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A Double-Negative Effect on Earnings of Immigrant Women?

Evidence from Denmark*

by

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Abstract

In this paper we investigate whether there exists a double-negative effect on the earnings of immigrant women in Denmark stemming from a combined negative effect of gender and foreign country of origin. We estimate separate wage equations for Danes and a number of immigrant groups allowing for individual specific effects. Considering females, correcting for possible sample selection bias due to the participation decision is essential. Based on a Danish panel of register data, we identify some groups of immigrant females that experience a strong and persistent double-negative effect on wages even after correcting for differences in qualifications.

JEL classification: J15, J16, J31, J71.

Keywords: Double-negative effect, wage assimilation, immigrants, and gender wage gap.

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1. Introduction

Since females and immigrants traditionally experience a looser attachment to the labor market and lower earnings than the rest of the population, one might expect that immigrant females face even more difficulties in the labor market. The earnings of the immigrant females compared to their otherwise similar native peers and their otherwise similar male peers are the topic of this paper.

Previous research on the earnings of immigrant women in North America find no unfavorable wage gap due to foreign country of origin. Based on a wage equation with an indicator variable for being foreign-born, Long (1980) for the U.S. and Beach and Worswick (1993) for Canada, find that the earnings of immigrant women are 12-14% higher than that of native women conditional on their characteristics. Thus, accepting the existence of gender discrimination in wages, they may reject the hypothesis of a double-negative effect on the earnings of immigrant females. However, Field-Hendrey and Balkan (1991) show that these results are artifacts of the simplified cross-sectional approaches. Using two independent cross-sections, correcting for selectivity, and predicting actual experience, they find a picture similar to that which is traditionally found for immigrant males: an initial earnings disadvantage and gradual closing of the gap, e.g. Borjas (1987).

A recent study by Shamsuddin (1998) improves on the analysis by employing a decomposition approach to study the possible presence of a double-negative effect on the earnings of immigrant females. The decomposition approach allows for a more detailed study of the question, since the earnings gap stemming from a difference in qualifications across gender and across ethnicity, and the earnings gap stemming from discrimination due to gender and due to ethnicity can be identified. Shamsuddin (1998) concludes that the foreign-born women suffer from a double-negative discrimination, though the gender discrimination dominates the discrimination by birthplace. Immigrant males, on the other hand, are shown to be affected by discrimination by birthplace.

Based on a panel of Danish register data, we investigate whether a double-negative effect on the earnings of immigrant women exists stemming from a combined unfavorable effect of gender and foreign country of origin. In the case of Denmark, a gender wage gap of about 20% prevails of which one-fourth is usually estimated to be due to endowments and three-fourths due to different returns, see Rosholm and Smith (1996). Studying immigrant females, a disadvantageous wage gap due to different returns between foreign born and natives may add on to this discriminatory gender wage gap. We analyze the immigrant-native ('ethnic') wage gap and the male-female ('gender') wage gap, and try to identify the parts of these gaps that are not due to differences in qualifications, but instead explained by differences in returns and in assimilation. This is done by calculation of a wage-experience assimilation profile for a representative standard person.

Considering female immigrants, who have a lower participation rate than native males, it is essential to measure actual experience rather than just potential experience. Fortunately, the Danish register data allow us to construct a rather accurate measure of actual experience. In addition to solving the problem of the inaccuracy of potential experience, this means that we are able to test the hypothesis that wage assimilation happens faster for immigrants who participates in the labor market than for non-participants. Another problem, that is more prevalent when studying women than men, is the possible sample selection due to the participation decision when estimating wage equations. Solving the two mentioned problems, we estimate separate wage equations for each gender by country of origin, while allowing for random individual specific effects.

The paper is organized as follows: section 2 describes the data sets that are used. Section 3 introduces the estimation method that is used. Section 4 presents the results of estimation, and investigates the determinants of earnings for female and male immigrants from different countries of origin, and compares those determinants to the determinants for native Danes. In addition, the wage-assimilation profiles for female immigrants are studied. Section 5 studies the presence of a double-negative effect for immigrant females. Section 6 concludes the analysis. Appendix A presents sample characteristics, whereas Appendix B contains the estimation results.

2. Data description

The empirical analysis is based on two register-based data sets. One data set consists of 10% of the Danish population (about 500,000 individuals) over the period 1984-1995. The other data set contains information on the whole population of immigrants in Denmark (about 250,000 individuals in 1995) during the period 1984-1995. The data sets contain information on a large number of demographic and labor market characteristics of the individuals and their families. The variables used in this study are hourly wage, age, civil status, occupation, years since migration, actual labor market experience and level of formal education obtained in Denmark.

In the empirical analysis in the following section, we do not use the total available data sets. Both data sets are restricted to individuals aged 20-59 years in order to avoid selection problems due to retirement and education. Furthermore, the sample of Danes contains only 3% randomly selected individuals from the original sample.

The immigrant sample is restricted to include only first generation immigrants. A first generation immigrant is defined as an individual who was born outside Denmark, and who has foreign-born parents or parents with foreign citizenship. If information on one of the parents is missing but the other parent full-fills 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 or she is foreign-born. Individuals who are applying for asylum are not included in the group of immigrants until they get residence permit. A first generation immigrant usually has a foreign citizenship, but immigrants who have lived in Denmark for a sufficient number of years may have converted into Danish citizenship.

The immigrant data set is separated according to the reason for migration (refugee/non-refugee), and we only look at the non-refugee immigrants. Furthermore, the sample is separated in groups based on the country of origin, and the grouping is meant to reflect cultural and geographical proximity. Grouping by country of origin and by reason for migration eliminates the cohort effects, and thus facilitates identification of the assimilation process.[1] We select the largest immigrant groups in the sample and leave out all groups with less than 800 observations (corresponding to about 80 individuals).[2] This selection leaves ten samples of non-refugee immigrants.

In Appendix A, we summarize the samples that are used. Table A1 presents the sample sizes. Almost half of the immigrant population comes from Europe, whereas the largest non-European regions of origin are Turkey, Pakistan and Africa. Tables A2-3 show the means of the variables that are used in the analysis.

The hourly wage rate is measured in DKK and is deflated by the consumer price index (1995-prices). The information on wages is based on annual earnings divided by annual hours employed.[3] Hourly wages are only observed for individuals who have been employed as wage earners during the year. Working hours and hourly wages are not observed for self-employed individuals and assisting spouses.[4]

In addition to the Nordic, the EU, and the North American immigrants, also the other European, the South- and Latin American immigrants and the Indian and Sri Lankan immigrants earn high average hourly wages.

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[1] See Lalonde and Topel (1997).

[2] Among the largest groups that are left out are immigrants without citizenship (Palestinians) immigrants from Iran and Iraq, and Vietnam.

[3] Thus, overtime payments and earnings in a second job are included in the average wage measure. If overtime work and the frequency of a second job vary systematically between immigrants and native-born, we may over- or underestimate the differences between the wage levels of immigrants and native-born individuals.

[4] Self-employment is a very important economic state for many immigrants, since 16% of the employed immigrants are self-employed whereas only 8% of the employed native born are self-employed. However, since we are not able to get information on wages and working hours for the self-employed based on register information, we treat all self-employed as having an unobserved wage.

The sample contains information on the type of education acquired in Denmark. Since immigrants, who already have a foreign education, may quickly acquire formal qualifications corresponding to many years of schooling for Danish born individuals, we use indicator variables for the highest level of education attained rather than length of schooling. For immigrants the excluded category in the estimations is 'no Danish education' while for the group of Danish born it is 'primary education'.

Among the immigrants from countries other than Europe and North America, it seems that immigrants coming from Turkey and Pakistan have acquired less education than those coming from South- and Latin America and India and Sri Lanka. Individuals from Thailand and the Philippines more often than others obtain vocational education.

The experience variable measures actual experience obtained by being employed as a wage earner in Denmark.[5] However, periods in self-employment and periods as assisting spouses do not add to the accumulated experience. Since many immigrants are self-employed, we expect to underestimate the actual work experience of immigrants.

The individuals from Turkey, Pakistan and India and Sri Lanka have been in Denmark for the longest time on average, and the individuals from Turkey, Pakistan, and Africa have the lowest level of experience relative to the years since migration.

A major problem for the analysis is that the registers contain no information on fluency in Danish and the type or length of education and experience obtained before immigration to Denmark, all of which are expected to be important for the earnings potential. In the econometric analysis, this problem is handled by using a panel data model where the unobserved pre-immigration educational level is treated as a random individual specific effect that does not vary over time.[6] The random effect estimator is expected to capture time invariant unobserved heterogeneity, but we are not able to control for unobserved proficiency in speaking the Danish language which probably varies over time for the individual immigrant.

Since the 1970s, Denmark has experienced extremely high unemployment rates, and even higher unemployment rates for immigrants than for Danes. In 1994, the unemployment rate for immigrants from outside EFTA and EU peeked and exceeded 40%. Entering the country in such a year complicates getting a job. Generally speaking, if the labor market is tight at the year of entry, it is probably considerably easier to get a job, and this may have long-term effects on the labor market career. Therefore, we include a variable indicating the overall Danish unemployment rate in the year of immigration. For Danish born individuals the analogue variable is the overall unemployment in the year the individual leaves the educational system. The average value of this variable differs among immigrant groups.

To study the wage gaps across ethnicity (natives versus immigrants) and across gender, it is instructive to look at the raw wage gap between native males and immigrant males, and the raw wage gap between immigrant males and immigrant females. These wage gaps are presented in Figure 1. A first glance at the figure reveals that the gender wage gaps are rather similar across country of origin, whereas there is a large variance in the ethnic wage gaps.[7]

Figure 1 shows that the Nordic and the North-American immigrant males earn more than the Danish males, hence the ethnic wage gap is negative. All other immigrant groups are characterized by a positive ethnic wage gap. The largest ethnic gaps (above 15 percentage points) are found for

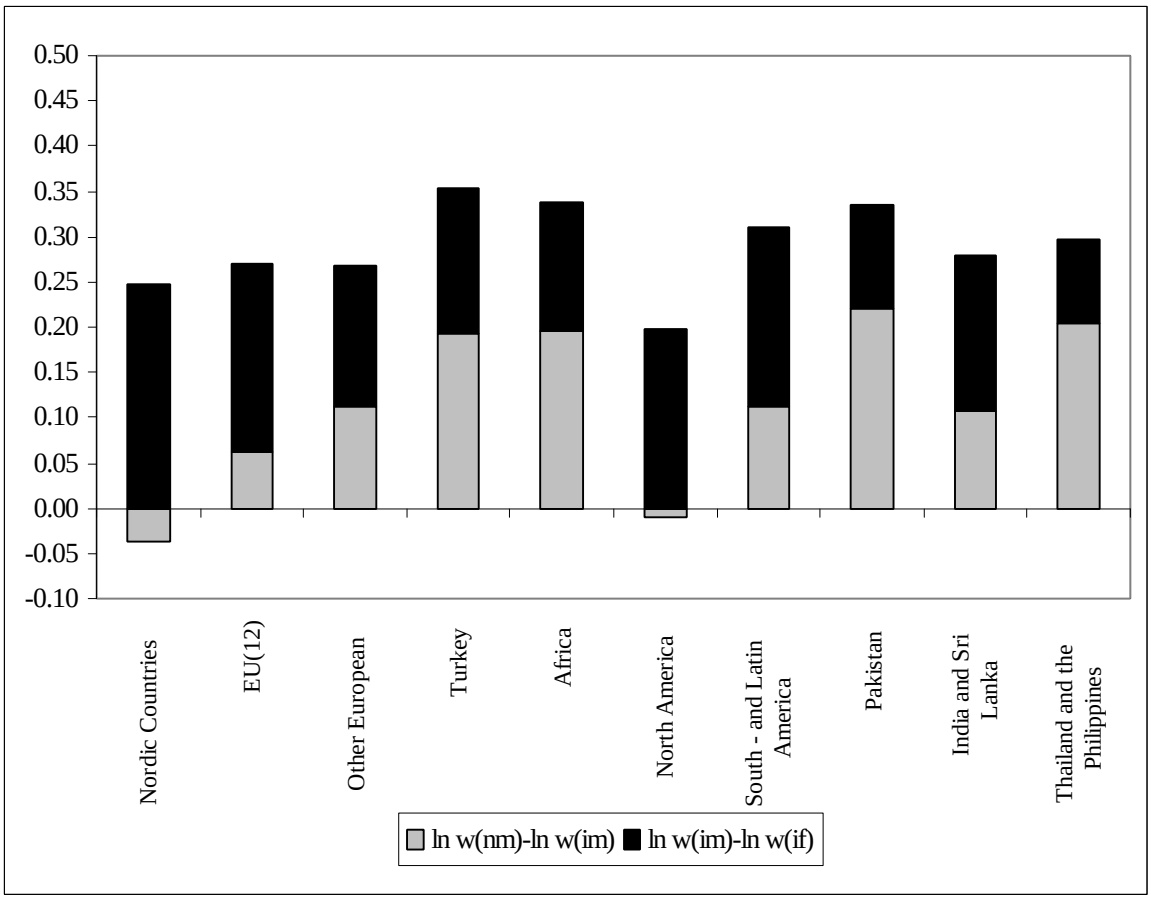
[5] See details about the experience variable in Husted et al. (1999).

[6] If the unobserved level of education acquired in country of origin is correlated with the included explanatory variables, this may result in inconsistent estimated coefficients in the random effects model. An alternative is to use a fixed effects model, which does not suffer from this problem. We prefer the random effect estimator due to efficiency reasons and because it gives direct estimates on time constant variables like the country of origin. Furthermore, random effects are intuitively appealing when the cluster units are individuals.

[7] Alternatively, we could have chosen to illustrate the raw wage gap between native males and females, and the gap between native females and immigrant females. In that case, the picture is nearly identical.

Turkey, Africa, Pakistan and the Philippines. In contrast to the ethnic gap, the gender wage gap is positive for all countries. The largest gender wage gap (around 20 percentage points) is found for individuals from the Nordic countries, EU12, North America, and South- and Latin America. The smallest one is found for Pakistan and Thailand and the Philippines.

Figure 1. Raw log-wage gap between native and immigrant males, and between immigrant males and females by country of origin.



An analysis of the development of the ethnicity and gender wage gaps over the observation period reveals that the gaps are relatively constant over the period. In a couple of cases the gaps increase or decrease a little during the period, and in all cases this development is followed closely by changes in the human capital variables. Hence, we are not going in more detail about the changes in the gaps over time.

The purpose of the econometric analysis that follows is to analyze the presented wage gaps in more detail. To study the double-negative effect, we need to eliminate the parts of the gender and the ethnic wage gaps that result from different characteristics, and separate out the parts of the two gaps that capture the wage gaps due to different returns to characteristics. However, first the applied econometric methods are presented.

3. Methodology

The availability of a panel data set instead of a single cross section allows us to distinguish the age and experience effects from the assimilation process.[8] To exhaust the panel property of the data set, we estimate a wage regression with selectivity correction and bivariate random effects. For individual *i* in time period *t*, the model is the following:

[8] See Borjas (1987) versus Chiswick (1978).

$$
\begin{aligned}
y_{it}^{*} &= x_{it}\beta + \alpha_i + \varepsilon_{it} \\
d_{it}^{*} &= z_{it}\gamma + \eta_i + \nu_{it} \\
d_{it} &= \begin{cases} 1 & \text{if } d_{it}^{*} > 0, \\ 0 & \text{otherwise} \end{cases} \\
y_{it} &= y_{it}^{*} \cdot d_{it}
\end{aligned}
$$

where y_{it} denote log wage, x_{it} and z_{it} are vectors of explanatory variables, α_i and η_i are individual specific random effects. About the error terms ε_{it} and ν_{it} are assumed that $E[\varepsilon_{it}] = E[\nu_{it}] = 0$, and $(\varepsilon_{it}, \nu_{it}) \sim N(0, \Sigma)$, where

$$
\Sigma = \begin{pmatrix} \sigma_\varepsilon & \rho\sigma_\varepsilon \\ \rho\sigma_\varepsilon & 1 \end{pmatrix}
$$

Assuming that the bivariate random effects follow a discrete distribution with 2×2 points of support, we can maximize the likelihood function. Let $\alpha = [\alpha_1, \alpha_2]$, $\eta = [\eta_1, \eta_2]$ and, $p = [p_{11}, p_{12}, p_{21}, p_{22}]$, and let $\theta = [\alpha, \eta, \beta, \gamma, \sigma_\varepsilon, \rho, p]$ denote the parameter vector. The following likelihood function is maximized:

$$
L_i(\theta) = \sum_{j=1}^{2}\sum_{k=1}^{2} p_{kj} \prod_{t=1}^{T_i} f(\varepsilon_{it}, \nu_{it} | \alpha_j, \eta_k)
$$

where

$$
\begin{aligned}
f(\varepsilon_{it}, \nu_{it} | \alpha_i, \eta_i) = ((1 - \Phi_{n|e}(-z_{it}\gamma - \eta_i | y_{it} - x_{it}\beta - \alpha_i)) \cdot f_e(y_{it} - x_{it}\beta - \alpha_i))^{d_{it}} \\
\times \Phi_n(-z_{it}\gamma - \eta_i)^{1-d_{it}}
\end{aligned}
$$

Consult Jensen, Rosholm and Verner (1999) and Husted et al. (1999) for details about this estimation technique.

The expected log wage from the model is the following:[9]

$$
\begin{aligned}
& E(y_{it} | d_{it} = 1) \\
&= E(\alpha | d_{it} = 1) + \frac{1}{N} \sum_{i | d_{it} = 1} x_{it}\beta + \frac{1}{N} \sum_{k=1}^{2}\sum_{j=1}^{2} p_{kj} \eta_k \rho\sigma_\varepsilon \sum_{i | d_{it} = 1} \frac{f(z_{it}\gamma + \eta_k)}{\Phi(z_{it}\gamma + \eta_k)}
\end{aligned}
$$

Shamsuddin (1998) suggests analyzing the double-negative effect by analyzing the earnings gap between native males and immigrant females, and decomposing that gap into a gender gap and an ethnicity gap. The gender wage gap may be estimated as the wage difference between native males and native females or the wage difference between immigrant males and immigrant females. The ethnicity wage gap may be defined either as the difference between the earnings of native males and immigrant males or the gap between native females and immigrant females. The term that Shamsuddin denotes the double-negative effect is the sum of the so-called discrimination component of the gender wage gap and the ethnic wage gap.

[9] For the correct calculation of $E(\alpha | d_{it} = 1)$, see Husted et al. (1999).

Neuman and Oaxaca (1999) discuss the decomposition in a selectivity corrected wage regression. Shamsuddin (1998) takes the sample selection term into account when estimating the earnings gap and estimates the earnings gap conditional on paid employment.

In the present paper, we investigate the double-negative effect by comparison of wage-experience assimilation profiles for 'standard' immigrants and wage-experience profiles for Danes with identical characteristics. Looking at standard individuals eliminates the effect of differing endowments, and what is left is the effect of differing returns (so-called discrimination) and assimilation. We study whether this remaining effect reveals a double-negative effect on the wages of immigrant females.

4. Results

The most important variables in the context of earnings of immigrants are the variables catching the assimilation process. An essential hypothesis to be tested in this paper is that the assimilation process goes faster for immigrants that are employed than for non-employed immigrants, and to test that hypothesis we investigate the effect of years in Denmark and actual labor market experience. Earlier studies have shown that the experience profile is best modelled as linear splines because the often used quadratic form turns out not to be sufficiently flexible (Husted et al., 1999). The same approach is used for years since migration.

Other explanatory variables determining the earnings are indicators for the highest level of education obtained in Denmark, indicators for being single, indicators for occupational categories, and a continuous variable for the total unemployment rate in Denmark when the individual entered the labor market.

When estimating the wage equation with correction for sample selection due to the participation decision, household variables describing the number of children and the age of the youngest child are used to identify the selection process. For endogeneity considerations the variables describing occupation and experience are only included in the wage equation and not in the selection equation.

The results from estimation of the econometric model are presented in Appendix B. The model is estimated separately for each (group of) country(ies) of origin, and for males and females. Tables B1 and B2 show the results from estimation of the selection equation and the wage equation for males, whereas Tables B3 and B4 show the similar results for females.

A brief look at the selection equations show that the probability that we observe a wage for males is higher for individuals with Danish vocational education, and even higher for individuals with Danish theoretical education than for those with no Danish education. The probability is lower for singles than for couples, and higher for parents than for non-parents, though a higher number of children decrease the probability. Having entered the labor market when it was tight, decreases the probability of having an observed wage. For females the picture is less clear cut since the signs of the family and child indicators vary. Females from Pakistan and Turkey stand out, since singles have a higher probability of observing a wage than females living in a couple. Also women from Nordic and North-American countries stand out because having young children increases the probability of observing a wage.[10] Regarding years since migration, an increasing number of years since migration increases the probability of having an observed wage for females (at a decreasing rate), but the results are odd for males.

[10] This is the opposite to MacPherson and Stewart (1989), who find that immigrant females from lesser-developed countries of origin who have young children are more likely to participate than comparable women from more developed countries. We do not test the hypothesis that married women subsidize the human capital investment of their husbands, meaning that they increase their participation if their husbands are undertaking education, although this hypothesis is supported by Long (1980), Duleep and Sanders (1993), and MacPherson and Stewart (1989).

Turning to the wage equation, it is seen that the return to education is positive for Danes but that the return to Danish education for immigrants is not estimated to be positive for all groups. However, often it is seen that theoretical education increases earnings compared to no Danish education (other European males and females, Nordic, African, and South- and Latin American males, and Indian and Sri Lankan females), and often vocational education increases earnings (Thai and Philippine males and females, Turkish and other European males).[11]

For all the samples the managers and higher level salaried are estimated to earn the most, but for some samples, it is predicted that the skilled workers earn less than the unskilled workers which is puzzling. However, Grossman (1984), who studies the differences in the occupational attainment between foreign and Swedish women around 1980, find that differences in occupation choice is due to parameter differences rather than different qualifications. He suggests that their characteristics are evaluated differently, they are treated differently in the labor market, or they have different preferences for occupations.

It is difficult to interpret the return to age, experience, and years since migration based on the coefficients in Table B1-B4, and therefore, we look at wage-experience assimilation profiles instead, see Figure 2. We compare the wage-experience profiles for hypothetical individuals, the only difference between them being their gender and their country of origin. In all other respects they are identical. This hypothetical individual enters the Danish labor market at the age of 16 years, which is also the age at which the immigrants are assumed to enter Denmark. The individual has completed Danish primary education and (s)he is cohabiting or married but they have no children. The random individual specific effect is assumed to be the population average.

We look at two extreme cases: In the first case the individual works as an unskilled worker and accumulates Danish labor market experience without any breaks, in the second case the individual does not work and accumulates no Danish labor market experience whatsoever. In the following, we focus on the wage profiles for females. We compare the two mentioned extreme cases for female immigrants to the similar profile for Danish females.

Figure 2 presents the wage profiles for native and immigrant females in four panels dividing the immigrant females in three arbitrary groups for expositional reasons. For each country of origin two curves are presented, the upper curve reflects the development in log wage when labor market experience is accumulated without any breaks, whereas the lower one shows the estimated log wage capacity in the case where no experience is accumulated.

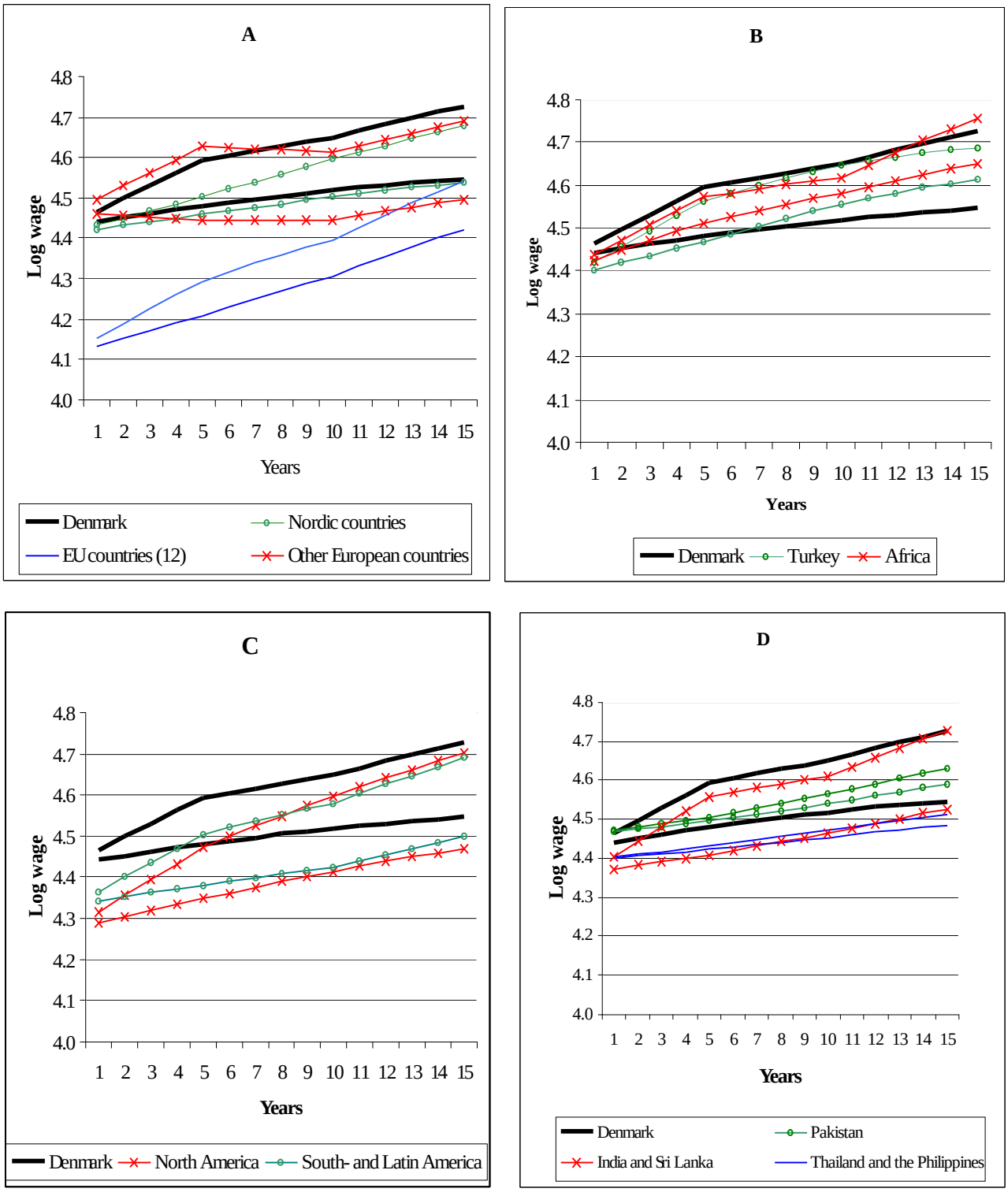
In all cases, the earnings capacity increases more slowly for females who are non-employed[12] than for those who are employed with no break. One might have expected skill depreciation to result in declining earnings capacity in case of accumulation of non-employment, but it does not. This may have to do with the high minimum wages and the rather compressed wage structure in Denmark. Both these characteristics mean that, if an individual enter wage employment at all, it is predetermined that the starting wage is relatively high. This argument applies to both the immigrant females and the Danish females.

In most cases, wage-assimilation takes place both for immigrant females that are non-employed and for immigrant females that are employed, since the earnings capacity approaches that of Danish females with a corresponding work experience after some years in the country. However, for Thai and Philippine females, for Pakistanis accumulating experience and for Nordic females accumulation non-experience, there is no assimilation whatsoever; the log wage gap between these females and their native peers do not tend to disappear over time.

[11]This finding lends no support to the hypothesis that immigrants have a higher return to education than natives because the value of the human capital from their country of origin increases when they acquire human capital in the destination country, see Duleep and Regets (1999). They use an example of a Cambodian carpenter, whose knowledge of carpentry from Cambodia gains value after a further education in the U.S.

[12] As mentioned in the data section, accumulation of 'non-experience' also covers self-employment. This may influence the results.

Figure 2. Wage-assimilation profiles for females.



For females from other European countries, North America and South- and Latin America, the wage-assimilation is much slower for females who are non-employed than for those who are employed. After 15 years out of employment, their earnings capacity is still far below that of an otherwise identical native female. Hence, non-employment is an obstacle for wage assimilation in these three cases. On the other hand, if these women are employed without any breaks their wages rise quickly to catch up within a 15 year period.

For individuals from the group of EU(12) countries, some wage-assimilation does take place but neither the females who are constantly employed nor those who are constantly non-employed do

catch up within the 15 year period. Even though the wage rises fast, they start out with such a low wage when they enter the country that catching up takes more than 15 years.

Anecdotal evidence tells that integration must be more difficult for females from the culturally different countries. However, a noteworthy characteristic of the wage-profiles for non-employed females is that the females from the culturally distant countries Africa, Turkey and Pakistan have wage-profiles that exceed that of the otherwise similar Danish female. Hence, it seems that those women are not 'punished' as much for being out of employment as a Dane would be. Such an observation may be explained by a signal effect. Native females that have been non-employed for a long period signal a preference for detachment from the labor market, whereas a similar behavior for an immigrant is not interpreted in the same way, particularly not when the immigrant comes from one of those culturally distant countries.

To conclude on wage profiles, we must say that being non-employed is not as large an obstacle to wage-assimilation of females as it might be expected; generally the wage-profile of non-employed immigrant females follow that of the non-employed Danes closely. However, there are a few exceptions to confirm the rule, these are the other European, North American, and the South- and Latin American females.

5. Analysis of a possible double-negative effect

As in the last section, we depict the change in log wage as age, experience, and years since migration increases for a standard individual. We compare the profiles for Danish males and females to that of immigrant males and females. The fact that we look at a standard individual means that the wage difference stemming from different endowments or qualifications is eliminated, and what is left is only the difference due to different returns[13] and due to assimilation. The difference in the wage-experience patterns over time stems from differences in the estimated return parameters to age, experience or years since migration, whereas the difference in the level of the curves may also reflect differences in the returns to other characteristics. Notice that in some cases there are only few observations behind the right tail prediction, and therefore standard deviations may be large.

Comparing the development of log wages for individuals from Nordic countries and Denmark, as age, experience and (in the case of immigrants) years in Denmark are accumulated, a strange picture emerges. Figure 1 showed that the Nordic immigrants earn more than the Danish males on average, but Figure 3 shows that the Nordic (standard) male earns less than the three other (standard) individuals. This observation indicates that the standard individual, who has only completed Danish primary education and works as an unskilled worker is a bad representative of the highly-educated male Nordic immigrants, who most often migrate to respond to changing labor market conditions.[14]

The Nordic female manages to overtake both the native (standard) female and (standard) male after 28 and 38 years of experience, respectively. However, looking at the results in Table B4 in Appendix B, it is seen that the right tail of the wage-experience profile for the Nordic females is not well determined. Due to the strange results for the immigrant males and the large standard deviation on the right tail of the curve for the immigrant females, it is debatable whether we can talk about a double-negative effect. However, at least we can conclude that the female immigrant experiences a small ethnic wage gap at the beginning of the labor market career.

[13] This is sometimes called discrimination.
[14] See Pedersen (1996) and Schröder (1996).

Figure 3. Wage-experience profiles for natives and immigrants.

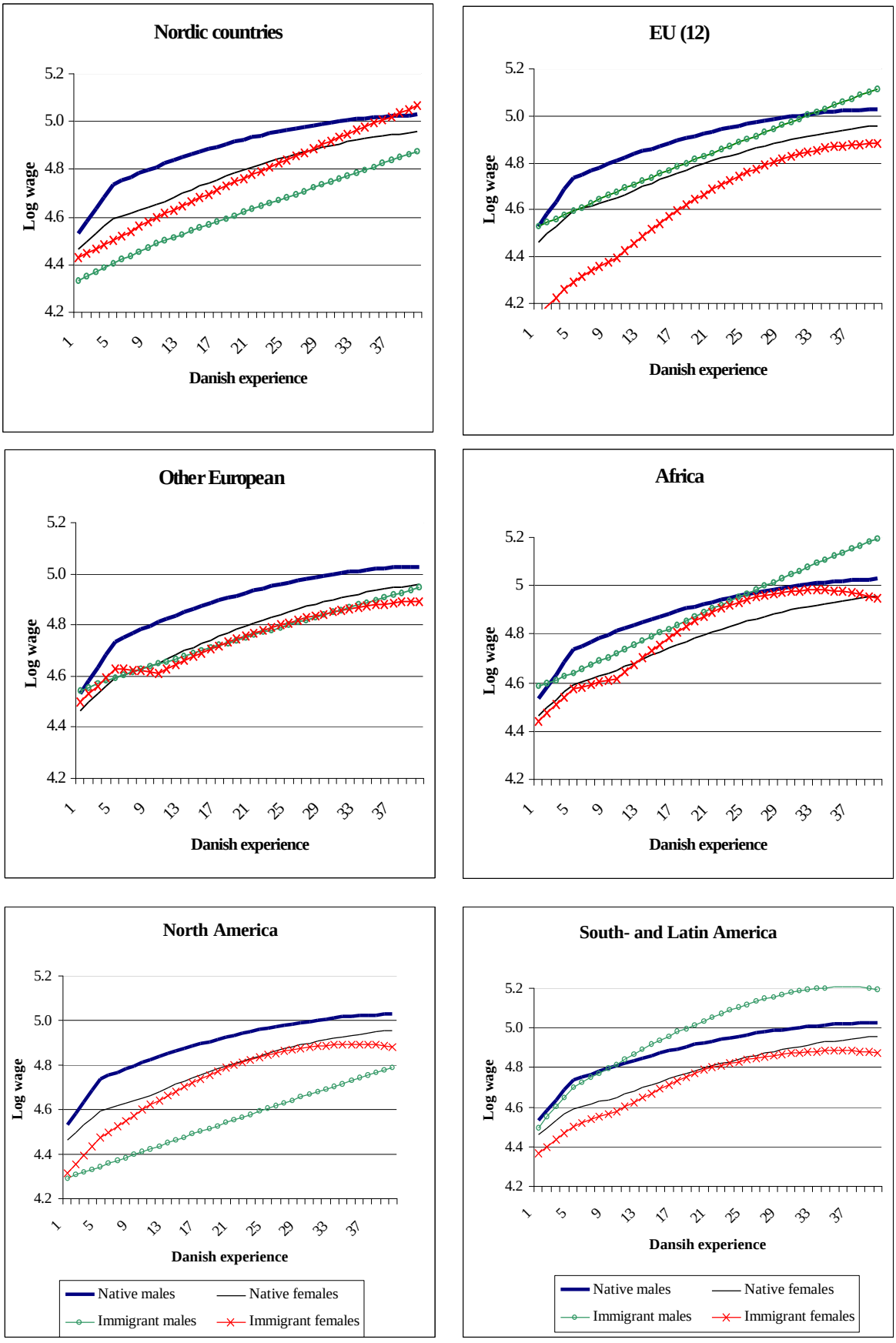
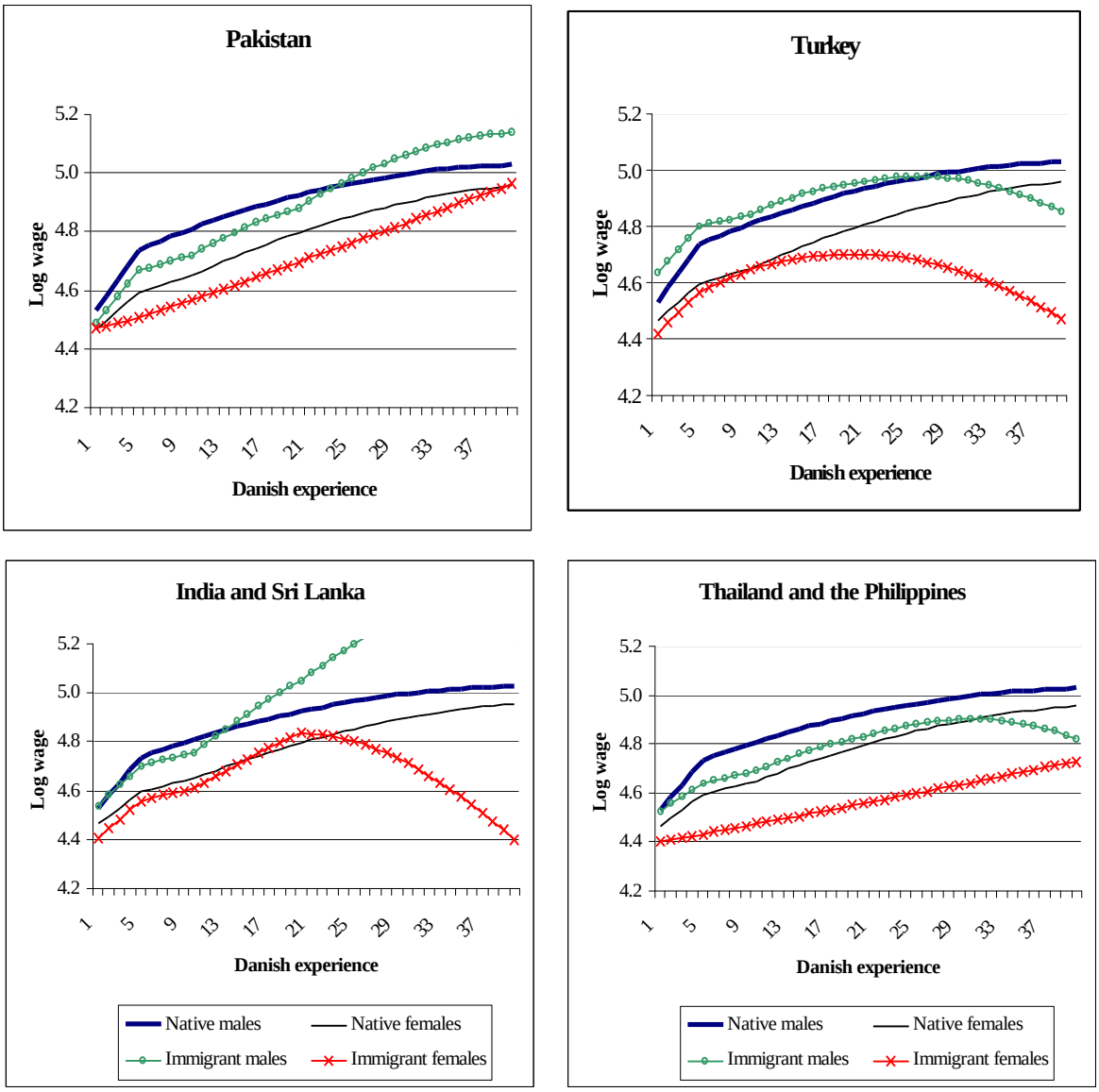


Figure 3. Continued.



For the EU(12) countries, the immigrant male overtakes the native males after about 30 years, but the wage of female immigrants fall far behind that of both native females and immigrant males. The ethnic wage gap, as measured by the wage gap between native and immigrant females starts out at about 30%, but narrows to reach a minimum of 6-7% after 30 years of experience. Hence, we can identify a double-negative effect on the wages of females from the EU(12) countries, which however, declines when Danish experience is accumulated.

For other European countries, the development of log wage shows that the immigrants earn slightly more than the native females for a low level of experience, and slightly less after 6-8 years of experience. After the first 6-8 years they fall behind the native males by about 15% during the rest of the experience interval. Therefore, in the case of immigrants from other European countries, the females are almost only affected by the ethnicity effect, hence no double-negative effect exists.

For Turkey, the wage profiles show that the male immigrant earns slightly more than the Dane whereas the immigrant female earns slightly less than her native peer. However, the curvature of the wage profile of the immigrant female is stronger due to skill depreciation meaning that the wage starts declining already after 20 years experience, hence an ethnic wage gap develops.[15] To

[15] The results in Table B4 in Appendix B show that the parameters are actually quite well determined for this sample.

conclude on Turkish women, it seems that they are mainly affected by the gender wage gap. If a double-negative effect is present, it is only in the evening of their labor market career.

Comparing the African immigrants with natives, it is seen that the wage of a native increases faster than that of an African male at the very beginning of the labor market career. Therefore an ethnic wage gap develops although they start out at a similar level. The African male catches up after 24 years. The African female earns slightly less than the native female until she has accumulated 13 years of Danish labor market experience, and then she overtakes the Dane. After 20 years of Danish experience she also catches up with the African male. Hence, we conclude that the African male is affected by a small ethnic wage gap, whereas the African female is almost only affected by the gender wage gap, and this effect seems to disappear after 20 years in the labor market.

The picture for immigrants from North America is similar to that of the Nordic immigrants. The wage of the North American male falls behind that of all three other standard persons, and this may be because the standard person (like for the Nordic countries) is a bad representative of a typical male immigrant from North America. The immigrant female experiences both an ethnic and a gender wage gap in the beginning of the labor market career, but manage to catch up with the native female after about 20 years of Danish experience. After that time she is only affected by the Danish gender wage gap.

In the case of South- and Latin America, the ethnic wage gap clearly narrows, as the immigrant males overtake the native males after 10 years of experience, whereas the immigrant females catch up with the native females after 20 years. After that time, the immigrant females are only affected by the Danish gender wage gap.

Looking at the wage-experience assimilation profile for Pakistani females, it is seen that except for the first year in the labor market, they experience lower wages than native females. The wage gap is about 10% in the beginning of the career, and it disappears when the Pakistani females catch up after 40 years in the labor market. The males are also negatively affected by an ethnic wage gap, though they overtake the Danish males after 24 years in the Danish labor market. Hence, we can identify a double-negative effect on the wages of Pakistani females.

For India and Sri Lanka, Figure 3 shows that the wage-experience profiles of the immigrants follow that of the natives closely in the beginning of the labor market career. However, after 15 years of experience, the immigrant males overtake the Danish males, and after 20 years of experience the wages of immigrant females declines steeply. However, the latter is mainly caused by the parameter to age squared, which is not very well determined. Hence, we must conclude that Indian and Sri Lankan women are mainly affected by the gender wage gap, since there is only a small ethnic wage gap in the beginning of their labor market career.

For Thai and Philippine females, there is a clear double-negative effect. The male immigrants start out with a wage similar to that of native males, but their wage rises not as fast as that of Danes, and hence an ethnic wage differential develops. As measured from the males, the ethnic wage gap is about 10%. Similarly, the immigrant females only lack slightly behind at the beginning of their career, but since their wages only rise slowly, a large ethnic wage gap develops, which is above 20% at its maximum. All together, the Thai and Philippine women experience very low wages both due to gender and ethnicity wage gaps.

Altogether, the evidence in favor of the double-negative effect is mixed, since most immigrant females are affected mainly by gender discrimination in wages. However, it is overall important which country of origin the female immigrant comes from.

6. Concluding remarks

Estimation of wage equations for immigrants shows no general positive return to Danish education for immigrants. However, the wage-experience profiles are nicely curved like the ones for Danes, and they indicate that a wage-assimilation process is going on for most countries of origin. If

females are non-employed, wage capacity increases more slowly over time for both Danes and immigrant females, but still wage-assimilation takes place. In some instances (other Europe, North America, and South- and Latin America) it goes more slowly, and in three cases (Turkey, Africa and Pakistan), these females are punished less than the Danish females.

Regarding the double-negative effect, the general picture in this study confirms the finding by Shamsuddin (1998) in the case of Canada. He found that immigrant females are affected mainly by gender discrimination in wages. Our focus on assimilation profiles refines this conclusion. Many females experience both an ethnic and a gender disadvantage in wages when entering the labor market, but the ethnic wage gap is driven towards zero when they accumulate Danish experience and hence assimilates.

The fact that we have access to the total population of immigrants means that, in contrast to Shamsuddin (1998), we are able to distinguish different immigrant groups according to the country of origin And, no surprise, the results show that this distinction is essential. The assimilation profiles give rise to different conclusions regarding the double-negative effect across different countries of origin.

Females from the EU(12) countries, Pakistan and Thailand and the Philippines all experience a double-negative effect on wages that does not disappear with accumulation of experience. In all three cases the ethnic wage gap narrows with accumulation of experience, but it stays present and adds to the gender wage gap.

In the case of Nordic countries, North America, and South- and Latin America, the females are affected by a double-negative effect in the beginning of their labor market career. However, in all three cases, an ethnic wage gap starting out at 5-10% disappears after about 20 years in the labor market. And after that time, these females are only affected by the gender wage gap in a similar fashion as the Danish females.

In the case of the group of other European countries, Turkey, Africa and India and Sri Lanka, there is no significant evidence of a double-negative effect. The wages of these females follow that of their native peers rather closely.

Disregarding the odd cases of Nordic and North America, the males are in some cases affected by an ethnic wage gap. For the immigrants from the group of other European countries and for immigrants from Thailand and the Philippines, the males never catch up with the native males. However, for immigrants from the rest of the analyzed countries, the males experience an ethnic wage gap in the beginning of their career, but they do catch up after some years in the labor market.

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Appendix A. Details about the samples.

Table A1. Sample sizes, individual-period observations.

	Males	Females
Country	Non-refugee immigrants	Non-refugee immigrants
Nordic countries	63,805	83,480
Rest of EU(12)	132,322	86,742
Other European countries	46,999	55,150
Turkey	94,139	91,903
Africa	40,552	27,758
North America	19,166	16,965
South- and Latin America	8,022	10,959
Pakistan	34,265	33,425
Sri Lanka and India	7,333	7,801
Thailand and the Philippines	6,097	26,243
Total number of immigrants	452,700	440,426
Denmark	47,259	45,308

Note: One observation represents one individual at one time period. Thus 63,805 male immigrants from Nordic countries might indicate that 6381 individuals are observed during 10 years on average.

Table A2. Sample means, males.

	Denmark	Nordic countries	Rest of EU(12)	Turkey	Other European	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Wage (DKK)		175.46	155.34	128.82	142.98	132.20	168.81	148.32	127.62	146.74	128.30
Ln wage	3.65	5.03	4.93	4.80	4.88	4.80	5.01	4.88	4.78	4.89	4.79
Wage>0	0.73	0.49	0.57	0.45	0.51	0.42	0.46	0.43	0.38	0.50	0.64
Primary education	0.33	0.09	0.08	0.31	0.20	0.15	0.06	0.14	0.29	0.17	0.26
Secondary education	0.03	0.03	0.03	0.01	0.02	0.02	0.03	0.04	0.03	0.03	0.01
Vocational education	0.47	0.06	0.05	0.02	0.06	0.05	0.05	0.08	0.04	0.04	0.06
Theoretical education	0.17	0.15	0.07	0.01	0.03	0.05	0.10	0.09	0.01	0.07	0.02
Experience DK	13.27	4.70	5.54	4.82	5.30	3.72	3.77	3.33	4.44	5.42	5.67
Non-experience DK	-	4.21	3.70	5.70	4.73	4.76	4.29	4.50	6.18	5.10	3.62
Years since migration		8.52	8.96	10.37	9.77	8.33	7.86	7.60	10.43	10.28	9.04
Age	38.96	38.40	36.25	29.11	34.21	33.22	39.14	34.32	32.56	36.75	32.03
Single	0.31	0.44	0.36	0.23	0.33	0.38	0.38	0.39	0.38	0.31	0.35
Youngest child 0-2 yrs											
Youngest child 3-6 yrs	0.10	0.12	0.14	0.31	0.14	0.20	0.13	0.15	0.25	0.18	0.14
Youngest child 7-17 yrs	0.08	0.08	0.10	0.18	0.11	0.10	0.08	0.10	0.13	0.13	0.12
Number of children	0.22	0.13	0.16	0.18	0.21	0.12	0.12	0.11	0.16	0.20	0.19
High level salaried	0.68	0.57	0.69	1.45	0.82	0.83	0.55	0.61	1.35	0.93	0.76
Low level salaried	0.23	0.19	0.16	0.02	0.07	0.07	0.18	0.11	0.02	0.13	0.04
Skilled	0.13	0.06	0.08	0.03	0.05	0.08	0.08	0.08	0.05	0.08	0.08
Missing occupation	0.19	0.05	0.10	0.03	0.07	0.05	0.04	0.05	0.03	0.05	0.14
Unemployment	0.18	0.53	0.42	0.51	0.51	0.57	0.54	0.59	0.53	0.43	0.44
Unemployment											

Table A3. Sample means, females.

	Denmark	Nordic countries	Rest of EU(12)	Turkey	Other European	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Wage (DKK)		128.87	123.43	108.63	119.88	112.40	134.52	116.43	112.25	117.59	113.85
Ln wage	3.24	4.78	4.73	4.64	4.73	4.66	4.81	4.68	4.66	4.72	4.70
Wage>0	0.68	0.52	0.46	0.23	0.38	0.28	0.43	0.36	0.19	0.43	0.51
Primary education	0.44	0.13	0.11	0.17	0.13	0.15	0.09	0.12	0.14	0.13	0.08
Secondary education	0.03	0.04	0.04	0.01	0.02	0.02	0.05	0.04	0.02	0.03	0.01
Vocational education	0.34	0.06	0.05	0.01	0.03	0.03	0.04	0.04	0.02	0.05	0.14
Theoretical education	0.19	0.13	0.10	0.00	0.03	0.03	0.12	0.06	0.00	0.04	0.01
Experience DK	9.49	4.57	3.72	2.36	3.55	2.22	3.27	2.20	2.19	4.28	3.48
Non-experience DK	-	5.08	5.46	7.39	6.03	6.51	5.07	5.37	8.56	6.84	3.88
Years since migration	-	9.47	9.05	9.62	9.48	8.64	8.25	7.44	10.64	11.02	7.27
Age	38.91	36.90	36.42	30.50	35.67	32.35	37.60	34.82	32.67	35.60	33.72
Single	0.26	0.35	0.33	0.13	0.27	0.26	0.35	0.32	0.16	0.20	0.18
Youngest child 0-2 yrs	0.11	0.15	0.15	0.32	0.17	0.29	0.15	0.19	0.30	0.19	0.21
Youngest child 3-6 yrs	0.10	0.13	0.12	0.21	0.13	0.17	0.12	0.16	0.20	0.17	0.15
Youngest child 7-17 yrs	0.26	0.22	0.20	0.24	0.27	0.20	0.15	0.23	0.27	0.31	0.22
Number of children	0.78	0.85	0.84	1.73	0.99	1.55	0.75	0.99	2.07	1.24	0.87
High level salaried	0.17	0.17	0.15	0.01	0.05	0.04	0.17	0.07	0.02	0.06	0.02
Low level salaried	0.30	0.17	0.13	0.02	0.07	0.06	0.13	0.09	0.04	0.11	0.05
Skilled	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.04
Missing occupation	0.28	0.49	0.53	0.75	0.63	0.72	0.58	0.64	0.77	0.54	0.52
Unemployment											

Appendix B. Estimation results.

Table B1. Results from estimation of selection equation for males.

	Denmark	Nordic countries	EU countries (12)	Other European countries	Turkey	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Constant 1	-0.269	-1.058	-0.431	-0.326	0.511	-0.402	-0.848	-2.105	-0.796	-1.337	-2.909
	(0.094)	(1.006)	(0.044)	(0.057)	(0.039)	(0.080)	(0.113)	(0.190)	(0.071)	(0.182)	(0.213)
Constant 2	1.967	1.006	1.479	1.331	1.800	1.098	1.133	-0.428	0.497	0.398	-1.419
	(0.093)	(0.052)	(0.045)	(0.059)	(0.040)	(0.082)	(0.115)	(0.189)	(0.073)	(0.184)	(0.209)
Primary education		-0.313	-0.216	-0.251	0.016	-0.111	-0.401	-0.018	0.028	-0.171	0.028
		(0.018)	(0.014)	(0.016)	(0.011)	(0.022)	(0.041)	(0.058)	(0.019)	(0.046)	(0.065)
Secondary education	-0.199	0.069	-0.055	0.006	-0.008	-0.079	-0.025	0.271	0.088	-0.050	0.257
	(0.043)	(0.029)	(0.023)	(0.037)	(0.036)	(0.041)	(0.050)	(0.086)	(0.037)	(0.086)	(0.152)
Vocational education	0.170	0.396	0.223	0.266	-0.066	0.009	0.394	0.225	0.194	0.205	0.268
	(0.016)	(0.020)	(0.016)	(0.024)	(0.026)	(0.027)	(0.044)	(0.064)	(0.036)	(0.077)	(0.087)
Theoretical education	0.355	0.297	0.600	0.564	0.687	0.386	0.466	0.414	0.651	0.463	0.081
	(0.023)	(0.015)	(0.013)	(0.031)	(0.031)	(0.029)	(0.031)	(0.051)	(0.060)	(0.057)	(0.126)
Years since migration		0.261	0.005	0.444	-6.008	-0.060	0.355	1.850	-8.719	-1.510	6.106
		(0.509)	(0.360)	(0.554)	(0.447)	(0.572)	(1.010)	(0.999)	(0.812)	(1.752)	(1.777)
Yrs since migr (5+yrs)		0.067	-0.130	0.132	2.864	-0.176	0.155	-0.356	4.597	-5.027	-6.333
		(0.744)	(0.551)	(0.644)	(0.617)	(0.890)	(1.548)	(1.223)	(1.150)	(2.636)	(2.649)
Yrs since migr (10+yrs)		-0.091	-0.199	-0.123	-3.240	-0.201	0.019	-3.190	-2.495	3.120	-7.641
		(0.511)	(0.359)	(0.155)	(0.348)	(0.640)	(1.038)	(1.326)	(0.635)	(1.493)	(1.826)
Yrs since migr (20+yrs)		-0.058	-0.072	-0.111	1.800	-0.082	-0.058	2.095	3.393	3.308	3.961
		(1.328)	(0.914)	(0.957)	(0.355)	(1.454)	(2.700)	(6.014)	(1.121)	(3.160)	(5.846)
Unemployment	-3.809	-0.097	-0.140	-0.308	-10.565	-0.136	-0.117	-4.506	-10.550	-8.644	-13.032
	(0.253)	(0.253)	(0.162)	(0.284)	(0.187)	(0.320)	(0.480)	(0.843)	(0.322)	(0.744)	(0.936)
Single	-0.294	-0.093	-0.080	-0.092	0.011	-0.091	-0.288	-0.138	0.087	-0.013	-0.022
	(0.017)	(0.012)	(0.009)	(0.014)	(0.011)	(0.015)	(0.024)	(0.036)	(0.016)	(0.041)	(0.042)
Age	1.912	-0.138	-0.509	-0.536	2.819	-0.598	-0.238	8.982	8.442	9.879	18.694
	(0.497)	(0.233)	(0.219)	(0.278)	(0.202)	(0.421)	(0.522)	(0.967)	(0.340)	(0.932)	(1.085)
Age squared	-5.880	-0.992	-1.393	-1.584	-7.095	-1.133	-1.372	-13.286	-12.399	-15.242	-24.798
	(0.619)	(0.281)	(0.272)	(0.361)	(0.301)	(0.572)	(0.606)	(1.227)	(0.452)	(1.207)	(1.373)
Youngest child 0-2 yrs	0.305	0.399	0.247	0.188	0.096	0.110	0.387	-0.067	0.187	0.112	-0.028
	(0.037)	(0.026)	(0.017)	(0.024)	(0.011)	(0.021)	(0.045)	(0.065)	(0.020)	(0.059)	(0.074)
Youngest child 3-6 yrs	0.324	0.485	0.264	0.240	0.060	0.070	0.457	0.022	0.118	0.121	-0.162
	(0.042)	(0.028)	(0.019)	(0.028)	(0.010)	(0.025)	(0.052)	(0.069)	(0.025)	(0.068)	(0.093)
Youngest child 7-17 yrs	0.273	0.398	0.213	0.121	0.027	0.107	0.396	0.087	0.020	0.223	-0.185
	(0.027)	(0.022)	(0.015)	(0.021)	(0.012)	(0.021)	(0.042)	(0.062)	(0.019)	(0.051)	(0.072)
Number of children	-0.161	-0.050	-0.024	-0.009	-0.054	-0.034	-0.039	-0.042	-0.063	-0.058	0.060
	(0.013)	(0.010)	(0.007)	(0.009)	(0.003)	(0.007)	(0.018)	(0.025)	(0.006)	(0.020)	(0.037)

Table B2. Results from estimation of wage equation for males.

	Denmark	Nordic countries	EU countries (12)	Other European countries	Turkey	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Constant 1	4.174	4.398	4.323	4.336	4.083	4.516	4.386	4.074	4.330	4.166	4.207
	(0.017)	(0.022)	(0.016)	(0.021)	(0.017)	(0.038)	(0.052)	(0.094)	(0.030)	(0.072)	(0.074)
Constant 2	4.552	4.992	4.838	4.740	4.426	5.003	4.912	4.593	4.780	4.684	4.553
	(0.017)	(0.022)	(0.016)	(0.021)	(0.017)	(0.038)	(0.053)	(0.096)	(0.029)	(0.073)	(0.075)
Primary education		-0.201	-0.088	-0.091	-0.036	-0.047	-0.208	0.022	-0.024	0.013	-0.076
		(0.007)	(0.005)	(0.005)	(0.004)	(0.010)	(0.017)	(0.024)	(0.009)	(0.014)	(0.020)
Secondary education	0.165	-0.066	-0.029	-0.044	0.025	-0.080	-0.149	-0.019	0.003	-0.045	-0.070
	(0.005)	(0.011)	(0.009)	(0.012)	(0.011)	(0.020)	(0.023)	(0.034)	(0.016)	(0.029)	(0.036)
Vocational education	0.100	-0.032	0.000	0.084	0.072	-0.036	-0.060	-0.011	0.004	-0.011	0.114
	(0.003)	(0.007)	(0.004)	(0.007)	(0.009)	(0.012)	(0.016)	(0.026)	(0.017)	(0.023)	(0.020)
Theoretical education	0.201	0.057	-0.043	0.105	-0.074	0.020	-0.032	0.055	-0.036	0.006	-0.009
	(0.003)	(0.005)	(0.005)	(0.008)	(0.011)	(0.011)	(0.010)	(0.021)	(0.031)	(0.019)	(0.045)
Experience	4.408	0.540	0.870	0.442	4.454	0.767	0.420	4.466	3.086	2.485	3.706
	(0.188)	(0.166)	(0.124)	(0.188)	(0.113)	(0.225)	(0.401)	(0.501)	(0.225)	(0.545)	(0.555)
Experience (5+ yrs)	-3.423	-0.047	0.339	-0.030	-4.620	0.291	0.051	-3.858	-2.945	-1.081	-4.899
	(0.259)	(0.259)	(0.189)	(0.284)	(0.179)	(0.369)	(0.626)	(0.875)	(0.380)	(0.864)	(0.788)
Experience (10+ yrs)	-0.081	-0.180	0.009	0.007	0.977	0.101	-0.026	0.590	0.260	0.198	0.829
	(0.109)	(0.188)	(0.123)	(0.199)	(0.162)	(0.296)	(0.426)	(0.785)	(0.357)	(0.615)	(0.601)
Years since migration		-0.027	-0.405	-0.353	-1.232	0.124	-0.089	-2.923	2.322	0.115	-3.968
		(0.109)	(0.147)	(0.232)	(0.172)	(0.287)	(0.449)	(0.656)	(0.434)	(0.751)	(0.593)
Yrs since migr (5+yrs)		-0.088	-0.210	-0.232	1.399	0.053	-0.057	1.882	-1.302	-0.684	4.533
		(0.160)	(0.223)	(0.325)	(0.239)	(0.436)	(0.678)	(0.981)	(0.623)	(1.146)	(0.822)
Yrs since migr (10+yrs)		-0.173	-0.138	0.017	0.807	0.023	0.032	0.872	1.510	1.765	0.539
		(0.174)	(0.137)	(0.179)	(0.135)	(0.290)	(0.414)	(0.734)	(0.323)	(0.622)	(0.528)
Unemployment	0.428	0.214	0.413	0.110	1.915	0.127	0.463	1.224	4.015	2.569	0.545
	(0.045)	(0.090)	(0.056)	(0.090)	(0.072)	(0.138)	(0.203)	(0.357)	(0.156)	(0.258)	(0.268)
Single	-0.031	-0.052	-0.063	0.027	0.030	0.034	0.017	0.024	-0.019	-0.024	0.031
	(0.002)	(0.004)	(0.002)	(0.004)	(0.004)	(0.006)	(0.009)	(0.014)	(0.007)	(0.013)	(0.011)
High level salaried	0.133	0.151	0.137	0.111	0.033	0.110	0.212	0.106	0.086	0.164	0.153
	(0.003)	(0.005)	(0.003)	(0.005)	(0.006)	(0.007)	(0.012)	(0.020)	(0.010)	(0.014)	(0.032)
Low level salaried	-0.020	0.005	-0.011	-0.010	0.007	-0.006	0.004	-0.039	-0.060	-0.075	-0.006
	(0.004)	(0.006)	(0.004)	(0.007)	(0.004)	(0.007)	(0.014)	(0.018)	(0.008)	(0.016)	(0.018)
Skilled	0.039	0.012	0.006	-0.024	-0.070	-0.028	0.072	-0.026	-0.076	-0.056	0.005
	(0.003)	(0.007)	(0.004)	(0.007)	(0.005)	(0.008)	(0.018)	(0.021)	(0.010)	(0.018)	(0.012)
Missing occupation	-0.077	0.038	-0.055	-0.129	-0.132	-0.128	0.100	-0.036	-0.159	-0.162	-0.055
	(0.004)	(0.005)	(0.003)	(0.005)	(0.004)	(0.006)	(0.012)	(0.016)	(0.007)	(0.015)	(0.014)
Age	1.485	1.270	1.233	1.252	2.839	0.766	0.979	2.978	-0.020	1.473	2.187
	(0.084)	(0.109)	(0.081)	(0.110)	(0.089)	(0.202)	(0.256)	(0.463)	(0.101)	(0.384)	(0.366)
Age squared	-2.027	0.233	0.256	0.198	-3.153	0.114	0.210	-2.633	0.642	-1.148	-1.938
	(0.101)	(0.132)	(0.101)	(0.138)	(0.135)	(0.277)	(0.295)	(0.611)	(0.152)	(0.504)	(0.466)
s_e	0.066	0.444	0.426	0.368	0.388	0.468	0.444	0.456	0.495	0.405	0.342
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.002)
r	-0.058	-0.783	-0.738	-0.713	-0.893	-0.901	-0.725	-0.865	-0.937	-0.850	-0.790
	(0.014)	(0.003)	(0.002)	(0.005)	(0.001)	(0.002)	(0.008)	(0.007)	(0.002)	(0.007)	(0.009)
P_{11}	0.231	0.175	0.107	0.092	0.059	0.037	0.145	0.051	0.031	0.097	0.087
	(0.009)	(0.009)	(0.005)	(0.008)	(0.005)	(0.005)	(0.018)	(0.016)	(0.006)	(0.019)	(0.021)
P_{12}	0.109	0.382	0.460	0.544	0.625	0.665	0.506	0.539	0.641	0.472	0.258
	(0.008)	(0.010)	(0.006)	(0.010)	(0.007)	(0.009)	(0.020)	(0.022)	(0.011)	(0.024)	(0.026)
P_{21}	0.451	0.310	0.285	0.149	0.229	0.215	0.211	0.290	0.268	0.329	0.329
	(0.008)	(0.006)	(0.004)	(0.006)	(0.006)	(0.007)	(0.009)	(0.017)	(0.009)	(0.019)	(0.023)
P_{22}	0.208	0.133	0.148	0.215	0.087	0.084	0.138	0.121	0.060	0.103	0.325
	(0.007)	(0.004)	(0.003)	(0.006)	(0.004)	(0.005)	(0.007)	(0.012)	(0.005)	(0.012)	(0.022)

Table B3. Results from estimation of selection equation for females.

	Denmark	Nordic countries	EU countries (12)	Other European countries	Turkey	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Constant 1	-2.340	-0.609	-3.188	-2.546	0.066	-1.857	-0.642	-2.671	-1.488	-1.981	-1.210
	(0.095)	(0.050)	(0.059)	(0.068)	(0.044)	(0.096)	(0.123)	(0.150)	(0.118)	(0.203)	(0.147)
Constant 2	-0.269	(1.315)	-1.287	-0.748	1.132	-0.446	1.190	-1.062	-0.085	-0.451	0.603
	(0.094)	(0.051)	(0.059)	(0.068)	(0.045)	(0.097)	(0.126)	(0.149)	(0.118)	(0.204)	(0.146)
Primary education		-0.027	-0.106	0.118	0.137	0.128	-0.078	-0.032	-0.030	0.039	-0.240
		(0.014)	(0.015)	(0.019)	(0.017)	(0.028)	(0.036)	(0.047)	(0.037)	(0.053)	(0.057)
Secondary education	-0.071	0.186	0.127	0.169	0.332	0.379	-0.177	-0.195	0.381	0.414	0.004
	(0.034)	(0.022)	(0.024)	(0.038)	(0.041)	(0.046)	(0.046)	(0.067)	(0.069)	(0.092)	(0.135)
Vocational education	0.245	0.444	0.532	0.526	0.440	0.577	0.313	0.281	0.445	0.457	0.046
	(0.015)	(0.020)	(0.021)	(0.031)	(0.039)	(0.040)	(0.055)	(0.069)	(0.053)	(0.085)	(0.135)
Theoretical education	0.505	0.551	0.657	0.671	0.873	0.789	0.351	0.449	0.547	0.620	0.055
	(0.020)	(0.013)	(0.014)	(0.028)	(0.054)	(0.051)	(0.033)	(0.051)	(0.072)	(0.081)	(0.120)
Years since migration		0.569	7.541	10.955	0.775	6.633	1.972	4.733	0.089	0.982	0.052
		(0.395)	(0.503)	(0.649)	(0.402)	(0.890)	(1.068)	(1.246)	(1.294)	(1.888)	(0.878)
Yrs since migr (5+yrs)		0.283	-6.656	-8.272	-2.219	-5.799	-1.974	-2.027	-0.005	4.306	-0.031
		(0.565)	(0.731)	(0.975)	(0.670)	(1.324)	(1.628)	(1.867)	(1.692)	(2.609)	(1.549)
Yrs since migr (10+yrs)		0.037	0.242	-3.582	-2.536	-4.808	-1.649	-1.905	-0.132	-7.271	-0.046
		(0.411)	(0.448)	(0.626)	(0.418)	(0.829)	(1.065)	(1.321)	(0.848)	(1.456)	(1.816)
Yrs since migr (20+yrs)		-0.066	-2.635	-5.318		-1.374	-0.964	-2.817	-0.075	-12.111	
		(1.032)	(1.092)	(1.170)		(1.844)	(2.505)	(2.676)	(2.108)	(2.998)	
Unemployment	-4.082	-0.149	-3.258	-8.218	-10.140	-5.937	-10.405	-3.717	-0.376	-5.063	0.471
	(0.232)	(0.205)	(0.208)	(0.285)	(0.253)	(0.435)	(0.515)	(0.704)	(0.375)	(0.703)	(1.016)
Single	-0.131	-0.114	-0.058	-0.185	0.111	-0.003	-0.123	-0.041	0.267	-0.142	-0.196
	(0.015)	(0.010)	(0.010)	(0.014)	(0.014)	(0.020)	(0.024)	(0.030)	(0.025)	(0.042)	(0.032)
Age	11.940	-0.622	14.552	13.071	1.242	7.319	3.002	9.866	-0.325	10.249	0.363
	(0.507)	(0.243)	(0.309)	(0.365)	(0.291)	(0.543)	(0.614)	(0.712)	(0.628)	(1.136)	(0.649)
Age squared	-17.550	-1.633	-21.851	-21.721	-6.344	-12.528	-5.296	-14.324	-0.435	-16.337	0.033
	(0.633)	(0.306)	(0.389)	(0.488)	(0.422)	(0.724)	(0.749)	(0.967)	(0.830)	(1.571)	(0.801)
Youngest child 0-2 yrs	-0.377	0.013	-0.233	-0.215	-0.011	-0.058	0.125	-0.182	-0.161	-0.134	-0.337
	(0.032)	(0.017)	(0.020)	(0.026)	(0.012)	(0.024)	(0.039)	(0.045)	(0.034)	(0.062)	(0.044)
Youngest child 3-6 yrs	-0.197	0.170	-0.029	-0.034	-0.035	-0.009	0.268	-0.080	0.011	-0.142	0.115
	(0.035)	(0.019)	(0.022)	(0.028)	(0.013)	(0.027)	(0.046)	(0.050)	(0.036)	(0.064)	(0.049)
Youngest child 7-17 yrs	-0.027	0.240	0.107	0.196	-0.020	0.053	0.330	-0.048	0.127	-0.018	0.218
	(0.025)	(0.015)	(0.017)	(0.022)	(0.012)	(0.023)	(0.039)	(0.040)	(0.028)	(0.054)	(0.047)
Number of children	-0.117	-0.087	-0.160	-0.186	-0.052	-0.101	-0.188	-0.045	-0.028	-0.090	-0.126
	(0.013)	(0.007)	(0.008)	(0.010)	(0.003)	(0.007)	(0.017)	(0.018)	(0.008)	(0.022)	(0.021)

Table B4. Results from estimation of wage equation for females.

	Denmark	Nordic countries	EU countries (12)	Other European countries	Turkey	Africa	North America	South- and Latin America	Pakistan	India and Sri Lanka	Thailand and the Philippines
Constant 1	4.115	4.284	2.479	3.355	4.003	4.543	3.890	4.692	4.429	4.391	4.538
	(0.018)	(0.017)	(0.019)	(0.022)	(0.017)	(0.048)	(0.057)	(0.047)	(0.065)	(0.069)	(0.052)
Constant 2	4.433	4.743	3.817	4.305	4.423	5.056	4.439	5.200	4.637	4.766	4.736
	(0.018)	(0.017)	(0.019)	(0.022)	(0.017)	(0.048)	(0.058)	(0.048)	(0.064)	(0.069)	(0.052)
Primary education		-0.067	-0.076	-0.065	-0.081	-0.107	-0.034	-0.027	-0.081	-0.089	-0.194
		(0.004)	(0.004)	(0.005)	(0.007)	(0.014)	(0.015)	(0.020)	(0.015)	(0.017)	(0.013)
Secondary education	0.117	-0.086	-0.077	-0.017	-0.151	-0.165	-0.030	0.002	-0.182	-0.021	-0.147
	(0.007)	(0.007)	(0.006)	(0.007)	(0.017)	(0.021)	(0.020)	(0.029)	(0.019)	(0.028)	(0.039)
Vocational education	0.050	-0.036	-0.053	-0.023	-0.153	-0.158	-0.077	-0.071	0.040	-0.024	0.084
	(0.003)	(0.005)	(0.005)	(0.007)	(0.016)	(0.017)	(0.018)	(0.028)	(0.028)	(0.019)	(0.024)
Theoretical education	0.097	0.003	-0.001	0.023	-0.226	-0.155	-0.049	0.008	0.028	0.068	0.047
	(0.004)	(0.004)	(0.003)	(0.005)	(0.021)	(0.021)	(0.013)	(0.022)	(0.028)	(0.020)	(0.036)
Experience	2.261	0.856	1.747	3.626	1.942	1.218	2.489	2.473	0.228	2.976	0.198
	(0.148)	(0.126)	(0.122)	(0.170)	(0.142)	(0.309)	(0.362)	(0.439)	(0.387)	(0.435)	(0.287)
Experience (5+ yrs)	-1.925	0.152	-1.699	-3.907	-2.063	-1.722	-1.318	-1.825	0.062	-3.042	-0.004
	(0.202)	(0.205)	(0.202)	(0.264)	(0.229)	(0.549)	(0.610)	(0.866)	(0.691)	(0.720)	(0.453)
Experience (10+ yrs)	0.688	-0.066	0.559	0.804	-0.216	1.942	-0.152	0.056	-0.013	1.203	
	(0.094)	(0.155)	(0.163)	(0.195)	(0.199)	(0.519)	(0.554)	(0.820)	(0.709)	(0.556)	
Years since migration		0.094	-0.841	-1.562	-0.067	-1.138	-0.497	-1.725	0.205	-0.693	0.152
		(0.141)	(0.180)	(0.236)	(0.119)	(0.434)	(0.489)	(0.583)	(0.689)	(0.608)	(0.291)
Yrs since migr (5+yrs)		-0.046	0.887	0.601	0.916	1.342	0.628	0.902	0.195	-0.154	0.057
		(0.207)	(0.260)	(0.333)	(0.212)	(0.635)	(0.709)	(0.874)	(0.936)	(0.882)	(0.452)
Yrs since migr (10+yrs)		-0.109	0.872	1.312	0.438	1.583	0.394	1.495	0.143	1.728	-0.009
		(0.134)	(0.147)	(0.172)	(0.158)	(0.387)	(0.441)	(0.582)	(0.439)	(0.474)	(0.472)
Unemployment	0.891	0.578	1.345	0.409	3.982	2.132	4.106	2.361	-0.076	1.667	-0.108
	(0.049)	(0.066)	(0.061)	(0.078)	(0.112)	(0.208)	(0.212)	(0.289)	(0.193)	(0.237)	(0.277)
Single	0.008	0.008	0.019	0.023	-0.044	-0.004	0.024	-0.007	-0.054	0.021	0.037
	(0.003)	(0.003)	(0.003)	(0.004)	(0.006)	(0.009)	(0.010)	(0.013)	(0.011)	(0.013)	(0.009)
High level salaried	0.151	0.135	0.191	0.167	0.054	0.053	0.185	0.058	0.103	0.037	0.068
	(0.004)	(0.004)	(0.004)	(0.004)	(0.008)	(0.011)	(0.012)	(0.015)	(0.014)	(0.014)	(0.018)
Low level salaried	0.030	0.036	0.083	-0.036	-0.012	-0.033	0.059	0.012	-0.002	-0.027	-0.058
	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)	(0.008)	(0.013)	(0.013)	(0.011)	(0.011)	(0.013)
Skilled	0.076	0.033	0.080	-0.014	-0.074	-0.026	0.018	-0.074	-0.043	-0.030	-0.030
	(0.008)	(0.008)	(0.009)	(0.009)	(0.011)	(0.017)	(0.029)	(0.033)	(0.027)	(0.026)	(0.012)
Missing occupation	-0.067	-0.061	0.011	-0.110	-0.100	-0.116	-0.009	-0.051	-0.159	-0.118	-0.078
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.008)	(0.012)	(0.013)	(0.013)	(0.013)	(0.007)
Age	1.606	0.951	3.770	2.015	2.475	0.668	2.182	-0.526	0.440	0.769	0.325
	(0.092)	(0.088)	(0.097)	(0.107)	(0.122)	(0.278)	(0.284)	(0.103)	(0.329)	(0.375)	(0.297)
Age squared	-1.904	-0.067	-4.290	-2.320	-1.760	-0.122	-2.275	1.248	0.116	-0.356	0.136
	(0.113)	(0.112)	(0.123)	(0.144)	(0.185)	(0.387)	(0.357)	(0.175)	(0.449)	(0.499)	(0.450)
s_e	0.070	0.368	0.360	0.305	0.443	0.470	0.456	0.455	0.332	0.345	0.266
	(0.0)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.001)
r	-0.500	-0.776	-0.153	-0.025	-0.957	-0.935	-0.849	-0.903	-0.134	-0.868	-0.349
	(0.007)	(0.003)	(0.010)	(0.015)	(0.001)	(0.002)	(0.005)	(0.004)	(0.096)	(0.008)	(0.030)
P_{11}	0.114	0.093	0.018	0.024	0.011	0.061	0.055	0.074	0.323	0.116	0.256
	(0.009)	(0.006)	(0.002)	(0.004)	(0.003)	(0.010)	(0.012)	(0.017)	(0.108)	(0.021)	(0.042)
P_{12}	0.246	0.457	0.564	0.595	0.735	0.605	0.582	0.510	0.314	0.502	0.235
	(0.010)	(0.007)	(0.006)	(0.008)	(0.007)	(0.014)	(0.016)	(0.022)	(0.109)	(0.025)	(0.015)
P_{21}	0.487	0.342	0.020	0.012	0.220	0.295	0.273	0.369	0.141	0.320	0.243
	(0.008)	(0.005)	(0.001)	(0.002)	(0.007)	(0.010)	(0.011)	(0.015)	(0.019)	(0.020)	(0.019)
P_{22}	0.154	0.108	0.398	0.369	0.034	0.040	0.090	0.048	0.222	0.063	0.267
	(0.006)	(0.003)	(0.005)	(0.007)	(0.002)	(0.004)	(0.007)	(0.007)	(0.020)	(0.011)	(0.019)