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## ABSTRACT

### Intergenerational Transmissions and the School-to-Work Transition of 2<sup>nd</sup> Generation Immigrants\*

We analyse the extent of intergenerational transmission through parental capital, ethnic capital and neighbourhood effects on several aspects of the school-to-work transition of 2<sup>nd</sup> generation immigrants and young ethnic Danes. The main findings are that parental capital has strong positive effects on the probability of completing a qualifying education and on the entry into the labour market, but it has a much smaller impact on the duration of the first employment spell and on the wage level. Growing up in neighbourhoods with a high concentration of immigrants is associated with negative labour market prospects both for young natives and 2<sup>nd</sup> generation immigrants.

JEL Classification: J61, J71

Keywords: School-to-work transition, second generation immigrants, intergenerational transmission, parental capital, ethnic capital, neighbourhood effects

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## 1. Introduction

In a survey by OECD (1999), Denmark is pointed out as *the* country with the highest relative unemployment rate for (first generation) immigrants among the OECD-countries studied. While immigrants in the US, Canada and Australia experience unemployment rates approximately equalling those of the native born population, immigrants in Denmark have unemployment rates which are more than three times the level of the native population. Although the figures are less depressing when looking at 2<sup>nd</sup> generation immigrants compared to the native population, 2<sup>nd</sup> generation immigrants in Denmark still experience higher unemployment rates than their native counterparts, see Hummelgård et al. (1998). Since the number of adult 2<sup>nd</sup> generation immigrants grows dramatically during the next decades, it is of primary importance to investigate which factors are associated with a successful labour market entry of different groups of 2<sup>nd</sup> generation immigrants. Such an investigation is exactly the purpose of this paper.

We analyse the educational attainment and employment for 2<sup>nd</sup> generation immigrants. We focus on potential intergenerational transmission mechanisms and the extent of intergenerational mobility. Specifically, we try to identify parental and ethnic capital effects separately from neighbourhood effects that may arise for 2<sup>nd</sup> generation immigrants who grow up in areas or municipalities with a very high ethnic concentration. The models for labour market success of 2<sup>nd</sup> generation immigrants are compared to parallel models for young ethnic Danes.<sup>1</sup>

Four aspects of the school-to-work transition are analysed. First, we study which factors explain whether or not young 2<sup>nd</sup> generation immigrants obtain a qualifying education by estimating a binary choice model. Second, the waiting time from leaving school to the first ordinary job is analysed in a duration model framework, and the duration of the first employment spell is analysed within that framework as well. Finally, the hourly wage rate in 1997 is analysed by estimating a standard human capital wage function. To account for the intergenerational transmission effects, we include parental capital, ethnic capital and neighbourhood effects in the models. The analyses are based on two panel databases, both arising from administrative registers and covering each of the years 1985-1997. The first sample contains the total population of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants in Denmark, while the second is a random 10% sample of the ethnic Danish population. We restrict the samples to include only individuals aged 35 or less. We are able to identify the fathers and mothers of these young individuals in both data sets and therefore, we have extensive information on family background.

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<sup>1</sup> We use the term 'ethnic Danes' for individuals who are not 1<sup>st</sup> or 2<sup>nd</sup> generation immigrants.

The results show that intergenerational spillovers exert some influence on the school-to-work transition for the 2<sup>nd</sup> generation immigrant youth. The intergenerational transmission exerts a strong effect on the probability of obtaining a qualifying education and on entering the first job but after that, the direct influence of intergenerational transmission dies out. There is still a strong indirect effect, since intergenerational spillovers are strongly present in the education decision, and we show that education has a strong influence on employment duration and wages. For females, parental capital is the dominant intergenerational transmission channel, while ethnic capital and neighbourhood effects are important channels as well for males.

If the 2<sup>nd</sup> generation immigrants succeed in obtaining a qualifying education, the waiting time until they get their first job and the probability of leaving employment are reduced significantly. Thus, obtaining a qualifying education is a key factor for the integration in the labour market for 2<sup>nd</sup> generation immigrants. However, the economic returns to education as estimated from wage regressions (conditional on employment) are somewhat smaller for 2<sup>nd</sup> generation immigrants than for ethnic Danes.

The paper is organized as follows. Section 2 presents the hypotheses to be tested in the paper. Section 3 gives an overview of immigration patterns to Denmark, describes the data sources and presents descriptive statistics for the two register-based panel data sets. Section 4 analyses the probability of completing a qualifying education, whereas Sections 5 and 6 analyse the duration of first non-employment and employment spell after leaving the school system. Finally, Section 7 presents estimates of wage functions for the hourly wages in 1997 and Section 8 offers a conclusion and discusses potential policy implications from the analysis of the school-to-work transition of young 2<sup>nd</sup> generation immigrants.

## **2. Three main hypotheses**

Much of the existing research on 2<sup>nd</sup> generation immigrants' integration into the labour market has been inspired by the theories and empirical analyses on intergenerational mobility, see for instance the survey by Solon (1999). The theories on intergenerational mobility explain the educational attainment and earnings capacity of the child (or 2<sup>nd</sup>) generation by the investments and endowment of the parent (or 1<sup>st</sup>) generation, and other factors influencing the earnings capacity of the children, see Becker and Tomes (1986). A priori, the intergenerational mobility for immigrant families with respect to earnings capacity might be expected to be larger than for native born generations, because the immigrant families tend to assimilate to the host country

over time. The assimilation process is often thought of as a ‘melting pot’ process,<sup>2</sup> though this hypothesis has been questioned and rejected by a number of empirical studies, indicating that the intergenerational mobility is smaller for immigrants than for natives, see Borjas (1995).

The intergenerational transmissions among immigrants may work through at least three different channels: direct effects from the parents (‘parental capital’), effects from the ethnic group (‘ethnic capital’) and effects from the neighbourhood in which the individual grew up (‘neighbourhood effects’). This gives rise to the three main hypotheses in this paper, namely that each of these channels are important determinants when it comes to explaining not only intergenerational mobility, but also labour market entry of young 2<sup>nd</sup> generation immigrants. As discussed in Solon (1999), it is not straightforward to identify the direct parental skill effects from the ethnicity and neighbourhood effects, since measurement errors in parental skill variables may be captured by the two other effects. Similarly, Ginther, Haveman and Wolfe (2000) find that significant neighbourhood effects tend to disappear when a rich set of family and individual characteristics are included. However, they conclude that the more closely the neighbourhood factor is tied to the outcome under study, the more likely it is to be robust towards addition of covariates. This may be the reason why Borjas (1992, 1995) finds indication that all three effects are important determinants of log earnings and skill levels of American 2<sup>nd</sup> generation immigrants.

Concerning the first hypothesis - that parental capital is important - there is plenty of empirical evidence that the earnings capacity of the parents is an extremely important determinant of the earnings capacity of the children, see for instance Solon (1999). Here, we extend the analysis and also focus on the potential parental effects on the duration of the first non-employment and employment spells after leaving the school system.

Regarding the second hypothesis - concerning the effect of ethnic capital - Borjas (1992, 1994) introduced the concept as one explanation of lower intergenerational mobility among immigrants compared to natives. The investments in human capital and earnings potential of the immigrant children may be influenced by an external effect from the average human capital of the ethnic group concerned, since originating from a low-skilled ethnic group may reduce the intergenerational mobility. Borjas (1992) labels this an ‘ethnic capital’ effect, a concept which is fairly parallel to the concept of ‘social capital’, see Coleman (1988). For immigrants, the notion of ethnic capital may include cultural and linguistic skills which are important for the human

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<sup>2</sup> See Borjas (1999) for an overview.

capital and earnings potential in the host country.

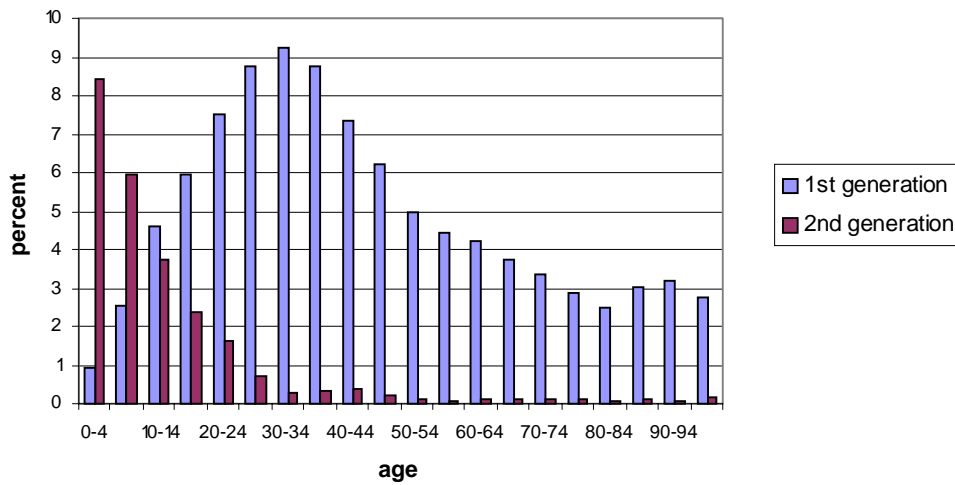
The third hypothesis analysed in intergenerational mobility studies is ‘neighbourhood effects’. Traditionally, neighbourhood effects in intergenerational mobility studies are associated with the negative impact of neighbourhoods on children growing up in poor communities. Neighbourhood effects on children’s human capital may arise through role modelling, enforcement of social norms by residents of the community and through the influence of social institutions, for instance schools in the neighbourhood, see Solon (1999). The concept of neighbourhood effects has been introduced into the analyses of 2<sup>nd</sup> generation immigrants by Borjas (1992, 1995), and it may be given a special interpretation when applied to skills and human capital of 2<sup>nd</sup> generation immigrants. If a child grows up in a community with a high fraction of inhabitants being immigrants, the child is more exposed to meet immigrants and less exposed to meet natives, *ceteris paribus*. This may have other effects on the skills of the child than the effects of ‘ethnic capital’. One obvious neighbourhood effect may arise at school. If the child grows up in a community with a high fraction of school children who are 1<sup>st</sup> or 2<sup>nd</sup> generation immigrants, this may influence the proficiency in the language of the host country and more generally the quality of school education. Neighbourhood effects typically refer to childhood experiences. However, in this study we also try to test whether there are any differences between childhood effects and effects arising from the current neighbourhood which may be different if the young individual has moved to another location.

### **3. Descriptives**

#### *3.1. First and second generation immigrants in Denmark*

Historically, Denmark has never been an immigration country. Until the mid 1980s, less than 3% of the population were immigrants and the number of 2<sup>nd</sup> generation immigrants amounted to about only 0.4% of the population. During the last 15 years, these figures have changed considerably. In 2000, 5.6% of the Danish population were 1<sup>st</sup> generation immigrants and 1.5% were 2<sup>nd</sup> generation immigrants. Due to the relatively small number of immigrants in the past, the number of adult 2<sup>nd</sup> generation immigrants is still small and the adult 2<sup>nd</sup> generation immigrants are on average very young. Out of the 81,000 2<sup>nd</sup> generation immigrants, only 14,000 were aged 20 years or more in 2000. This is illustrated in Figure 1 which shows the proportion of the population in different age groups for 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants.

Figure 1. The number of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants as a proportion of the total population in different age groups in 2000.



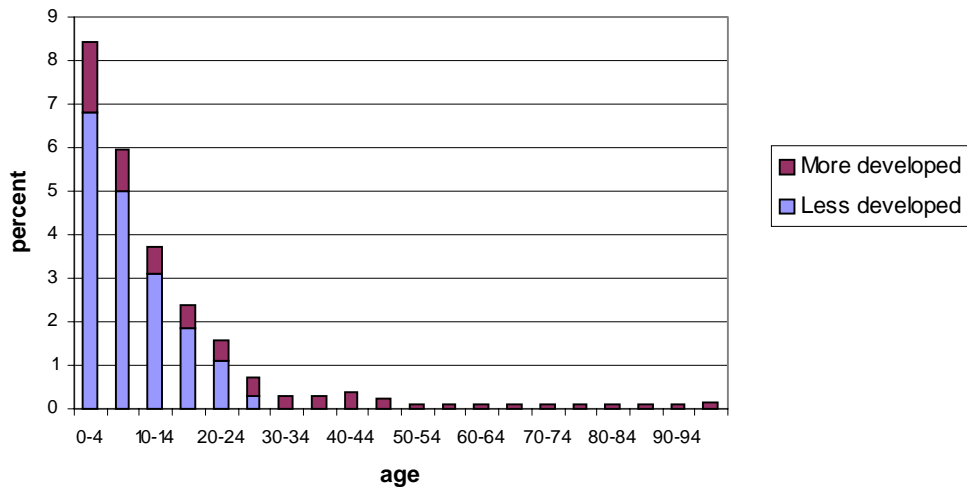
Source: Statistikbanken, Statistics Denmark.

Until the early 1970s, the dominant part of immigrants entering Denmark were labour migrants and tied movers. Around 1970 immigration mainly consisted of ‘guest workers’ from Turkey, Pakistan and the former Yugoslavia, whereas earlier immigrant cohorts consisted almost exclusively of immigrants from developed countries, especially the other Nordic countries (Sweden, Norway, Finland and Iceland). After the first oil crisis in 1973, the immigration pattern changed and as in many other European countries, the immigration of ‘guest workers’ stopped, while refugee immigration grew considerably, especially after the mid 1980s, see Husted et al. (2001).

Due to these changes in the immigration patterns, the age composition of 2<sup>nd</sup> generation immigrants varies considerably for immigrants from less developed countries compared to developed countries, see Figure 2. There are relatively few 2<sup>nd</sup> generation immigrants from less developed countries who are aged more than 25 years while the age composition of 2<sup>nd</sup> generation immigrants from developed countries is less skewed, relative to the native population.

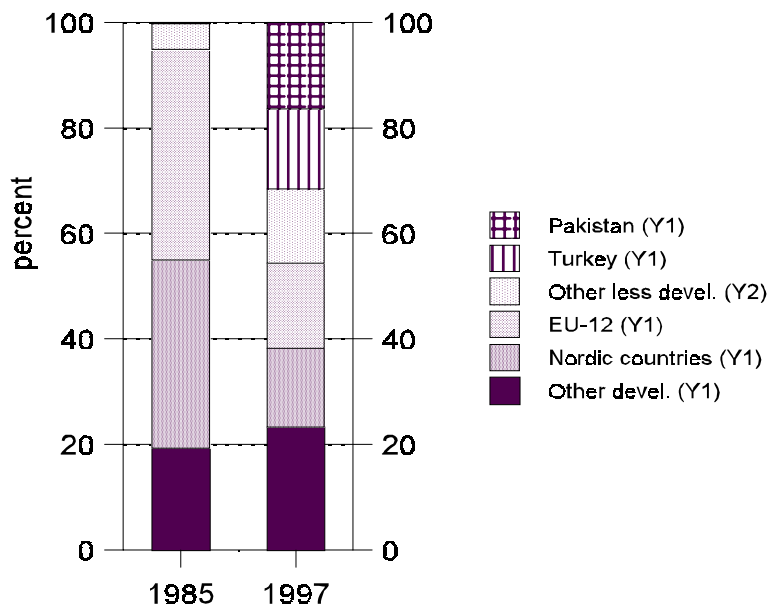


Figure 2. Second generation immigrants as a proportion of total population in different age groups distributed by country of origin for 2000.



Source: Statistikbanken, Statistics Denmark.

Figure 3. Ethnic origin for 2<sup>nd</sup> generation immigrants aged 18 to 35 years in 1985 and 1997.



Note: EU-12 are the EU countries, excluding Denmark, Sweden, Finland and Austria. Other developed countries are USA, Canada, New Zealand, Australia, Europe excluding the EU, Norway, Iceland, Japan and parts of the former USSR.

### 3.2. Data

The empirical analysis is based on two large data sets, originating from administrative registers in Statistics Denmark. The first data set contains information on the entire population of immigrants in Denmark (about 270,000 individuals in 1997) for each of the years 1985-1997. The other data set contains 10% of the Danish population (about 500,000 individuals) covering the period 1985-1997. The original sample is an unbalanced panel sample of individuals aged 15 years or more. Young individuals are added to the sample each year. Thus, besides being a panel, the sample is also representative for the population in each of the years. The samples contain information on a large number of demographic and labour market characteristics of the individuals and their families.

In this study, the two master samples are restricted to individuals aged 18-35 years. From the immigrant database, we select all 2<sup>nd</sup> generation immigrants, i.e. individuals who are born in Denmark and who have 1<sup>st</sup> generation immigrant parents.<sup>3</sup> In 1997, there were 4,579 men and 4,345 women in this group. Because the database contains the total population of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants, it is possible to identify a number of characteristics of 2<sup>nd</sup> generation immigrants' parents. The information used about the parents is: years since migration, country of origin, the municipality and county where they live (Denmark has 276 municipalities and 13 counties), the amount of education<sup>4</sup>, and the annual gross income. A weakness of the database used is that it does not include information on Danish language proficiency of the parents. For the sample of young natives, which includes about 66,000 men and 64,000 women in 1997, the same information is available, allowing us to compare the intergenerational transmission pattern of immigrants to that of the natives.<sup>5</sup>

The three main hypotheses in this paper regard the effect of parental capital, ethnic capital and neighbourhoods. As concluded in Österberg (2000), it is not sufficient to include, for instance, education of the parents when the education of the child is studied. One reason is that many

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<sup>3</sup> We use the official definition used by Statistics Denmark of a 1<sup>st</sup> generation immigrant: A first generation immigrant is defined as an individual with birth country other than Denmark where both parents have foreign citizenship or are born abroad. If information on one of the parents is missing but the other parent is full-filling the criteria, the individual is also defined as an immigrant. Finally, if there is no information on any of the parents then the individual is defined as a first generation immigrant if he is born abroad.

<sup>4</sup> Information on parents' education acquired before migration is available for immigrants present in 1999, where questionnaires were sent to the entire population of 1<sup>st</sup> generation immigrants. The issue of education of 1<sup>st</sup> generation immigrants is discussed in Mørkeberg (2000).

<sup>5</sup> The sample of ethnic Danes only contains information about the parents for individuals who were aged less than 20 years in 1980. Therefore, we only use individuals who fulfill this criteria.

immigrants have a lower economic position than equally educated natives do. To represent parental capital we use: Number of years since migration, length of education, the log annual gross income and labour market experience in Denmark. We use the maximum values of the variable for the father and mother, if information on both parents exists.<sup>6</sup> If there is only information on one of the parents, we use this information. For a considerable number of 2<sup>nd</sup> generation immigrants (5-6%), we do not have any information on their parents, either because both parents are dead or have emigrated from Denmark. Therefore, we include an indicator variable for missing information.

In order to analyse the effects of ethnic capital, we have constructed a measure which is the average value for 1<sup>st</sup> generation immigrants in the ethnic group concerned of each of the four variables included in parental capital described above, i.e. years since migration, length of education, annual income and working experience obtained in Denmark. The ethnic group is defined by country of origin and for each country of origin, we select the larger of the average for males and females.

The variables measuring neighbourhood effects consist of four variables, two for the childhood neighbourhood and two for the current neighbourhood: The database includes information on the municipality in which the individuals (and the parents) live during each year in the whole observation period. Based on this information, we construct a variable which we call 'ethnic concentration' defined as the percentage of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants in the population in the municipality concerned. A supplementary variable, an 'exposure index' (see Borjas, 1999), is defined as the proportion of immigrants (1<sup>st</sup> or 2<sup>nd</sup>) with a certain ethnic origin in the municipality divided by the corresponding proportion in Denmark as a whole. This variable gives an indication of the relative density of immigrants from own country of origin which characterizes the municipality in which the individual lives. A negative effect of this variable might be interpreted as a 'ghetto effect', whereas a positive effect might be interpreted as an 'ethnic good' or 'ethnic network' effect.

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<sup>6</sup> One might argue that the characteristics of both parents should enter as explanatory variables. However, this would dramatically increase the problem of missing information on the variables of the parents. But since we only include the values of one of the parents it may give rise to problems when comparing natives and immigrants with respect to intergenerational effects, see Card et al. (1998). If the parents of immigrants are more likely to have similar characteristics (income and education) than ethnic Danish parents, and if both the characteristics of fathers and mothers affect the outcome of the children, we tend to get higher estimates of the effects of parental capital for immigrants than for ethnic Danes.

These two variables are constructed for both the childhood neighbourhood, which is of main interest in the context of intergenerational transmission, but also for the current neighbourhood, that is where the individual resides at the time of observation to capture potential assimilation effects. The childhood neighbourhood is defined as the neighbourhood of the parents in 1985, the first year of observation in our sample. For the younger part of the individuals in our sample this measure will catch the childhood neighbourhood fairly well but for the oldest groups who might already have left their parents' home in 1985, this measure is only correct to the extent that the parents did not change their residence since the children were young and lived in their households.<sup>7</sup> We expect that 'childhood neighbourhood' effects capture the influence of role models as well as for instance the effects of school quality, while the 'current neighbourhood' effects capture two intuitively counteracting effects, namely a (positive) network effect and a (negative) ghetto-effect. However, there may be endogeneity problems with these variables which we do not account for in this study since the location of immigrants, both 1<sup>st</sup> and 2<sup>nd</sup> generation, may in itself be affected by the preferences and the labour market prospects of the immigrants.<sup>8</sup>

In Table A1, the raw means of the neighbourhood variables are shown, whereas the variation across ethnic origin is seen in Table A2. Second generation immigrants from Pakistan tend to live in municipalities with many immigrants, and they also tend to live in areas where the relative frequency of immigrants from Pakistan is very high, as indicated by the 'exposure index'. Second generation immigrants originating from other less developed countries also typically live in municipalities with a high fraction of immigrants, but the exposure index is on average much lower than for Pakistani immigrants. Looking at the same variables for the parents (not shown in Table A2), exactly the same pattern appears for the parents of the 2<sup>nd</sup> generation immigrants, indicating that the children could be settling in the same geographical areas as their parents.<sup>9</sup>

Finally, we use a number of variables which typically enter human capital models or models explaining employment and educational attainment. Age is represented by a number of indicators for age cohorts, education is measured by length of education, and the experience variables (experience and experience squared) measure number of years of actual experience obtained by

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<sup>7</sup> The municipality of the mother determines the measure of the variable 'ethnic concentration, childhood municipality' because the children most often live with their mother in case the parents have divorced. If information on the mother is missing (typically if the mother is dead) we use the information of the father.

<sup>8</sup> Edin, Frederiksson and Åslund (2000) present Swedish evidence of sorting across locations.

<sup>9</sup> This is confirmed in the study by Hummelgård et al. (1998).

being employed as a wage earner in Denmark.<sup>10</sup> We also include a marriage indicator and for immigrants, we distinguish between whether the spouse is an immigrant or a native (the excluded category consists of unmarried cohabitants and singles). These variables are included to indicate the existence of a Danish network. However, these variables may suffer from endogeneity problems because the ethnic origin of the spouse may be influenced by, among other factors, the educational attainment of the individual.

The databases refer to the period 1985-97 which is a period of very large economic fluctuations in Denmark, including strong peaks in 1985-86 and 1996-97 and a deep recession in 1991-93. Furthermore, there are fairly large variations in regional unemployment rates during the period, with the highest unemployment rates in the Copenhagen region for most of the period. In order to capture these cyclical and regional effects, we include a variable for the unemployment rate in the local labour market in the models of duration of non-employment and first employment spell.<sup>11</sup>

We have estimated four alternative specifications for 2<sup>nd</sup> generation immigrants where more explanatory variables successively are added: (i) A model including parental capital variables beside individual variables for the 2<sup>nd</sup> generation immigrants, (ii) to this model we add ethnic capital variables, (iii) and further the model is extended with neighbourhood variables (only childhood neighbourhood). Finally, in (iv) we include current neighbourhood variables and a number of indicators for country of origin and region in Denmark, mainly in order to test the sensitivity of the coefficients of ethnic capital and neighbourhood variables to the inclusion of these indicator variables.<sup>12</sup> The results concerning parental variables, ethnic capital and neighbourhood effects turn out to be very robust with respect to these four specifications and

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<sup>10</sup> This variable is based on the payments to a compulsory pension scheme, ATP. These payments are registered for all individuals employed as wage earners in Denmark back to 1964. Based on this information, we are able to construct a rather precise measure of accumulated experience. The deficiency is that until recently ATP has not been paid by self-employed individuals or assisting spouses and thus, these activities do not add to the accumulated experience. Since many immigrants are self-employed, we expect to underestimate the actual work experience of immigrants.

<sup>11</sup> We define the local labour market for each individual as the region within which the individual can commute at an average transportation cost of DKK 90. This variable is originally constructed by the Institute of Local Government Studies (AKF) who uses it in their regional models. AKF has kindly supplied us with the information necessary to construct the variable. The variable is treated as time-invariant since it measures the unemployment rate at the beginning of the spell.

<sup>12</sup> The indicators for country of origin are grouped into Turkey, Pakistan, other less developed countries, Nordic countries, EU-12 and other developed countries. The regional indicators are based on the 13 Danish counties. At an earlier stage, we also included an indicator for whether the individual originated from a refugee family, but that indicator had no explanatory power.

therefore, we only show the results from the most extended model (iv). In order to compare with Danes, we have estimated the same model (i.e. model iv) for young ethnic Danes, too. For young ethnic Danes we do not include the variable ‘ethnic capital’ and the exposure index. These variables are not meaningful for the group of ethnic Danes because they are either constant or show very little sample variation.

### 3.3. Descriptive statistics for young natives, 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants

In Table 1, we compare some key variables for 1<sup>st</sup> generation immigrants, 2<sup>nd</sup> generation immigrants and ethnic Danes in 1985 and 1997. Even though the age group has been restricted to 18-35 years, it is clear from Table 1 that the group of 2<sup>nd</sup> generation immigrants is younger in 1997 than it was in 1985 because the young age cohorts passing the age of 18 during this period are much larger than the older age cohorts of 2<sup>nd</sup> generation immigrants.

Table 1. Mean values of key variables for ethnic Danes, 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants aged 18-35 years. (Values for males above, for females below).

	1985			1997		
	Ethnic Danes	1 <sup>st</sup> generation immigrants	2 <sup>nd</sup> generation immigrants	Ethnic Danes	1 <sup>st</sup> generation immigrants	2 <sup>nd</sup> generation immigrants
Age	26.2 26.2	27.6 27.6	25.5 25.1	26.8 26.8	28.1 27.4	23.3 23.3
Education, years	11.2 11.2	5.5 5.6	11.1 11.3	11.7 11.9	5.7 5.7	10.8 11.0
Experience, years	6.5 5.5	3.8 3.1	4.9 4.0	7.4 5.7	2.3 1.5	3.3 2.7
% Employed <sup>1)</sup>	69 57	45 33	51 44	64 48	33 20	33 29
Individual unemployment rate	9.4 14.9	14.7 16.8	10.2 13.9	6.8 10.0	15.1 12.5	9.5 9.4
Hourly wages, DKK 1997 prices <sup>2)</sup>	138.6 110.4	139.9 116.1	140.9 114.9	156.3 128.0	144.4 124.6	153.9 128.2
Annual gross income, thousand DKK 1997 prices	140.3 100.6	144.1 100.9	178.3 133.7	202.6 154.1	139.5 103.6	139.7 120.0
Sample/population size <sup>3)</sup>	69,321 66,155	24,386 23,134	2,221 1,903	65,715 63,507	48,111 46,458	4,498 4,259

1) Employed at least 1000 hours during the year as paid worker or registered as self-employed. The employment shall be on ordinary market conditions, i.e. not employment in a labour market programme.

2) The calculation of wage rates is restricted to individuals who are employed and not enrolled in the educational system.

3) Danes 10% and immigrants 100% of the population.

The most striking fact from Table 1 is that 2<sup>nd</sup> generation immigrants are much better off compared to 1<sup>st</sup> generation immigrants when looking at their labour market characteristics - even though they are much younger on average. In general, this holds true for all key variables reported in both 1985 and 1997: Education, experience, employment and unemployment rate, hourly wage and annual gross income.<sup>13</sup> However, in 1997 the employment rates of male 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants are equal. And, in 1985 the hourly wage for female 2<sup>nd</sup> generation immigrants is slightly lower than that of their peers from the 1<sup>st</sup> generation.

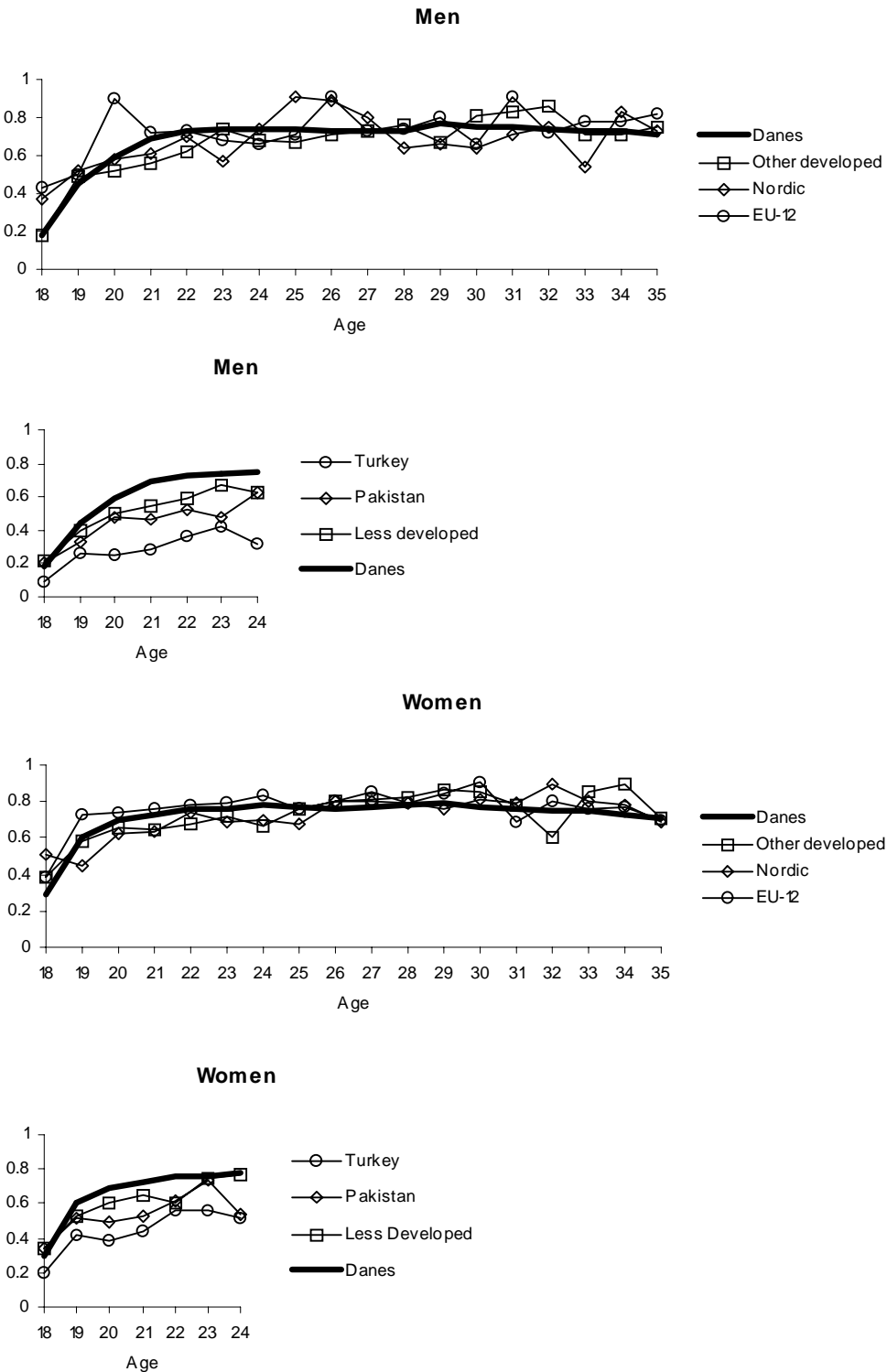
Comparing 2<sup>nd</sup> generation immigrants to ethnic Danes, the labour market performance is generally much better for ethnic Danes due to the different age compositions of the two groups, at least in 1997. However, when it comes to hourly wages and annual gross income, 2<sup>nd</sup> generation immigrants rank first in 1985 whereas ethnic Danes rank first in 1997. In addition to the declining average age of 2<sup>nd</sup> generation immigrants, the explanation is found in the changing composition by ethnic origin during the period. In 1985, individuals originating from Nordic and EU-12 countries dominated the population of 2<sup>nd</sup> generation immigrants and they tend to be older and earn high wages, whereas in 1997, individuals originating from less developed countries dominated and they tend to be younger and have less favourable labour market characteristics (see Table A2 in the appendix).

Table 1 shows only minor differences in the hourly wage rates between ethnic Danes and 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants in both 1985 and 1997. It is surprising as one would expect the large differences in observed human capital to result in larger wage differentials. However, as argued by Husted et al. (2001), it may have to do with the compressed wage structure in Denmark implying that differences in human capital tend to show up in terms of different employment rates and consequently different gross incomes, as also indicated by Table 1. In the Appendix, Table A2 shows a more differentiated picture of the wage and income differentials across ethnic origin. Here the differences in mean age and education clearly show up in the hourly wage and the annual gross income. However, 2<sup>nd</sup> generation immigrants with ethnic origin in the Nordic and EU-12 countries earn higher hourly wages than others including ethnic Danes, although the age and level of education are similar.

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<sup>13</sup> This was also found by Hummelgård et al. (1998), and Ekberg (1997) illustrates a similar picture for Sweden.

Figure 4. Fraction of age cohort of 2<sup>nd</sup> generation immigrants and ethnic Danes who have completed a qualifying education in 1997.



Note: See note to Figure 3 about the country grouping.



#### 4. Educational attainment of 2<sup>nd</sup> generation immigrants

It is usually thought that a basic condition for a successful integration in the labour market is to obtain a qualifying education. In this study, we focus on whether or not a qualifying education has been obtained, and not on different types or lengths of educations.<sup>14</sup> Figure 4 shows the proportion of each age cohort who has completed a qualifying education in 1997. For Turkey, Pakistan and ‘Other less developed countries’ the figure has been cut off at the age of 24 because there are only few observations in older age cohorts.

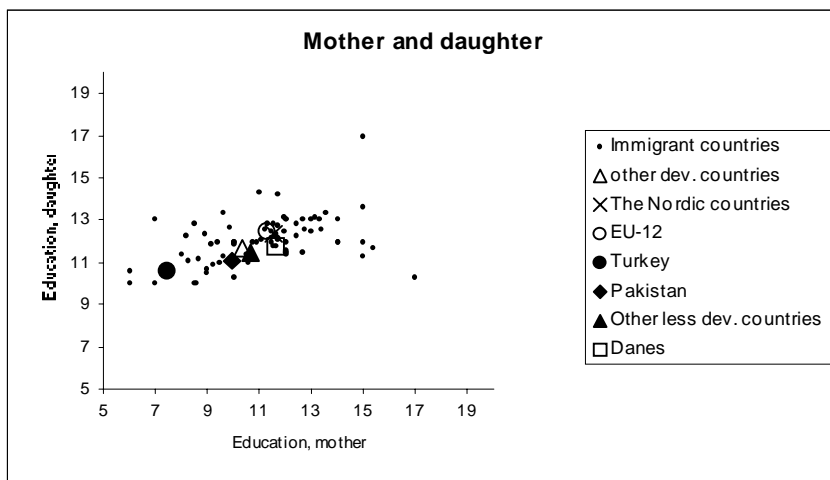
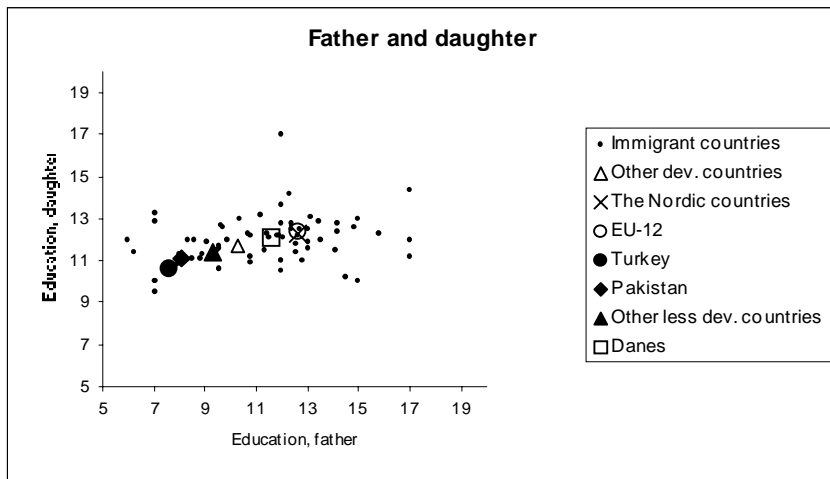
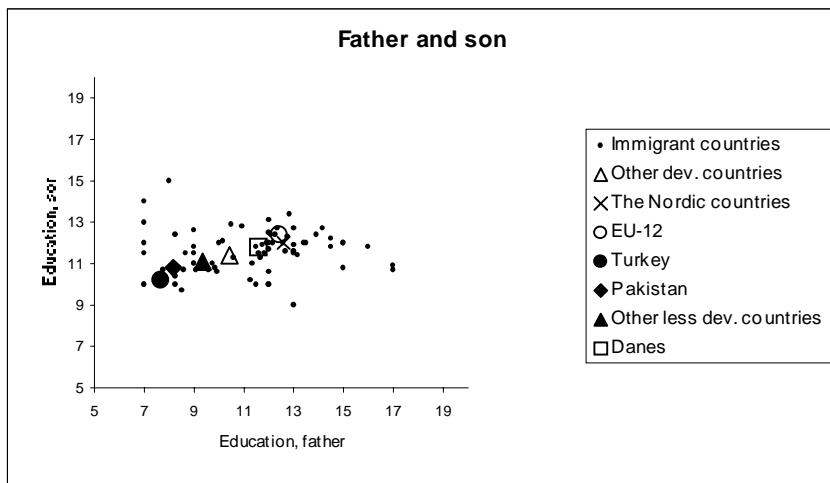
The general impression from Figure 4 is that 2<sup>nd</sup> generation immigrants from EU, the Nordic countries and other developed countries do not deviate much from ethnic Danes with respect to the probability of completing a qualifying education. For 2<sup>nd</sup> generation immigrants from less developed countries, the story is different. Among 2<sup>nd</sup> generation immigrants from Turkey, a much lower fraction in each age cohort has completed a qualifying education. For Pakistan and other less developed countries the difference to ethnic Danes exists although it is smaller. The figure shows that female 2<sup>nd</sup> generation immigrants from Turkey, Pakistan and other less developed countries do fairly well in the educational system compared to males, although they still lack slightly behind their native peers (see also Table A2).<sup>15</sup>

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<sup>14</sup> Only an education lasting at least 18 months (beyond secondary school and/or highschool) is considered a qualifying education.

<sup>15</sup> Since the individuals included in Figure 4 are young on average, a possible hypothesis for the low fraction among individuals with Turkish origin is that they are still undertaking education. For Turkish men, detailed analyses reject this hypothesis, since a larger proportion of this group compared to others immigrants and natives is neither under education, nor have they completed a qualifying education. For Turkish women, that tendency is less pronounced.

Figure 5. Length of education for parents and their children.



Despite the relatively low level of education for male Turkish 2<sup>nd</sup> generation immigrants, this group has a much higher level of education than their parents. The same holds true for many other 2<sup>nd</sup> generation immigrants, as illustrated in Figure 5, which shows the average level of education for parents, sons and daughters for the 108 countries of origin registered in the administrative registers.<sup>16</sup> There is a large variation in the educational attainment of both parents and their children between the 108 countries and in general, children have obtained a much higher level of education than their parents. Based on the figures, it seems fair to conclude that there is a positive correlation between the level of education for parents and their children, both sons and daughters. This correlation may stem from influence directly from the parents or from the ethnic group concerned. However, the level of education for the children may also depend on many other determinants than the education of the parent generation. In order to analyse this further, we estimate a model for having completed a qualifying education. Since we only focus on a dichotomous measure of education, we use a simple logistic regression. Let  $F$  denote the logistic CDF, let  $P_i$ ,  $E_i$ , and  $N_i$  denote the three sets of explanatory variables related to intergenerational transmissions, namely, parental capital, ethnic capital and neighbourhood variables, and let  $O_i$  denote other variables. Finally, let  $D_i$  be an indicator for obtaining a qualifying education, then the likelihood contribution for individual  $i$  is given by:

$$(1) \quad \ell_i(.) = F(\alpha X_i)^{D_i} \cdot (1 - F(\alpha X_i))^{1-D_i}, \text{ where } X_i = \{P_i, E_i, N_i, O_i\}$$

As mentioned earlier, the intergenerational transmission from ethnic capital ( $E_i$ ) is not relevant for young natives but only for individuals with a non-Danish ethnic origin. The matrix  $O_i$  includes marriage indicators, age indicators, regional indicators and indicators for missing information on parents. The results from maximum likelihood estimation are shown in Table 2.

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<sup>16</sup> The graph for the relationship between mother and son is not presented because this is where the lowest correlation is usually found, see e.g. Österberg (2000).

Table 2. Logit model for having completed a qualifying education in 1997, individuals aged 20-35 years.

	Dep. variable = 1, if finished qualifying education, 0 otherwise			
	Males		Females	
	2 <sup>nd</sup> generation immigrant	Ethnic Danes	2 <sup>nd</sup> generation immigrant	Ethnic Danes
<i>Parental variables:</i>				
Years since migration parents/100 <sup>1)</sup>	2.158* (0.755)	-	0.697 (0.729)	-
Education, years, parents/100 <sup>1)</sup>	0.335 (1.013)	4.517* (0.220)	-0.707 (1.020)	3.798* (0.224)
Log annual gross income, parents/100 <sup>1)</sup>	2.673 (3.625)	-0.737 (0.592)	7.669* (3.880)	-0.068 (0.563)
Experience, years, parents/100 <sup>1)</sup>	2.083* (0.541)	2.736* (0.140)	1.590* (0.546)	2.157* (0.140)
<i>Ethnic capital variables:</i>				
Average years since migration	0.091 (0.078)	-	-0.006 (0.075)	-
Average education <sup>2)</sup>	-0.031 (0.054)	-	-0.002 (0.055)	-
Average log annual gross income	0.002 (0.629)	-	0.005 (0.652)	-
Average years of experience	-0.002 (0.055)	-	-0.030 (0.054)	-
<i>Neighbourhood variables:</i>				
Ethnic concentration in childhood municipality <sup>3)</sup>	-8.094* (1.504)	-5.894* (0.432)	-3.418* (1.495)	-6.136* (0.437)
Exposure index, childhood municipality <sup>4)</sup>	0.060* (0.024)	-	0.005 (0.024)	-
<i>Other variables:</i>				
Constant	-3.534 (6.800)	-1.266* (0.076)	-2.000 (7.080)	-1.521* (0.074)
Married to an ethnic Dane <sup>5)</sup>	0.341* (0.140)	0.495* (0.026)	0.296* (0.136)	0.357* (0.023)
Married to an immigrant	0.056 (0.412)	-	-0.583* (0.248)	-
Indicators for age	yes	yes	yes	yes
Indicators for region of origin	yes	-	yes	-
Indicators for Danish regions	yes	yes	yes	yes
Indicators for missing information on parents	yes	yes	yes	yes
Mean log likelihood	-0.593	-0.615	-0.619	-0.618
No. of observations	3186	58420	2998	56684

\* Significant at a 5% significance level.

1) Defined as the maximum values of either father's or mother's variable. If information on both parents is missing, the value is set to 0, and in that case the indicator for missing information on parents take the value of 1.

2) Ethnic capital variables are defined as the country average for 1<sup>st</sup> generation immigrants for the variable concerned.

3) Ethnic concentration is defined as the proportion of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants in the municipality concerned.

4) Exposure index is defined as the fraction of immigrants from own ethnic origin in the municipality concerned divided by the fraction in the total population from own ethnic origin.

5) For ethnic Danes this indicator is equal to unity whenever the individual is married.

The completion of a qualifying education seems to be highly affected by intergenerational transmission effects working through parental capital and childhood neighbourhoods. For male 2<sup>nd</sup> generation immigrants, the number of years since the parents immigrated to Denmark has a positive effect on the probability of completing a qualifying education, whereas for women, this effect is insignificant. On the other hand, the education of young 2<sup>nd</sup> generation immigrant women seems to be highly dependent on the income the parents. This is not the case for young immigrant men - or for ethnic Danes. Having parents who have several years of labour market experience from the Danish labour market has a significantly positive effect on the probability of completing a qualifying education for all groups. The coefficient on the education of the parents is only significantly positive for young Danes. This is quite surprising, and it suggests that there is substantial intergenerational mobility among the immigrants, since this is the variable which is most closely related to the outcome variable under study. It may also be that there are measurement errors in the variable indicating the educational attainment of 1<sup>st</sup> generation immigrants.

We are not able to identify any significant ethnic capital effects in this model (having controlled for region of origin). It could be argued that the four variables representing ethnic capital are partly collinear but other estimations show that this result also holds if only one or two ethnic capital variables are included. Turning to the neighbourhood effects, the estimations yield some interesting results. For all groups, immigrants as well as young Danes, men as well as women, growing up in an area with a high concentration of immigrants is associated with a significantly lower probability of completing an education. The size of the effect is surprisingly large although, as mentioned above, the estimated coefficients may suffer from endogeneity. Evaluated at the sample mean, the marginal effect of increasing ethnic concentration from 10% to 20% (corresponding to moving from a municipality with just above average level ethnic concentration to one of the Danish municipalities with the highest ethnic concentration) is associated with a reduction in the probability of completing a qualifying education with 18 percentage points for a 2<sup>nd</sup> generation young man and 13 percentage points for a young ethnic Danish man. For women, the negative effects are slightly smaller, 8 percentage points and 10 percentage points for immigrants and natives, respectively. On the other hand, living in an area with a relatively large fraction of immigrants with the same ethnic origin is associated with a significantly higher probability of obtaining a qualifying education for 2<sup>nd</sup> generation immigrant men (but not women). This may reflect that young immigrant men are more dependent on a social network and that the concept of 'ethnic goods' is more important for young immigrant men than women.

Finally, marriage matters for the attainment of education. Being married to an ethnic Dane is associated with a higher probability of completing a qualifying education. The marginal effect is about 7 percentage points for an average individual. For an average 2<sup>nd</sup> generation immigrant women, marriage to an immigrant man reduces the probability of completing a qualifying education by about 14 percentage points. Although one should be careful with the interpretation because the causality may run in both directions, this negative effect is a serious drawback for young female immigrants from less developed countries since only about 2% of these women marry an ethnic Dane (Pedersen, 2000), and among Turks and Pakistanis three-fourths of all immigrants are against marriage with an individual of a different ethnic origin (Nielsen, 2000).

## **5. The duration of waiting time from leaving the educational system until the first job**

After having left the educational system with or without completing a qualifying education, the next question is how long time, the young 2<sup>nd</sup> generation immigrant or native has to wait until he or she succeeds in finding a job in the ordinary labour market.<sup>17</sup> In the second model, we estimate the duration (in months) until the first job in the ordinary labour market after leaving the educational system. In Table A1, the average length of this waiting time (non-employment spells) is shown. The average waiting time is longer for 2<sup>nd</sup> generation immigrants than it is for ethnic Danes and in addition, it is longer for women than it is for men.

We estimate a proportional hazard model with a piecewise constant baseline hazard. If  $t_i$  denotes the waiting time for the first job, the hazard function looks as follows:

$$(2) \quad h(t_i | X_i) = h_0(t_i) \exp(\beta X_i), \text{ where } X_i = \{P_i, E_i, N_i, O_i\}$$

To the vector  $O_i$  is now added years of education and the regional unemployment rate as earlier described. The splitting times for the baseline have been determined by looking at Kaplan-Meier hazard plots. A large group of individuals finds employment almost immediately after leaving school, hence we have chosen a finer grid at the beginning of the spell. The splitting times chosen for both men and women, 2<sup>nd</sup> generation immigrants and ethnic Danes are: 1, 3, 6, 12, and 24 months.

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<sup>17</sup> We do not consider participation in different labour market schemes (publicly subsidized jobs, job offer schemes or in-work-benefits) as ordinary jobs.

Table 3. Duration model for time until first ordinary job, individuals aged 18-35 years.

Estimates are effects on the log hazard rate for entering the first job				
	Males		Females	
	2 <sup>nd</sup> generation immigrant	Ethnic Danes	2 <sup>nd</sup> generation immigrant	Ethnic Danes
<i>Parental variables:</i>				
Years since migration, parents/100 <sup>1)</sup>	0.758* (0.263)	-	1.597* (0.274)	-
Education, years, parents/100 <sup>1)</sup>	0.315 (0.419)	-1.148* (0.094)	-1.267* (0.462)	-0.690* (0.113)
Log annual gross income, parents/100 <sup>1)</sup>	0.311 (1.497)	3.483* (0.531)	3.714 (2.247)	3.719* (0.577)
Experience, years, parents/100 <sup>1)</sup>	0.278 (0.270)	1.656* (0.061)	1.379* (0.304)	0.828* (0.069)
<i>Ethnic capital variables:</i>				
Average years since migration	-0.012 (0.026)	-	-0.046 (0.037)	-
Average education <sup>2)</sup>	-0.020 (0.015)	-	-0.073* (0.030)	-
Average log annual gross income	0.201 (625.920)	-	-0.019 (0.311)	-
Average years of experience	0.075* (0.025)	-	0.017 (0.026)	-
<i>Neighbourhood variables:</i>				
Ethnic concentration in childhood municipality <sup>3)</sup>	-3.228* (0.834)	-2.269* (0.217)	1.274 (1.005)	-0.846* (0.221)
Exposure index, childhood municipality <sup>4)</sup>	0.002 (0.016)	-	0.019 (0.018)	-
Ethnic concentration in current municipality <sup>3)</sup>	0.018 (0.744)	-2.237* (0.165)	-1.447 (0.930)	-1.962* (0.168)
Exposure index, current municipality <sup>4)</sup>	-0.053* (0.015)	-	-0.035* (0.018)	-
<i>Other variables:</i>				
Education, years	0.066* (0.008)	0.059* (0.002)	0.092* (0.009)	0.073* (0.002)
Regional unemployment rate	-0.107* (0.011)	-0.060* (0.002)	-0.089* (0.011)	-0.055* (0.002)
Married to an ethnic Dane <sup>5)</sup>	0.222* (0.089)	0.438* (0.023)	0.122 (0.107)	0.064* (0.018)
Married to an immigrant	0.427 (0.249)	-	-0.664* (0.232)	-
Piece-wise linear baseline hazard	yes	yes	yes	yes
Indicators for age	yes	yes	yes	yes
Indicators for region of origin	yes	-	yes	-
Indicators for Danish regions	yes	yes	yes	yes
Indicators for missing information on parents	yes	yes	yes	yes
Mean log likelihood	-1.153	-0.512	-1.224	-0.922
No. of observations	1633	20403	1582	21629

Notes: See Table 2.

Looking at the baseline hazard rates (which are not shown in Table 3), we find that the hazard rate is very high during the first month after leaving school, reflecting the fact that many school leavers find jobs immediately. After the first month, the hazard rate tends to be constant until 12 months after leaving school after which point it declines. For 2<sup>nd</sup> generation immigrant women, there is negative duration dependence throughout all baseline intervals. This negative duration dependence might indicate that the individuals who have not found job after some time are negatively selected with respect to unobserved characteristics (e.g. motivation or language proficiency), that is, the negative duration dependence may be spurious, see Lancaster (1990). On the other hand, it may be genuine negative duration dependence, in which case it may reflect stigma effects of non-employment, depreciating human capital, etc.

Focusing on the intergenerational transmission mechanisms, the dominant effect for women comes from the parents, whereas men are affected by ethnic capital and childhood neighbourhoods as well. For natives, we find significant effects of both parental capital and neighbourhood variables.

Spelling out the results in more detail, the coefficients on the ‘parental capital’ variables (years since migration, log annual gross income and labour market experience) confirm that assimilation and labour force attachment of the parents have a significantly positive effect for mainly female 2<sup>nd</sup> generation immigrants, but these effects are not as well-determined for males for whom it is only the years since migration of the parents that matters. The striking gender difference in the strength of the effect of parental capital may indicate the existence of ‘parental gender discrimination’ when a girl child considers entering the labour market. This ‘discrimination’ may stem from inducing the girls to getting married (with a man of similar nationality) and being a full-time housewife instead of entering the labour market.

For female 2<sup>nd</sup> generation immigrants as well as ethnic Danes, the education of the parents seems to exert a ‘perverse’ effect on the probability of entering the first job after leaving the educational system. For some reason, a higher education of the parents (or their generation) prolongs the non-employment spell. However, compared to the effect of own education (see below), the effect is relatively small.

When it comes to the males, it is important whether they belong to an ethnic group who has been attached to the Danish labour market for many years. This may indicate that the integration process of male 2<sup>nd</sup> generation immigrants is highly dependent on the labour force integration of the parent generation, and belonging to an ethnic minority who has spent many years in Denmark without accumulating labour market experience has negative effects on the integration process.



Furthermore, the labour market success of male 2<sup>nd</sup> generation immigrants is affected by the concentration of immigrants in the neighbourhood where they grew up, as it is the case for natives of both gender. For natives, but not for immigrants, the negative ethnic concentration effect is reinforced if the individual currently lives in an ethnic concentrated municipality. Thus, young 2<sup>nd</sup> generation immigrant women do not suffer from coming from an ethnically concentrated neighbourhood, while this is a clear disadvantage for all other groups. Regarding the exposure index, we find that the overall effect on the job finding rate of living in a municipality with an above normal share of immigrants from the same ethnic group is negative.

As expected, the level of own education for the 2<sup>nd</sup> generation immigrant is extremely important. Individuals who have completed a long education are likely to find a job faster than others. Thus, having a qualifying education significantly increases the probability of obtaining employment for all groups, a result which is in line with earlier Danish studies of 1<sup>st</sup> generation immigrant men, see Husted et al. (2001). Those who leave the educational system when the unemployment rate is high tend to spend significantly longer time finding a job. Finally, a married young immigrant man has a shorter waiting time until the first job, whether married to another immigrant or to an ethnic Dane. On the contrary, for young immigrant women, the effect of being married to another immigrant is strong and significantly negative.

## 6. Duration of the first employment spell

We analyse the duration of the first spell of employment, given that the immigrant succeeds in obtaining a job.<sup>18</sup> We are not able to get exact information on the duration of jobs but based on the administrative registers, we are able to calculate the duration (in months) of the first employment spell, which may consist of several job spells. Only jobs in the ordinary non-subsidized labour market are included. The average length of the first employment spell is longer for ethnic Danes than it is for 2<sup>nd</sup> generation immigrants (see Table A1). Once again, the estimated model is a proportional hazard model with a piecewise constant baseline. Let  $s_i$  denote the duration of the employment spell for individual  $i$ :

$$(3) \quad h(s_i | X_i) = h_0(s_i) \exp(\theta X_i), \text{ where } X_i = \{P_i, E_i, N_i, O_i\}$$

Choice of baseline intervals (or equivalently splitting times) is based upon an examination of Kaplan-Meier hazard plots (not presented here), and the following splitting times are chosen: 3, 6, 9, 12 and 24 months.

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<sup>18</sup> Ending employment is equivalent to becoming unemployed in this study, as we treat all other destination states out of employment as independent right censoring.

In general, there is a negative duration dependence, although there is a tendency that the hazard rate is higher during the third to sixth month of employment for 2<sup>nd</sup> generation immigrants, as well as for ethnic Danish males, while for ethnic Danish females, the hazard rate out of employment is higher during the seventh to twelfth month of employment. The hump-shaped baseline hazard could be explained by ‘learning about the quality of the job match’ as argued by Jovanovic (1979).

Given that the young immigrant succeeds in getting a job, the effect of intergenerational transmission on the duration of the first employment spell seems to be less significant than on obtaining a qualifying education and on the waiting time until the first job. It might be argued, of course, that intergenerational effects are already captured by the variable reflecting educational attainment, and that there is a strong indirect intergenerational effect present.

For male 2<sup>nd</sup> generation immigrants, both parental and ethnic labour market experience reduce the instantaneous probability of leaving employment (significant at a 10% level). This effect is also found for ethnic Danes but not for female 2<sup>nd</sup> generation immigrants. For female 2<sup>nd</sup> generation immigrants, on the other hand, we find that after controlling for different background variables (e.g. region of origin), there is a positive effect (significant at a 10% level) of the number of years that the parents have been in Denmark. This means that the longer parents have been in Denmark, the shorter is the duration of a female employment spell. Altogether, the results indicate some influence on employment duration of the parental generation, though it is not as well-determined as at the earlier stages of the school-to-work transition. The results add to the evidence presented earlier that integration into the Danish labour market is far from being an ‘automatic process’ where it is just a matter of time, years or decades, until the immigrants or their children obtain a well-established position on the labour market.

Table 4. Duration model for first employment spell, individuals aged 18-35 years.

Estimates are effects on the log hazard rate for ending first employment spell				
	Males		Females	
	2 <sup>nd</sup> generation immigrant	Ethnic Danes	2 <sup>nd</sup> generation immigrant	Ethnic Danes
<i>Parental variables:</i>				
Years since migration, parents/100 <sup>1)</sup>	-1.328 (0.864)	-	1.875* (0.946)	-
Education, years, parents/100 <sup>1)</sup>	0.299 (0.818)	0.065 (0.269)	0.131 (0.895)	0.427 (0.268)
Log annual gross income, parents/100 <sup>1)</sup>	2.971 (3.752)	-2.402* (0.986)	2.272 (4.781)	-0.016 (1.069)
Experience, years, parents/100 <sup>1)</sup>	-0.955 (0.553)	-1.001* (0.160)	-0.132 (0.606)	-0.951* (0.156)
<i>Ethnic capital variables:</i>				
Average years since migration/10	-0.332 (0.509)	-	0.388 (0.715)	-
Average education/100 <sup>2)</sup>	-1.220 (3.125)	-	-5.154 (6.235)	-
Log annual gross income/100	-1.440 (106.416)	-	-2.308 (65.985)	-
Average years of experience/100	-9.582 (5.221)	-	-3.272 (5.035)	-
<i>Neighbourhood variables:</i>				
Ethnic concentration in childhood municipality <sup>3)</sup>	6.227* (1.951)	2.669* (0.568)	-2.458 (2.065)	0.929 (0.526)
Exposure index, childhood municipality <sup>4)</sup>	-0.050 (0.035)	-	0.067 (0.035)	-
Ethnic concentration in current municipality <sup>3)</sup>	-3.559* (1.777)	-0.173 (0.449)	3.720 (1.901)	0.155 (0.413)
Exposure index, current municipality <sup>4)</sup>	0.077* (0.035)	-	-0.058 (0.036)	-
<i>Other variables:</i>				
Education, years	-0.039* (0.015)	-0.005 (0.005)	-0.083* (0.017)	-0.073* (0.005)
Regional unemployment rate	0.020 (0.022)	0.042* (0.005)	0.003 (0.024)	0.016* (0.005)
Married to an ethnic Dane <sup>5)</sup>	-0.150 (0.193)	-0.332* (0.068)	-0.366 (0.206)	-0.204* (0.043)
Married to an immigrant	-0.597 (0.573)	-	0.212 (0.363)	-
Piece-wise linear baseline hazard	yes	yes	yes	yes
Indicators for age	yes	yes	yes	yes
Indicators for region of origin	yes	-	yes	-
Indicators for Danish regions	yes	yes	yes	yes
Indicators for missing information on parents	yes	yes	yes	yes
Mean log likelihood	-2.17	-2.184	-2.135	-2.22
No. of observations	1516	19265	1356	19704

Notes: See Table 2.

A high ethnic concentration in the childhood neighbourhood of young men, immigrants as well as ethnic Danes, increases the risk of becoming unemployed, but for immigrants the effect is, to some extent, counteracted by the effect of ethnic concentration in the municipality of current residence. For 2<sup>nd</sup> generation immigrant women, the effects are similar, but insignificant. The exposure indices for the childhood or current municipality also tend to (net) increase the risk of losing the job. Thus, we do not find significant indication of positive ‘ethnic network’ or ‘ethnic good’ effects on the chances of keeping a job for young 2<sup>nd</sup> generation immigrants in Denmark.<sup>19</sup>

A longer own education is associated with a lower probability of becoming unemployed after the first employment. Especially for women, this effect is very important. For immigrants, the coefficients to the marriage indicators are not well-determined, though female immigrants tend to be less likely to lose their jobs if they are married to ethnic Danes. Surprisingly, the duration of employment for immigrants who succeed in getting a job is less sensitive to local unemployment rates compared to young Danes. The coefficient to the local unemployment rate is significantly positive for Danes, but insignificant for male as well as female immigrants. This seems to indicate a fundamental difference between the jobs that 2<sup>nd</sup> generation immigrants and young ethnic Danes get. However, this question is left for future study.

## **7. Hourly wages in the first employment spell**

Finally, the fourth model explains the wage in the first employment spell. The dependent variable is the log hourly wage rate, which is measured in DKK. The information on wages is based on annual earnings divided by annual hours employed.<sup>20</sup> Hourly wages are only observed for individuals who have been employed as wage earners during the year while there is no information on the earnings capacity of self-employed individuals who are excluded from this analysis. The means of the hourly wage rates are shown in Tables A1-2. It is higher for males than for females, and higher for ethnic Danes than for immigrants, except for 2<sup>nd</sup> generation immigrants from the EU and the Nordic countries who have higher hourly wage rates than ethnic Danes. The plots of wage distributions show a log-normal shaped distribution, see Figure 6, but there is no clear indication of large differences with respect to variance or means for the groups included in the figure.

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<sup>19</sup> In alternative estimations (not shown here), we have experimented with different interaction terms on the neighbourhood variables, allowing for different effects of these variables in big cities and rural areas. One hypothesis could be that living in a small municipality with a high ethnic concentration would have smaller effects than living in a large municipality with the same high ethnic concentration. However, we found no significant differences in the neighbourhood effects.

<sup>20</sup> Thus, overtime payments and earnings in a secondary job are included in the wage measure. If the frequency of overtime work or secondary jobs varies systematically between immigrants and native-born, we may over- or underestimate the differences between the wage levels of immigrants and native-born individuals.

We perform simple human capital estimations of hourly wage rates for young ethnic Danes and 2<sup>nd</sup> generation immigrants who are observed to have at least one employment spell during the observation period 1985-1997.<sup>21</sup> The wage equation takes the following form

$$(4) \quad \ln w_i = \delta X_i + \varepsilon_i, \text{ where } X_i = \{P_i, E_i, N_i, O_i\}$$

To the matrix  $O_i$  are now added: years of education, experience and experience squared. Assuming  $\varepsilon_i \sim iid(0, \sigma^2)$ , the equation is estimated using OLS.

The results are presented in Table 5. While parental capital work as an important intergenerational transmission channel in obtaining education and employment for young 2<sup>nd</sup> generation immigrants, the hourly wage rates for those who succeed in getting a job do not seem to depend on these variables. And, for natives, there is a perverse effect of parental capital, which - in a society with a highly compressed wage distribution<sup>22</sup> - could be the result of a ‘regression towards the mean’, i.e. those whose parents earn a lot tend to earn a little less, and vice versa. Combined with the results in Table 4, where the effect of these variables also tend to be weak, we may interpret this result as reflecting that parental capital mainly affects the beginning of the school-to-work transition, i.e. the educational attainment and entry into the first job. The direct effects of the background of the parents on the wage rate are weak or non-existing. However, for female 2<sup>nd</sup> generation immigrants, there is some effect from ethnic capital variables and for male 2<sup>nd</sup> generation immigrants, there is some effect from the childhood neighbourhood.

Surprisingly, the concentration of immigrants in the current neighbourhood affects the earnings capacity of immigrants positively. This could be interpreted as an ‘ethnic good’ or ‘ethnic network’ effect.

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<sup>21</sup>In this study, we ignore potential selectivity effects due to missing information on wages for non-employed, see Husted et al. (2001).

<sup>22</sup> A similar conclusion is drawn by Österberg (2000), who concludes that Sweden - in contrast to the US - is characterised by a low cross-sectional income inequality and a high intergenerational income mobility.

Figure 6. Distribution of hourly wage rates in first job.

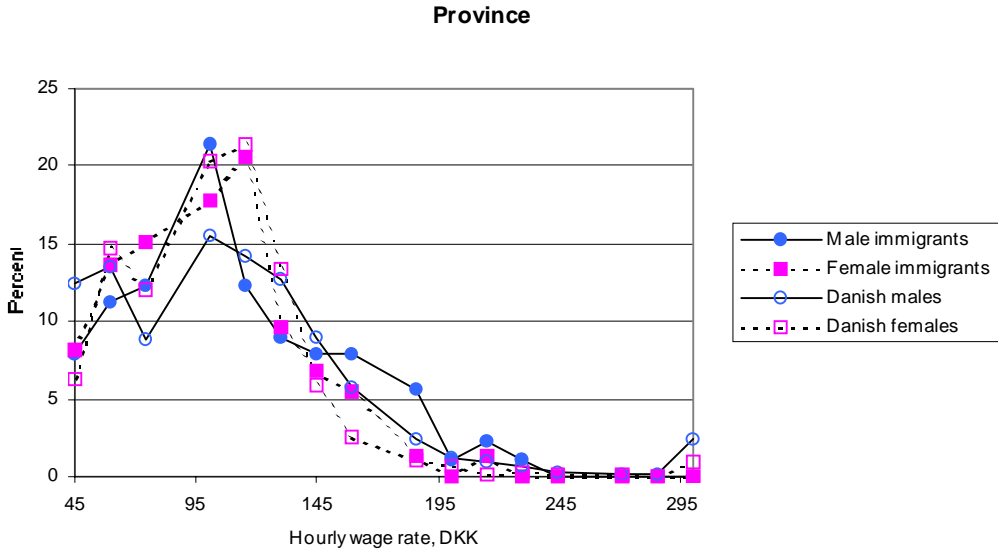
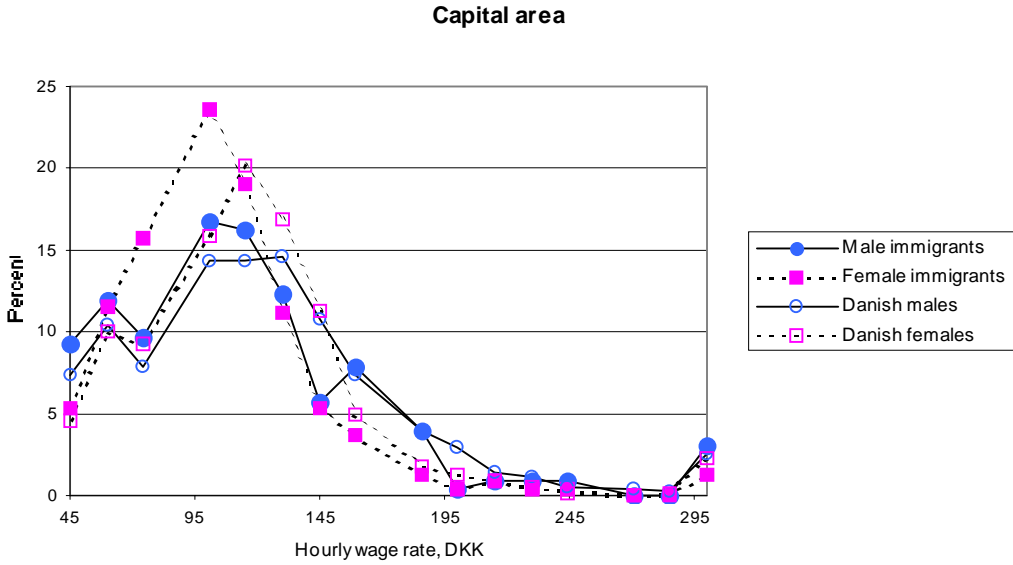


Table 5. OLS estimation of wage equation for 1997, individuals aged 20-35 years.

	Dependent variable= log hourly wage rate, DKK			
	Males		Females	
	2 <sup>nd</sup> generation immigrant	Ethnic Danes	2 <sup>nd</sup> generation immigrant	Ethnic Danes
<i>Parental variables:</i>				
Years since migration, parents/100 <sup>1)</sup>	0.151 (0.267)	-	0.354 (0.283)	-
Education, years, parents/100 <sup>1)</sup>	-0.600 (0.373)	-0.207* (0.092)	0.265 (0.332)	-0.367* (0.086)
Log annual gross income, parents/100 <sup>1)</sup>	-0.438 (1.314)	-0.900* (0.399)	-0.223 (1.358)	-0.083* (0.345)
Experience, years, parents/100 <sup>1)</sup>	0.057 (0.240)	-0.037 (0.054)	-0.164 (0.211)	-0.096 (0.050)
<i>Ethnic capital variables:</i>				
Average years since migration/10	0.346 (0.307)	-	-0.541* (0.253)	-
Average education/100 <sup>2)</sup>	2.229 (2.331)	-	-4.751* (2.006)	-
Average log annual gross income/100	-8.233 (25.821)	-	49.841* (22.374)	-
Average years of experience/100	1.808 (2.200)	-	1.563 (1.882)	-
<i>Neighbourhood variables:</i>				
Ethnic concentration in childhood municipality <sup>3)</sup>	-1.742* (0.726)	0.364* (0.184)	-0.887 (0.635)	-0.041 (0.159)
Exposure index, childhood municipality <sup>4)</sup>	0.128 (0.191)	-	0.007 (0.012)	-
Ethnic concentration in current municipality <sup>3)</sup>	1.567* (0.657)	-0.202 (0.141)	0.991 (0.580)	0.011 (0.121)
Exposure index, current municipality <sup>4)</sup>	-0.013 (0.014)	-	0.003 (0.013)	-
<i>Other variables:</i>				
Constant	4.295 (2.785)	3.564* (0.053)	-1.499 (2.418)	3.694* (0.048)
Experience	0.035* (0.017)	0.047* (0.003)	0.026 (0.016)	0.016* (0.004)
Experience squared/100	-0.028 (0.137)	-0.146* (0.027)	0.024 (0.146)	-0.047 (0.029)
Education, years	0.043* (0.007)	0.087* (0.002)	0.053* (0.007)	0.067* (0.002)
Married to an ethnic Dane <sup>5)</sup>	0.148* (0.073)	0.015 (0.019)	0.112 (0.062)	-0.007 (0.012)
Married to an immigrant	-0.014 (0.176)	-	0.115 (0.136)	-
Indicators for age	yes	yes	yes	yes
Indicators for region of origin	yes	-	yes	-
Indicators for Danish regions	yes	yes	yes	yes
R-squared	0.139	0.245	0.155	0.212
No. of observations	1105	16554	1050	16628

Notes: See Table 2.

For both males and females, the coefficients to the traditional human capital variables indicate that the human capital of young ethnic Danes is better remunerated than that of on 2<sup>nd</sup> generation

immigrants.<sup>23</sup> The experience profiles are flatter for immigrants than for ethnic Danes (the experience coefficient of immigrant women is numerically larger than for Danish women, but is insignificant). The effect of one extra year of education is much lower for 2<sup>nd</sup> generation immigrants, especially males, than for ethnic Danes.<sup>24</sup> On average, the remuneration to an ethnic Dane is 9 % for a man and 7% for a woman while the same figures for 2<sup>nd</sup> generation immigrants are only 4 % and 5 %, respectively. This may be due to differences in the quality and type of education that 2<sup>nd</sup> generation immigrants and ethnic Danes acquire. But another obvious explanation is that it reflects discriminatory tendencies in the Danish labour market, see Nielsen et al. (2001). Finally, the marriage indicators show a positive effect of being married to an ethnic Dane, which may be interpreted as a positive network or language effect.

## 8. Conclusion

In this paper, we investigate the transition from school to work for 2<sup>nd</sup> generation immigrants in Denmark. Analysing the school-to-work transition, we investigate four different aspects of this transition: the completion of a qualifying education, the waiting time before entry into the first ordinary job, the duration of the first employment spell and the hourly wage earned in 1997. The school-to-work transition of 2<sup>nd</sup> generation immigrants is less successful than it is for young ethnic Danes. On average, they are less likely to obtain a qualifying education, the waiting time for the first job is longer, the first employment spell is shorter and their wages in 1997 are lower.

The focus is placed on the intergenerational transmission mechanisms, and the three main hypotheses that are tested concern the importance of parental capital, ethnic capital and neighbourhood effects for the school-to-work transition. In general, we are able to confirm that all three factors are correlated with successful labour market entry, although the strongest transmission mechanisms work through parental capital and childhood neighbourhoods. However, the influence on different aspects of the transition from school to work varies considerably. In general, the strongest effects of intergenerational transmissions happen in the educational attainment of the 2<sup>nd</sup> generation immigrants, which again is very important for the employment experience of 2<sup>nd</sup> generation immigrants, exactly as it is the case for young ethnic Danes. Also the waiting time for the first job after leaving the educational system is significantly affected by intergenerational effects, but the effects die out after the individuals have entered the labour market. This might be because demand side effects dominate supply side effects at this stage of the labour market career, and intergenerational transmissions are mainly thought to work through the individual decision making, which is on the supply side. In addition, there *is* a strong

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<sup>23</sup> And the coefficients are unchanged if the intergenerational variables are left out.

<sup>24</sup> A similar result is reported by Österberg (2000) for Swedish males.



*indirect* intergenerational effect, which works through the strong effects of obtaining a qualifying education on employment duration and wages, and through the strong effect of education on the probability of obtaining a job in the first place.

Among the variables reflecting parental and ethnic capital, both years since migration and labour market experience are important. Hence, it does not only matter how long time the parents (or their generation) have been in the country, but also whether they have been attached to the labour market. This result leads to the conclusion that the ‘assimilation process’ of the descendants of 1<sup>st</sup> generation immigrants is not a process that ‘automatically’ takes place, given time. The ‘assimilation process’ is also dependent on the employment success of the parent generation, and if the parents are not successfully integrated into the labour market, this result may carry over to the children.

We find striking gender differences in the intergenerational transmission effects among 2<sup>nd</sup> generation immigrants. The overall picture from the analysis of the four aspects of the school-to-work transition shows that the dominant intergenerational effect for women comes from the parents, whereas men are affected by ethnic capital and childhood neighbourhoods as well. Among the significant parental variables are years since migration, gross income and experience in the Danish labour market and therefore, we may conclude that labour market assimilation of the parents is extremely important for successful labour market entry of female 2<sup>nd</sup> generation immigrants. This may indicate that to some extent well-assimilated parents have adopted Danish norms with respect to female labour market participation. When it comes to the males, their labour market success is also affected by the concentration of immigrants in the neighbourhood where they grew up and furthermore, after getting a qualifying education, it is important whether they belong to an ethnic group who have been attached to the Danish labour market for many years.

Especially, in the analysis of the waiting time for the first job, the gender difference in the effect of parental capital is large. This may indicate that the parents ‘allow’ their daughters to take an education and then, potential ‘parental gender discrimination’ sets in when the daughter considers entering the labour market. This ‘discrimination’ may stem from arranging for the daughter to get married (with a man of similar nationality) and be a full-time housewife instead of entering the labour market. A related story may be told based on the coefficients to the marriage indicators. In almost all cases, we find a favourable effect from being married to an ethnic Dane, but for female 2<sup>nd</sup> generation immigrants, we find that being married to an immigrant reduces the probability of completing a qualifying education and the probability of entering the first job. Although, marriage is potentially endogenous, this result indicates an important problem for

young immigrant women, since only few young immigrant women marry an ethnic Dane.

As mentioned above, we find strong intergenerational transmissions in the attainment of a qualifying education. This is an important result because education turns out to be essential in all the studied phases of the school-to-work transition for all four groups in the study. Therefore, having parents with unfavourable characteristics, belonging to an unfavourable ethnic group or growing up in a neighbourhood with a high concentration of immigrants, is associated with a lower probability of achieving a qualifying education. As a consequence, the negative intergenerational influence potentially affects the whole labour market career not only directly, but also indirectly, through the attainment of education.

Since obtaining a qualifying education is shown to be extremely important for a successful integration into the labour market, it is unfortunate that the economic incentives for 2<sup>nd</sup> generation immigrants to acquire an education seem to be much lower than for young ethnic Danes. In the estimation of a simple wage equation, we find that the returns to both education and experience are considerably lower for 2<sup>nd</sup> generation immigrants compared to young ethnic Danes. In our study, we do not correct for self-selection into wage employment and neither do we control for potential differences in the quality or types of education that 2<sup>nd</sup> generation immigrants and ethnic Danes acquire, except for the effects controlled for by neighbourhood effects. Hence, it could be the case that the differences in the parameter estimates are due to stronger sample selection effects among 2<sup>nd</sup> generation immigrants relative to young ethnic Danes. However, the large differences in returns to educational investments are hard to explain without reference to theories of discrimination.

This leads us to the obvious policy conclusion that - to the extent that we are capturing causal relationships - schooling is important for young 2<sup>nd</sup> generation immigrants, even if the returns to education in terms of hourly wages are lower for 2<sup>nd</sup> generation immigrants than they are for young ethnic Danes. Hence, additional resources targeted at 2<sup>nd</sup> generation immigrants in primary and secondary schools to induce them to undertake further education should be considered. Furthermore, all policy initiatives that potentially increase the returns to education for 2<sup>nd</sup> generation immigrants should be considered.

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## Appendix

Table A1. Mean sample values for 2<sup>nd</sup> generation immigrants and ethnic Danes aged 18-35 years in 1997.

	Males		Females	
	2 <sup>nd</sup> generation immigrant	Ethnic Danes	2 <sup>nd</sup> generation immigrant	Ethnic Danes
Fraction who has completed a formal education	0.325 (0.468)	0.647 (0.478)	0.353 (0.478)	0.617 (0.486)
Duration of spell until first job, months	4.117 (9.079)	2.737 (7.915)	5.418 (10.930)	3.897 (9.789)
Duration of first employment spell, months	14.166 (15.738)	19.927 (20.620)	14.411 (15.899)	19.183 (20.553)
Log hourly wage rate, DKK 1997 prices	4.600 (0.542)	4.644 (0.494)	4.532 (0.462)	4.566 (0.451)
<i>Parental variables:</i>				
Years since migration parents <sup>1)</sup>	14.348 (12.749)	-	14.542 (13.012)	-
Education parents, years <sup>1)</sup>	6.845 (5.517)	10.403 (4.614)	7.864 (5.369)	10.380 (4.635)
Log annual gross income, parents <sup>1)</sup>	11.371 (2.915)	12.103 (1.998)	11.232 (3.222)	12.073 (2.085)
Experience, years, parents <sup>1)</sup>	15.335 (9.055)	-	15.462 (9.076)	-
<i>Neighbourhood variables:</i>				
Ethnic concentration in childhood municipality <sup>3)</sup>	0.081 (0.046)	0.032 (0.031)	0.080 (0.046)	0.032 (0.031)
Exposure index, childhood municipality <sup>4)</sup>	2.744 (2.376)	-	2.701 (2.357)	-
Ethnic concentration in current municipality <sup>3)</sup>	0.107 (0.047)	0.066 (0.044)	0.108 (0.047)	0.067 (0.044)
Exposure index, current municipality <sup>4)</sup>	2.938 (2.338)	-	2.984 (2.323)	-
<i>Ethnic capital variables:</i>				
Average years since migration <sup>2)</sup>	11.831 (1.090)	-	11.799 (1.123)	-
Average education <sup>2)</sup>	6.568 (1.427)	-	6.607 (1.443)	-
Average log annual gross income <sup>2)</sup>	11.980 (0.159)	-	11.982 (0.158)	-
Average years of experience <sup>2)</sup>	10.132 (1.103)	-	10.162 (1.129)	-
<i>Other variables:</i>				
Age	23.346 (4.888)	26.770 (5.098)	23.363 (4.945)	26.769 (5.111)
Experience, years	3.215 (4.080)	7.309 (5.550)	2.686 (3.509)	5.650 (4.765)
Education, years	10.569 (3.511)	11.548 (2.761)	10.779 (3.582)	11.826 (2.635)
Married to an ethnic Dane <sup>5)</sup>	0.095 (0.293)	0.194 (0.395)	0.109 (0.311)	0.273 (0.445)
Married to an immigrant	0.007 (0.086)	-	0.026 (0.159)	-
Indicator for missing years since migration for parents	0.380 (0.485)	-	0.379 (0.485)	-
Indicator for other missing information on parents	0.054 (0.225)	0.019 (0.135)	0.058 (0.233)	0.021 (0.143)
No. of observations	4579	66130	4345	63741

Notes: See Table 2.

Table A2. Mean sample values for 2<sup>nd</sup> generation immigrants and ethnic Danes aged 18-35 years in 1997. (Values for males above, for females below).

	Turkey	Pakistan	Other less developed countries	EU-12	Nordic	Other developed countries	Ethnic Danes
Age	20.0	20.4	21.7	27.4	26.9	23.4	26.8
	20.1	20.5	21.6	27.6	27.1	23.4	26.8
Education, years	9.7	10.5	10.7	11.9	10.9	10.7	11.7
	10.3	10.5	11.0	11.9	11.3	11.1	11.9
Hourly wage rate, DKK <sup>1)</sup>	125.6	127.3	142.9	167.3	172.8	147.9	156.3
	111.8	102.1	124.4	135.8	140.7	127.6	128.0
Annual gross income, thousand DKK	102.4	87.4	114.7	197.3	186.4	146.6	202.6
	99.2	77.6	104.0	154.4	151.7	129.4	154.1
Ethnic concentration <sup>2)</sup>	10	13	12	9	9	11	7
	10	14	12	9	10	11	7
Exposure index <sup>3)</sup>	2.8	5.0	0.1	0.7	0.5	0.5	1.0
	2.9	5.0	0.1	0.7	0.5	0.6	1.0
No. of observations	663	771	633	737	675	1019	66,130
	683	673	602	670	618	1013	63,741

1) The calculation of wage rates is restricted to individuals who are employed and not enrolled in the educational system.

2) Ethnic concentration is defined as the percentage of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants in the municipality concerned.

3) Exposure index is defined as the fraction of immigrants from own ethnic origin in the municipality concerned divided by the fraction in the total population from own ethnic origin.

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