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The Impact of Segregation on Failing Labor Market Integration in Sweden – Causal or Not?

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Abstract

Labor market integration of immigrants is an important issue in the political debate in many countries. Segregation is one factor often assumed to impact labor market integration negatively – through processes related to socialization, networks or stigmatization. Nevertheless, previous research finds mixed results about the economic effects of residing among people with similar ethnic backgrounds. I conduct an empirical analysis of the relationship between segregation and labor market integration in the 100 most populated Swedish municipalities. The regression analysis shows that more segregated municipalities indeed perform worse at labor market integration. The association is however spurious. The foreign-born who have not completed a secondary education reside more often in more segregated municipalities, and this category of immigrants also struggles to find jobs. Historic abundance of housing explains a large part of the settlement patterns of this category with weak labor market prospects, whereas having a larger immigrant population on the whole does not. The findings are robust for different operationalizations of labor market integration and testing for reverse causality. Moreover, no interaction effect is found between segregation and poverty. The findings offer support to focus policy efforts on improving the employability of the unemployed. Fears that segregation perpetuates unemployment among the foreign-born appear overstated, even though desegregation policies may still be justified on other grounds.

Keywords: segregation, labor market integration, education, housing market, ethnic networks

1. Introduction

Segregation is a fiercely debated topic in many countries. Numerous studies (for example Massey & Denton 1993; Musterd et al. 2008) have shown a relationship between segregation and common measures of societal integration of ethnic minorities, however it is less evident that such relationships can be found across all different contexts. Moreover it is also far from evident that segregation is actually causing failed integration. Ethnic minorities are overrepresented among the poor in many countries, and it is a challenge to disentangle socio-economic effects from effects of geographical clustering. From the perspective of public policy, it is of high relevance to advance a clearer picture on precisely what factors that hold integration back. Integration in the labor market is one crucial dimension, and for this reason it will be the focus in this thesis. If living in segregated areas does not impact labor market integration in a causal way, then it is probably more motivated to focus integration policies on the functioning of the labor market or factors related to the human capital of individuals.

Failure to find a uniform relationship between segregation and integration also leaves open the possibility of interaction effects playing an important role. In other words, it might be the case that only when high levels of segregation are combined with some third variable the detrimental effects on integration will be noticeable. One interaction effect that is of high relevance to test is the one between segregation and poverty. While there is no consensus about whether segregation is beneficial or detrimental on the whole, there is some modest consensus about that living in a neighborhood where people with low socio-economic status are overrepresented will impact you negatively (Musterd et al. 2008). Bringing in a socio-economic dimension to the study of segregation is consistent with a general conclusion emerging from the so-called neighborhood effects literature, namely that the accumulated difficulties in several dimensions matter, and in some cases interact with each other to determine the disadvantage you will have from living in a specific neighborhood (Sharkey & Faber 2014).

The central question investigated in this thesis is whether segregation has a causal impact on the labor market integration of the foreign-born. This will be investigated using municipal data from Sweden. The thesis will also provide theoretical explanations for why segregation may have negative effects on labor market integration, or why it on the contrary may have

positive effects. It is hardly straightforward to analyze this causality issue. Not only the influence of third variables need to be dealt with – there is also an evident possibility of reverse causality. Immigrants who fail to establish themselves on the labor market are likely to be among the people who are forced to live in segregated areas. The central research question will be investigated using a number of different approaches, with the aim of deepening our understanding of these dynamics. As stated above, the thesis moreover hypothesizes an interaction effect between segregation and poverty, which will also be tested.

The thesis is structured as follows. Section 2 defines and discusses the two key concepts used in the study. Section 3 summarizes previous research on the effects of segregation and socio-economic factors, and presents the theoretical framework for how they may affect integration. The section also provides a description of the situation in Sweden. Section 4 introduces the data, methods and operationalizations. Section 5 presents the results. Section 6 discusses the results and concludes.

2. Definitions and Key Concepts

2.1. Segregation

When the term segregation is used in this thesis it refers to ethnic residential segregation, unless otherwise stated. This is defined as a disproportionate geographic concentration of one or several categories of ethnic minorities. Although much of the previous literature has focused on clustering of particular ethnic groups, it is evident in the Swedish scenario that the most relevant dimension of segregation in society is between natives and the foreign-born. Research on Sweden has found that clustering of only one ethnic group in specific areas is rare (Musterd et al. 2008).

Even though the focus in the Swedish context will be on segregation between natives and the foreign-born, in the theory section I may interchangeably refer to segregation between the majority population and one or several minorities. In these cases, I do it in the context of discussing specific studies, however the mechanisms are in essence understood to be the same regardless of how segregation is defined. It depends on the specific context whether the relevant segregation dimension is between one or several minorities having long residential histories, or whether it is between natives and the foreign-born population. On a similar note,

I sometimes refer to ethnic clustering, which should essentially be understood as meaning the same as segregation. Ethnic clustering is what is observed at the neighborhood level whereas segregation is what is observed at the city level[1].

2.2. Integration in the Swedish context

Integration can be a rather vague concept unless it is clearly defined. In this thesis, it specifically means the relative absence of structural inequalities between the majority population and minorities. So if integration in the labor market is perfect, there should be no difference in unemployment rates between the majority population and minorities. The Swedish integration model was formulated in the 1970s and has been based around three central concepts: *equality*, *freedom of choice* and *concurrence* (Andersson et al. 2009).

Integration can be seen as either *system integration* or *social integration*. Swedish integration policies have focused on system integration, namely that immigrants should have equal conditions in work life and public society at large, as well as equal representation. Social integration refers to human relationships and reflects the social capital of an individual. In relation to the principle of freedom of choice, social integration has been seen as outside the scope of public policy. Obviously there is substantial evidence for that system integration is difficult to achieve without social integration, however it is at least remains a theoretical possibility. System integration is also theoretically possible in situations where segregation is high, so at least in the Swedish policy context we must be cautious not to merely see the concepts of segregation and integration as each other's opposites. Integration using this type of definition is thus best operationalized looking at dimensions as the labor market or schools. As stated above, this thesis will try to explain what influences labor market integration (Andersson et al. 2009).

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[1] In the same way, when I refer to "segregated neighborhoods", I mean areas where minorities are overrepresented. Segregation is a dynamic phenomenon, and there is certainly a point to be made that areas where the majority population is overrepresented relative to its share of the total population are also segregated. However when I refer to such areas in this thesis I do not refer to them as "segregated" for purposes of clarity.

3. Theory

3.1 Theoretical Framework and Previous Research about Segregation

The purpose of this theoretical overview is to summarize research linking segregation with economic and social outcomes for minorities. The most important mechanisms through which residential patterns affect integration will be explained. Empirical findings from segregation and so-called neighborhood effects research will be summarized, however priority will be given to studies conducted in the European context.

The theoretical explanations for why segregation may affect the prospects for integration can be summarized into three strands – *socialization theories*, *network theories*, and *stigmatization theories*. These perspectives can also be used to understand why segregation patterns arise in the first place. Socialization theories can point to that immigrants may have different cultural norms than natives, and for that reason they may prefer to live around people from the same background. Network theories can point to that immigrants cluster because of perceived economic benefits from living around co-ethnics. Stigmatization theories can point to that clustering happens because of discrimination in housing allocation, or that the majority population "flees" areas when the share of minorities becomes high (Andersson et al. 2014).

Socialization theories

These theories focus on norms, values and behavior, and how these are built up and transferred in various local contexts. Socialization is especially important when it comes to children and adolescents, since they are strongly affected by the norms of their surroundings – be it their parents or in external arenas like the school environment. In the segregation context it can be seen as that there are certain destructive norms that are socialized in marginalized areas, which is the "culture of poverty" (Lewis 1966) explanation. The socialization of destructive norms thus impedes segregated people from seeing possibilities of social mobility (Massey & Denton 1993: 168-171).

Moreover, socialization seen as a type of "groupthink" impacts how parents view the choice of schools for their children. Malmberg et al. (2014) find that in neighborhoods dominated by residents with high levels of social capital, parents by large make school choices in line with

what rational choice models would predict. In non-elite areas parents tend to favor the geographically assigned schools, and not spend much time evaluating school reputations and teacher quality.

Socialization also has to do with the concept of community cohesion. Depending on your viewpoint, it is more or less important that society as a whole subscribes to the same value systems, and that people from different backgrounds can cooperate. Community cohesion can also be a relevant concept at the local level. Common backgrounds, most importantly sharing the same ethnicity can function to create social bonds. These bonds can be positive because they facilitate cooperation within the group. They can however also be negative since they may obstruct cooperation with other groups. In some cases, strong groups can reproduce value systems that are detrimental to integration (Bolt et al. 2009). Özuekren and Ergoz-Karaham (2010) argue based on interviews with Turkish immigrants in Germany that adherence to a conservative worldview is associated with choosing to live in segregated areas. On the other hand, the opportunity to exercise cultural practices is an important factor when trying to explain why minorities would prefer to reside among co-ethnics. How the opportunities to reproduce cultural practices may affect the labor market performances is an open question. However it can be argued that if minorities do not feel culturally alienated, their human capital will be strengthened (Andersson et al. 2014).

People who grow up in rough environments often expect little of society and their peers. For example, being exposed to violent crime growing up is likely to traumatize children, and also normalize violence (Ellen & Turner 1997). In other words, the people who expect little of society have low inter-personal trust, a factor found in a vast array of research to perpetuate poverty. Stating that low generalized trust is related to poverty is consistent both with theories emphasizing that civil society builds trust (Putnam et al. 1994) and theories emphasizing the role of impartial public institutions (Rothstein & Stolle 2008). Moreover Uslaner (2010) finds evidence that areas with more integrated neighborhoods have higher levels of trust.

Network Theories
Seen from this perspective, your opportunities in society are strongly shaped by the extent and nature of your social network. Having the right contacts is essential in both the housing and labor markets, so it is hardly a surprise that immigrants on average have fewer opportunities to build up networks in these markets, which creates inequality when many people are hired

as a result of their personal contacts (Andersson 2008). A Swedish study found that immigrants are less likely to find jobs through informal methods compared to natives (Behtoui 2008).

On the other hand, ethnic businesses create employment opportunities, and do not put up barriers of discrimination against immigrants. Ethnic clusters can also give rise to new markets for specific goods, and loans can be facilitated through personal relationships. In essence these arguments are about building ethnic networks that can benefit members. We can however assume that access to ethnic networks is better for work immigrants compared to refugees (Musterd et al. 2008).

The other side of this argument is that ethnic clustering can lead to that the social contacts of many immigrants are limited to their own ethnic group, or people from other immigrant groups. Individuals may have plenty of social capital and thus access to networks generating various services for them. However if "bridging" social capital is missing, these individuals lack prospects for being integrated into the social networks of mainstream society (Musterd et al. 2008). Two Dutch studies find that living in neighborhoods with higher concentrations of minorities is associated with the residents having fewer informal contacts with natives (Van der Laan Bouma-Doff 2007; Vervoort 2012). Bridging social capital is theoretically close to the sociological concept of "weak ties", which has been emphasized as crucial in explaining how people find jobs (Granovetter 1973). These ties may for example be contacts made in civil society. In the housing market bridging social capital can be personal contacts or knowledge of various queue systems – resources that immigrants generally speaking have less of (Hedman & Andersson 2016).

Moreover, the geography of the labor market should impact how individuals find employment. Translating the Spatial Mismatch Hypothesis (Kain 1992) to the Swedish context means emphasizing that minorities cluster in suburbs, whereas more jobs are located in inner cities. If strong labor market zones are located far away from segregated areas, the residents in these areas will face numerous difficulties when trying to take the jobs in these zones, especially through the long times and costs of commuting.

Zenou et al. (2006) finds support in the Swedish data for the spatial mismatch hypothesis, exploiting a refugee placement regime to handle bias related to self-sorting in the housing

market[2]. The findings that being placed in a zone with relatively more jobs is positively related with subsequent labor market participation are not only enlightening to understand urban problems, but also say much about the likely consequences of placing refugees in rural areas with weak labor markets.

Stigmatization theories

This perspective emphasizes the effects of the categorization of certain groups of people, and the projection of negative characteristics on them. Ethnic minorities are often the targets of stigmatization, but entire geographic areas can also be associated with stigma. Stigma is faced by individuals who belong to these groups and creates hurdles for them when coming into contact with the majority culture (Andersson 2008). Stigmatization is also likely to interact with socialization processes in the long run. Let us assume that at the starting point workers from the majority group and workers from minorities have the same level of skills. However let us also assume that a substantial number of employers hire partly based on prejudices, then minorities will end up in unemployment more often. In turn, minority workers will have weaker incentives to socialize onto their children values connected to that hard work pays off, and so in the long run the skills of the minority groups are also likely to be lower (Sáez Martì & Zenou 2012).

A clear illustration of that segregation leads to stigmatization is the presence of a so-called ethnic hierarchy. Swedish studies have found that segregation primarily affects certain ethnic groups from outside Europe, and that it largely seems to be the effect of an ethnic hierarchy in the housing market. It has been common practice for public housing companies to actively refer new immigrants and other socio-economically weak groups to specific residential areas, where housing has been relatively abundant. The ethnic groups who tend to be segregated also fare worse in the labor market. This illustrates a double stigma. People face hurdles in society because they belong to certain minority groups, and these hurdles then become even greater if the minority is perceived as clustering and creating social problems (Andersson 2008).

Andersson et al. (2009) provide preliminary evidence of a striking indication of an ethnic

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[2] This combined with findings that immigrating during a recession further damages long-term integration does much at explaining the variation in labor market success of immigrants that goes beyond individual differences in human capital (Åslund & Rooth 2007).

hierarchy when analyzing the housing situation in the Gothenburg region. Around half of the foreign-born who have high incomes live in low-income neighborhoods, a pattern that stands in stark contrast to natives who have high incomes. The same tendency has consistently been observed in American segregation studies. It is often assumed that people will move on to better neighborhoods as their incomes rise. This is however not evident for blacks, and it is mainly because of discriminatory barriers in the housing market (Massey & Denton 1993: 150-151).

Research on blacks in The United States has also shown that the less they are in contact with whites, the greater they rely on Black English Vernacular (Massey & Denton 1993: 163). Speaking in a way expressing that you belong to a minority group is a further possible source of stigmatization. Most immigrants do not speak the language of their new country flawlessly, and in many countries people who have grown up in immigrant-dense areas speak differently than the majority population, so even though they are natives they can be stigmatized for that reason. Children who are not exposed at home to the language spoken in the standard dialect are likely to be disadvantaged in school.

3.2. State of Play in Research on Segregation and Socio-Economic Factors

Because of the difficulties to disentangle the effects of specific socio-economic factors in this research context I choose to take a broad focus on these aspects and categorize them as socio-economic factors. They are aspects like income, employment status and education level, and have often been studied in relation to segregation. However as stated in the introduction, I am particularly interested in whether poverty and segregation interact when affecting social outcomes.

All the mechanisms described in the previous sections are ways of explaining how characteristics of neighborhoods affect societal outcomes. Empirical studies focusing on these dynamics are often categorized under the umbrella of the "neighborhood effects" literature. Such studies use factors like educational attainment, criminal activity and employment as dependent variables. The answer to the question if neighborhoods matter for the outcomes of individuals is arguably less interesting than the answer to the question in what ways neighborhoods matter (Sharkey & Faber 2014). However, most studies do find that neighborhoods tend to affect individual outcomes in the dimensions listed above. It should

however be stated clearly that the research in general finds that the neighborhood effects are relatively marginal compared to the effects associated with family characteristics, such as education and incomes of parents (Ellen & Turner 1997).

It is beyond the scope of this thesis to extensively summarize this vast literature. An important general conclusion from the empirical neighborhoods literature is however that neighborhoods affect you more or less depending on your age. Especially children and adolescents are highly likely to be strongly influenced by their surroundings. The literature also emphasizes the importance of thresholds. It appears as if segregation and socio-economic deprivation are only associated with strongly negative effects for individuals at more extreme levels (Ellen & Turner 1997).

Findings pointing towards positive effects of clustering include Edin et al. (2001) who evaluate a refugee dispersal scheme in Sweden and find that immigrants who could settle freely benefitted compared to those who were dispersed. Dutch studies point in the same direction (Musterd & Andersson 2005). Borjas (1994) studying United States census data finds that growing up around a larger share of co-ethnics is positively related to the educational attainment and wages of the same people in subsequent decades. Johansson (2016) finds that more segregated municipalities do not perform worse at integration of immigrants from the EU. An interpretation of these findings is that problems are visible when they are concentrated in segregated areas, however the same individuals are likely to struggle even if they avoid segregation.

The results of other studies however point in the opposite direction. Galster et al. (1999: 95) find that living around a larger share of co-ethnics is associated with worse labor market prospects and higher poverty. In particular, the authors emphasize that living around many "poorly educated, welfare-assisted, nonworking" residents have detrimental effects on the educational and labor market prospects of immigrants. Andersson et al. (2009) Musterd and Andersson (2006) and Andersson and Malmberg (2016) reach similar conclusions. Studies looking particularly at the use of welfare programs also point in this direction (Åslund & Fredriksson 2005; Bertrand et al. 1998). These studies appear to confirm what socialization theories bring up, namely that being surrounded by many unemployed people, especially unemployed males, will be associated with being influenced by bad role models.

The results in the study by Musterd et al. (2003) are interesting to note. For people in households with at least one member in employment at the start of the measurement period, the subsequent likelihood of finding themselves in a situation where they have to rely on benefits rises the more economically distressed households they have as neighbors. For those households already living on benefits at the start of the measurement period, no such neighborhood effect was found. The authors argue that the results may seem counter-intuitive, however they may be explained by that welfare state programs likely give much support to the most disadvantaged residents of the most disadvantaged neighborhoods.

Musterd et al. (2008: 789) summarize the state of play in the neighborhood effects research: "There is some modest consensus that residing among poorly educated or not employed individuals retards the economic prospects of immigrants. But the direct tests of the effect of colocating among members of one's own ethnic group yield contradictory findings". On the first note, the interpretation is that the socio-economic profile of areas with ethnic clusters has much to do with whether neighborhood effects will have a positive of negative influence. On the second note, the empirical overview does not give a clear answer as to whether it is more beneficial to settle among co-ethnics or to settle among the majority population. It appears likely that the answer to this is dependent on additional factors. If there is a strong micro-economy in the ethnic clusters then it is probably beneficial for individuals to settle there, even though the areas are segregated. On the other hand, if ethnic stigmatization is not particularly strong in society, it appears wise to choose to reside around the majority population, and thus have bigger opportunities to develop networks with potential employers and people working in middle-class jobs.

I have shown that the literature about the economic effects of ethnic clustering is divided, which strongly suggests that interactions with various socio-economic contextual variables are crucial to understanding how the dynamics work (Musterd 2003). It is interesting to note the results of studies of interactions between segregation and income inequality, a concept that is close to relative poverty. Massey and Fischer (2000) argue and show empirically that the rise in income inequality in The United States since the 1970s has interacted with segregation to magnify the effects on an important social outcome, namely the concentration of poverty. In a quantitative study of individuals in Sweden, the overrepresentation of individuals with incomes either in the highest of the lowest three deciles of the income distribution have much greater explanatory value for the income development of individuals

than measures of ethnic or educational diversity (Andersson et al. 2007). If poverty is concentrated to segregated areas, then increases in poverty, for example during business cycle downturns will be disproportionally absorbed by these areas, leading to vicious cycles (Massey & Denton 1993: 181), something supported by evidence from Sweden (Åslund & Rooth 2007).

An obvious potential caveat of the entire study of the effects of segregation is potential reverse causality. When it comes to the labor market integration of immigrants, the ones who do not find employment are unlikely to afford accommodation outside the worst residential areas. It could therefore be the case that the people who end up living in segregated areas are merely the ones who have failed to enter the labor market.

As argued by Bolt et al. (2010), the processes underlying segregation and integration are both complex and intertwined with each other – so trying to find a definitive answer to what direction causality is going is not possible. Authors like Musterd (2005), Peach (1999) and Galster (1988) have however demonstrated that differences in class and other social inequalities can only explain a part of segregation patterns. Unless you are immigrating because of work, you will most likely find accommodation before you find work. Research shows that newly settled immigrants are overrepresented in neighborhoods with relatively few native residents (Andersson et al. 2009). This suggests that segregation comes first in the chain of causality, in other words people find a place to live before they find a job.

3.3. Summary of Theory and Hypotheses

The possible mechanisms through which segregation affects labor market integration and other societal outcomes were discussed in the section about network, socialization and stigmatization theories. This provides an understanding of how the dynamics work, however since the empirical investigation will have a quantitative focus on the aggregate municipal level, the purpose is not to explicitly test which of the theoretical perspectives best explaining how segregation impacts societal outcomes.

Formulating hypotheses based on the theoretical overview is not entirely straightforward, as the surveyed literature spans very different country contexts, and the studies also differ substantially when it comes to research questions. There are many different options for how

to measure the degree of societal integration of immigrants or minorities, however labor market integration is surely one of the most relevant dimensions. Having a job is essential to being economically self-sufficient, and the lower employment rates among the foreign-born are often discussed as threatening social models based on high participation in the labor market, which finances large welfare states.

The direction of the general relationship from segregation to labor market integration is likely to be negative, that is municipalities that are more segregated should perform worse at providing jobs for their foreign-born population. Assuming that segregated areas concentrate poor socio-economic conditions, having relatively more of these areas should be associated with a larger exclusion from the labor market of the foreign-born population.

Hypothesis 1: The more segregated a municipality is the less successful it will be at integrating the foreign-born into the labor market.

Even if Hypothesis 1 is confirmed, it is not enough to validate that causality goes in the direction from segregation to labor market integration. In fact, one of the more consistent findings in the neighborhood studies is that living among unemployed people is associated with worse income development. Thus if labor market integration is used as the dependent variable, there are likely endogeneity issues. Nevertheless, evidence has been provided supporting that the foreign-born make residential choices before they find employment, so the hypothesis is that there will remain a causal effect from segregation to labor market integration even after controlling for the endogeneity issues. The impact of additional variables also needs to be controlled for. The characteristics of the foreign-born population, and in particular their educational levels are likely to influence the relationship between segregation and labor market integration. I however believe that there is an effect from segregation that is independent from all other factors.

Hypothesis 2: There is a causal impact from segregation leading to worse labor market integration.

Moreover, we have good reasons to believe that the general relationship between segregation and labor market integration does not give a complete picture. In situations where segregation

is combined with bad socio-economic conditions, the effects on labor market integration should become aggravated.

Hypothesis 3: When combined with poverty, the negative effects of segregation on labor market integration increase in magnitude.

3.4. Segregation and Integration in Sweden

In the empirical section I will test the hypotheses on Swedish municipal data. In this section I present a brief overview of the Swedish case, which will facilitate the interpretation of the empirical results. European levels of segregation are rather moderate in comparison to the segregation between blacks and whites in the United States (Schönwälder 2007). Moreover, Musterd (2003) argues that the relative absence of neighborhood effects found in European studies can largely be explained by the roles of ambitious welfare states. Under such social models, programs aiming to promote participation in education and the labor market likely balance the negative effects of segregation.

Transfer systems between and within municipalities work to put a check on the out-migration pressures that will be the result of discrepancies in the quality of public goods. For families dependent on the quality of public schools, there are strong incentives to move to areas with good public schools and to avoid areas with bad ones. Such incentives are stronger in The United States, however especially in the biggest cities in Sweden it is hardly unheard of that the quality of schools in areas plays a role when well-off families choose where to live (Andersson et al. 2010).

Several media investigations during the last years have focused on whether segregation is increasing or not. Some claim that is rising (Dagens Nyheter 2015, Dagens Samhälle 2016) while other reports claim that it is decreasing (Dagens Nyheter 2016). Whether segregation has been increasing or not depends on how you measure it and how you choose to present the results. In any case, the changes in all reports are marginal. Hedman and Andersson (2016) find that there has been practically no increase in segregation on average in the 100 largest labor market regions. It is probably the case that problems with bad neighborhoods receive more attention today, however most of the cities that are well known for being segregated were so also 20 years ago (Hedman & Andersson 2016).

Whereas ethnic segregation has been stable over time, segregation by income has increased almost everywhere. The increase was particularly large during the economic crisis in the 1990s. A striking trend can also be observed when looking at neighborhoods that are segregated when it comes to both ethnicity and income. In all of the biggest labor market regions there has been a marked increase in the number of neighborhoods with both high shares of people born outside of Europe and people with low incomes (Hedman & Andersson 2016). As in many other countries, income inequality has increased in Sweden during the same period. Among people with low incomes, the share of the foreign-born is increasing, and this trend is particularly evident for people born outside of Europe. The foreign-born are twice as likely to have low incomes (Hedman & Andersson 2016).

Residential segregation has been a noted political issue in Sweden during the last decades. In the 1960s, in order to deal with severe housing shortages and low quality housing, the government decided to implement The Million Homes Program, which achieved the construction of one million new dwellings in ten years. The new dwellings were made up of different housing and tenure forms, however the neighborhoods built during the program tended to be rather homogenous. That the areas are often high-rise in character, have an unappealing physical appearance and often lack when it comes to social and commercial establishments has been criticized (Andersson et al. 2010).

In the decades following The Million Homes Program various immigrant groups started to cluster in the areas. Even though Sweden is still among the European nations with the lowest income disparity, inequality can be clearly noted at the level of neighborhoods. In Sweden today, almost all poor neighborhoods are immigrant dense (Andersson et al. 2010). Moreover, according to Andersson (1998), more or less all so-called problem areas were constructed during the Million Homes Program. There have been periods after the 1960s when there has been abundance of housing in Sweden. In practice, the Million Homes areas have then functioned as "regulators" in the housing market. When demand for housing is low they have many vacancies, whereas areas with good reputations usually do not have vacancies. It has been common for municipal agencies to use the Million Homes areas to find accommodation for people in need of social assistance, as well as for refugees. All this taken together points to that The Million Homes Program and its legacy is an example of how segregation can be socially engineered, albeit unintentionally.

The construction of new housing is now largely a market-driven process, so unlike in the 1960s and 1970s the state is not a very active player, which limits its possibilities of affecting segregation patterns. "[T]he actual mix of households is contingent on a series of factors such as local economic development, migration in and out of the city, the level of service provision in the initial stages," (Musterd & Andersson 2005: 765). In many Swedish cities there has been an increasing shortage of housing during the last decades. As of 2016 the general housing shortage is rather extreme. In such a situation, the dynamics giving rise to segregation will be enforced, as the relative price of living in good areas increases if there is a shortage of housing (Andersson et al. 2009).

Swedish politicians tend to view ethnic residential clustering as a problem, and there have historically been various policies to disperse refugees. In the 1980s, The Sweden-Wide Strategy for Refugee Dispersal was implemented. The strategy was later on abandoned, and since the mid-1990s refugees have the right to settle where they want. Research about the dispersal strategy has found that it was by large ineffective in achieving long-term dispersal of the refugees. Typically refugees would go to their assigned municipality at first, but then move elsewhere when they were free to do so. One important reason for this was that many dispersed refugees ended up in municipalities with abundant housing, however the reason why housing was abundant was often the poor labor market prospects in the municipality (Andersson et al. 2010).

4. Methods, Data and Operationalizations

4.1. Methods

The unusually large share of refugees out of the total immigrant population, as well as a history of refugee dispersal make Swedish municipalities appropriate for studying the impact of segregation on local labor market integration. Unlike countries with much work immigration, the variation in local immigration patterns has been fairly exogenous to the labor market conditions. Prior to a reform of the work immigration regime in 2008, it was rather difficult for non-EU citizens to immigrate to Sweden for reasons related to work (Bevelander & Irastorza 2014). Using Swedish municipal data is also motivated from the perspective of the independent variable segregation. Even though levels of segregation in Sweden are

relatively low in an international comparison, some municipalities are very segregated. The large variation between different municipalities can be exploited to make inferences about the consequences of segregation.

The analysis will be conducted as follows. Firstly, the bivariate relationship between segregation and labor market integration will be examined. In the second step, this relationship will be analyzed through ordinary least squares (OLS) regression analysis, where a set of structural variables related to demography and the housing market will be entered as controls. The reason for why not all control variables will be included right away is the risk for endogeneity in the specifications when including variables related to the characteristics of the foreign-born population and socio-economic factors. What this means is that such additional variables may be affected by the level of labor market integration, which is the dependent variable in the specifications.

The third step of the analysis will be to test an instrumental variable (IV) approach, as a way of dealing with the risk of endogeneity/reverse causality. The logic behind the IV approach is to replace an independent variable sensitive to reverse causality or other endogeneity problems with a theoretically close variable that is not sensitive to reverse causality. In the ideal case, this variable, referred to as an instrumental variable, is "uncontaminated by error or unobserved factors that affect the outcome" (Sovey & Green 2011: 188). Causal inferences are more appropriate to make after conducting this analysis, since it makes the design more exogenous, i.e. quasi-experimental. When trying to find instrumental variables it is typical to look at historic circumstances that somehow "forced" the independent variable to develop in a certain direction.

When it comes to the Swedish case, not only some of the relevant control variables should be affected by the degree of labor market integration, but also segregation itself. It is however possible to use the share of the municipal housing stock that is made up by apartments built during the Million Homes Program in the 1960's and 1970's as an instrumental variable for segregation. Previous research has underlined that practically all areas that are considered segregated problem areas were built during this program, therefore there should be a strong connection between the quantity of Million Homes apartments and segregation (Andersson 1998). Crucially however, the current level of labor market integration does not have an affect on historic construction policies.

Sovey and Green (2011) point to three important criteria that need to be addressed when determining whether an instrumental variable is suitable to use. The first criterion is independence, which is that it is plausible to believe that the instrumental variable is not related to unmeasured causes of the dependent variable. This criterion is met, because Million Homes apartments were built in bother bigger and smaller cities, and any effects the apartments have on social outcomes are indirect. The second criterion is exclusion restriction, which is that the instrumental variable must not have a direct effect on the dependent variable. We have good reasons to believe that it is only indirectly, through the current levels of segregation, that the share of Million Homes apartments affects labor market integration. The third criterion is instrument strength, referring to whether the instrumental variable strongly predicts the values of the main independent variable, even under control for covariates. This criterion is tested empirically through an F-change test.

The IV analysis is performed using a 2-Stage Least Squares (2SLS) regression analysis. In the first stage the independent variable segregation is instead the dependent variable in the regression, and the instrumental variable share of Million Homes apartments is the independent variable. In the second stage the predicted values of segregation based on the first stage regression are the values for the independent variable. That predicted values of segregation make up the independent variable is what is important to note, and this means that the segregation coefficient in the second stage will be informative about the part of segregation that is not sensitive to reverse causality. The second stage models are however in every other way interpreted the same as ordinary OLS.

In the fourth step of the analysis we return to OLS, however entering more control variables. At this stage, it is unlikely that important variables will be omitted from the specifications. On the other hand, the results must be interpreted with more caution. The independent and dependent variables as well as several of the control variables are likely to reinforce each other. At this stage, the hypothesized interaction effect between segregation and poverty will also be tested.

The fifth step in the analysis is a series of robustness tests related to the operationalization of labor market integration. A rather generic measure for labor market integration will be used up until this point, so that the baseline for the analysis is the effect segregation has on the

labor market outcomes of the foreign-born population on the whole. Based on previous research, there are however reasons to believe that certain groups of immigrants should be more adversely affected by segregation, for example those who immigrated as refugees. Testing whether there is a general trend regardless of how labor market integration is operationalized will make us more secure in drawing conclusions. At this step, I will also test whether there is any difference when looking only at the young foreign-born population compared to the situation for the foreign-born population as a whole. This is interesting because previous research indicates that adolescents are the ones most adversely affected by segregation.

4.2. Data and Operationalizations

Unless otherwise stated, the data is based on official statistics obtained through the open databases managed by Statistics Sweden (SCB). All variables are measured at the municipal level, and are based on data for the year 2014, unless otherwise stated. Sweden has 290 municipalities, however only the 100 most populated will be analyzed. The reason for this is that there is no reason to believe that there is much segregation in the smallest municipalities. Where there are only a few different areas in a town, residents of "segregated" areas should not have long distances to go to other areas. The choice to include exactly 100 municipalities is to some extent arbitrary, however it means that only municipalities with at least 25 000 inhabitants are included, which is a reasonable cut off point. It also makes the results easy to compare with some of the analyses conducted by Johansson (2016), who also studied the 100 most populated municipalities.

The main independent variable in the study is the level of segregation in municipalities. This is measured with a so-called index of dissimilarity (SCB 2016a). This type of index is frequently used in research about segregation. It is a measure of the evenness of the spatial distribution of two groups within a geographic entity, divided into smaller units. The two groups in this case are natives and the foreign-born. The higher the value of the index, the more people from either of the groups would have to move in order for the distributions to reflect the proportions of each group out of the total population (Peach 2007). The smaller units in this case are so-called SAMS (Small Areas for Market Statistics) areas[3].

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[3] Statistics Sweden in collaboration with local authorities has divided the 290 municipalities of Sweden into 9200 SAMS areas. Even though the delimitation has been done with somehow differing practices depending on

The instrumental variable for segregation is the share of the municipal housing stock that is made up by apartments built during The Million Homes Program. The units used when calculating are dwellings, which is either an apartment or a house. The data was obtained from the registries of The National Board Of Housing, and are the number of dwellings in the year 2013 that are either rental apartments or privately owned apartments built during the Million Homes program (Boverket 2016). These figures were divided with the total number of dwellings in each municipality for the year 2013 (SCB 2016b).

The dependent variable in the study is labor market integration. This is operationalized as the difference in unemployment rates between natives and the foreign-born. The scores for each municipality were calculated subtracting the unemployment rate for natives from the unemployment rate for the foreign-born (SCB 2016c). Being unemployed is defined as being a person who at any point during the year has been registered as being in open unemployment. If you are in open unemployment, it means that you are not enrolled in any labor market program.

Operationalizing labor market integration this way is motivated because it controls for regional disparities in integration that are merely a result of the general state of the labor market. It is almost certainly the case that the foreign-born are employed more often in municipalities with stronger labor markets, however the same should be true for natives. The difference in unemployment levels captures the dimension of labor market integration that cannot be explained by the strength of local labor markets.

The control variables included can be divided into two categories. The first category is structural variables related to demography and the housing market, and the second is demographic variables related to characteristics of the population. The structural variables

the municipality, the general principle is that the SAMS areas are relatively homogenous when it comes to housing type, age and tenure form. Local authorities use the delimitation for purposes of city planning (Musterd & Andersson 2005; Andersson 1998). Unfortunately, a caveat of using this index is that the scores of different municipalities are not perfectly comparable with each other. This is because the SAMS areas differ in size. Different sizes of the smaller areas will somewhat bias the index. Nevertheless, the SAMS areas as well as indexes of dissimilarity are widely used in research about residential segregation, and many authors argue that the SAMS areas are the most relevant formal delimitation. (Andersson et al. 2014).

related to demography and the housing market are the population, population density, the share of municipally owned apartments unoccupied in the year 2000 and the average apartment prices. These factors should affect labor market integration through that bigger and more densely populated municipalities should have stronger labor markets. Municipalities with these characteristics should also be more segregated, since segregated areas are most well known for being located in and around the major cities. Low prices and historic abundance in the housing market are expected to reinforce segregation, because having these characteristics should attract more socio-economically weak immigrant households.

The population figures (SCB 2016d) and the population densities (SCB 2016e) are straightforward measures. The logarithm of these variables will however be used because the metropolitan cities are found at a rather extreme end of the distribution of the actual figures. The logarithm of the share of publicly owned apartments unoccupied in the year 2000 is a measure of historic abundance of housing (SCB 2016f)[4]. The abundance of housing in Sweden peaked in the late 1990s (SCB 2015), and as of 2016 there are very few unoccupied apartments in Sweden. Segregation is the result of historic residential choices, so using values from the period when there was still abundant housing in many cities is the best way to capture this factor. The average apartment prices are the average prices per square meter of apartments sold between August and October 2016 (Mäklarstatistik 2016)[5].

The demographic controls related to the characteristics of the population are the following. Firstly, the share of the population born outside of Sweden is included (SCB 2016g). This should affect both segregation and labor market integration, however it is uncertain in which directions. The fact that the foreign-born are greatly overrepresented in some municipalities is evidence of segregation that exists between municipalities. This is most clearly observed in the Stockholm metropolitan area, where few immigrants live in affluent suburbs, whereas some suburbs have the highest shares of foreign-born in the whole of Sweden. Just because many foreign-born people live in a municipality does however not necessarily mean that it is

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[4] Unfortunately, there is no data for 14 of the municipalities. These are however all rather affluent municipalities in the metropolitan areas, so I assume that the number of unoccupied apartments was close to zero in these municipalities. This was the case for municipalities with similar characteristics, so the value 0.10 is entered for those municipalities where data is missing. The logarithm of the percentages is used because many municipalities had vacancy rates of less than one percent. For municipalities with vacancy rates of zero, the value 0.10 was also entered, because there is no logarithm of zero.

[5] This is the best available measure for apartment prices, however it is a measure with some imperfections. Most other variables are based on 2014 data, so using figures from 2016 is not ideal. Some of the smallest municipalities in the analysis also have relatively few cases, because the time period is only three months.

highly segregated within the municipality. When it comes to labor market integration, receiving more immigrants should be associated with greater integration challenges. However as discussed, ethnic networks and experience of integration should be stronger where there are more immigrants, so it may also be positive for labor market integration.

A second control in this category is the share of the foreign-born population who has not completed a secondary education (SCB 2016h). The data is for the year 2015. Bevelander and Irastorza (2014) show that this category of immigrants stands out as having particularly low employment levels. A third control in this new specification is male overrepresentation among the foreign-born (SCB 2016g). It is calculated taking the share of the foreign-born population that is male minus the share of the foreign-born population that is female. Having a higher figure is thus associated with male overrepresentation among the foreign-born. Bevelander and Irastorza (2014) also show that immigrated men have higher employment rates than immigrated women.

The final control variable is the poverty rate (SCB 2016i). This is not related to the characteristics of the foreign-born population per se, but instead of the population on the whole. The data used is the share of persons in households with a persistent risk of poverty[6]. The poverty control is included at the same time as the variables related to the characteristics of the foreign-born population, because the poverty rate is also likely to be influenced by how successful labor market integration is.

Descriptive statistics and a correlation matrix for all variables are presented in the appendices. The alternative operationalizations of labor market integration will be presented in Section 5. Before proceeding to the empirical analysis, it must be noted that there are limitations to studying these dynamics at the municipal level. Segregation is a dynamic phenomenon occurring at the city level, so in itself it is most appropriate to study at this level. The variables measuring population characteristics, like unemployment and poverty rates are however not ideal to use at the municipal level. These figures are municipal averages, so there are risks that the effects for the people living in segregated areas are obfuscated.

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[6] Living in poverty is defined as being in a household with less than 60 percent of the median income per consumption unit. That the risk is persistent is defined as that this was also the case for at least two of the three previous years.

Unfortunately, it has not been possible to use individual level data in this thesis, so it must be accepted that the data is not ideal for my purposes.

Furthermore, another factor that the design cannot accurately control for is the influence of selective migration. People often move to or commute to other municipalities, and therefore the underlying conditions of the municipality are not completely connected to the state of the labor market in the municipality. This issue is however hard to control for without longitudinal individual data. Several large-scale studies using individual data for metropolitan areas (for example Andersson et al. 2014) have been carried out in Sweden. Because of the huge samples and high attention to details in these studies, a study such as this one using aggregated data at the municipal level cannot make as strong claims about causality. The contribution using municipalities as the focus is however that I also include municipalities outside the metropolitan areas in the analysis. By large, segregation has often been assumed to only be a problem in the big cities. However there has been increasing discussion in the last years of the segregation patterns in many smaller cities in Sweden. One noted example is the municipality of Borlänge, which has 50 000 residents, and is now one of the most segregated cities in Sweden (Dagens Samhälle 2016).

5. Results

This section will be structured as follows. Firstly in section 5.1 the bivariate relationship between segregation and labor market integration will be examined. Then in Section 5.2 the results for the OLS regressions with structural controls related to demography and the housing market are presented. The results for the IV approach are then presented in Section 5.3. In Section 5.4 the OLS regressions with the full set of controls are presented. Finally, in Section 5.5 the robustness tests with different operationalizations of labor market integration are presented.

5.1 Bivariate relationship

In Figure 1 a scatterplot is shown of the focal relationship between segregation and the difference in unemployment levels between natives and the foreign-born in the 100 most populated municipalities in Sweden. The Pearson r is 0.51, which is a quite strong correlation. This confirms Hypothesis 1, namely that higher segregation levels are associated with worse

labor market integration. Johansson (2016) also tests this bivariate relationship for the same municipalities and gets a zero result. The operationalizations are however different, which explains why the results differ[7]. When conducting the bivariate analysis for all 290 municipalities the picture is somewhat different and the Pearson r drops to 0.20. This indicates that the apparent association between segregation and bad labor market integration is much stronger in bigger cities. However, as discussed in the methods section, the smallest municipalities have so few residents that it becomes nearly irrelevant to talk in terms of segregation occurring there. For this reason the rest of the analysis will only focus on the 100 most populated municipalities.

Some well-known examples from media reports stand out in the scatterplot. In particular, the middle-sized city Borlänge appears to be a perfect example of when very high levels of segregation and a high difference in unemployment levels between natives and the foreign-born co-exist. Another of the middle-sized cities well known for being segregated, Trollhättan, also performs relatively badly at labor market integration. On the other hand, segregated municipalities in the metropolitan areas like Göteborg, Stockholm and Botkyrka do not stand out as performing badly at labor market integration. In the far left corner of the scatterplot, we can observe the model cases that are not segregated and are good at labor market integration. These are mainly affluent suburbs in the metropolitan areas. The reason for this is probably a mixture of strong local labor markets and relatively more high-skilled immigrants.

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[7] Johansson (2016) uses a segregation index based on electoral districts rather than SAMS areas. Her index and the one I use are highly correlated, however mine should be preferred since SAMS areas are on average smaller and thus better resemble actual neighborhoods, and also because SAMS areas were created to conceptually resemble actual neighborhoods. Johansson's labor market integration variable is the difference in unemployment levels between natives and immigrants from outside the EU. I argue that it is appropriate to use a more general measure as a baseline, however I will later on perform a robustness test using Johansson's operationalization, and it does not change the overall picture. Johansson's segregation index and her labor market integration variable are correlated with my operationalizations over 0.85, so it should not be expected that the analysis would be strongly affected by the different operationalizations. However when rerunning Johansson's analysis it is actually the case that the operationalizations make all the difference of a correlation that is zero and one that is 0.5. The relatively low number of cases may be one explanation for why this is the case.

Figure 1. Scatterplot of the Correlation Between Segregation and the Difference in Unemployment Levels Between Natives and the Foreign-Born.
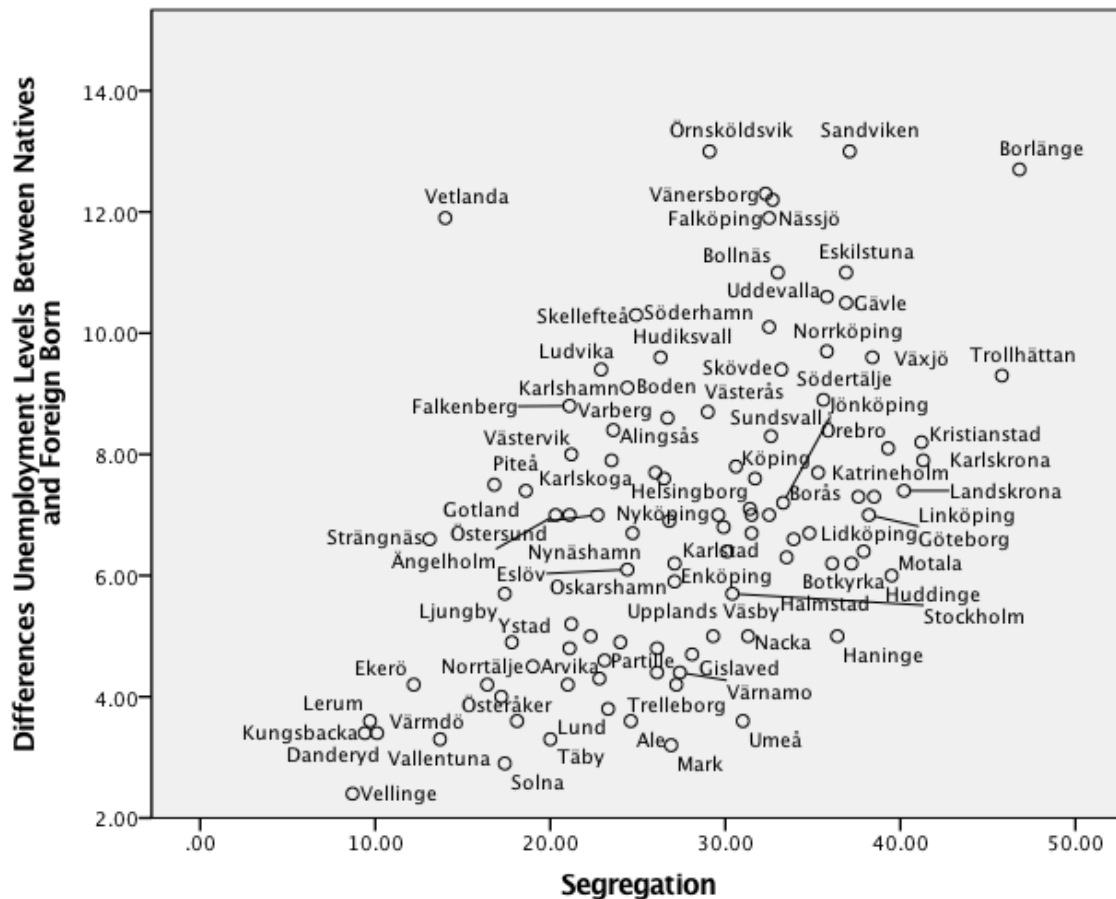
Pearson r = 0.51. Sources: SCB 2016a,c.

5.2. Controlling for Structural Factors Related to Demography and the Housing Market

In Table 1 the results for the first regression analyses are presented. The effect of segregation on the difference in unemployment rates between natives and the foreign-born is seen in Model 1 and is highly significant. The b coefficient 0.155 should be interpreted as that one point higher on the segregation index is associated with an increase in the difference in unemployment levels of 0.155 percentage points. To illustrate, say a municipality moves from a fairly low segregation level of 20 to a very high one of 40. This is associated with an

increase in the difference in unemployment levels of 3.1 percentage points. The mean

difference in unemployment levels for the 100 most populated municipalities is 6.9

percentage points, so an increase with 3.1 percentage points would hardly be trivial.

Model 2 presents the effect of segregation on labor market integration under control for

structural factors related to demography and the housing market. Introducing these controls

do not drastically alter the effect segregation appears to have on labor market integration, as

more than 75 percent of the segregation coefficient remains moving from Model 1 to Model

2, and the coefficient is still highly significant. This gives support to Hypothesis 2, namely

that there is a causal effect from segregation to worse labor market integration. The only

control variable that is significant in Model 2 is the share of unoccupied apartments in the

year 2000. This supports the suspicion that immigrant groups with few resources to compete

with in the labor market have settled more often in municipalities where it has been easy to

find affordable housing. The r-squared rises from 0.254 to 0.471 from Model 1 to Model 2, so

accounting for these structural factors is important when explaining why municipalities

perform better or worse at labor market integration. However this effect is by large

independent from the effect of segregation.

Table 1. Effect of Segregation on the Difference in Unemployment Levels between Natives and the Foreign Born under Control for Structural Factors Related to Demography and the Housing Market (Unstandardized b Coefficients, Standard Errors in Parentheses)

	Difference Unemployment Levels between Natives and the Foreign-Born	
	Model 1	Model 2
Segregation	0.155***	0.118***
	(0.026)	(0.028)
Log Population		0.315
		(0.395)
Log Population Density		-0.288
		(0.216)
Log Unoccupied Apartments		0.382*
		(0.173)
Log Apartment Prices		-0.609
		(0.568)
Intercept	2.645**	7.541
	(0.761)	(4.936)
Adjusted R^2	0.254	0.471
N	100	100

*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$
Sources: SCB 2016a,c,d,e,f; Mäklarstatistik 2016.

To summarize the findings so far, we have seen that there is an association between

segregation and labor market integration that is of relatively substantial magnitude. Structural

factors are important to include in the analysis, especially the control for unoccupied publicly

owned apartments, however they do not take away the effect of segregation. The advantage of having conducted this analysis as a starting point is that it can now be said with some certainty that structural factors related to demography and the housing market do not explain the association between segregation and worse labor market integration.

5.3. IV Analysis

We now more on to further test whether there is a causal effect from segregation to worse labor market integration. In Table 2 the results for the IV analysis are presented. As discussed in the methods section, the purpose of conducting this analysis is to investigate whether the relationship from segregation to a higher difference in unemployment levels between natives and the foreign-born is causal or not. It can be expected that failing to integrate immigrants into the local labor market will further reinforce segregation, so we use an instrumental variable that explains current levels of segregation, but which cannot itself be caused by current levels of labor market integration. As discussed in the methods section. the share of the housing stock made up by dwellings built during The Million Homes Program meets the theoretical criteria of being used as an instrumental variable in this analysis.

As mentioned in the methods section, it is however also necessary to conduct an empirical test to make sure the approach does not suffer from a so-called weak instrument problem. The instrumental variable must be a strong independent predictor of the independent variable, otherwise any conclusions based on this analytical approach would be shaky. Sovey and Green (2011) recommend that F-change statistics should be above 10 to avoid the weak instrument problem. In Model 1 in Table 2 the results of the first stage of the 2SLS regression are presented. The F-change statistic exceeds 30, indicating that it is actually a very strong instrument. Both the high F-change statistic and the fact that the coefficient of the share of Million Homes dwellings is highly significant inform us that the share of the housing stock that consists of Million Homes dwellings is highly correlated with more segregation, even under control for the structural factors. As expected, municipalities with bigger populations, and where housing is more available and affordable are more segregated.

In Model 2 the results for the second stage of the 2SLS analysis are shown. The segregation coefficient is now no longer significant. It must however be noted that the p-value for the segregation coefficient is 0.069, so perhaps reverse causality does not bias the OLS regression

(Model 3) in a major way. More than 85 percent of the coefficient remains moving from OLS to IV. The IV analysis can be seen as pointing in the direction that causality does not go from segregation to worse labor market integration, however the picture emerging so far motivates bringing in more controls to obtain a clearer picture about the causality question. There is also a real possibility that the instrumental variable does not work as well as intended. Even though previous research has found a strong association between Million Homes neighborhoods and segregation, it must be emphasized that there is nothing related to the Million Homes dwellings that forces foreign-born people to move in there. The case is rather that the construction of the Million Homes neighborhoods led to these neighborhoods adopting certain characteristics, leading to that mostly the people with the weakest positions on the housing markets ended up living there. When an instrumental variable is ideal to use, it has instead more or less forced certain outcomes.

Table 2. Two-Stage Least Squares Regression – Effect of Instrumented Segregation on the Difference in Unemployment Levels between Natives and the Foreign-Born (Unstandardized b Coefficients, Standard Errors in Parentheses)

	Model 1 2SLS First stage	Model 2 2SLS Second stage	Model 3 OLS
Dependent Variable	Segregation	Unemployment Difference Between Natives and the Foreign-Born	Unemployment Difference Between Natives and the Foreign-Born
Share Million Homes	0.696***		
	(0.126)		
Segregation		0.103	0.118***
		(0.056)	(0.028)
Log Population	5.635***	0.422	0.315
	(1.140)	(0.528)	(0.395)
Log Population Density	0.574	-0.263	-0.288
	(0.711)	(0.232)	(0.216)
Log Unoccupied Apartments	1.129*	0.402*	0.382*
	(0.547)	(0.185)	(0.173)
Log Apartment Prices	-5.555**	-0.698	-0.609
	(1.759)	(0.641)	(0.568)
Intercept	9.929	7.568	7.541
	(16.032)	(4.944)	(4.936)
F-change test	30.276		
Adjusted R^2	0.491	0.425	0.471
N	100	100	100

*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$
Sources: Boverket (2016); SCB 2016a,b,c,d,e,f; Mäklarstatistik (2016)

5.4. Controlling for Population Characteristics

We now move on to including also the population characteristics controls in the analysis. As discussed in the methods section, the local labor market conditions is one important factor affecting how many and which immigrants who settle in a municipality. It is still possible to

use these controls in the analysis, but we must be more cautious when drawing conclusions because of these endogeneity issues.

In Table 3 the analysis with the full set of control variables is presented in Model 3. Practically nothing of the effect of segregation on worse labor market integration remains after the additional controls are included. In particular, the effect of the educational composition of the foreign-born population stands out. Even under an extensive set of controls, having relatively more foreign-born residents with only primary education is strongly associated with worse labor market integration. That this is an important factor is hardly surprising given that Bevelander and Irastorza (2014) show that there is a big gap in employment between the foreign-born with the lowest level of education and the rest of the foreign-born population. The magnitude of its effect is however truly striking. Model 3 provides strong evidence to reject Hypothesis 2, namely that there would be a causal effect going from segregation to worse labor market integration.

The association between segregation and a higher difference in unemployment levels is most likely spurious. Having a larger share of the foreign-born population with only primary education results in greater municipal integration challenges, and the foreign-born with the lowest education also settle more often in segregated municipalities. That this is the case is illustrated in Figures 2 and 3 where scatterplots are shown for the bivariate relationships between the share of the foreign-born population with only primary education, and segregation and labor market integration respectively. Having a larger share of the foreign-born with only primary education is strongly associated with both more segregation and worse labor market integration.

Most foreign-born people immigrated to Sweden after completing their education, so we can say with some certainty that education comes before segregation in the causal chain. To complete the picture it must however be discussed what characteristics of segregated municipalities that explain why immigrants with low education choose to settle there. Firstly, it can be hypothesized that immigrants with low education are likely to be the ones most reliant on ethnic networks, so they should prefer to settle where other immigrants already live. Secondly, since they are unlikely to have neither much financial resources nor contacts in the housing market, it can also be hypothesized that they should settle more often where it is relatively easier to find a place to live.

In Figure 4 a scatterplot for the bivariate relationship between the share of the population that is foreign-born and the share of the foreign-born population with only primary education is shown. Figure 5 is a scatterplot of the relationship between the share of municipally owned apartments that were unoccupied in the year 2000 and the share of the foreign-born population with only primary education. There is no relationship between having many foreign-born inhabitants in general and having a large share of the foreign-born with low education. There is however a strong association between having had many vacant apartments and having a larger share of the foreign-born population with low education. This is evidence of that availability of housing is more important than ethnic networks in explaining the settlement patterns of the immigrants who are least likely to be competitive on the labor market. The coefficient of unoccupied apartments in the year 2000 is insignificant in Model 3 in Table 3, which is explained by its close association with the share of low-educated foreign-born. However as explained, there are good reasons to believe that availability of housing explains the settlement patterns of this category of immigrants, and thus historic abundance of housing is nevertheless an important part of the story.

To summarize the new findings, controlling for the share of the foreign-born population only having primary education renders the previously found association between segregation and worse labor market integration completely spurious. The settlement pattern of the foreign-born with the lowest education is by large explained by where there has been abundance of housing historically. A larger immigrant population on the whole does however not mean that a municipality will have a higher share of the foreign-born with low education. In fact, returning to Model 3 in Table 3, the share of the population that is foreign-born is the only variable besides low education among the foreign-born that comes out as significant. Under all the other controls, having a larger immigrant population is associated with better labor market integration. This provides support for network theories asserting that residing among co-ethnics is beneficial for labor market integration. It could also be due to that integration programs are more effective in cities with a history of immigration, or that the labor market tends to adapt to the changed nature of labor supply associated with immigration.
The foreign-born population in the metropolitan areas is often perceived as a problem category when it comes to integration, however what the scatterplots show is that they have relatively high education levels and are relatively well integrated into the labor market. It is a well-known fact that many foreign-born people with high education have typical working

class professions in Sweden. Needless to say, it is a problem that these people are not in high productivity work. They having working class professions however means that they are at least in employment and can afford to live close to the strong metropolitan labor markets, unlike the foreign-born with the lowest education.

Table 3. Effect of Segregation on the Difference in Unemployment Levels between Natives and the Foreign-Born under All Controls (Unstandardized b Coefficients, Standard Errors in Parentheses)

	Difference in Unemployment Levels Between Natives and the Foreign-Born		
	Model 1	Model 2	Model 3
Segregation	0.155***	0.118***	0.012
	(0.026)	(0.028)	(0.033)
Log Population		0.315	0.236
		(0.395)	(0.396)
Log Population Density		-0.288	0.056
		(0.216)	(0.238)
Log Unoccupied Apartments		0.382*	0.166
		(0.173)	(0.163)
Log Apartment Prices		-0.609	0.978
		(0.568)	(0.621)
Share Foreign-Born			-0.101*
			(0.048)
Share Low Educated Foreign-Born			0.277***
			(0.059)
Male Overrepresentation among Foreign-Born			0.130
			(0.076)
Share in Poverty			0.101
			(0.127)
Intercept	2.645**	7.541	-10.760
	(0.761)	(4.936)	(5.674)
Adjusted R^2	0.254	0.471	0.580
N	100	100	100

*** $p \leq .001$, **$p \leq .01$, *$p \leq .05$
Sources: SCB 2016a,c,d,e,f,g,h,i; Mäklarstatistik (2016)

Figure 2. Scatterplot of the Correlation Between the Share of the Foreign-Born Population with only Primary Education and Segregation.
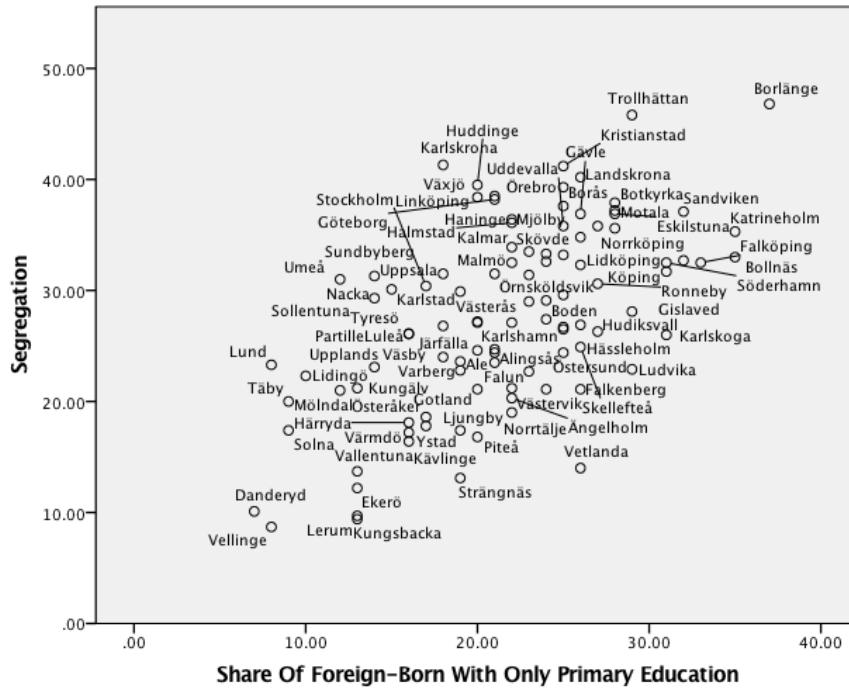
Pearson r = 0.59 Sources: SCB 2016a,h.

Figure 3. Scatterplot of the Correlation between the Share of the Foreign-Born Population with only Primary Education and the Difference in Unemployment Rates Between Natives and the Foreign-Born.
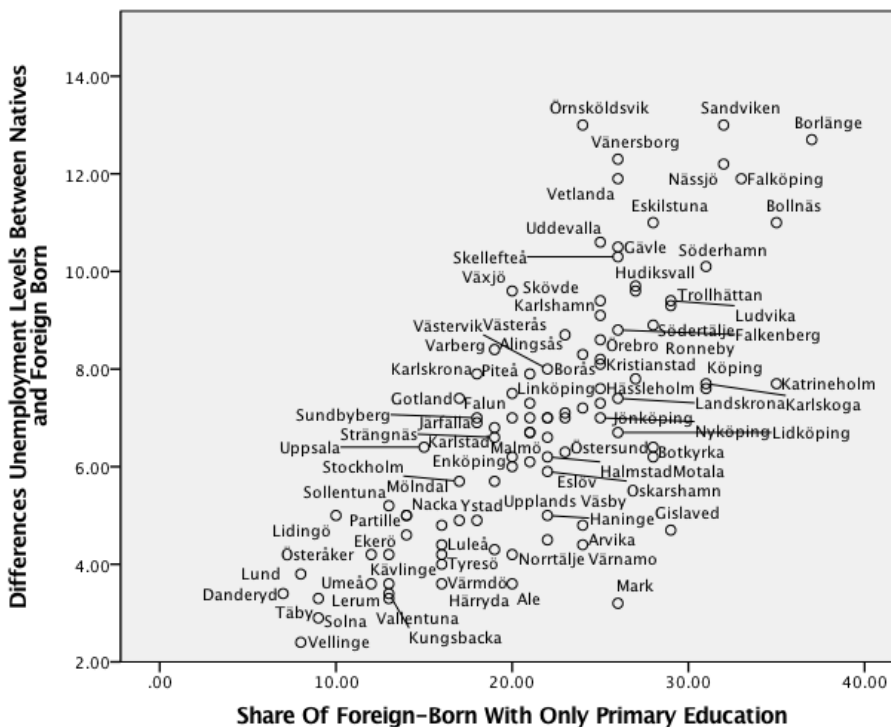
Pearson r = 0.74 Sources: SCB 2016c,h.

Figure 4. Scatterplot of the Correlation between The Share of the Population Foreign-Born and the Share of the Foreign-Born Population with only Primary Education.
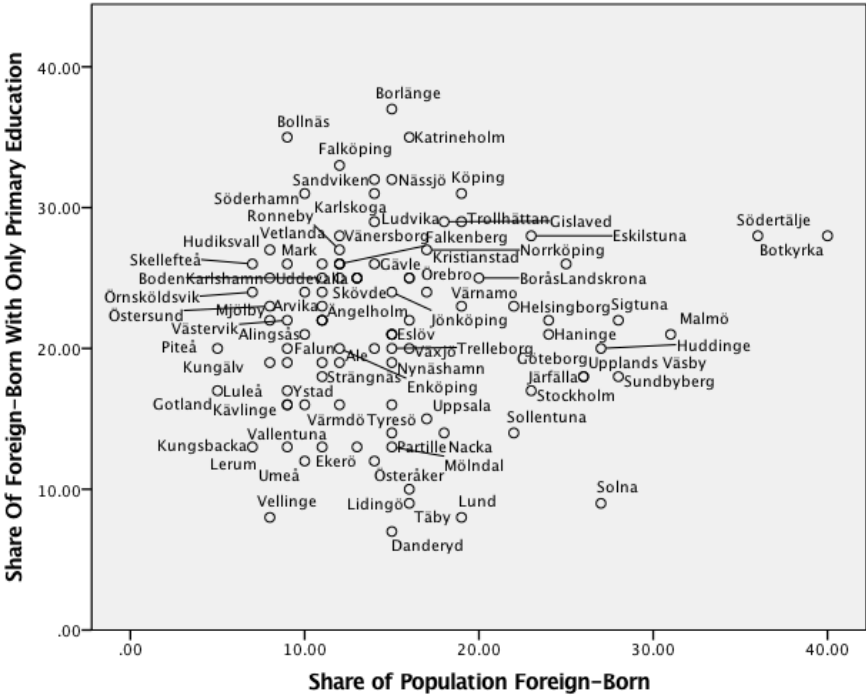
Pearson r = 0.03 Sources: SCB 2016g,h.

Figure 5. Scatterplot of the Correlation between the Logarithm of the Share of Publicly Owned Apartments Unoccupied in the Year 2000 and the Share of the Foreign-Born Population with only Primary Education.
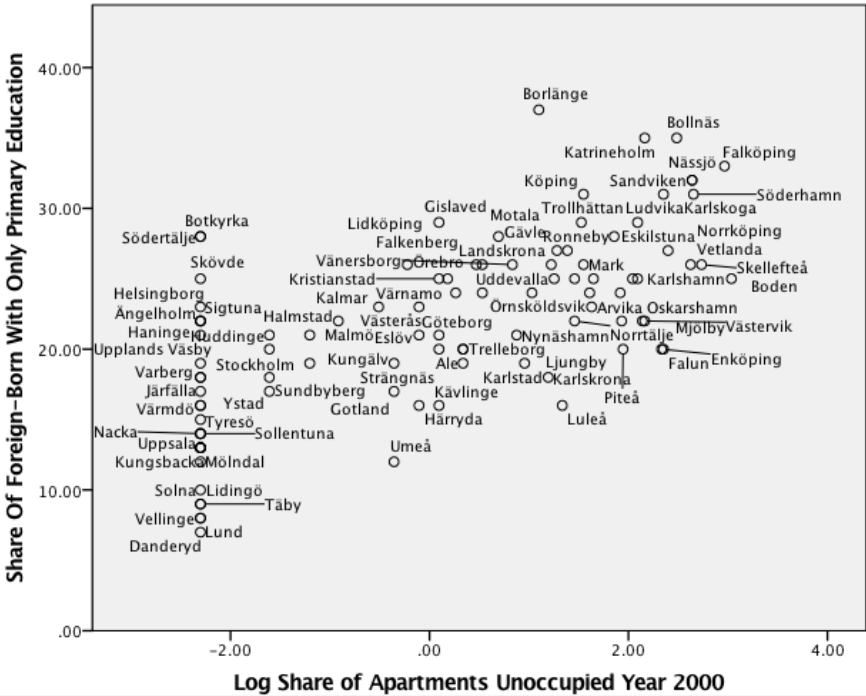
Pearson r = 0.68 Sources: SCB 2016f,h.

The analysis in this section has so far established that the association between segregation and worse labor market integration is not causal. An IV analysis will however still be conducted with the full set of controls. The results of this are presented in Table 4. The main purpose of including this additional IV analysis is to see the magnitude of the impact of reverse causality, also controlling for population characteristics. Conducting the IV analysis with all controls is however also important as an additional robustness test of the chosen instrument for segregation. The first stage analysis is presented in Model 1. The F-change statistic is still above 10, meaning that there should not be a weak instrument problem. It is important to note that the share of the foreign-born population with only primary education is hardly the only factor explaining current levels of segregation. The robust influence of the share of Million Homes dwellings on segregation should be interpreted as that many immigrant groups settled in the Million Homes areas in the 70's and 80s. This created segregation, and by large these residential patterns remain today.

In Model 2 the results for the second stage analysis are presented. The coefficients are very similar to the ones obtained in the OLS regression (Model 3). What this means is that it may be the case that failed labor market integration reinforces segregation, however this effect is in that case very marginal compared to the influence of the settlement patterns of the low-educated foreign-born, as well as the structural factors explaining these settlement patterns. The fact that a large share of the foreign-born with only primary education do not have jobs is needless to say an important part of the story as to why this category does not have the resources to live close to strong labor market zones, however it is quite clear that low education among foreign-born populations is the root cause explaining why some municipalities perform worse at labor market integration. As mentioned, a potential caveat to drawing the conclusion that the influence of reverse causality is only marginal is the possibility of that the instrumental variable is not good enough. I have no way of ruling this out, however there is clearly a strong connection between the share of Million Homes dwellings and segregation, and the variable meets the three relevant criteria posited by Sovey and Green (2011).

Finally in this section, we now proceed to analyzing the hypothesized interaction between segregation and poverty. This analysis would arguably have been more interesting if the impact of segregation had proven to be robust. Moreover the share of the population living in persistent risk of poverty does not either come out as significant in Model 3. However, the big

effect of the low education variable is evidence of that the socio-economic context is important for labor market integration, so it is still motivated to test the interaction effect. The interaction term is introduced in Model 4. It is far from significant, and introducing the interaction term makes no difference to the explained variance in labor market integration, as measured by the r-squared figure. Hypothesis 3 that segregation and poverty interact to reinforce the negative consequences on labor market integration must therefore be rejected. Data limitations about poverty may however have led to that the operationalization of the poverty variable is too rough. The highly significant variable for low education is informative about the composition of the foreign-born population, whereas the poverty variable is informative about the composition of the total population. Unfortunately there is no municipal data about poverty for just the foreign-born population, so we cannot rule out that the hypothesized interaction effect is real, even if it cannot be captured given the data limitations.

Table 4. Effect of Segregation on the Difference in Unemployment Levels between Natives and the Foreign-Born under All Controls – IV Analysis and Interaction Effect (Unstandardized b Coefficients, Standard Errors in Parentheses)

	Model 1 2SLS First Stage	Model 2 2SLS Second Stage	Model 3 OLS	Model 4 OLS
Dependent Variable	Segregation	Unemployment Difference between Natives and the Foreign-Born	Unemployment Difference between Natives and the Foreign-Born	Unemployment Difference between Natives and the Foreign-Born
Segregation		-0.006 (0.101)	0.012 (0.033)	0.015 (0.063)
Share Million Homes	0.421** (0.127)			
Log Population	3.455** (1.131)	0.295 (0.514)	0.236 (0.396)	0.231 (0.406)
Log Population Density	1.076 (0.703)	0.074 (0.257)	0.056 (0.238)	0.060 (0.245)
Log Unoccupied Apartments	0.149 (0.486)	0.170 (0.164)	0.166 (0.163)	0.165 (0.164)
Log Apartment Prices	1.390 (1.873)	1.022 (0.669)	0.978 (0.621)	0.986 (0.638)
Share Foreign-Born	-0.175 (0.154)	-0.101* (0.048)	-0.101* (0.048)	-0.101* (0.049)
Share Low Educated Foreign-Born	0.852*** (0.153)	0.292** (0.102)	0.277*** (0.059)	0.278*** (0.060)
Male Overrepresentation among Foreign-Born	0.430 (0.223)	0.138 (0.090)	0.130 (0.076)	0.129 (0.077)
Share in Poverty	0.222 (0.381)	0.107 (0.132)	0.101 (0.127)	0.118 (0.278)
Segregation*Poverty				-0.001 (0.008)
Intercept	-50.092** (16.145)	-11.796 (8.074)	-10.760 (5.674)	-10.917 (6.148)
Adjusted R²	0.655	0.579	0.471	0.575
F Change	11.029			
N	100	100	100	100

*** *p≤.001, **p≤.01, *p≤.05*
Sources: Boverket (2016); SCB 2016a,b,c,d,e,f,g,h,i; Mäklarstatistik (2016)

5.5. Robustness Tests with Different Operationalizations of Labor Market Integration

Finally we proceed to analyze the full model with different operationalizations of the dependent variable – labor market integration. As discussed in the methods section, there is no universal definition or operationalization of this concept. The general difference in unemployment levels was however used in the analysis until now because it is desirable to use a measure that does not exclude subsections of the foreign-born population, nor is sensitive to variation in labor market conditions that should affect both natives and the foreign-born. Testing whether the conclusions so far hold for different operationalizations of labor market integration is a form of robustness test. The results for these tests are presented in Table 5. In none of the models, except for the special case Model 8, does segregation comes out as significant, reaffirming the conclusion that it does not have a causal effect on labor market integration.

In Model 2 the difference in employment levels between natives and the foreign-born is used as the dependent variable (SCB 2016c). Comparing employment levels accounts for the fact that some people are not in the labor force, however they are also likely to be so because of personal characteristics, and not only because of the nature of the local context. There are not strong reasons to believe that municipal context matter greatly in explaining why some people within Sweden are outside the labor force. The Swedish labor market policy regime produces strong incentives for all able workers to be in the labor force.

In Model 3 the dependent variable is the unemployment level among the foreign-born (SCB 2016c). This operationalization most accurately captures the state of labor market integration in municipalities. It is however sensitive to differences in unemployment rates that are merely related to the fact that there are regional variations in the strength of the labor market. In Model 4 the dependent variable is the difference in unemployment between natives and the foreign-born who have resided 4-10 years in Sweden (SCB 2016c). The reason for including this model is to control for factors related to time of residence[8]. Models 5 and 6 use respectively the difference in unemployment rates between natives and people born outside

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[8] For example, it could be that all 1000 immigrants in Municipality A immigrated to Sweden ten years ago, whereas all 1000 immigrants in Municipality B immigrated only one year ago. The unemployment rate among the foreign-born is most likely higher in Municipality B, however in this extreme case we would have every reason to believe that it is because immigrants in Municipality A have had more time to integrate.

EU/EFTA and between natives and people who immigrated as refugees (SCB 2016c). People born outside of Europe, and in particular refugees stand out in Sweden and other countries as the immigrants who struggle most to integrate.

Only in Model 2 does the coefficient of segregation come anywhere close to being significant (p=0.065). However as already stated, the overwhelming conclusion remains that segregation does not have a causal impact on labor market integration. I will not go deeper into analyzing each model, however the influence of the share of the foreign-born with only primary education is robust throughout all models, except for Model 2. This Model shows a somewhat different picture compared to the rest of the models. This could be explained by that there are in fact systematic local differences within Sweden when it comes to being in the labor force. It is however beyond the scope of this thesis to investigate whether this is the case, and in any case the results in Model 2 do not drastically alter the overall picture.

It is also interesting to compare the r-squared values. Most of them are high, in particular for Model 2, explaining nearly 75 percent of the variation in the employment difference. When r-squared values are at this level it is very unlikely that estimates based on the models are biased because of omitted variables. There is however substantial variation in the r-squared values, with Model 6 explaining less that 35 percent of the difference in unemployment rates between natives and refugee immigrants. This illustrates that the results are sensitive to how labor market integration is operationalized, and validates the choice to test models with different operationalizations.

This section has further demonstrated that when looking at the overall pattern, segregation does not have any causal impact on labor market integration. There are however still reasons to expect that the foreign-born who have grown up in segregated areas will fare worse in the labor market, as found by a recent Swedish study (Andersson & Malmberg 2016). This category is relatively small as a share of the total foreign-born population, however it is the category that should be most affected of living in a segregated context.

In Model 7 the results are presented for the effect on youth unemployment among the foreign-born. The data is for June 2014, and comes from the Public Employment Service, and is the unemployment rate among the foreign-born aged 18-24 (Arbetsförmedlingen 2016). A new control is also entered – school results for the foreign-born (Skolverket 2016). This variable is

the average share of the foreign-born graduating from primary school passing all subjects for the years 2014, 2015 and 2016[9]. The data comes from the National Agency for Education. Even when looking specifically at youth unemployment among the foreign-born segregation is not a significant predictor. The segregation coefficient is larger than with most other specifications, however the p-value is as high as 0.146, so there is much uncertainty as to whether the impact going from segregation is real.

Finally, in Model 8 the same regression is run again, this time dropping the share of the foreign-born with only primary education as a control. In one sense this is motivated, because controlling for school results among the foreign-born population is a different way of controlling for low education levels, and thus there would be no need to have double controls for education. On the other hand, if we only control for school results, we miss out on controlling for the impact the education level of parents has on labor market integration of youths. This influence is most likely substantial, so the results in Model 8 must be viewed with caution. What happens however is that segregation now comes out as highly significant. It appears that when focus is directed towards the people who have grown up in segregated areas, there are negative effects caused by the neighborhood context. School results also come out as significant in Model 8 – meaning that under all other controls the less foreign-born children who pass all subjects the higher youth unemployment is among the foreign-born. The share of the population living in persistent risk of poverty also comes out as significant. This gives weight to what has been stressed in this thesis, namely the importance the socio-economic context has for integration.

Because of the limitations when it comes to data and time, the situation for the young foreign-born category will not be analyzed further. Especially the fact that Model 8 does not control for the strength of the local labor market and education levels among the adult foreign-born population should lead us to some caution when drawing conclusions. The findings in Model 8 can however be seen as something for future research to further explore.

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[9] An average is used because the number of foreign-born children graduating each year is rather small in the least populated municipalities

Table 5. Effect of Segregation on Labor Market Integration – Alternative Operationalizations (Unstandardized b Coefficients, Standard Errors in Parentheses)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Dependent Variable	Difference In Unemployment	Difference In Employment	Unemployment Foreign-Born	Difference Unemployment after 4-10 Years in Sweden	Difference Unemployment Born Outside EU	Difference Unemployment Refugees	Youth Unemployment Foreign-Born	Youth Unemployment Foreign-Born
Segregation	0.012	0.119	0.013	0.035	-0.037	-0.010	0.125	0.221**
	(0.033)	(0.064)	(0.038)	(0.042)	(0.042)	(0.064)	(0.085)	(0.077)
Log Population	0.236	-0.501	0.208	-0.043	-0.214	-0.083	-0.434	-0.937
	(0.396)	(0.759)	(0.447)	(0.501)	(0.501)	(0.762)	(1.019)	(1.025)
Log Population Density	0.056	1.419**	0.212	0.285	0.006	-0.331	0.721	0.274
	(0.238)	(0.456)	(0.269)	(0.301)	(0.301)	(0.458)	(0.611)	(0.599)
Log Unoccupied Apartments	0.166	0.761*	0.217	0.039	0.150	0.380	-0.039	0.043
	(0.163)	(0.312)	(0.184)	(0.206)	(0.206)	(0.313)	(0.426)	(0.436)
Log Apartment Prices	0.978	-1.455	1.078	1.512	1.713*	3.253**	0.345	-0.539
	(0.621)	(1.191)	(0.702)	(0.786)	(0.787)	(1.196)	(1.589)	(1.589)
Share Foreign-Born	-0.101*	-0.449***	-0.173**	-0.105	-0.154**	-0.181	-0.280*	-0.226
	(0.048)	(0.093)	(0.055)	(0.061)	(0.061)	(0.093)	(0.125)	(0.126)
Share Low Educated Foreign-Born	0.277***	0.186	0.293***	0.415***	0.315***	0.329**	0.410*	
	(0.059)	(0.113)	(0.067)	(0.075)	(0.075)	(0.114)	(0.168)	
School Results Foreign-Born							-0.079	-0.142**
							(0.058)	(0.053)
Male Overrepresentation among Foreign-Born	0.130	0.477**	0.148	-0.051	0.079	0.022	-0.173	-0.248
	(0.076)	(0.146)	(0.086)	(0.096)	(0.096)	(0.147)	(0.200)	(0.203)
Share in Poverty	0.101	0.885***	0.444**	0.251	0.332*	0.346	0.586	0.807*
	(0.127)	(0.244)	(0.144)	(0.161)	(0.161)	(0.245)	(0.332)	(0.328)
Intercept	-10.760	31.060**	-9.005	-16.326*	-10.854	-25.550*	2.139	25.297*
	(5.674)	(10.883)	(6.414)	(7.178)	(7.190)	(10.921)	(15.287)	(12.295)
Adjusted R^2	0.580	0.744	0.681	0.577	0.496	0.331	0.482	0.454
N	100	100	100	100	100	100	100	100

*** $p \leq 001$, ** $p \leq 01$, * $p \leq 05$
Source: Arbetsförmedlingen 2016; SCB 2016a,c,d,e,f,g,h,i; Mäklarstatistik (2016); Skolverket 2016

6. Concluding Discussion

The empirical analysis only generated support for the first of the three hypotheses. There is an association between segregation and worse labor market integration, however it is a spurious relationship. The association between segregation and failing labor market integration is mostly explained by settlement patterns of the foreign-born population with only primary education. This group settles disproportionately in more segregated municipalities, and also stands out as struggling to integrate into the labor market. The reason for why this category of immigrants settle in more segregated municipalities is by large historic abundance of housing. The empirical analysis does not find that segregation and poverty rates are strong predictors of labor market integration, and no interaction effect between these two factors was found.

These findings are in line with what some previous European studies have found (Andersson et al. 2014, Musterd et al. 2003), namely that the characteristics of neighborhoods do not seem to have an effect that is independent from human capital effects in explaining labor market integration. In light of the theoretical overview, this can be interpreted as that access to ethnic networks facilitates integration, that socialization processes leading to non-participation in the labor market are not stronger where there is more segregation, and that stigmatization is not a problem in more segregated municipalities to the extent that it results in failed labor market integration.

I however want to be careful in making conclusions about how these mechanisms work based on the empirical analysis. Especially when it comes to socialization and stigmatization processes, looking at the aggregate municipal level is very rough. These results can be seen as preliminary evidence of the suggested interpretations in light of the three theoretical strands, however drawing far-reaching conclusions would make me guilty of the ecological inference fallacy, that is drawing conclusions about individual behavior based on aggregate data.

On the other hand, the particular design of this study is an excellent test of the version of the spatial mismatch hypothesis claiming that many immigrants reside in places where the labor market is weak, and that this by large explains integration levels. Indeed, the empirical analysis demonstrates that this is most likely the case. Immigrants with the lowest education,

and thus the worst prospects to find jobs, settle disproportionately where housing has been cheap and abundant. It can be assumed that these municipalities in many cases have these housing market characteristics because of out-migration related to weak labor markets.

The policy implications of the findings are that in order to improve labor market integration, most focus should be devoted to improving the human capital and employability of the unemployed. This is already by large the focus of the Swedish integration measures. One of the most important policy debates in 2016 was between those arguing that raising the education levels among the newly immigrated should be the main focus of integration policy, and those arguing that the main focus should instead be on restructuring the labor market, in order to make room for a low-wage sector where new immigrants can find their first jobs on the Swedish labor market. The results in this thesis do not provide any indication of which of these two policy directions that should be pursued, however the findings underline that employability related to low human capital is the main factor explaining variation in municipal integration levels, and that the core issue when it comes to labor market integration is now being discussed in the policy debate.

The results should also be discussed in relation to another heated Swedish policy discussion during the last years, namely the one of burden sharing between municipalities in refugee reception. Before 2016, municipalities were not obligated to accept refugees, and duly some municipalities have had very low levels of refugee immigration. Some of the most well known of these municipalities are the affluent metropolitan suburbs that in Figures 1 and 3 appear in the lower left corner, showing a mix of strong labor market integration, little segregation and few immigrants with only primary education. A new law as of 2016 makes it mandatory for all municipalities to accept refugees. Given the picture emerging through the analysis in this thesis it is hard to find arguments for why affluent municipalities with strong labor markets should not take a bigger responsibility. It is true that municipalities declining to take refugees have few vacant dwellings, however as of 2016 there is a housing shortage in most Swedish municipalities.

The findings in this thesis should also be discussed in light of the academic and public policy debate about area and desegregation policies. For instance, there was a policy package freely translated to The Metropolitan Cities Plan (in Swedish "Storstadssatsningen), which between 1999 and 2004 enabled increasing investments and general financial support to socially and

economically marginalized areas in the metropolitan regions. By critics, this package has been held up as ineffective, in the sense that it did not improve the structural conditions in the areas. Focusing on particular areas can also be seen as unfair, since it may be argued that individuals living in middle class neighborhoods, but in poor households, deserve equal public support as those individuals living in poor households in the most marginalized areas (Andersson et al. 2009; Andersson et al. 2010).

The findings that segregation does not have a causal effect on labor market integration is indicative of that particular area policies are unlikely to be the most effective measures to further labor market integration. This said, the results still leave open the possibility that segregation has causally detrimental impacts on other dimensions of integration. In particular, school results and the life prospects of adolescents in general are likely to be vulnerable to high segregation levels. In municipalities with high shares on immigrants, like Södertälje, there have been reports in recent years that many people live extremely crowded (Sveriges Radio 2016). Where this is the case, calls to prevent more new immigrants from settling may be justified, because it is arguably bad for children to grow up in overcrowded apartments. However, it bears repeating that Södertälje and municipalities with similar reputations have rather average performances when it comes to labor market integration, and in the empirical analysis having a larger share of the population that is foreign-born was one of only a few variables that was fairly robustly associated with better labor market integration. One may on the other hand argue that there is something intrinsically bad with segregation, in the sense that it is indicative of an unjust society, since ethnic origin should not determine where you are able to find housing. Nevertheless, desegregation and area policies need to be motivated on these grounds instead of presumed benefits when it comes to labor market integration.

A final note on this is however that the fact that public policy supports certain areas more means that the design of the study is not truly exogenous. As discussed, well-known cases of high segregation like Södertälje and Botkyrka are not among the municipalities where labor market integration is weakest. It may however be the case that segregated areas in the metropolitan regions receive disproportionate levels of state support. The counterfactual then is how the situation would have been under a system that redistributes less between rich and poor municipalities.

The implications for future research are that less attention should be put on trying to find a general relationship between segregation and labor market integration. Such a relationship is unlikely to be found, at least in Sweden. More attention is needed on comparing how residing in a segregated area has different effects for those who settle there as adults and those who grow up there. With access to individual level data, there is a possibility to advance a clearer picture about this. There are still reasons to believe that there are interaction effects between segregation and factors related to the socio-economic context, however the empirical analysis indicates that more precise data would be needed to find such effects.

The most striking result in the empirical analysis is that the settlement patterns of the foreign-born with the lowest level of education explain why there is an association between segregation and worse labor market integration. I demonstrated that historic abundance of housing is an important factor explaining these settlement patterns, however there is probably more to this story, so an in-depth investigation would be motivated. In particular to what extent the Million Homes Program contributed to abundance of cheap but segregated housing would motivate more systematic study.

In the coming years it will also be interesting to study if the picture emerging from the empirical analysis in this thesis changes. A severe housing shortage means that municipalities increasingly need to find unconventional solutions to provide housing for newly arrived refugees, and since there is practically no abundance of housing anymore the link with low educated foreign-born settling in municipalities with weak labor markets may be broken. On the other hand, migration patterns are to some extent self-reinforcing, since reliance on ethnic networks means that new immigrants will tend to settle where their co-ethnics already reside.

One final possibility is that municipalities that started receiving large numbers of refugees just over the last two decades were at first unprepared for working with effective integration measures, but may now have developed better working methods. Over the coming decade, there is an important job for researchers to study the integration of the several hundred thousand refugees who have come to Sweden during the 2010s. The severe housing shortage means that it is difficult for politicians to apply measures to desegregate cities, and it also means that it may be more difficult for new immigrants to settle close to strong labor markets. On the other hand, the larger the foreign-born population the more positive effects there could be from ethnic networks, and the accumulated knowledge about integration policy should

now be greater in the average municipality. As of 2016, there is awareness in Swedish politics that factors identified as important in this thesis such as education levels among the foreign-born and burden-sharing by municipalities with strong labor markets need to be promoted.

Finally, if there is a de facto shift towards increasing refugee dispersal to municipalities with strong labor markets it needs to be studied. Local programs to work with segregation and labor market integration are also important to study. It is one thing to identify the general relationships causing variation in labor market integration, however it may still be the case that policies attempting to promote the "right" factors will backfire, and so the best answers to how to design effective integration policies are most likely to come from evaluations of actual policies.

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Appendix 1

Table 6. Descriptive Statistics.

Variables	N	Mean	Std.	Min	Max
V1 = Segregation	100	27.67	8.38	8.70	46.80
V2 = Million Homes Apartments Share Of Housing Stock	100	12.40	5.42	1.00	38.00
V3 = Difference Unemployment Levels Natives and Foreign-Born	100	6.94	2.54	2.40	13.00
V4 = Log Population	100	10.91	0.66	10.14	13.72
V5 = Log Population Density	100	4.55	1.43	1.95	8.53
V6 = Log Unoccupied Apartments	100	0.00	1.83	-2.30	3.03
V7 = Log Apartment Prices	100	9.89	0.61	8.32	11.18
V8 = Share of Population Foreign-Born	100	14.83	6.52	5.00	40.00
V9 = Share Low-Educated Foreign-Born	100	21.59	6.40	7.00	37.00
V10 = Male Overrepresentation among Foreign-Born	100	-2.78	2.87	-10.00	5.00
V11 = School Results Foreign-Born	100	53.44	11.69	23.97	85.33
V12 = Share in Poverty	100	7.33	2.61	2.20	16.30
V13 = Difference In Employment	100	23.50	6.25	12.60	41.00
V14 = Unemployment Foreign-Born	100	11.88	3.30	6.10	18.80
V15 = Differences Unemployment After 4-10 Years in Sweden	100	9.80	3.20	3.70	20.20
V16 = Difference In Unemployment Born Outside EU	100	9.49	2.94	4.00	17.00
V17 = Difference Unemployment Refugees	100	10.83	3.88	3.80	24.90
V18 = Unemployment Young Foreign-Born	100	12.80	5.85	2.40	31.30

Sources: Arbetsförmedlingen 2016; SCB 2015, 2016a,b,c,d,e,f,g,h,i; Mäklarstatistik (2016); Skolverket 2016

Appendix 2

Table 7. Correlation Matrix of all Variables

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18
V1	1	0.49	0.51	0.38	0.02	0.25	-0.16	0.39	0.59	0.55	-0.50	0.64	0.51	0.55	0.56	0.34	0.29	0.50
V2	0.49	1	0.04	0.39	0.42	-0.22	0.29	0.66	0.06	0.30	-0.08	0.29	-0.10	0.09	0.10	-0.09	-0.11	0.05
V3	0.51	0.04	1	0.00	-0.42	0.58	-0.49	-0.06	0.74	0.44	-0.58	0.58	0.76	0.96	0.80	0.95	0.84	0.77
V4	0.38	0.39	0.00	1	0.46	-0.29	0.52	0.43	-0.16	0.18	0.02	0.20	-0.10	0.02	0.03	-0.12	-0.04	-0.05
V5	0.02	0.42	-0.42	0.46	1	-0.71	0.73	0.65	-0.52	-0.09	0.28	-0.23	-0.47	-0.44	-0.29	-0.48	-0.42	-0.34
V6	0.25	-0.22	0.58	-0.29	-0.71	1	-0.75	-0.39	0.68	0.26	-0.52	0.48	0.70	0.62	0.47	0.57	0.48	0.51
V7	-0.16	0.29	-0.49	0.52	0.73	-0.75	1	0.37	-0.71	-0.29	0.49	-0.49	-0.67	-0.55	-0.41	-0.50	-0.33	-0.49
V8	0.39	0.66	-0.06	0.43	0.65	-0.39	0.37	1	0.03	0.32	-0.14	0.32	-0.16	-0.05	0.07	-0.17	-0.18	-0.04
V9	0.59	0.06	0.74	-0.16	-0.52	0.68	-0.71	0.03	1	0.47	-0.73	0.72	0.73	0.78	0.75	0.68	0.52	0.69
V10	0.55	0.30	0.44	0.18	-0.09	0.26	-0.29	0.32	0.47	1	-0.51	0.58	0.52	0.48	0.35	0.31	0.20	0.31
V11	-0.50	-0.08	-0.58	0.02	0.28	-0.52	0.49	-0.14	-0.73	-0.51	1	-0.54	-0.52	-0.58	-0.62	-0.49	-0.42	-0.55
V12	0.64	0.29	0.58	0.20	-0.23	0.48	-0.49	0.32	0.72	0.58	-0.54	1	0.68	0.70	0.61	0.52	0.38	0.56
V13	0.51	-0.10	0.76	-0.10	-0.47	0.70	-0.67	-0.16	0.73	0.52	-0.52	0.68	1	0.82	0.62	0.72	0.61	0.71
V14	0.55	0.09	0.96	0.02	-0.44	0.62	-0.55	-0.05	0.78	0.48	-0.58	0.70	0.82	1	0.80	0.91	0.78	0.80
V15	0.56	0.10	0.80	0.03	-0.29	0.47	-0.41	0.07	0.75	0.35	-0.62	0.61	0.62	0.81	1	0.74	0.63	0.71
V16	0.34	-0.09	0.95	-0.12	-0.48	0.57	-0.50	-0.17	0.68	0.31	-0.49	0.52	0.72	0.91	0.74	1	0.89	0.75
V17	0.29	-0.11	0.84	-0.04	-0.42	0.48	-0.33	-0.18	0.52	0.20	-0.42	0.38	0.61	0.79	0.63	0.89	1	0.67
V18	0.50	0.05	0.77	-0.05	-0.34	0.51	-0.49	-0.04	0.69	0.32	-0.55	0.56	0.71	0.80	0.71	0.75	0.67	1

Sources: Arbetsförmedlingen 2016; SCB 2015, 2016a,b,c,d,e,f,g,h,i; Mäklarstatistik (2016); Skolverket 2016. See Appendix 1 for variable explanations.