Department of Sociology

Working Paper Series

THE INTERGENERATIONAL TRANSMISSION OF DISADVANTAGE: EDUCATION AND LABOR MARKET GAPS BETWEEN CHILDREN OF NATIVES AND CHILDREN OF IMMIGRANTS

No 27 (November 2016)

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The intergenerational transmission of disadvantage: Education and labor market gaps between children of natives and children of immigrants

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Abstract

We analyze whether gaps in educational attainment and labor market outcomes between children of immigrants and children of native Swedes are dependent on a relative lack of resources within the family and/or in the broader social environment, particularly in neighborhoods. In our empirical analyses, we follow all individuals who completed compulsory school during the 1990s over time and analyze their educational and labor market careers. We conclude that the gaps between children of immigrants and children of native Swedes are mainly generated by differences in various forms of resources in the family of origin. The role of neighborhood segregation is also substantial. Moreover, our results indicate that the gaps in employment are larger than the corresponding gaps in educational attainment. When gainfully employed, children of immigrants follow roughly the same income path as children from native families. The gendered patterns found in the analyses indicate that female children of immigrants face lower barriers and have greater opportunities (as compared to children of native Swedish parents) than their male counterparts.

Funding: This research was funded by the Swedish Research Council (Vetenskapsrådet), grant numbers 2015-01635 and 2015-01715

Introduction

In recent decades, Sweden, much like many other western countries, has opened its borders to substantial waves of immigration. This extensive immigration has resulted in a rapid growth in the proportion of children of immigrants in Swedish society. Earlier studies unequivocally show that adult immigrants lag behind natives in terms employment and wages (when gainfully employed), and more often live on social welfare and in disadvantaged neighborhoods (Alba and Foner 2015; Biterman and Franzén 2007; Heath, Rothon and Kilpi 2008; Hermansen 2016; Musterd 2005; Szulkin et al. 2014). Swedish studies on the children of immigrants and their life-chances have shown that young people of immigrant origin have poorer elementary and secondary school grades, are less likely to complete high school, and on average spend fewer years in education (Hällsten and Szulkin 2009).

Children of immigrants are a heterogeneous group, and there are clear differences in school performance depending on whether they were born in Sweden and on the socio-economic background of their families (Brandén, Birkelund and Szulkin 2016; Böhlmark 2009; Skolverket 2005; Szulkin and Jonsson 2007). Young people of immigrant origin who were raised in Sweden also have lower employment levels and incomes than their native-Swedish peers (Nekby, Vilhelmsson and Özcan 2007; Rooth and Ekberg 2003). At the same time, much inequality is inherited across generations. Family background and the broader childhood environment structure child development and children's careers when adults.

In this paper, we analyze differences in the educational and labor market careers of young people of immigrant versus native-Swedish origin. In order to capture the impact of social background on differences in future life-chances, we study the parental generation's socio-economic status as well as the residential context during adolescence.

We will analyze a dataset that includes all individuals who completed compulsory school between 1990 and 2000, follow these individuals over time and analyze their educational and labor market careers, which are measured when the individuals are 30 years old.[1] Extensive administrative data that are available for research in Sweden provide a unique opportunity to address the role of childhood living conditions in generating stratified social outcomes in adulthood.

Families

Educational attainment is strongly structured by social background. Across a multitude of countries, Hertz et al. (2007) found that the global intergenerational correlation in education was close to .4. We know from previous literature that parents' educational, cultural, and economic resources, but also their understanding of how the educational system works, influence educational results, educational careers and, in the long term, labor market careers (see Breen and Jonsson 2005 for a review of the literature; Erikson and Jonsson 1996; Schneider and Coleman 1993). Families play a central role in children's socialization and therefore contribute to their future successes or failures in adulthood.

Parents can utilize a wide range of strategies to support children and raise their chances of success in the educational system. Parents invest time and other resources in their children, and use everyday practices in order to transfer cultural capital to the next generation. Parents can help with their children's school work and can try to expand their horizons through their choice of intellectually stimulating leisure-time activities. Furthermore, as (Lareau 2003) has noted, the cultural repertoire of well-educated parents resembles the cultural repertoire of the educational system, which reinforces the advantage of children from higher social classes. Previous research has shown that the social position of the family of origin influences

[1] An exception from this rule is that the analysis of individuals who are not in employment or education (NEET) is performed for those who are 23 years old.

children's success in the educational system, in part through the children's performance in school, and in part through their educational choices and educational careers, controlling for their previous performance (Boudon 1974; Breen and Jonsson 2005; Erikson and Jonsson 1996).

Intergenerational transfers may also explain gaps in life-chances between immigrants and natives. Immigration is selective in that certain, often more resourceful, social strata tend to migrate. However, immigration often means that some resources must by necessity be left behind, and compared to the majority population, immigration from a poorer to a more prosperous context also means that immigrants will be equipped with less resources compared to the majority in the new country. To the extent that immigrant families have more limited resources than native families, one can expect that children of immigrants will be disadvantaged in the educational system. Moreover, it is reasonable to assume that immigrant parents have less knowledge about the educational system and about which educational tracks hold the greatest potential for future success, and we would also expect the incidence of matching cultural repertoires to be lower (Lareau 2003). Indeed, previous research tends to show that the disadvantaged positions of immigrant families in a stratified social system impose limits on the educational career possibilities of their offspring (Heath, Rothon and Kilpi 2008; Hermansen and Birkelund 2015). A substantial part, and sometimes all, of the observed difference in school performance between immigrants' children and their peer-group of non-immigrant background disappears after the introduction of statistical controls for the education and other socio-economic characteristics of the family of origin (Heath and Brinbaum 2007; Heath, Rothon and Kilpi 2008; Warren 1996). Jonsson and Rudolphi (2011) found a similar pattern in an analysis of all students who completed compulsory school in Sweden between 1998 and 2003. Hence, resources transferred across generations explain much of the difference between children born in Sweden of Swedish parents and those born of

immigrant parents. In addition, it can be noted that studies of the intergenerational transmission of human capital indicate that family is more important for immigrants than natives (Hammarstedt and Palme 2012). The immigrant family may however also induce their children to make higher investments in education than native children. This is known as the immigrant optimism hypothesis (Heath 2010). One reason is that even if parents do not have the means to change their own situation for the better, because of a lack of resources, or discrimination, they have more scope for doing so with their children, especially in a country where education is free at all levels. Many immigrant families had middle class positions in their countries of origin, but are unable to reproduce these positions in Sweden. Previous research on secondary level education in Sweden provides support for such a view (Jonsson and Rudolphi 2011), although here the phenomenon is specific to certain particularly ambitious immigration groups.

The generation of inequality does not end with education, but continues in the labor market. In a labor market where employers utilize meritocratic principles when hiring, promoting, and rewarding workers, formal education ought to be of crucial importance, and background factors, such as social and ethnic origin, should play no role when differences between individuals in educational attainment are taken into account. Nevertheless, this implies that any gaps in educational merits between children of immigrants and native Swedish children will reemerge as gaps in labor market outcomes. However, Breen and Goldthorpe (2001) note that in a market economy, it is the employer who defines merits. While education is important, other characteristics such as loyalty, conscientiousness, adaptability, and social competence may also be sought. Employers may not only demand job skills, but also certain manners or linguistic usage, which again makes the family of origin a central asset (or a liability) that may influence an individual's career over and above formal education. Empirical analyses have shown that individuals with the same level of education

and the same type of education may earn different incomes depending on the class position of the family of origin (Erikson and Jonsson 1998; Hällsten 2013). Furthermore, there is experimental evidence that some employers include a Swedish sounding name in their definition of merit (Bursell 2014; Carlsson and Rooth 2007). Obviously, discrimination constitutes an important career obstacle for persons of foreign origin, regardless of their education. Another mechanism that may generate disadvantage on the labor market for the children of immigrants is that a relatively high proportion of young individuals start their labor market careers at an establishment at which one of their parents works (Kramarz and Skans 2014). Due to the higher unemployment rates found among the adult immigrant population, their children will experience fewer opportunities to enter the labor market using personal ties, and when they do utilize such ties, they may be channeled into lower skilled segments, since this is where immigrants tend to be over-represented.

The above arguments indicate that ethnic origin may have a direct effect on the future labor market careers of individuals, independent of the family's socio-economic status. This ethnic disadvantage of children of immigrants can materialize in two ways. First, these children may have relatively low employment opportunities. Second, they may be pushed into the labor market segment that offers good employment opportunities for less qualified jobs but relatively small chances of getting a good job.

Neighborhoods

The high level of social and ethnic segregation in numerous European cities (Biterman and Franzén 2007; Malmberg et al. 2016; Musterd 2005) means that many children of immigrants grow up in low-income neighborhoods with relatively low levels of education, where levels of unemployment and the number of social welfare recipients are high, and where contacts with the majority population are limited. The social structure of a local community can exercise a

long-term influence on individuals who grow up there. The everyday life of individuals in a local community is characterized by specific patterns of interactions among family members and neighbors (both adults and children), in youth centers, athletic clubs, and last but not least, in schools with other pupils and teachers. Members of the local community can function as role models and convey interests, norms and aspirations, and can also exercise informal social control (Coleman and Hoffer 1987; Crowder and South 2003; Szulkin and Jonsson 2007).

Children of immigrants in segregated and socially marginalized neighborhoods are presented with many examples of adults whose educational merits from their countries of origin do not lead to adequate employment in the new country. Under such circumstances, it is likely that children underestimate the value of education and formal merits and therefore put less effort into school work (cf. Morgan 2005). A more pointed version of this hypothesis states that minority groups who have long lived in marginalized circumstances may be more disposed to develop oppositional cultures which question the central social values of the majority society (Fordham and Ogbu 1986). Observing various forms of obstacles and social mobility barriers (Zhou 1997) in the adult generation may have a negative impact on the educational aspirations of the generation growing up.

Hence there are reasons to expect that ethnic and social residential segregation may explain part of the gap in educational attainment between children of native and foreign origin and that it may thus influence young people's future employment careers. Even when educational attainment has been accounted for, a direct effect of segregation on labor market outcomes may arise through social network effects. Many, or even most, employees have found their jobs via informal channels (Hensvik and Skans 2013), and the extent of network ties explains a substantial part of the income differences between employees with similar qualifications (Arrow and Borzekowski 2004). As a consequence, socially and ethnically

segregated neighborhoods are likely to generate less helpful networks when it comes to finding gainful employment and well-paid jobs (Andersson and Malmberg 2016).

Since immigrants are newcomers to a country, it is reasonable to assume that immigrant families' social contacts usually do not include people with power and influence, even more so if they live in segregated environments. Immigrant families' relatively limited access to advantageous social contacts may therefore constitute a disadvantage for the future employment of their children (Behtoui 2006; Olli Segendorf 2005). The individuals studied in this paper are relatively young. This means that the importance of the family's social ties and the peer contacts developed in the local community by the children themselves may be greater than the importance of these factors later in life. Research suggests, for example, that neighborhood disadvantage during adolescence is of particular importance for educational outcomes, whereas its influence is lower at other ages (Wodtke, Elwert and Harding 2016). Thus, segregated housing that yields limited ties with the majority population should also constitute an obstacle to developing the type of networks that produce potentially high payoffs in the labor market.

The arguments presented here give an unequivocally pessimistic view of the consequences of ethnic and socio-economic segregation on young people of foreign origin. However, as shown in Bygren and Szulkin (2010), ethnic enclaves comprising people of the same national background can under some circumstances have a positive influence on the future prospects of the ethnically homogeneous groups that share the local community's immediate environment. Ethnic residential segregation in Sweden has created multi-ethnic environments rather than ethnic homogeneity, and there is less reason to expect that the positive mechanisms mentioned here would dominate over the negative.

Data

The dataset employed in the empirical analyses is comprised of population register data and includes all individuals who were born between 1974 and 1989 (for outcomes measured at the age of 23; 1.6 million observations) or between 1974 and 1982 (for outcomes measured at the age of 30; 850,000 observations), who were registered as residing in Sweden at the age of both 16 and 23/30, and who, if they are foreign-born, migrated to Sweden prior to age 13. These individuals have been linked to their biological or adoptive parents via Sweden's multigenerational registers, enabling us to assess their socio-economic and ethnic background.

Dependent variables

We perform analyses on four dependent variables that are intended to capture different dimensions of ethnic stratification in educational and labor market outcomes.

(1) Not in Education, Employment or Training (NEET) is measured at the age of 23. We follow Bäckman and Nilsson (2016) and define enrollment in education as being registered as a student during a given year, or having received more than 1 so-called price base amount in study grants combined with not having earned more than 3.5 price base amounts from employment that year (the price base amount is used for the purpose of Swedish social insurance calculations, and many benefits relate to this definition). An individual is considered as being NEET if s/he was not a student (given this definition) and/or earned less than half a price base amount during the year s/he turned 23.

(2) Graduation from tertiary education is measured at the age of 30, and is based on Statistics Sweden's educational nomenclature SUN2000. It captures whether an individual has at least 3 years of tertiary education.

(3) Being employed is measured at the age of 30, and is constructed as whether the individual earns at least half the median earnings of the 44-46 year olds in the population, which is a good proxy for full time employment (Erikson et al. 2007, p. 27-29).
(4) Earnings are measured at the age of 30 as the cohort-specific earnings percentile of the individual, for those who have previously been defined as employed (according to (3)). Thus we aim to identify whether the differences in labor market outcomes are driven by differences in employment or in levels of earnings when gainfully employed.

All outcomes, with the exception of NEET, are measured at the age of 30. The reason for this age selection is that labor market attachment may be unstable during a person's early twenties, and earnings during the early twenties do not reflect a more permanent employment picture (Björklund 1993). NEET, on the other hand, is intended to capture inequality precisely in these volatile years, and is thus measured at age 23.

Independent variables

Our main independent variable is *immigrant status*, combining the individual's and his or her parents' country of birth. If a person was born abroad to two foreign-born parents, s/he is considered a first-generation immigrant. A person born in Sweden to two foreign-born parents is categorized as a second-generation immigrant.[2] Both first and second generation immigrants are divided into European and non-European categories, based on their own country of birth (for the first generation) or the mother's country of birth (for the second generation). The idea behind our classification is to capture potential differences between young people originating from more or less developed parts of the world, and we know that non-western immigrants in particular tend to be characterized by larger gaps to the majority population. We classify

[2] If there is information about one parent only, we use her/his country of birth to identify the status of the children. As follows from our definition, children are considered to be of Swedish origin if they and one of their parents were born in Sweden.

people originating from North America, Australia and Oceania as being from Europe. We use terms European vs. non-European and West vs. Non-West interchangeably.

In order to adjust for study-sample members' own educational achievement, for the analyses on NEET, employment and earnings, we include a variable measuring the *highest achieved education* up to the relevant age for the respective analyses. This variable is divided into (1) less than 9 years of compulsory school, (2) 9 years of compulsory school, (3) short (vocational) secondary school, (4) long (theoretical) secondary school, (5) short post-secondary education, (6) academic education, (7) postgraduate studies, or (8) missing. In these analyses we also adjust for the student's final ninth-grade grades, measured as the cohort-specific percentile in grade points.

In order to adjust for *the socio-economic characteristics of the family of origin* we include a number of variables at the parental - or family level. *The disposable income of the two parents* is measured as their respective mean disposable income during the years from when the child is aged 13 until the parent turns 65 or 2012, whichever comes first.[3]

The variable is included as cohort (from the child's perspective) specific percentiles. *The educational level of the two parents* captures their highest recorded education up until 2012 and is divided into (1) less than 9 years of compulsory school, (2) 9 years of compulsory school, (3) short (vocational) secondary school, (4) long (theoretical) secondary school, (5) short post-secondary education, (6) academic education, (7) postgraduate studies, or (8) missing. Family situation when growing up is measured at age 16 and distinguishes between (1) lives with both parents, (2) lives with mother only, (3) lives with father only, and (4) lives

[3] This is done in order to reduce measurement error, which tends to strongly attenuate effects of income. One may object that we measure parental resources when their children have become adults, which would make the causal direction ambiguous. However, the advantage of reducing measurement error is very substantial, and our approach also captures earnings potential in the family that wasn't fully realized during the children's childhood, but was realized later. This potential is likely to have been an important resource throughout the childhood period nonetheless. Moreover, we believe that endogeneity is minimal, and would require a scenario where parents reduce their work effort as a direct response to earnings support from their children, and this should be rare.

with no parent. We also include a variable measuring the total number of children under 18 years residing in the household when the individual is aged 16.

Furthermore, to capture the possibility of effects of differential fertility between groups, we include the age at first giving birth prior to the age at which the dependent variables are measured (23/39 years).

In addition, we have information on *the neighborhood where the child was brought up*. Since previous research has demonstrated neighborhood characteristics to be of particular importance during adolescence (Wodke et al. 2016), we focus on the neighborhood at age 16. The neighborhoods have been defined in accordance with Statistics Sweden's detailed SAMS classification.[4] One important advantage of this classification is that it splits Swedish residential areas into small, socially homogenous neighborhoods. The SAMS classification is comparable to the United States census tracts (Galster et al. 2008). We control for neighborhoods using fixed effects (for the neighborhood identity), which means that we will capture all aspects of neighborhoods, both observed and unobserved factors.[5]

One important aspect of our analysis is that we take all parental SES factors as given, since we are focused on the living conditions of children during childhood. It should be noted that parental SES may be negatively influenced by discrimination, but since we control for the outcome of this discrimination, our analysis will not discern the cumulative effect of discrimination across generations. The degree to which discrimination effects cumulate is

[4] SAMS is the acronym for Small Area Market Statistics. There are approximately 9200 SAMS areas in Sweden. The average population residing in a SAMS area is about 1000 persons. The SAMS is developed by each municipality for administrative purposes (e.g., planning of social services), but serves as a good proxy of neighborhood because the size of these areas is relatively small. It should, however, be noted that there is heterogeneity in the definition of SAMS across municipalities.

[5] As is well known to all students of residential segregation, analyzing neighborhood effects is a rather complicated matter. The neighborhood fixed effects capture all variation that is shared within the neighborhood area, by children who grew up there: both observed and unobserved stable aspects of the local environment are thus captured. However, it should be noted that the fixed effects adjustments will also reflect unobserved and nonrandom population sorting across neighborhoods, i.e., variation that we often attribute to parents/social background. Since our aim is to control for social background, and not decompose neighborhood effects from family effects, this approach is feasible. Our analyses below indicate that neighborhood effects exist, but their real range is unknown.

beyond the scope of the paper, not least since we cannot adequately identify discrimination, only unexplained differences between groups.

Descriptive statistics for the key variables in our analysis are presented in Table 1. We can clearly see that children of immigrants have, on average, substantially lower levels on all outcome variables, but also that their parents have lower levels of education, employment and earnings. One exception, however, are first generation immigrants from Europe, who come from similar educational backgrounds to natives.

[Table 1 about here]

Methods

We use linear probability models, LPM, for our binary outcomes (NEET, university education, and employment), and linear regression for our continuous outcomes. We avoid using non-linear models such as logit regressions as their coefficients are not comparable across samples and models due to scaling sensitivity (Mood 2010). Linear probability models produce consistent estimates of the expected value of the outcome conditional on covariates, i.e., E(Y|X) (Angrist and Pischke 2009, Chapter 3). LPM coefficients are close to identical estimates to average marginal effects from logistic regressions (which are scaling insensitive), and our results are in no way model dependent.

Results

NEET

Our indicator of *Neither in Employment nor in Education or Training* (NEET) measures the situation of relatively young people, i.e. at the age of 23. Thus, several younger cohorts that will not appear in the later analyses of educational and labor market outcomes are included in this analysis.

In the analyses presented in Table 2, we estimate the gross differences in NEET between young people of immigrant background and children of Swedish origin in Model 1. Here we only include a control for birth cohort. As the method used is linear probability models, the coefficients are interpreted as percentage point differences (divided by 100) of a one unit change in the independent variables. The raw native-immigrant background gap is around 4-5 percentage points for second generation males of European and non-European background and for first generation males of European background. For first generation males born in countries defined here as non-European, the gap is more than 7 percentage points. The average NEET figure for males of native origin is somewhat above 6 percent.[6] Male immigrants from non-Western countries have twice that level of NEET. For women, the corresponding differences between young people of immigrant background and native background is some 1 to 1.5 percentage points lower. The average NEET level for women of Swedish background is somewhat higher than the corresponding figure for men. Thus, the risks for being inactive in the labor market and the educational system are particularly high for men and women born outside Europe.

We now turn to the models where we try to account for the gross differences. In Model 2, we introduce the highest level of education acquired by the individual at the age of 23 and the GPA from 9th grade. Adding the individuals' own level of education and GPA to the model reduces the size of the analyzed gaps, in most cases by approximately 1 to 2 percentage points, i.e., roughly a 30 percent decline. The largest part of this reduction is due to differences in educational level (not shown in the Table). The remaining gap is still substantial and somewhat higher for men than for women. In the following models, we introduce controls for families' socio-economic background and for the studied individuals having had children (Model 3) and neighborhood fixed effects (Model 4). The gaps in NEET

[6] To be more precise this is the value for persons of native origin born 1974.

between the groups analyzed shrink gradually, for both men and women. The reduction in differences noted in Model 3 is almost entirely due to the effects of socio-economic background. Differential fertility accounts only for a marginal part of the reduction. The net differences (Model 4) for second generation immigrants from countries outside Europe and for first generation women from Europe are now very close to zero. For other groups, the first generation from countries outside Europe and the second generation from Europe, the remaining gap is not large but remains non-trivial, at approximately 2 percentage points.

Our results indicate that levels of inactivity are higher for persons of immigrant background. A large part of these differences (sometimes all) stems from background factors such as education (own and parents'), other parental resources and, finally, neighborhood segregation.

[Table 2 about here]

University Education

We proceed in similar ways as above when we analyze the probability of achieving a university degree by age 30 (Table 3). The only exception is, that, for obvious reasons, the individuals' own level of education is not used as a control. In Model 1, we estimate the unconditional differences in educational outcomes between children of immigrants (both first and second generation) and children of native Swedes. The probability of having a degree is larger among women of native background (36 percent) than among men of native background (25 percent).[7] For men of immigrant background, the gap to men of Swedish background is approximately 5 to 8 percentage points. The corresponding gaps for women are between 8 and 14 percentage points. In sum, the conclusion is that the probability of having a

[7] The exact figure is for persons born in 1974. Even if the probability of having a degree differs between age cohorts the gender gap is more or less the same.

degree is higher among women of immigrant background than among men of immigrant background.

In Model 2, we add controls for family characteristics and fertility to our regression model. The gaps shrink dramatically. For first and second generation men originating from countries outside Europe, the gap is reversed. The probability of graduating from university is higher for these groups than the corresponding figure for native Swedes with a similar socio-economic situation in the family of origin and with a similar family situation of their own. For the other groups (both men and women) introducing the socio-economic conditions during childhood reduces the gaps substantially. For women with a background in European countries, however, the distance to the individuals of native background remains relatively large.[8]

In Model 3, we include neighborhood fixed effects, which reinforces the previous pattern to some extent. With this model specification, all groups with immigrant background have equal or higher probabilities of university graduation than persons of native background. The reversed gaps are particularly large for people of non-European background, both first and second generation. For first and second generation immigrants of European background, the differences are small or more or less non-existent. Thus when taking into account the disadvantages in parental resources and neighborhood environment, we can demonstrate that the educational careers of the children of immigrants are at the same level or higher than the corresponding careers of the children of native Swedes.

Finally, in Model 4, we add a control for educational achievement in elementary school. This control tends in some cases to attenuate the reversed gaps somewhat, but importantly they remain positive and substantial for non-European immigrants of both generations. In

[8] The role of differential fertility is rather limited in this context. The only exception applies to first generation women born in Europe. For these the reduction in the gap in education due to relatively early childbirth is substantial. (Not shown in the Table.)

sum, immigrants do often invest substantially more in university education all else equal, possibly to escape their disadvantaged position of origin.

[Table 3 about here]

Employment

Table 4 presents analyses of the gap in employment rates at age 30 between children of immigrants (of first and second generation) and those of Swedish background. As can be seen in Model 1, the gross average differences in employment are striking. While the employment levels for Swedes are 82 percent for men and 72 percent for women (cf. footnote 7), immigrant employment levels are up to 20 percentage points lower. The gaps are more marked for men, although women of immigrant background still have lower levels of employment than men of immigrant background. The largest gaps are found for men born outside Europe, with a 21 percentage point lower employment rate than men of native Swedish background. The corresponding contrast for the same group of women is 17 percentage points. For all the remaining groups, the difference in employment levels is also considerable.

In Model 2, we control for the individual´s own level of education, including previous educational achievement. Adjusting for educational differences between individuals of Swedish and immigrant background reduces the gap between the groups to varying degrees. The difference remains substantial for all groups, however, and is still larger for men than for women. Thus the probability of employment among young people of immigrant background brought up in Sweden is substantially lower than that of their peers of Swedish origin with a

similar level of education. For first generation immigrants from countries outside Europe, the gap net of education is still 18 percentage points for men and 12 percentage points for women.

In Model 3 and Model 4, we add controls for family of origin (and for having had children) and neighborhood background respectively. The analyzed gaps shrink substantively in both models, but remain large in almost all cases. In the final model, the differences lie at between approximately 6 and 12 percentage points for men and 2 and 8 percentage points for women. For the first generation non-European immigrants, the probability of employment is 12 percentage points lower for men and 8 percentage points lower for women than for native Swedes.

Thus our results indicate that once all extensive controls have been added to the model, there still remains a substantial gap in employment levels. This result is in contrast to the results presented in Table 3 above, in which the remaining gaps in education between children of immigrants and children from native families were to a large extent accounted for or even reversed. Thus our analysis indicates that Swedish-educated children of immigrants have substantially lower chances of being employed than their peers of Swedish origin with the same level of education, the same level of prior achievement, and the same observed socioeconomic conditions during childhood.

[Table 4 about here]

Earnings

In the final step of our empirical analysis we turn to annual earnings at age 30 (Table 5). We use the cohort-specific percentile ranking of the earnings of an individual at age 30, and we only include individuals who are employed. The general pattern that emerges in the analysis in Table 5 is quite different from the picture presented in Table 4, where the likelihood of

being gainfully employed was analyzed. The gender pattern in particular is very different. As expected, the average earnings of men of Swedish origin are substantially higher than the average earnings of women of Swedish origin (the 61st versus 41st percentile). For men of immigrant origin the income rank is lower, sometimes much lower, whereas it is somewhat higher for both groups of first generation women. When we control for the individual's own education in Model 2, the gap for men shrinks. However, for first generation men born outside Europe the distance remains large. For women, the income rank is now higher in all immigrant background groups. Thus with controls for education, young women of immigrant background have higher earnings rankings than their similarly educated peers of Swedish background.

Controlling for family characteristics (and having own children) in Model 3, the gaps close for men of second generation origin. For the first generation born outside Europe, there is still a small earnings disadvantage. For the first generation born in Europe the opposite is the case. For women, the reversed gaps tend to grow even larger with the inclusion of the family controls. The difference is particularly large for young first generation women. Introducing controls for neighborhoods in Model 4 changes the magnitude of the gaps in some cases, but not their direction. The substantive pattern remains the same.

[Table 5 about here]

The difference in the results for employment and earnings respectively is quite striking. When we account for own education, family resources, and neighborhood segregation, the remaining gap in employment between children of immigrant and Swedish background is large for many groups. The gaps in earnings, however, are close to zero (for men) or even reversed (for women). Thus the children of immigrants seem to face huge problems when

entering the labor market, but their situation seems to improve once they gain access to stable employment. [9]

Discussion

Sweden has been a country of immigration for a quite long time; the number of immigrants has substantially exceeded the number of emigrants. One consequence of recent waves of immigration is that increasing numbers of young people who have grown up in Sweden have their roots in other countries. This paper asks why young people of immigrant background, who were raised in Sweden during the 1990s, have lower levels of success than their peers of native background in some central aspects of their careers in education and on the labor market.

General theories on social inheritance claim that inequalities in different forms of resources in one generation result in inequalities in social conditions in the next generation. If the position of immigrant parents in Sweden's system of social stratification is substantially different from that of Sweden-born parents, one may expect these differences to affect the future careers of their children. In addition to the relative lack of resources in the family of origin, resources in the community in which young people spend much of their formative years may also condition various careers during adulthood. If residential segregation results in a situation in which children of immigrants and children of natives grow up under socially different circumstances, segregation can become an important factor that contributes to future differences between the groups. For the children of immigrants, socioeconomic and ethnic residential segregation can mean that they only have limited contact with the majority population during childhood, and that this contact is limited to families of relatively low social status. Thus there are reasons to believe that differences in future educational and labor

[9] In order to test whether our results are sensitive to alternative groupings of countries of origin, we have rerun all the analyses distinguishing between (1st and 2nd generation) immigrants originating from countries/regions from which the largest stream of immigrants to Sweden consists of refugees. These include immigrants from Afghanistan, former Yugoslavia, Eritrea, Ethiopia, Iraq, Iran, Lebanon, the Middle East, Somalia and Syria. The general pattern that emerges from these analyses is similar to that found in the main analyses presented above.

market careers between children of immigrants and children of native parents are a result of social process that are beyond their control.

In our empirical analysis, we shed light on the question of whether the mechanisms outlined above actually contribute to our understanding of the differences between the relevant groups in the educational system and on the labor market. We follow all young people born between 1974 and 1982/1989 over time and study their educational attainment and labor market outcomes for the year in which they turn 30. For one indicator, NEET, we use the outcome at age 23.

Our analyses have shown that family resources and, to some extent, neighborhood segregation during childhood are powerful factors underlying the differences in future careers between children of Swedish and immigrant origin. While the unconditional (gross) differences in the outcomes studied are huge, the conditional (net) outcomes are small, sometimes close to zero and in some cases are even reversed. Thus the general conclusion is that the social transmission of advantage and disadvantage between generations is a powerful mechanism that explains much of ethnic stratification among young people who have grown up in Sweden.

Beside these general patterns, however, we have observed a number of residual patterns that remain to be explained. In our analysis of educational careers, the large distance noted in the unconditional gap is reversed in the final conditional model, indicating that (some groups) of children of immigrants have higher probabilities of graduating from university than their peers of native origin who were brought up under similar social conditions. There are several alternative explanations for this result. First, according to Heath (2010) high rates of continuation into the higher levels of the educational system among children of immigrants may be caused by the anticipation or experience of labor market discrimination. Prolonging education may be a means of obtaining better qualifications and thus compensating for the

effects of discrimination (cf. Jonsson and Rudolphi 2011). Second, if immigrant parents who have experienced ethnic penalties on the labor market develop compensatory strategies and push the level of their children's aspirations beyond what is usual among the majority population, a relatively high level of education, net of background factors, may be the result (Heath 2010). The fact that the relatively high level of education, *ceteris paribus*, is particularly large among individuals with a background in non-European countries, i.e. those who are especially exposed to discrimination, provides support for such explanations.

The pattern for employment status is very different. The influence of own education, family and neighborhood segregation on future employment prospects is strong. However, the remaining gaps in employment rates are large, and particularly so for individuals of non-European background. There is also a gendered pattern in the probability of obtaining gainful employment, which indicates that the employment gap is greater among men than women. Whereas educational success is largely dependent on the individual's own capacity and choices, employment is also an outcome of the interaction between the employer and the individual, in which the latter's resources are evaluated, and the employer decides whom to engage. Thus one reasonable explanation for the observed differences is that individual resources are evaluated differently depending on the ethnic origin of the bearer of these resources. Swedish studies show that people with foreign sounding names are discriminated against on the Swedish labor market and that this discrimination has a more powerful effect on males looking for jobs than on females (Arai, Bursell and Nekby 2016).

In relation to earnings, we also found a gendered pattern indicating that employed women of immigrant background have a relatively strong position (compared to women of native background). In an unconditional model, the ethnic differences for female employees are small or there is even an indication of some advantage for the immigrant group. When we compare women of native Swedish background with their peers of immigrant background

with a similar education and conditions of upbringing, the advantage for the latter group is substantial.

One interpretation of this pattern is that the differential employment probabilities also produce a selection on unmeasured skills and capacities. The relatively low level of employment among individuals of immigrant background, particularly among women, is an indication that this selection may be important. Hence, our results indicate that a positively selected group of women of immigrant background enters the labor market, and that once gainfully employed this group wins recognition and obtains relatively high earnings.[10] A combination of high aspirations and less discrimination (once employed) would appear to constitute a possible explanation for earnings differences between the female majority population and the female children of immigrants.

Parental migration to a new country involves difficulties for children and young people. Our results indicate that such difficulties are not limited to the period directly following immigration. Following the completion of education, new obstacles arise when educational resources have to be converted into stable employment. These obstacles at the point of entry onto the labor market exist for children of immigrants with similar conditions of upbringing and with the same grades from compulsory school as their peers of Swedish background. However, for those who succeed in establishing themselves on the labor market, ethnic origin is not a driving force behind earning differentials.

Finally, it should be emphasized that the major contribution of our analyses is found in the way they show the long-lasting consequences for young people's futures of the resources embedded in families of origin and segregated local communities. The ethnic stratification in education and on the labor market does not seem to be a result of individual differences in

[10] It may be noted here that with lower levels of selectivity onto the labor market, one could instead expect earnings differentials that were advantageous to individuals of Swedish origin.

talent or ambition but is rather due to mechanisms that lie beyond the control of individuals, and which generate an intergenerational transmission of social advantage and disadvantage.

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Table 1. Descriptive statistics for variables included in the models.

	Age 23 (born 1974-1989)					Age 30 (born 1974-1982)				
	Native background	II gen. Europe	II gen. non-Europe	I gen. Europe	I gen. non-Europe	Native	II gen. Europe	II gen. non-Europe	I gen. Europe	I gen. non-Europe
NEET at 23 (%)	5.7	10.7	9.7	11.3	13.6	-	-	-	-	-
University degree at 30 (%)	-	-	-	-	-	34.5	23.9	25.2	26.3	22.8
Employed at 30 (%)	-	-	-	-	-	77.5	68.8	64.8	65.1	58.1
Earnings rank at 30 (mean)	-	-	-	-	-	0.583	0.569	0.584	0.585	0.565
Own educational level (%)										
< 9 years of compulsory school	0.1	0.3	0.1	0.3	0.3	0.1	0.3	0.1	0.3	0.3
9 years of compulsory school	9.8	16.5	16.4	15.8	20.2	7.4	13.0	18.1	14.2	17.5
Short (vocational) secondary school	7.5	10.0	8.2	9.1	10.4	8.5	12.0	9.8	11.2	12.5
Long (theoretical) secondary school	49.5	47.3	42.0	43.0	42.3	36.4	39.1	34.9	34.8	33.4
Short post-secondary education	25.7	19.3	23.3	22.3	20.5	13.1	11.7	11.9	13.1	13.5
Academic education	7.4	6.5	9.9	9.3	5.9	34.0	23.6	24.9	25.8	22.4
Postgraduate studies	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.3	0.5	0.4
Missing	0.1	0.2	0.1	0.2	0.4	0.0	0.1	0.0	0.1	0.1
Grade rank in ninth grade (mean)	0.510	0.455	0.445	0.440	0.391	0.507	0.450	0.428	0.432	0.384
Earnings rank of mother (mean)	0.515	0.439	0.333	0.357	0.325	0.510	0.435	0.321	0.377	0.335
Earnings rank of father (mean)	0.523	0.340	0.243	0.301	0.215	0.518	0.337	0.223	0.308	0.216
Education of mother (%)										
< 9 years of compulsory school	4.2	19.2	28.6	18.3	26.8	6.5	24.0	36.3	17.5	30.1
9 years of compulsory school	10.6	14.5	17.1	8.0	14.2	11.3	14.8	15.9	9.2	15.2
Short (vocational) secondary school	37.9	33.8	28.0	21.4	18.3	39.0	33.6	25.9	26.0	20.3
Long (theoretical) secondary school	11.8	11.4	9.0	20.2	12.9	10.3	9.6	5.4	16.5	10.8
Short post-secondary education	14.7	8.3	7.4	9.8	8.5	13.7	7.4	7.0	9.7	7.7
Academic education	19.6	10.9	8.0	17.3	10.4	17.9	8.4	6.1	15.8	8.0
Postgraduate studies	0.7	0.5	0.4	1.3	0.7	0.6	0.4	0.5	1.1	0.4
Missing	0.5	1.4	1.5	3.7	8.2	0.7	1.8	2.8	4.2	7.4

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Education of father (%)										
< 9 years of compulsory school	10.3	21.5	21.7	9.0	16.8	14.7	25.7	27.2	11.0	19.5
9 years of compulsory school	13.7	12.2	17.1	4.5	12.0	12.3	11.5	17.7	5.3	12.4
Short (vocational) secondary school	31.9	31.3	30.5	17.8	16.6	28.4	29.4	26.9	18.4	19.0
Long (theoretical) secondary school	14.0	12.4	9.5	19.4	11.9	15.3	12.2	7.7	14.1	10.4
Short post-secondary education	11.9	6.6	7.7	10.5	9.3	10.9	5.5	6.4	8.6	8.2
Academic education	14.7	7.5	8.7	14.0	12.8	14.3	5.9	7.2	12.2	10.1
Postgraduate studies	1.6	1.2	1.2	2.4	1.5	1.6	1.0	1.3	2.2	1.1
Missing	1.9	7.3	3.5	22.4	19.1	2.5	8.7	5.6	28.2	19.3
Housing situation (%)										
Lived with both parents	67.2	58.0	68.3	60.9	57.7	69.5	60.5	72.0	55.3	59.3
Lived with mother only	25.4	34.3	26.7	33.6	33.3	23.7	32.3	23.1	38.0	31.8
Lived with father only	6.3	5.3	3.9	3.7	5.4	5.5	4.9	3.8	4.1	5.1
Lived with no parent	1.2	2.3	1.0	1.9	3.6	1.3	2.3	1.1	2.6	3.9
Number of children in household when growing up (mean)	1.8	1.7	2.4	2.1	2.7	1.8	1.7	2.6	2.0	2.7
Age at first birth before age 23/30 (%)										
No child before age 23/30	91.8	89.3	91.2	87.2	88.2	55.2	56.5	54.2	52.1	56.3
<19	1.2	2.2	1.2	2.4	2.1	1.3	2.4	1.8	3.0	2.5
20	1.0	1.5	1.3	1.8	1.8	1.1	1.6	2.0	2.1	2.1
21	1.5	2.0	1.7	2.5	2.3	1.6	2.3	2.6	2.8	2.6
22	2.0	2.4	2.1	2.9	2.8	2.0	2.5	3.0	3.0	3.4
23	2.4	2.6	2.5	3.2	2.8	2.4	2.8	3.3	3.4	3.1
24	-	-	-	-	-	3.0	3.3	3.5	3.7	3.4
25	-	-	-	-	-	3.7	3.7	3.8	4.0	3.9
26	-	-	-	-	-	4.5	4.3	4.8	4.8	4.2
27	-	-	-	-	-	5.3	4.8	4.9	4.9	4.5
28	-	-	-	-	-	6.1	5.1	5.3	5.2	4.4
29	-	-	-	-	-	6.7	5.4	5.5	5.2	4.6
30	-	-	-	-	-	7.0	5.3	5.4	5.6	5.0
N	1,434,334	52,523	28,790	35,090	49,010	775,731	31,046	8,773	13,556	22,242

Table 2. Linear probability models of the probability of being NEET at the age of 23.

	M1		M2		M3		M4	
	Men	Women	Men	Women	Men	Women	Men	Women
II generation Europe	0.054***	0.042***	0.038***	0.026***	0.031***	0.021***	0.027***	0.018***
II generation non-Europe	0.043***	0.033***	0.024***	0.021***	0.012***	0.012***	0.006*	0.008**
I generation Europe	0.054***	0.037***	0.040***	0.025***	0.026***	0.010***	0.014***	0.001
I generation non-Europe	0.076***	0.069***	0.050***	0.048***	0.031***	0.031***	0.019***	0.023***
Intercept	0.063***,[a]	0.071***,[a]						
N	781,858	741,317	781,858	741,317	781,858	741,317	781,858	741,317
R2	0.007	0.005	0.074	0.082	0.080	0.093	0.095	0.107

M1=without controls (only birth year), M2=own education (incl. GPA from 9th grade), M3=M2+parents+own children, M4=M3+neighborhoods fixed effects. The sample comprises those born 1974-1989 with Swedish schooling. * p<0.05, ** p<0.01, *** p<0.001. [a] This is the reference value for individuals of Swedish background born in 1974.

Table 3. Linear probability models of the probability of having a university degree at the age of 30.

	M1		M2		M3		M4	
	Men	Women	Men	Women	Men	Women	Men	Women
II generation Europe	-0.082***	-0.121***	0.007*	-0.023***	0.020***	0.006	0.007*	-0.010**
II generation non-Europe	-0.071***	-0.142***	0.051***	0	0.074***	0.059***	0.055***	0.049***
I generation Europe	-0.047***	-0.079***	-0.013*	-0.022***	-0.003	0.005	0.007	0.022***
I generation non-Europe	-0.073***	-0.140***	0.025***	-0.023***	0.040***	0.023***	0.044***	0.044***
Intercept	0.253***,[a]	0.361***,[a]						
N	416,683	395,197	416,683	395,197	416,683	395,197	416,683	395,197
R2	0.003	0.008	0.169	0.196	0.195	0.225	0.365	0.364

M1=without controls (only birth year), M2=M1+parents+own children, M3=M2+neighborhood fixed effects, M4 = M3 + GPA from 9th grade. The sample comprises those born 1974-1982 with Swedish schooling. * p<0.05, ** p<0.01, *** p<0.001. [a] This is the reference value for individuals of Swedish background born in 1974.

Table 4. Linear probability models of the probability of being employed at the age of 30.

	M1		M2		M3		M4	
	Men	Women	Men	Women	Men	Women	Men	Women
II generation Europe	-0.096***	-0.068***	-0.083***	-0.039***	-0.073***	-0.033***	-0.057***	-0.034***
II generation non-Europe	-0.142***	-0.107***	-0.113***	-0.066***	-0.096***	-0.042***	-0.069***	-0.041***
I generation Europe	-0.134***	-0.085***	-0.116***	-0.055***	-0.092***	-0.022**	-0.067***	-0.016*
I generation non-Europe	-0.215***	-0.170***	-0.183***	-0.121***	-0.151***	-0.086***	-0.119***	-0.082***
Intercept	0.817***,[a]	0.722***,[a]						
N	416,683	395,197	416,683	395,197	416,683	395,197	416,683	395,197
R2	0.012	0.005	0.046	0.071	0.079	0.082	0.106	0.105

M1=without controls (only birth year), M2=own education (incl. GPA from 9th grade), M3=M2+parents+own children, M4=M3+neighborhood fixed effects.. The sample comprises those born 1974-1982 with Swedish schooling. * p<0.05, ** p<0.01, *** p<0.001. [a] This is the reference value for individuals of Swedish background born in 1974.

Table 5. OLS regressions of earnings rank at the age of 30 conditional on employment.

	M1		M2		M3		M4	
	Men	Women	Men	Women	Men	Women	Men	Women
II generation Europe	-0.023***	0	-0.010***	0.023***	0.003	0.028***	0.001	0.016***
II generation non-Europe	-0.041***	-0.003	-0.026***	0.030***	0.005	0.058***	0.007	0.035***
I generation Europe	-0.019***	0.011*	-0.008*	0.035***	0.017***	0.062***	0.019***	0.056***
I generation non-Europe	-0.068***	0.013**	-0.050***	0.049***	-0.014***	0.069***	-0.009*	0.054***
Intercept	0.608***,[a]	0.407***,[a]						
N	336,911	286,495	336,911	286,495	336,911	286,495	336,911	286,495
R2	0.033	0.037	0.110	0.167	0.126	0.305	0.156	0.333

M1=without controls (only birth hear), M2=own education (incl. GPA from 9th grade), M3=M2+parents+own children, M4=M3+neighborhood fixed effects. The sample comprises those in employment born 1974-1982 with Swedish schooling. The earnings rank is the cumulative rank, bounded between 0 and 1, i.e., percentile ranks/100. * p<0.05, ** p<0.01, *** p<0.001. [a] This is the reference value for individuals of Swedish background born in 1974.

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[1] Titles more than two years old are available from the editors upon request.

2009

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