest that the socioeconomic characteristics of households match the neighbourhood they move to (Hedman et al. 2011) and that uneven price development and territorial stigmatization (Smith 2015, Wacquant 2008, Peck and Tickell 2002) are important for the development of segregation. This relates to the quote from Cheshire (2012) in the introduction, where he argues that poor households do not make similar gains as the wealthier parts of the population from the way “cities generate (and distribute) welfare” (see also Wind and Hedman 2017). The ability to capitalize on the increasingly market-based housing stock is conditioned on personal income, but also increasingly on where; geographically, the housing asset is located.

Together with earlier research findings and the insights gathered in this thesis, I argue that the Stockholm housing market, and other housing markets that are losing accessible rental options, produces stronger economic segregation. This is through the process of residential mobility – affected by the geographically, socioeconomically and ethnically uneven gains from the housing market transformations experienced over the last three decades in Stockholm. Sorting by income grows stronger in the owner parts of the housing market, for low-, mid- and high-income earners alike. This is not found to the same degree in the rental sector. The fast and geographically uneven changes of the housing stock enable some households to capitalize on this development. This in turn, affects residential mobility patterns that enforce processes of economic segregation. This is why Marcinczak et al. (2015) can conclude that economic segregation is higher in Stockholm compared to what could be expected from the (rising) income inequality levels.

Since house price information has not been included in the analysis carried out, a task for future research is to more closely examine the (geographically uneven) price development of housing and how this affects residential mobility decisions and outcomes (a recent first step in Sweden has been taken by Wind and Hedman 2017).
Ethnic segregation

Money matters, but so does the household’s ability to navigate the institutional framework surrounding the housing market. These institutions have been found to be important for exercising choice in the housing market (van Kempen and Murie 2009). Marketization of housing allows for income inequality to transpire into stronger patterns of segregation (Marcinczak et al. 2015, Reardon and Bischoff 2011, Cheshire 2012, Scarpa 2015). This makes institutions that provide mortgages increasingly important on the housing market, especially when the welfare state withdraws from intervening in housing supply, and when demand-side interventions are scaled down. Discrimination from mortgage lenders (or real estate agents e.g. Molina 2015) could explain findings showing that foreign-born residents are less able to convert higher income into owned housing tenure forms (Kauppinen et al. 2016).

To some degree the enforced patterns of ethnic segregation (Amcoff et al. 2014) may be explained by increasing income disparities between those who are foreign-born and those who are native born (Statistic Sweden 2016). The development in the Stockholm housing market seems to promote stronger economic segregation patterns that also affect ethnic segregation, as foreign-born residents are increasingly, in relative terms, poor.

In this thesis I have shown that the sorting of movers in Stockholm has become increasingly structured by income levels. Furthermore, I have shown that income is more important in explaining the residential mobility out from neighbourhoods characterized by lower income levels and high shares of foreign-born residents for those with foreign backgrounds compared to the native-born part of the population. These insights display the process behind the lower ethnic segregation found within income brackets by Andersson and Kährik (2015). Nielsen and Henenrdal (2017) display no change in the level of ethnic segregation over time in Stockholm when measured on the total population. I argue that my results display a process of increased concentration of economically and politically marginalized to Stockholm’s rental-dominated suburban neighbourhoods. In relation to these results I argue that the new housing regime in Stockholm (and Sweden) and the residential mobility patterns and the economic stratification of residential mobility opportunities it gives rise to, increases the economic, political and social marginalization of neighbourhoods characterized by low income levels and high shares of foreign-born residents.
In line with the above findings I propose, that there is a selection bias into co-ops in neighbourhoods with high concentrations of foreign-born residents by a mobile part of the foreign-born population, and that these housing assets enables increased choice in housing markets that is progressively characterized by housing allocation through market mechanisms. Owned forms of housing units in neighbourhoods with higher concentrations of foreign-born residents thus enable both spatial and housing careers. It seems that this spatial housing career is relatively short. Moves beyond moderate concertation neighbourhoods, or socioeconomically more mixed neighbourhoods, are not being realized by foreign background residents if they do not gain a higher income level, when compared to the native part of the Stockholm population.

I draw the conclusion that combating ethnic segregation is today even more closely related to combating the socioeconomic differences between the foreign-born and native-born parts of the population. The ethnic differences disclosed may also be related to the access to key institutions (e.g. mortgage institutions) in the (new) housing market, lending support to the place stratification framework of explaining a large part of ethnic segregation, and the underlying residential mobility trajectories, with discrimination.

In closing this research has found that, the geographically, socioeconomically and ethnically uneven gains from the transformation of Stockholm’s housing market produce stronger economic segregation through clustering of income groups across the whole income spectra. These transformations also strengthen the political, social and economic marginalization of households with few possibilities to enter the market, and of those neighbourhoods that political ambitions to counter-act segregation focuses on. The traditionally mobile groups with low income levels in rented housing have fewer options in the housing market. Important differences between ethnic groups are most clearly visible among those with low income levels in rental housing, whereas those with native background seem to possess resources (other than higher individual income) that help them in their housing careers.

Future research needs to seek knowledge on the position of younger and/or foreign background households, two aspects are of importance. How do parental wealth and parental housing assets affect the housing consumption choices of young adults. Is there parental-aided flight or avoidance? And, the importance of, and the varying possibilities to access, mortgage-lending institutions: Who
have access to the increasingly important mortgage-lending institutions?

Future research is furthermore encouraged to seek qualitative knowledge on foreign-born owner households. Is there selection bias into owned housing tenure forms from a mobile part of the population and to what extent does owning present possibilities through private capital accumulation?

Operationalizing the *neighbourhood*

The neighbourhood operationalizations used in the empirical parts of this thesis builds on individualized operationalizations of neighbourhood by the use of *k*-nearest neighbours. This technique, to use a population-based neighbourhood operationalization, has some benefits when compared to pre-defined neighbourhood units. Even if pre-defined neighbourhoods are suitable for many types of studies – not least as they are appropriate for studying neighbourhood change and planning practices – pre-defined neighbourhoods do not necessarily capture what is perceived to be a neighbourhood by the population (Haynes et al. 2007). Population-based measurements have greater potential to capture what is perceived as one’s own neighbourhood as it is a neighbourhood operationalization based on individuals’ geographical location and that a neighbourhood often is perceived as the individuals own surrounding (Östh 2014). Haynes et al. (2007) find that individuals usually talks about their neighbourhood and meaning an area encapsulating about the 500 closest neighbours. For this study this is important.

Two main reasons are (i) since there is a relation between a household’s status and the neighbourhood socioeconomic composition that households react to (Mustered et al 2017), it is reasonable that the neighbourhood operationalization tries to capture a neighbourhood meaningful for such sources of discontent. Secondly (ii), residential mobility outcomes are structured by economic, social, demographic and ethnic factors (Hedman et al 2011). When larger geographical delimitations are used the neighbourhood will become more mixed (ethnically, socially, economically and by tenure). With a geographically detailed operationalization of what constitutes the neighbourhood context the micro-shifts in the environment and the detailed residential sorting can be captured. This second reason to use small-scale
population-based operationalizations of the neighbourhood unit is also a potential source of limitation.

For the benefit of future research, when making choices about neighbourhood operationalizations, this thesis has shown that individual level determinants have a stronger impact in statistical models when the geographical level of scale is small, compared to when operationalizations of the neighbourhood unit is done at larger geographical aggregates. This implies that a detailed spatial scale, in relation to residential mobility studies, could capture micro-shifts in the environment that are important for understanding the small-scale sorting of residential movers but risks obscuring larger scale processes of social mix. The meaningful scale of social mix may be debated. Where are processes of socialisation and stigmatization taking place, and at what geographical scale-level should policy address residential segregation and sorting? There are no conclusive answers to these questions and different processes take place at different geographical scales (e.g. in schools, in the direct surrounding, at the local play-ground or in city districts). Maybe analysing residential mobility and processes of segregation with a neighbourhood operationalization of only a few hundred neighbours is too small scale for any meaningful conclusions to be drawn for processes associated with the negative effects of segregation. The principles guiding the choices of neighbourhood operationalizations in this thesis nevertheless rest on the notion that individuals talk about their neighbourhood meaning a very small geographical area.

Pre-defined neighbourhoods do not have similar structure in the statistical model outputs when comparing different scale-levels, it is reasonable to assume that zoning affects outcomes when using these types of neighbourhood definitions, this could make them less appropriate when individual residential mobility trajectories are the concern for the study. But using pre-defined units as an operationalization of neighbourhood makes sense if the analysis is concerned with planning and neighbourhood change. The logic of construction of the neighbourhood operationalization needs to be taken into account. If there are pre-defined planning units used by the municipality these may be suitable units for analysing planning practice. Statistic Sweden's new (2018) DeSO unit could, for Swedish concerns be suitable units for analysis in comparative neighbourhood change work across Sweden as the logic of constructing them are used across the country, at least in relation to the older SAMS operationalization.
A population-based measure of neighbourhood captures micro-shifts that are increasingly important when housing type and housing tenure mix ambitions are to be analysed. Then $k$-based measurements, and the benefits of scalable neighbourhoods, are important as they provide better tools to estimate impact from mixing policies. Furthermore, the $k$-based measures allow us to find suitable neighbourhood units to analyse based on the variation in the empirical material and how aggregated variations are constituted. Empirically informed, individually centred measurements that do not necessarily impose arbitrary boundaries into statistical aggregates are a feasible strategy when analysing residential (small-scale) sorting. This could reduce some of the aspects associated with the Modifiable Areal Unit Problem of zoning (Openshaw 1984). We may then approach neighbourhood operationalizations that have meaning for individuals through the use of "bespoke" neighbourhoods, i.e. neighbourhoods defined for each individual in the data (Johnston et al. 2004).

Policy implications
This thesis has shown that residential mobility is increasingly taking place between similar neighbourhoods in terms of the socioeconomic composition of the residents inhabiting them. I argue that this is the case, at least partly, due to the increased share of market-based housing and the concentration of affordable (rental) options in fewer and more peripheral housing areas. In the owner segments of the housing market, sorting by income is growing stronger, not only in the upper and lower ends of the neighbourhood hierarchy, but also in mid-income neighbourhoods. The rental housing sector does not display the same strict sorting by income levels.

Tackling processes of economic segregation
The level of economic residential segregation, and the processes of residential mobility that reproduce and increase economic segregation, depend on three important and linked parts. Reardon and Bischoff (2011:1102) identified income-correlated residential preferences, an income-based housing market and housing policies that link income to residential location as important for residential segregation by economic resources of the households.
Preferences have not been studied in this thesis. But, the processes of residential mobility contributing to economic sorting have been studied. The studies carried out in this thesis span a long period during which the Stockholm housing regime has become increasingly income-based. The research also covers a period where housing policy has contributed to effectively concentrate affordable housing options to fewer neighbourhoods, while the tax-system has favoured the owner segments increasingly linking the ability to pay to housing location.

Tackling economic segregation comes down to whether Swedish society is concerned with the (increasing) spatial separation of income groups. If it is deemed to be a problem, actions to disrupt the link between income and residential outcomes have to be taken. Either this is done through increasing the share of affordability mix (perhaps with income-related eligibility demands or by influencing pricing on dwellings) or through efforts to increase the capacity to consume housing for those with lower income levels in less affordable locations in the city. I will in the following relate these two broad avenues of housing policy to the findings in this thesis.

First, increasing the demand-side subsidies to enable more people to enter co-op or homeownership as proposed by Koliev and Lind (2017) is a potential way to break mechanisms of economic segregation, should low-income residents enter owned housing in areas with few low-income residents. The findings in this thesis show that low-income residents enter co-op and homeownership housing in relatively poor neighbourhoods and increasingly so over time. Probably, due to increasing price differences between various locations across the city, or low availability of rental housing units (Andersson and Magnusson Turner 2014). Not only must there be mechanisms to cope with housing market volatility in a system of demand-side interventions in order to avoid large-scale evictions, or lock-in effects, if (when?) mortgage levels increase but also there is the potential negative effect that demand-side interventions drive prices upwards, thus escalating state and household costs for housing.

With the influence that broad demand-side interventions can have on the price development of housing, they need to be combined with other measures or be limited to a smaller group. If limited to a smaller group of low-income households the effects on economic segregation may be meagre. Such policy could of course be very beneficial for individual households that may consume housing more in accordance with their preferences (cf. Moving to
opportunity program in the U.S e.g. Sampson 2008) but any larger effect on the patterns of economic segregation seems unlikely.

The second broad intervention is supply-side subsidies for the production of housing. The findings disclosed in this thesis show that renters are less likely to enter neighbourhoods where the income levels are high. Low-income earners are also less likely over time to move into mid- and high-income areas. This may be attributed to the lower share of affordable housing options in these types of neighbourhoods. Low cost co-op housing are rare in mid- and high-income areas and rental options, in Sweden regulated through the use-value principle of rent-setting effectively countering market rents, are disappearing through housing tenure conversions. Within the rental segment it is found that low income households increase their share of in-movers to mid- and high-income neighbourhoods displaying the potential in the rental segment to attract and present possibilities for low-income households to enter mid- to high-income neighbourhoods. It is not necessarily so that increased shares of rental housing units in attractive locations will decrease economic segregation. It certainly will not affect economic segregation if these housing units are inhabited by those with high income levels. What such a policy strategy would do most definitely, is to offer at least the theoretical possibility for achieving economically mixed neighbourhoods by not contributing to strengthening processes of economic segregation by excluding some population groups from the possibility to enter these housing units and neighbourhoods.

If Stockholm’s politicians want to reduce economic segregation, one potential way forward, and I argue the most suitable way, is to increase the share of rental housing units within the system where the use-value principle guides rent-setting negotiations. In relation to this suggestion it should be noted that the higher shares of low-income residents moving into rented housing in mid- and high-income neighbourhoods is of course explained in part by the fact that fewer high-income earners choose rented housing. One potential obstacle for increasing production of affordable rental options is that the rental sector is not profitable enough for builders. Thus, policy makers need to address the ways in which goals of profits could be matched or aid production in other ways to increase the pace of construction of affordable rental options across the city.
Marginalized neighbourhoods

Results displayed in the empirical contributions show that tenure diversification strategies in marginalized neighbourhoods do not necessarily have any effect on lowering residential mobility frequencies. Nor do co-op or homeownership housing attract mid- or high-income earners to marginalized neighbourhoods. The gap in mobility frequencies in marginalized neighbourhoods between rented and co-op housing is closing. This gap has been replaced with increasing socioeconomic selectivity of mobility, and by socioeconomic- and tenure-based selectivity of mobility destinations. Those with foreign background are more inclined to leave for non-poor neighbourhoods and neighbourhoods with lower concentrations of foreign-born residents if they are co-op owners compared to renters. Economic selectivity is also strong within minority groups.

This thesis find low support for any direct effects on ethnic and economic segregation from the political ambitions to increased shares of co-ops and homeownership housing in rental dominated neighbourhoods (e.g. Palm et al. 2011, Social democrats; Björklund et al. 2014, Liberal Party). Especially if the focus only is on increasing the share of owned housing in marginalized neighbourhoods and not related to the development in the rest of the city. This insight mirrors those from evaluations of area-based policy initiatives with the aim to decrease segregation in Sweden (Urban 2005, SOU 2005:29). There are few indications that segregation is decreasing, or that neighbourhood mix is achieved if policy interventions solely focus on the neighbourhoods that are suffering the most negative consequences from segregation.

It seems plausible that there is selection bias into co-op owning from a part of the foreign-born population that are likely to move. This is not a problem per se, what is a problem is that the amount of choice regarding the housing market available to those born in other countries is conditioned on owning. Owned housing does not seem to accommodate preferences for owning in poor neighbourhoods but rather is a prerequisite to be able to move and embark on a housing and spatial career, at least for the part of the population with foreign background.

From the above findings it is suggested that housing policy directs its focus when discussing housing tenure to a broader geographical horizon. Policy needs to take into account the role of co-ops and income as well as the role of the rental sector for the changing patterns of residential mobility affecting segregation.
It is likely that economic means and housing assets increasingly affect who is able to act on their moving desires, and the empirical contributions in this thesis show a stronger relationship over time between being a co-op owner and leaving neighbourhoods with higher concentrations of foreign-born residents. The results displayed in this thesis shows that opportunities to choose owned housing increase for those of foreign descent only if they choose within the lower parts of the “neighbourhood hierarchy”. Thereafter, sorting according to income is increasingly important, and as long as there are large, and growing, income disparities between foreign-born and native parts of the population (Statistics Sweden 2016), ethnic segregation will persist. And, as long as there are large and growing house price differences between neighbourhoods, household income is likely to be structuring neighbourhood attainment and the possibility to act on the family’s housing preferences.

In the rental segment, queuing time is the main resource necessary to demand rental housing and act according to preferences for neighbourhood. Time in the rental queuing system almost by definition favours natives, as they have usually had more time to enter the queuing system. One plausible way to even out the possibilities within the rental sector is simply to assign queuing time to foreign-born residents when they get citizenship. Again, this suggestion is not worth anything for ethnic mix strategies if rental options are not available throughout the city.

It seems that, regardless of whether the focus is on the owned or rented housing sectors, if there were a political will to extend choice in the housing market for the low-income foreign-born groups, it would necessitate supply-side and/or demand-side support.

Simultaneously, the low inflow of socioeconomically stronger households, and the selective out-mobility of resourceful households, points to low attractiveness of Stockholm’s marginalized neighbourhoods. Increasing the attractiveness could have the potential effect of making people want to move there, making them stay and in turn lowering residential turnover. Even if this is not the result, achieving better living environments throughout the city is an important goal in itself.

Knowledge gathered in this thesis, and these proposed future research topics, could inform policy so as to increase the influence of preferences in the housing market rather than promote restrictions based on income.
Svensk sammanfattning

I denna avhandling är de empiriska bidragen inriktade på att undersöka betydelsen av bostadens upplåtelseform och individers disponibla inkomst för flyttningar inom Stockholm. Undersökningarna syftar till att belysa dels vad dessa två resurser betyder för hur människor flyttar, om detta skiljer sig mellan olika grupper i populationen (med avseende på etnisk bakgrund) och dels hur dessa förklaringsvariablers påverkan på rörligheten på bostadsmarknaden har förändrats över tid. Utifrån de samlade insikterna från de tre delstudierna, som utgör avhandlingens empiriska bidrag, förs en diskussion om hur förändringarna på Stockholms bostadsmarknad kan tänkas påverka selektiva mobilitetsmönster som omformar, förstärker och reproducerar både etnisk och ekonomisk segregation på bostadsmarknaden.

I denna avhandling är det en av de viktigare processerna för att förstå utvecklingen av boendesegregation (åtskillnaden av olika populationsgrupper på bostadsmarkanden) som står i fokus, således hur rörligheten mellan olika typer av bostadsområden skiljer sig åt mellan olika grupper i populationen. Studieområdet kräver därför vissa definitioner, till exempel av vad en flytt är (i denna avhandling definerat som att byta bostad över ett avstånd om minst 200 meter) och vad som skiljer en grupp från en annan. I denna studie är inkomstgrupper definierade efter inkomstdeciler på länsnivå, indelade i hög (decil 8-10), medel (decil 4-7) och låg (decil 1-3) inkomst. Etniska grupper är indelade i svensk bakgrund (födda i Sverige med minst en svenskfödd förälder), utländsk bakgrund (utlandsfödda eller svenskfödda med två utlandsfödda föräldrar) samt icke-västliga utlandsfödda (födda i Sydamerika, Afrika eller Asien). Dessutom är det av vikt att definiera vad ett bostadsområde är. I denna avhandling har utgångspunkten varit att studera individernas kontexter och låta dessa kontexter utgöra operationaliseringen av begreppet bostadsområde. För att operationalisera begreppet bostadsområde har därför en populationbaserad närmsta-grannar teknik använts (k-nearest neighbours; knn). I korthet har således attribut hos varje individs närmsta grannar
används för att bestämma en kontext (andelen grannar inom vissa inkomstnivåer eller andelen icke-västliga utlandsfödda) i vilken individen befinner sig (med hjälp av programmet Equipop (Östh 2014)). I de empiriska bidragen är detta de 500 närmsta grannarna (Delstudie I och II) eller de 1600 närmsta grannarna (Delstudie III). Ett sekundärt syfte för denna avhandling är att undersöka vilka konsekvenser knn-operationaliseringar av bostadsområde kan ha för statistisk modellering av mobilitetsdata, vilka konsekvenser har antalet grannar som inkluderas i knn-operationaliseringen av bostadsområde, samt hur detta påverkar olika typer av förklaringsvariabler. Insikter kring denna typ av operationalisering jämförs också med fördefinierade enheter för operationalisering av bostadsområde vanliga i en svensk kontext, SAMS-områden, Stockholms läns Basområde samt de av SCB nykonstruerade DeSO-områdena.


Det som karakteriserar Stockholms bostadsmarknad, och mycket av övriga Sveriges, är förskjutningen av synen på bostaden som en social rättighet till att behandlas som vilken handelsvara som helst. Detta ligger helt i linje med processer som sker internationellt (för USA se Rolnik 2013, Europa exempelvis Arbaci 2007, Elsinga et al 2014, för svenska forskningsbidrag se till exempel Grundström och

En viss förändring i den demografiska strukturen jämfört med utvecklingen av bostadsstocken bör poängteras som viktigt, även om förändringarna är små. Det sker en ökning av yngre par utan barn och par i åldern 40-65 med hemmaboende barn på Stockholms bostadsmarknad vilket kan ha en påverkan på vilka typer av bostäder som efterfrågas. Den utveckling som schematiskt har beskrivits ovan pekar på större möjligheter för de grupper som har kapital, eller kan låna kapital, att följa sina bostadspreferenser medan grupper som står utan sådana möjligheter har färre val på bostadsmarknaden. Särskilt relevant blir denna förskjutning i relation till utsatta bostadsområden. De flesta politiska partier i Sverige och i Stockholm anser att det är viktigt att öka andelen bostadsrätter (och egnahem) i dessa utsatta bostadsmråden. Detta för att minska utflyttningen av resurstarka hushåll som kan bidrar till social mix och med politiskt och socialt kapital till dessa områden. Dessutom anses bostadsrätter kunna locka till sig inflyttare av en annan karaktär än de som normalt söker sig till hyressegmenten i dessa områden.

Den utveckling som beskrivits ovan torde påverka segregationen i staden. Den ekonomiska segregationen växer i Stockholm. Andersson och Kährik (2015) visar till exempel att främst koncentrationen av de med låga inkomster växer under 1990-talet, medan koncentrationen av rikare hushåll är starkare under 2000-talet. I relation till utvecklingen beskriiven ovan förefaller det så att koncentrationen av låginkomsthushåll är starkare i tider av ekonomisk stagnation och då välfärdsstaten drar sig tillbaka från bostadsmarknaden medan koncentrationen av rikare hushåll sker...
efter en stark stegning av inkomstskillnaderna och då en växande andel av bostäderna fördelas med hjälp av marknaden.


Denna avhandlings huvudsakliga syfte är att undersöka hur den selektiva mobiliteten på bostadsmarknaden har förändrats över tid, med särskild hänsyn tagen till effekten av bostadens upplåtelseform och individens inkomster för mobilitetsmönster. Avhandlingen bidrar till ytterligare förståelse för segregationsgenererande flyttningar på en förändrad bostadsmarknad genom tre delstudier.

Delstudier

Den första studien undersöker den ekonomiska sorteringens utveckling över tid i hela populationen. Forskningsfrågan som analyseras är: På vilket sätt har bostadens upplåtelseform och hushållens inkomster fått ändrad betydelse för flyttenägenheten och flyttdestinationer i Stockholm mellan 1990 och 2014?

Den andra studien fokuserar främst på skillnader mellan de med svensk respektive utländsk bakgrund samt har ett kortare tidsperspektiv. Frågan som analyseras är: På vilket sätt har upplåtelseformen och inkomster skilda betydelser för de med svensk
respektive utländsk bakgrund för flytta inom och utifrån områden som karaktseriseras av låga inkomster?

Den tredje studien analyserar utvecklingen över tid för etnisk sortering av de som lämnar områden med höga respektive medelhöga andelar av icke-västliga utlandsfödda. Två frågor analyseras, (i) hur påverkar upplåtelseformen sannolikheten att flytta i olika områdestyper och skiljer sig detta åt mellan olika etniska grupper och förändras det över tid? Samt (ii) på vilket sätt har upplåtelseform och inkomster betydelse för att lämna områden med högre andelar utlandsfödda och skiljer sig detta mellan olika etniska grupper och över tid?

I den första studien visar resultaten (1-4) på (1) starkare samband mellan inkomster och hushållens flyttmönster över tid (jämförelse mellan perioden 1990-2001 och 2002-2014). Det har varit belagt sedan tidigare att inkomster har en stark betydelse för var individer flyttar (Hedman et al 2011) men bidraget i denna studie visar att detta förhållande stärks över tid i Stockholm. Vidare (2) visas i denna delstudie att högre inkomster är starkare sammankopplad med att flytta överhuvudtaget i den senare perioden. Detta betyder att den traditionellt mobila låginkomstgruppen i hyresrätt har färre möjligheter att flytta och anpassa sitt boende till förändrade preferenser. Även fast låginkomsttagare i hyresrätt är den mest mobila gruppen minskar skillnaderna över tid, vilket visar att de med höga och medelhöga inkomster är mer benägna att flytta i den senare delen av perioden som analysen spänner över. Som ett tredje (3) empiriskt bidrag står det klart i analysen att det finns ett över tid starkare samband mellan att äga sin bostad och flytta mot mer välbärgade områden, detta samband förstärks med högre inkomst och i vilken geografisk kontext bostaden som ägs är belägen i. Det spelar alltså stor roll var hushållet äger sin bostad för var hushållet flyttar. Att detta samband är starkare över tid visar på att förändringarna på Stockholms bostadsmarknad genererar privat kapitalackumulation i boendet som hushållen kan utnyttja för vidare bostadskarriär, men att detta privata kapital är mer ojämnt fördelat i den senare delen av studieperioden. Detta pekar på hur det samtida urbana Stockholm generrar ojämna möjligheter för hushåll att agera på sina preferenser och byta bostad. Som en sista empirisk insikt (4) i denna studie kan det slås fast att den ekonomiska sorteringen av individer som flyttar är starkare i bostadsrätts- och egnahemssegmenten av bostadsmarknaden än i hyressegmentet. Det är bara inom hyressegmentet som låginkomsttagare ökar i andelen inflyttare till rikare områden. Dessutom är en allt större andel av de
som flyttar in i bostadsrätter och egnahem i fattigare områden låginkomsttagare, vilket visar på att ökningen av bostadsrätter i hyresdominerade låginkomstområden i större utsträckning lockar låginkomsttagare och inte medel- eller höginkomsttagare som de politiska ambitionerna med blandning av upplåtelseformer avsett. Det skall dock sägas att dessa bostadsrätter troligen är ett första steg på en bostadskarriär för många med lägre inkomster då de inte kan finna hyresrätter eller bostadsrätter till överkomliga priser på andra platser i staden, men något steg mot en minskad ekonomisk segregation är inte ökningen av bostadsrätter i hyresdominerade utatta områden.

Den andra delstudien fokuserar på de områdena med hög (> 2 S.D. över medel) andel fattiga (<60% av disponibel medianinkomst). Skillnaderna mellan grupperna med svensk och utländsk bakgrund står i fokus med hänsyn till upplåtelseformens och inkomsternas betydelse för sannolikheten att lämna dessa områden. Undersökningen visar att de med utländsk bakgrund har större sannolikhet att lämna fattiga områden om de äger sitt boende innan flytt, vilket också är fallet om de har högre inkomster. Gruppen med svensk bakgrund uppvisar också starka kopplingar mellan att äga sitt boende och lämna fattiga områden, men höga inkomster är inte lika starkt kopplat till att lämna för denna grupp. Slutatsen som dras är att de med utländsk bakgrund är beroende av att ha privat kapitalackumulation i boendet, samt lyckats komma in på bolånemarknaden för att kunna lämna dessa områden. De med svensk bakgrund förefaller ha flera möjliga resurser de kan utnyttja för att navigera bostadsmarknaden och lämna dessa typer av områden. Att en hög inkomst inte är tillräckligt för att de med utländsk bakgrund skall flytta till mer välbärgade områden tyder på svårigheter att få tillgång till bostäder (att hyra eller att köpa) på andra platser än i de mest utpraglade låginkomstområdena. Denna grupp verkar behöva komma in på bolånemarknaden, sannolikt är trösklarna in i lånemarknaden högre för denna grupp på grund av diskriminering och sämre anknytning till arbetsmarknaden. Det skall också påpekas att då operationaliseringen av vad som definieras som ett låg-inkomstområde görs mindre strikt, ökar vikten av högre inkomster och de positiva effekterna av att äga för gruppen med utländsk bakgrund minskar.

Den tredje studien är en påbyggnad av den andra, i det att den analyseras utvecklingen över tid av vikten av att hyra och att ha höga inkomster för att lämna utatta områden. Dock adderas en ytterligare etnisk grupp (icke-västligt utlandsfödda) samt att andra
operationaliseringar av bostadsområde används, beräknat på andelen icke-västliga utlandsfödda bland de 1600 närmsta grannarna. Hög andel icke-västliga utlandsfödda (över 1 S.D. över medel) kategoriseras som områden med hög koncentration medan mättlig koncentration är områden där andelen icke-västliga utlandsfödda är över medel sett utifrån Stor-Stockholm. Dessutom studeras i ett första steg om omflyttningstakten i koncentrationsområdena är större än i resten av staden, särskilt med hänsyn till hur olika upplåtelseformer skiljer sig mellan områdestyper.

Resultaten (1-5) i analysen visar (1) att skillnaden mellan olika bostadsområdestyper och sannolikheten att flytta varierar marginellt, men att i de områdena med en hög andel utlandsfödda är sannolikheten för att flytta starkare än i resten av staden i den senare perioden. Det finns således tecken på att dessa områden blivit något mindre attraktiva för befolkningen och att flyttenägenheten ökar. (2) Sannolikheten att flytta i ägda boendeformer är också något högre i områden med hög eller medelhög andel icke-västliga utlandsfödda jämfört med resten av staden. Det finns således tecken på att omflyttningen ökar i utsatta områden samt att ökande andelar ägt boende inte skulle motverka en hög omflyttningstakt i dessa områden. Intressanta skillnader mellan etniska grupper är att de med utländsk bakgrund och gruppen icke-västliga utlandsfödda har en starkare ökningstakt av utflyttningsrisken i områden med höga andelar med icke-västlig utlandsfödda. (3) I områden med medelhöga andelar icke-västliga utlandsfödda är det däremot vanligare för dem med svensk bakgrund att ha en snabb omflyttningstakt. När flyttdestinationer analyseras visar resultaten att (4) skillnaderna i flyttdestinationer mellan de med svensk bakgrund och andra grupper är stora men minskar över tid, istället (5) stärks den ekonomiska och upplåtelseformsbaserade sorteringen. De med högre inkomster tenderar att lämna utsatta områden, vilket också är fallet med de som äger sitt boende innan en flytt. Resultaten visar att ägt boende har vissa positiva effekter för de grupperna med utländsk bakgrund samt icke-västliga utlandsfödda i relation till möjligheten att lämna områden med högre andelar utlandsfödda. Dock skall det påpekas att dessa positiva effekter inte är särskilt starka i områden med medelhöga koncentrationer av icke-västliga utlandsfödda utan att högre inkomstnivåer är avsevärt mycket viktigare för att lämna dessa områden. Det finns etniska hierarkier i möjligheten att lämna områden med högre andelar utlandsfödda, där de med svensk bakgrund förefaller ha störst möjligheter, eller starkare preferenser, för att lämna. Dock minskar

Slutsatser

I relation till tidigare forskning är resultaten i denna avhandling viktiga för två forskningsfält, det som studerar relationen mellan processer av ekonomisk/etnisk segregation på bostadsmarknaden och bostadsregimen samt fältet som undersöker varför och hur hushåll flyttar. Resultaten i studien visar processer bakomliggande den ökande ekonomiska segregationen i Stockholm. Särskilt viktigt är det förstärkta sambandet mellan inkomster och tillgångar (bostaden) och flyttdestinationer. Det är helt enkelt större sannolikhet att en flyttare hamnar i områden som är karakteriserade av liknande inkomster som hushållet har. Detta har sin förklaring i den förändrade bostadsmarknaden i Stockholm. I och med att staden förlorar relativt billig hyresrätter som ersatts med relativt dyra bostadsrätter sker en geografiskt betingad kapitalackumulation i boendet som hjälper de som har dessa resurser att vidare navigera bostadsmarknaden, därmed bidrar 2000-talets utveckling av bostadsmarknaden till en stärkt ekonomisk segregation i synnerhet på grund av att de som besitter resurser (finansiella) nyttjar dessa (och kan nyttja dessa) till att bosätta sig i områden där medelinkomsten är relativt hög. De med lägre inkomster har mindre
möjligheter att välja var de skall bosätta sig. Denna inkomstbaserade sortering påverkas och förstärks av att äga, samt var den geografiskt bundna kapitaltillgången är lokaliserad. Att äga i relativt fattiga områden är såklart bättre än att hyra, om möjligheten att välja ett nytt bostadsområde är målet. Dock finns det en geografisk hierarki av var dessa positiva effekter är starkast. Analysen i denna avhandling ger vid hand att över tid genererar Stockholms bostadsmarknad starkare ekonomiskt och geografiskt stratifierade flyttningar.

I relation till etnisk segregation, och särskilt i relation till områden som i den politiska diskursen omnämnts som utsatta, visar studiens samlade resultat på en ekonomiskt, etnisk och upplåtelseformsbaserad sortering av flyttare ut från dessa områden, samt en ökning av inflyttare med relativt låga inkomstnivåer till dessa områden. Den ökande inflyttningen till utsatta områden av de som har lägre inkomster sker inom alla upplåtelseformer men det är en iögonfallande ökning inom de ägda upplåtelseformerna.


Metod

För att operationalisera begreppet bostadsområde har en populationbaserad närmsta-grannar teknik använts. I korthet har således attribut hos varje individs närmsta grannar använts för att bestämma en kontext (andelen med låga inkomster eller andel utlandsfödda) i vilken individen befinner sig. När en sådan typ av operationalisering genomförs hamnar individen i centrum för det bostadsområde som denne befinner sig i, till skillnad från när fördefinierade bostadsområdesoperationaliseringar används, då bara ett fåtal individer är i centrum för ett område. I metodavsnittet i denna avhandling genomförs en empirisk undersökning av vad olika typer av fördefinierade bostadsområden samt ett antal olika kn-operationaliseringar har för inverkan på statistiska modeller av mobilitet i Stockholm. I korthet visar, i enlighet med litteraturen kring the Modifiable Areal Unit problem (MAUP) att mindre geografiska aggregeringar av bostadsområde varierar mer mellan olika områden, stora områden har mindre variation mellan områdena och större variation inom områdena. Detta är förväntat och gäller både för fördefinierade områden (i denna studie SAMS, Basområden och DeSO) och för k-baserade mått (i denna studie k=500, 1000, 2000, 4000). Undersökningen består vidare i genomförandet av en regressionsanalys av flyttare inom Stockholmsområdet 2006-2008 där andelen fattiga i bostadsområdet flyttaren bor i 2008 utgör den beroende variabeln. Resultat från analysen visar att i modeller med låga k-nivåer är genomslaget av individvariabler större och dessa har generellt högre koefficienter medan områdevariabler har högre förklaringsgrad med större k-nivåer. Detta gäller också de fördefinierade områden även fast det blir tydligt att hur gränserna är dragna är av vikt för utfallet i modellerna med dessa typer av operationaliseringar. Vinsterna med de val som gjorts i denna avhandling beträffande operationaliseringen av bostadsområdet är att låga k fångar en
småskalig stratifiering av bostadsområden vilket således fångar vad tidigare forskning visat vara individers upplevda bostadsområde (Heynes et al 2007).

Vidare visar det starka sambandet mellan $k$-nivån och modellutfall hur en $k$-baserad teknik för operationalisering av bostadsområden kan ske på olika geografiska skalar beroende på forskningsfråga och att det är möjligt att fånga processer på flera nivåer i ett samlat och kombinerat mått av bostadsområde med flera geografiska skalar. Detta är inte möjligt med den typ av fördefinierade områden som finns att tillgå i Stockholm då dessa dels är skapade med olika syften (maximera variation mellan områden DeSO, eller för planering Basområden) dock finns det såklart vinstер med de fördefinierade områdestyperna. Men användningen bör ta hänsyn till logiken för deras respektive konstruktion. I relation till resultaten i denna avhandling bör det uppmärksammas att den låga $k$-nivån som används genererar en starkare förklaringsgrad till individvariable, och med att samma logik för konstruktionen av bostadsområden har använts över tid kan resultaten anses tillförbättra då bostadsområdena inte har ändrat sin inbördes hierarki. Ombyggnad, tillbyggnad och stadsförändringar i fördefinierade områden kan ställa till problem med jämförbarhet över tid medan $k$-baserade operationaliseringar inte nödvändigtvis är behäftade med samma problem. Dock skall det påpekas att ett fattigt område, med en relationell definition som används (2 standardavvikelse över medel andel fattiga (<60% av medianinkomst)) inte heller är samma i absoluta termer över tid. Det viktigaste för denna avhandlings vidkommande är att mindre geografisk skala kan fånga individers upplevelse av sitt område om de är individbaserade. Det är inte med nödvändighet så, men genom att placera individen i centrum för sitt eget bostadsområde ökar sannolikheten och samtidigt ökar sannolikheten att träffa rätt i en studie av den småskaliga sorteringen av flyttare med hänsyn till inverkan från inkomst och upplåtelseform. Vidare ger en sådan definition av bostadsområde, samt de flyttmönster som kan urskiljas, en god inblick i hur sortering sker och hur policy bör adressera segregation i och med att ett område med betydelse för individen också torde vara det område som policy bör adressera segregation. Individbaserade områdesdefinitioner som är småskaliga missar i detta hänseende processer beroende av stigmatisering som sker på annan geografisk nivå.
Policy
Två insikter bör lyftas fram för framtida formering av policy i relation till kopplingen mellan den förändrade bostadsmarknaden och selektiva mobilitetsmönster på Stockholms bostadsmarknad. För det första, att öka andelen bostadsrätter i hyresdominerade områden med hög andel låginkomsttagare och människor födda i utlandet kan ha positiva effekter. De positiva effekterna består i att de som flyttar in i dessa bostadsrätter oftare än de som hyr lämnar dessa områden efter en flytt, vilket tyder på fler valmöjligheter. Det finns således tecken på att den privata kapitalackumulation i ägt boende kan omvandlas till en spatial bostadskarriär. I och med att inflyttningen till bostadsrätter och egnahem i utsvagade områden i allt högre grad sker av de med låga inkomster visar att den ökande ekonomiska segregationen inte kan brytas med hjälp av fler bostadsrätter i hyresdominerande områden. Det förefaller så att det sker en selektion in i bostadsrätten av de som har möjlighet i dessa områden, och de använder det privata kapital som bostaden genererar för att möjliggöra flytta till andra områden. Denna möjlighet saknar de som väljer att hyra, eller de som måste hyra på grund av att de inte kan få ihop tillräckligt kapital från arbete och lån för att köpa in sig på bostadsrättssystemet. Om valmöjligheter för alla individer är av vikt, och då resultaten i denna studie visar att den ekonomiska sorteringen är starkare i de ägda segmenten, bör således möjligheterna att välja bostadsområde inom hyressegmentet förstärkas genom större produktion av hyresrätter i hela staden.

En andra insikt är att Stockholms bostadsmarknad producerar ojämna möjligheter mellan bostadsrättsinnehavare och de som bor i hyresrätt. Dock skall det också påpekas att de positiva effekterna av att äga sitt boende förefaller vara geografiskt stratifierat vilket genererar allt större skillnader i kapitaltillgång mellan olika områden vilket förstärker stratifieringen av flytta också via geografiska skillnader i kapitalackumulation i boendet. Detta förefaller påverka etniska grupper olika på grund av möjligheten att välja bostadsrätten över hyresrätten skiljer sig mellan olika grupper. Skillnader mellan bostadsområden ökar, vilket leder till färre möjligheter att flytta mellan olika områden, särskilt i de ägda segmenten av bostadsbeständet.

De mönster som blottläggs i denna avhandling visar på en ökning av de geografiska, socioekonomiska och etniskt stratifierade möjligheterna att navigera den nya bostadsmarknaden i Stockholm. Dessa faktorer har funnits tidigare men förstärkts av utvecklingen mot allt högre grad av marknadsanpassning av bostadsstocken. Om
segregationen på Stockholms bostadsmarknad är av vikt för framtida policyformering bör den förstärka kopplingen mellan bostadens upplåtelseform, individernas inkomster och bostadsområdesutfall adresseras. Detta kan göras genom att fokusera på en förstärkt produktion av hyresrätter i stadens alla delar som öppnar upp möjligheten för de med låga inkomster att konsumera boende på flera olika platser, detta kan också dämpa prisstegringen på bostadsmarknaden om hyresrätten är relativt billig. En formering av policy med ökat ägande, särskilt i vissa utsatta områden, kommer att generera vinster på individnivå (åtminstone relativt till de som hyr) men har små möjligheter att påverka större processer av etnisk och socioekonomisk segregation. Det finns också ett behov av mer kunskaper om den institutionella praxis som existerar kring tillgång till lån och hur unga navigerar bostadsmarknaden med hjälp av föräldrars finansiella tillgångar. Prisutvecklingens påverkan på stratifieringen av flyttar i staden bör också beaktas i vidare forskning. Med hjälp av insikterna samlade i denna avhandling är min förhoppning att policyformeringen kan ordnas på sådant visat att stadens bostadsmarknad låter fler följa sina preferenser om boende snarare än att förstärka restriktioner baserade på inkomst, härkomst och tillgång till nyckelinstitutioner på bostadsmarknaden.
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117


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Appendix I

Figure 16. Maps of poor neighbourhoods. Top left k-500, Top right k-1000, bottom left k-2000, bottom right k-4000
Figure 17. Maps of poor neighbourhoods, top left DeSO, top right Basområden, bottom SAMS
### Selected OLS-results estimating the share of poor in neighbourhood after a move, Stockholm County, population aged 20-63, 2006-2008, with different neighbourhood operationalizations

<table>
<thead>
<tr>
<th>Neighbourhood operationalization</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td>S.E.</td>
<td>Sig.</td>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.187</td>
<td>0.000   ***</td>
<td>0.269</td>
</tr>
<tr>
<td>Ratio poor in neighbourhood</td>
<td>0.502</td>
<td>0.002   ***</td>
<td>0.358</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
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</tr>
<tr>
<td>Ethnic background controls</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Socioeconomic controls</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Demographic controls</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Neighbourhood context controls</td>
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<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Individual level variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High income (yes=1)</td>
<td>-0.017</td>
<td>0.000   ***</td>
<td>-0.013</td>
</tr>
<tr>
<td>Low income (yes=1)</td>
<td>0.010</td>
<td>0.000   ***</td>
<td>0.011</td>
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<td>Owned housing (yes)</td>
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<td>-0.013</td>
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<td>Neighbourhood context controls</td>
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<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Ratio rental housing</td>
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<td>0.001   ***</td>
<td>0.003</td>
</tr>
<tr>
<td>Ratio high education</td>
<td>0.023</td>
<td>0.003   ***</td>
<td>0.023</td>
</tr>
<tr>
<td>Ratio high disposable income</td>
<td>-0.068</td>
<td>0.003   ***</td>
<td>-0.068</td>
</tr>
<tr>
<td><strong>R²</strong></td>
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<td>0.264</td>
<td>0.304</td>
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<td>Regression Sum of Squares</td>
<td>336.1</td>
<td>470.8</td>
<td>492.3</td>
</tr>
<tr>
<td>Residual Sum of Squares</td>
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<td>1310.8</td>
<td>1289.3</td>
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