Family Return Migration

Till Nikolka

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Abstract

This paper investigates the link between family ties and return migration using Danish full population register data. Couples returning from Denmark to the non-Nordic countries are positively selected with respect to income of the primary earner. Positive selection holds for male and female primary earners, but is weaker among dual earner couples and among couples with children. Results suggest that schooling considerations as well as factors related to cultural identity play a role for return decisions of couples with children.

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1 Introduction

A major part of migration flows to OECD countries is of temporary nature (Dustmann 1995, 1997; Dustmann and Görlach, 2016). It has been shown that family ties play an important role for the initial emigration decision (Mincer, 1978; Mont, 1989; Borjas and Bronars, 1992; Tenn, 2010; Gemici, 2011; Junge et al., 2014) but they can also be expected to be relevant for the decision to return home (Dustmann, 2003). There exists an extensive literature focusing on return migration and migrants' ties to the home country when family members were left behind (For a survey see Docquier and Rapoport, 2006). In contrast, this paper analyzes joint migration decisions of partners who immigrate together and decide whether to jointly return to the country of origin. In this context, there is only little evidence so far on family related considerations for return migration. If immigrants' decisions whether to settle permanently abroad or to return home depend on their partners' integration in the labor market and earnings or education perspectives of their children, such considerations are also important from a policy perspective. Understanding return migration decisions at the household level can help attract and retain immigrants to decrease labor shortages and overcome demographic challenges in the host country.

This paper uses administrative data from 1973 to 2010 to study potential determinants for return decisions of immigrant couples living in Denmark. Descriptive analysis reveals a large heterogeneity in family return rates according to the immigrant couples' countries of origin. Coming from one of the other Nordic countries goes along with higher return rates while return rates are lower for the other Western countries and lowest for the non-Western countries of origin. This confirms findings by Jensen and Pedersen (2007) who study out-migration of immigrants in Denmark and also report large differences for individuals from different sending country groups. Further analysis relates return migration of couples to different potential explanatory channels, separately for three major country of origin groups: Nordic countries, other Western countries and non-Western countries.

First, this paper investigates potential explanatory channels regarding children and family return migration. Having children in the household is associated with lower return propensities. However, this is statistically significant for families from non-Western countries only. Couples from all countries of origin are less likely to return when the oldest child was born in Denmark compared to couples without children or couples having a child that was born abroad. Moreover, families are statistically significantly more likely to return before school age of the oldest child, especially if the child was born outside Denmark. This holds for couples from the Nordic countries, the other

Western countries and the non-Western countries. Dustmann (2003) and Djajic (2008) argue that labor market perspectives of children have an influence on the parents' decision whether or not to return. In this context, schooling considerations might play an important role, too. Even though the quality of schooling in Denmark is high compared to many non-Western countries, families might be relatively more likely to return to a country of origin where education perspectives for the children are better. Tiebout (1956) already suggests that individuals choose where to live depending on their policy preferences; the provision and quality of public schools might be one factor associated with location preferences of families. Results reveal that return migration of households where the oldest child is below the age of 7 is more likely to countries where average schooling quality is better, measured by the country's average PISA test score. However, variation in log GDP per capita contributes even more to explaining relatively higher return propensities of couples with young children. This suggests that other factors correlated with schooling quality like the average income level and institutional quality in the country of origin play a role for return decisions of couples with children, too.

Additionally, this paper studies the link between cultural identity and family return migration decisions. Ties to the home country society and factors related to cultural identity might have an effect on the decisions of families to return home. Fernández (2007) and Fernández and Fogli (2009) study the impact of cultural identity among immigrants as well as their descendants and find that economic decisions of first and second generation immigrants in the host society are strongly associated with their cultural background. Sajons (2016) studies children's eligibility to citizenship and return migration of families from Germany and finds that eligibility to host country citizenship reduces return rates possibly through considerations related to identity. The empirical analysis in this paper shows that parents from non-Western countries with a girl compared to those with a boy as the oldest child exhibit a relatively higher probability to return to their home country. This result is driven by immigrant couples from Turkey. Given that Denmark is a country with high female labor force participation rates, high quality of schooling and a gender equal society, it is unlikely that the differences in relative return propensities are due to better labor market or schooling prospects for daughters in the country of origin. The results rather suggest an effect of parents' preferences towards gender roles and identity. The comparison of return propensities between families with a daughter and a son addresses the endogeneity concern that return plans affect fertility decisions. In an earlier study, Dustmann (2003) analyzed out-migration of guest workers from Germany and found that Turkish immigrants with a higher share of daughters in the household are more likely to leave the country. The analysis in this paper improves on causally

identifying return considerations related to children in the household by identifying an effect of the gender of the first born child on return migration decisions of families.

Finally, this study links to the literature studying immigrants' self-selection into return migration on labor market characteristics. The present analysis studies self-selection into return on observable characteristics of the partners, in particular labor income, separately for all couples, for dual-earner couples, for couples with children and by different countries of origin. Extending the literature on individual self-selection into return migration with a household level perspective can provide additional insights on how determinants for return migration on the individual level are related to family characteristics. In general, families migrating together often have to overcome co-location problems due to different individual migration incentives of the partners. Thus partners experience unequal labor market gains from migration and one partner often becomes a tied mover (Mincer, 1978). While family ties have generally been found to reduce mobility (Mincer, 1978; Frank, 1978), the effect of family ties on self-selection is less clear. Junge et al. (2014) show that self-selection for emigrant couples from Denmark according to primary earner's income is stronger than self-selection patterns for singles. Borjas and Bronars (1992), on the other hand, find weaker self-selection of immigrants with family ties into the US. They argue that family migrants are selected more randomly as they are more likely not to migrate primarily due to own income incentives. Similarly, co-location problems and divergent individual gains from migration might also affect return decisions from the host country. However, it is not clear ex-ante which effect family ties and the partners' labor market characteristics would have on self-selection into return migration.

The analysis in this paper shows that individual and family characteristics of both partners contribute to explaining joint return propensities. Either partner being out of the labor force is associated with higher joint return propensities for immigrant couples from the Nordic, the other Western as well as the non-Western countries. The results reveal strong self-selection into return migration on primary earner's income for couples with male as well as female primary earner. Self-selection patterns are strongest for non-Nordic countries. Borjas and Bratsberg (1996) argue that the self-selection into return migration accentuates selection patterns of the initial migration flow between two countries. Along these lines, Denmark, with a narrow income distribution would attract relatively more immigrants at the low end of the income distribution (Pedersen, 2005). Consistent with theory, self-selection patterns of returning migrant couples according to the primary earner's income is strongly positive to non-Nordic countries where incomes are often more

unequally distributed. Positive self-selection of immigrants into out-migration has also been shown in the case of Norway (Longva, 2001). For Sweden, Nekby (2006) finds U-shaped selection patterns with positive self-selection of immigrants into return migration at the upper end of the income distribution. Moreover, results reveal that positive selection is weaker among dual earner couples indicating that co-location problems weaken the selection patterns determined by labor market incentives of the primary earner. The presence of children also seems to affect self-selection into return migration. Results, which are driven by the non-Western sending countries, show that the children in the household weaken positive self-selection into return migration on the income share of the primary earner. Possibly, for couples with children other factors which are uncorrelated with primary earner income, reduce positive selection into return migration compared to singles or couples without children.

As outlined, the following analysis is going to show along different dimensions how family considerations are related to return migration decisions of immigrant couples. For policy makers it is of utmost importance to understand return decisions of immigrants in order to design policies aiming at attracting and retaining immigrants to overcome skill shortages, demographic challenges and to foster economic growth. The present analysis shows that considerations related to the family play an important role and have to be taken into account in this context. The rest of the paper is organized as follows. Section 2 provides background information on immigration to Denmark and introduces the data and empirical strategy for the subsequent analysis. Section 3 presents basic descriptive statistics. Further analysis then refers to the role of children for family return migration in Section 4 and partners' labor market status and earnings in Section 5. Section 6 concludes.

2 Data and Empirical Strategy

The Danish administrative data contains information on all registered immigrants living in Denmark in a given year. According to the definition of Statistics Denmark, a person is considered as immigrant if he or she was born outside Denmark and both parents have non-Danish or unknown citizenship.[1] According to this definition the total number of immigrants living in Denmark in 2005 was 542,738, corresponding to 9.8% of the resident population (Statistics Denmark, 2015). Table 1 shows that 7.5% of immigrants living in Denmark in year 2005 originate from another Nordic country, mostly from Sweden (3.5%) and Norway (3.2%); a minor share of migrants comes from Finland (0.6%) and Iceland (0.2%). Immigrants from Faroe Islands or Greenland will be excluded

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[1]Further information is available at https://cpr.dk/in-english/moving-from-denmark/, https://cpr.dk/in-english/moving-to-denmark/.

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in this paper's analysis as Faroe Islands and Greenland are autonomous regions of Denmark. Sweden and Denmark have a particularly long history of high bilateral migration flows as migration costs between these countries are low given the geographic as well as cultural proximity. Formally, there has been free mobility between the Nordic countries since 1954 (Nannestad, 2004). Since 1993 individuals from countries that are part of the European common market, like Denmark, can move freely between these countries without having to apply for visa or work permits. As for citizens from these countries working and living in Denmark became possible without any legal restrictions, immigration to Denmark increased subsequently (Jensen and Pedersen, 2007). Table 1 shows that 13.1% of immigrants living in Denmark in 2005 are from a non-Nordic, Western European sending country. There are 2.2% of immigrants from Australia, Canada, New Zealand or the United States.

Immigration to Denmark from many non-EU countries is very restricted. Major immigration channels from non-Western countries are due to asylum policies and family reunification. The major sending countries for asylum seekers in Denmark over the considered time period were Afghanistan, Iran, Iraq, Somalia, Lebanon and the Balkan countries.[2] These major refugee sending countries make up in total 34.6% of the immigrant population in 2005, but will be excluded in the subsequent analysis as migration and return considerations are likely to be different compared with other countries. After excluding migrants from the major refugee sending countries, migrants from non-Western countries account for the remaining 42.6% of the immigrant population in 2005; the biggest group among them are Turkish immigrants with a share of 12.2%. Most immigrants from Turkey entered Denmark as so-called guest workers before the 1980s or later through family reunification programs (Nannestad, 2004). Even though many of the initial guest workers returned home after the recruitment policies had ended, many also stayed and made use of the possibility for family reunification in Denmark (Böhning, 1984).

Origin	
Nordic countries	7.5%
Other Western countries	15.3%
Other W.European countries	13.1%
AUS, CAN, NZ, US	2.2%
Non-Western countries	77.2%
Turkey	12.2 %
Major refugee sending countries	34.6 %
Remaining countries	30.4 %
Total	542,738

Table 1: Immigrant population in Denmark, 2005.

[2]According to Damm and Dustmann (2014) 86% of the permanent residence permits granted to asylum seekers between 1985 to 1997 were issued to citizens from these countries.

The data used in the subsequent analysis come from the Danish administrative population, tax, and migration registers. For a given year the records contain basic demographic characteristics, and labor market related information, as well as data on immigration and emigration events for each person. The analysis is going to pool data on individual characteristics from these sources for immigrants in Denmark over the cross section years from 1981 to 2005. Individual characteristics are linked with migration data for each year indicating whether an individual enters or leaves the country as well as the respective sending or destination country. Registering immigration and emigration is compulsory in Denmark. As soon as a person leaves the country for more than six months he or she is required by law to report the emigration country and the date of emigration to the authorities in Denmark (Statistics Denmark, 2015). Similarly, immigrants have to report their date of entry and country of origin to the authorities. The migration register contains information on immigrations and emigrations from 1973 to 2010 for all individuals in the population at any point in time since 1981. For the subsequent analysis attention will be restricted to immigrants who came to Denmark at earliest in 1973 and at latest in 2005, are in the population data in any year between 1981 and 2005 and stayed for at least one year.

The sample will be restricted to individuals who are between 25 and 59 in order to capture the working age immigrant population. Furthermore, individuals have to be at least 18 when immigrating; this ensures that they most probably migrated for own reasons to Denmark and did not come as children with the family. The major part of the empirical analysis restricts attention to a sub-sample of immigrants with a partner from the same country who also fulfills the age restriction above. Return behavior of couples with partners from different countries of origin is likely to be qualitatively different and should be analyzed separately, which is beyond the scope of this study. Unique individual and family identifiers make it possible to combine data for cohabiting partners as well as their children while they reside in Denmark.[3] In order to allow for the possibility of sequential immigration of spouses (Borjas and Bronars, 1992), both partners do not necessarily need to have immigrated in the same year to Denmark. However, to be included in the analysis the second mover must immigrate less than five years after the first mover and both partners have to cohabit immediately after the second mover immigrated.[4]

A return event in the subsequent analysis is defined as emigrating from Denmark to the country

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[3]Immigrants linked with a partner are either cohabiting at the same address, married or in a registered partnership according to the administrative registers. Individuals in registered same-sex partnerships will be excluded because the number of observations is low in the immigrant population.

[4]The reported results are not sensitive to this restriction. However, the sample size reduces by about one third when requiring that both partners immigrated within the same year.

of origin. A couple returns if both partners migrate to their country of origin within the same year and do not re-enter Denmark in the subsequent five years. Couples and singles are observed in the administrative registers over the observation period every year as long as their cohabitation status remains the same and as long as they reside in Denmark. Returners and non-returners will be compared based on observable characteristics in the year before the potential return migration event.

To comprehensively analyze different factors associated with family return migration a linear probability model (LPM) will be estimated on the above described sample. Regression results presented in the next sections stem from estimations of the following baseline specification:

$$R_{ab,t+1} = \beta_0 + \beta_1 X_{ab,t} + \beta_2 YSM_{a,t} + \beta_3 YSM_{b,t} + D.Imm.Age_a + D.Imm.Age_b + D.t + u_{ab,t},$$

where each observation in year t refers to a couple ab with partners a and b. $R_{ab,t+1}$ is a binary indicator for a joint return event in the following period requiring that neither partner re-migrates to Denmark during the subsequent five years. Non-parametric controls for life- and business-cycle effects are included with dummy variables for the age of each individual and for the corresponding cross-section calendar years. Furthermore, the regressors $YSM_{a,t}$ and $YSM_{b,t}$ capture the years since immigration for each individual. The vector $X_{ab,t}$ summarizes observable individual and family related characteristics which will be introduced in more detail later. The above equation is also estimated for single households to compare the response of return propensities to observable characteristics between singles and couples. Naturally, in that specification only the corresponding individual level control variables for one single person are included.

The analysis covers return events of immigrants who reside in Denmark between 1981 and 2005. As immigrants are included who entered Denmark between 1973 and 2005 the sample year 1981 already contains a stock of migrants living in Denmark up to eight years. Starting with a stock of immigrants oversamples those in the population who stay longer in the host country (see Ridder, 1984). However, this allows to include also migrants having entered Denmark between 1973 and 1981 into the analysis. Moreover, a potential estimation bias might arise due to censoring of the data because some couples drop out of the sample due to separation as time passes by. Analysis addressing this concern will be part of a future extension to the presented results. The main estimation results from the regression models will be reported for the pooled sample of immigrants as well as separately for the three main country-of-origin groups described in Table 1: Immigrants from

other Nordic countries, those from the other Western countries, and those from the non-Western countries, excluding migrants from the major refugee sending countries.[5] Results presented in this paper are estimated with OLS, standard errors being clustered at the household level.[6]

3 Descriptive Statistics

Table 2 presents the data of the analyzed sample with the mentioned restrictions according to the origin countries of the migrants, separately for couples and singles. There are 166,130 individual-year pairs for male single migrants and 136,015 individual-year pairs for female single migrants in the data. There are 202,276 observations for individuals with a partner from the same country of origin. According to the restrictions above, in total 9,214 return events of couples can be observed during the considered time period. A large share of immigrants in the sample originates from one of the other Nordic countries, mainly Sweden and Norway. This share is higher among singles (14.2% for males and 19.9% for females) than among couples (7.6%). Immigrants from the other Western countries account for 38.5% among male singles, 26.0% among females singles, and 23.8% among couples. Most of the couple migrants originate from non-Western countries (68.6%), the corresponding share is lower among single males (47.2%) and singel females (54.0%). For couple migrants the most important sending country is Turkey. Migrants from the major refugees sending countries as defined above are excluded.

| | Singles | | Partners from |
	males	females	same origin country
Other Nordic countries	14.2	19.9	7.6
Other Western countries	38.5	26.0	23.8
Western Europe	33.8	22.1	20.8
US, NZ, CAN, AUS	4.7	3.9	3.0
Non Western countries	47.2	54.0	68.6
Turkey	7.6	5.7	19.9
Remaining countries	39.6	48.3	48.7
Observations	166,130	136,015	202,276

Source: Administrative data.

Table 2: Origin countries.

Table 3 reveals that return propensities of single and couple migrants differ considerably according to the country of origin. Returns are least frequent among those from the non-Western countries,

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[5]These countries are Afghanistan, Iran, Iraq, Somalia, Lebanon and the Balkan countries.
[6]Signs, sizes and significance levels of most LPM coefficient estimates are very similar to average marginal effects estimated from a Probit model. The Probit estimation results are avaialable upon request.

and more frequent among those from the Western countries, in particular among those from the other Nordic countries. Of course, the average duration of stay varies between the different origin country groups, with migrant singles as well as couples from Western European countries having on average shorter duration of stay than those from the non-Western countries. The differences confirm findings by Jensen and Pedersen (2007) who study out-migration of immigrants in Denmark and also report large heterogeneity in out-migration rates for individuals from different sending country groups. Accordingly, much of the subsequent analysis is going to distinguish three groups of sending and return countries of migrants: The first group are other Nordic countries, the second group other Western countries consisting of the non-Nordic, Western European countries as well as Australia, Canada, New Zealand and the United States. Non-Western countries are the third group accounting according to observations in the data for a majority among couples as well as single migrants.

| | | | Couples, partners from same origin country | |
| | Singles | | | |
	males	females	males	females
Age	37.4	38.3	40.6	37.2
Children in household	0.10	0.33	0.78	
Out of labor force	0.23	0.23	0.14	0.33
Self employed	0.06	0.03	0.12	0.06
Employment	0.44	0.46	0.49	0.32
Full time employment	0.30	0.31	0.38	0.21
Dual-earner couples			0.15	
Full-time average annual earnings	237,724	212,792	244,325	237,724
Returns events:				
Other Nordic countries	0.13	0.10	0.18	
Other Western countries	0.10	0.10	0.10	
Western Europe	0.09	0.09	0.08	
US, NZ, CAN, AUS	0.14	0.13	0.18	
Non Western countries	0.07	0.04	0.02	
Turkey	0.02	0.01	0.01	
Remaining countries	0.08	0.05	0.02	

Source: Administrative data.

Table 3: Descriptive statistics.

Table 3 presents further average sample characteristics separately for singles and couples in the data. Females in couples are on average slightly younger while males are slightly older than in the corresponding sample of singles. Table 3 also reports the share of couples with children. 78% of

couples have children below the age of 16 in the household.[7] Children are also present in 33% of single female and 10% of single male migrant households. The income and tax register data provide information on labor market activity of the immigrant population in Denmark. Table 3 shows that 23% of single men and women are out of the labor force in the sample. This share is higher among females in couples (33%), but lower among male partners (14%). The share of self-employed is relatively small in all groups. 44% of single men and 46% of single work in employment, 30% of males and 31% of females in full-time employment.[8] Compared to singels, the share of partners working in employment is lower among females (32%, full-time: 21%) and higher among males (49%, full-time: 38%). The share of couples in which both partners work full-time in the labor market is only 15%. The income register data reports annual gross labor and freelance income for each individual. Table 3 shows average values in Danish Krone for the sum of both earnings from employment and non-negative freelance income. These are calculated only for individuals who work full-time. Average earnings are higher among males as well as females in the group of couples compared with single households.

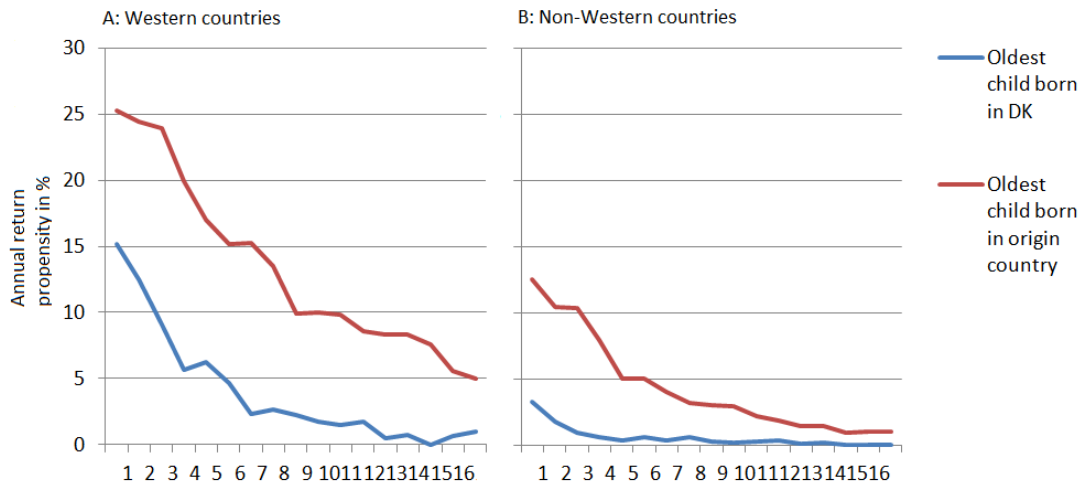# 4   Children and Return Migration

Figure 1: Return migration propensities in percent according to age of oldest child.

Previous literature has already pointed out that children in the household can be expected to play an important role for return migration decisions (Dustmann, 2003; Djajic, 2008). Given the high share of couples with children reported in Table 3, considerations related to children can also be

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[7]Older children are not directly recorded as household members and thus left out of the analysis.

[8]Throughout the paper, full-time employment is defined as working more than 60% of the full-time equivalent working time in a given year.

expected to be relevant in the context of return migration of families from Denmark. Figure 1 illustrates the relationship between the age of the oldest child under 16 and the return propensity of families to the country of origin. The illustration distinguishes between the case in which the oldest child was born abroad or in Denmark. Data for singles with children are not presented and analyzed further as migration decisions of single individuals with children might very likely be related to family members or a partner living abroad, e.g. in long-distance relationships. To account for the heterogeneity between the return rates of migrants from the origin-country groups described above, the graphs in Panel A refer to couples from Western countries and in Panel B to those from non-Western countries. Figure 1 shows that couples are more likely to return at any age of the oldest child in case it was not born in Denmark. The graphs also provide descriptive evidence that couples with young children in the household are more likely to return than couples with older children. In general, as seen from Table 3, couples from Western countries have much higher return propensities that couples from the non-Western countries. Returns are most likely either when the children are very young, or are shortly before school age which starts at the age of 7 in Denmark.[9] In particular, for families from Western countries, the graphs show a kink and sharply decreasing return propensities between the ages 5 to 7.

Of course, omitted variables are likely to influence patterns in Figure 1. The following analysis will control for additional factors like the years since immigration and further characteristics of the parents. Regression results reported in Table 4 refer to the model described in section 2 and provide a more thorough picture about the empirical relationship between return migration and child-presence in the household. In addition to the control variables introduced in section 2, information on the presence of children below the age of 16 in the household is included in the specifications. In order to explore potential explanatory factors for return migration related to the presence of children, the estimated regression specifications in Table 4 address the timing of return migration of families more closely. The specification in Column 1 controls for whether the oldest child in the household is younger than 7 or between 7 and 16. An additional dummy captures if there are children below the age of 16 in the household in case the oldest child is older than 16. The reference group are couples without children. Column 2-5 additionally include separate dummy variables for whether the oldest child in the household was born in Denmark or abroad. Columns 1 and 2 refer to the whole sample of couples while Columns 3-5 report estimation results for the specification in Column 2 separately for the three groups by country of origin.

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[9]For further information on compulsory schooling in Denmark see
https://www.retsinformation.dk/forms/r0710.aspx?id=133039#K2.

	All countries	All countr.	Nordic countries	Other West. countries	Non-West. countr.
First child 0-6	0.00692*** (0.00161)				
First child born abr. 0-6		0.0221*** (0.00368)	0.0698*** (0.0218)	0.0222** (0.00885)	0.0131*** (0.00354)
First child born abr. 7-16		-0.0109*** (0.00159)	-0.00916 (0.0130)	-0.00470 (0.00518)	-0.00617*** (0.00140)
First child 7-16	-0.00586*** (0.00141)				
First child born in DK 0-6		-0.00712*** (0.00174)	0.0174 (0.0213)	0.00618 (0.00645)	-0.00447*** (0.00144)
First child born in DK 7-16		-0.00418*** (0.00125)	-0.0581*** (0.0159)	-0.000912 (0.00590)	-0.00153 (0.00107)
Children <16 in HH when oldest Child >16	-0.00688*** (0.00104)	-0.00756*** (0.00102)	-0.0112 (0.0132)	-0.00215 (0.00542)	-0.00452*** (0.000848)
Male out of LF	0.0249*** (0.00215)	0.0247*** (0.00215)	0.0339*** (0.0141)	0.0799*** (0.00703)	0.0118*** (0.00195)
Female out of LF	0.0164*** (0.00105)	0.0156*** (0.00105)	0.0352*** (0.0116)	0.0447*** (0.00469)	0.0127*** (0.000809)
Dummy variables:					
Years since imm. male	Yes	Yes	Yes	Yes	Yes
Years since imm. female	Yes	Yes	Yes	Yes	Yes
Female age at imm.	Yes	Yes	Yes	Yes	Yes
Male age at imm.	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Observations	101,138	101,138	7,659	24,076	69,403
R-squared	0.077	0.079	0.144	0.081	0.060

Notes: OLS estimation. Standard errors clustered on household level. Constant included.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table 4: Linear probability regressions: Children and family return to origin country.

In general, the literature on family migration argues that children in the household reduce mobility of couples because of higher costs to migrate (e.g. Mincer, 1978; Gemici, 2011). The first specification in Table 4 indicates for the pooled sample that if the oldest child is older than 6, this goes along with lower return propensities compared with the reference group, couples without children. Controls for whether the oldest child was born in Denmark or born abroad reveals lower return migration probabilities if the oldest child was born in DK and is above the age of 6. On the other hand, return migration probabilities are statistically significantly higher compared to couples without children if the oldest child is younger than 7 and, in particular, if born before immigration. This finding is robust across the three country of origin groups: Nordic countries, other Western countries, non-Western countries. More detail on the relationship between age of the oldest child and return propensities is provided in Table A1 which includes a full set of age

dummy variables for the oldest child in the household. As seen from the estimation results, and in line with evidence from Figure 1, family return rates are highest for children born outside Denmark and fall substantially around the time when the oldest child reaches school age. This indicates that the timing of return for these families might be driven by schooling considerations. This finding seems to hold, in particular, if the oldest child was born outside Denmark.

Dustmann and Glitz (2011) emphasize the link between joint migration and education decisions, when individuals' investments in their general and country-specific labor market skills depend on the returns to these investments in different locations. As far as a child's education and location choice is concerned, such a decision can expected to be made by the parents, and be eventually reflected in the family migration decision (Djajic, 2008). Tiebout (1956) suggests that individuals choose where to live based on their policy preferences. For parents with children about to enter school, the quality of public education in a country might be an argument in favor or against returning. Analysis presented in Table 5 addresses the question whether schooling quality might influence return decisions of parents. Specification 1 includes standardized average PISA 2012 test score for math in the country of origin as regressor, interacted with the dummy variable referring to the oldest child as introduced above.[10] Results indicate that parents with children born in the origin country tend to return more frequently to countries with a higher average score, which can be cautiously interpreted as a proxy for schooling quality. The model interacts the standardized PISA test score with the dummy variables for the oldest child born abroad and in Denmark, separately by age group. In line with the argument that schooling considerations matter most for the returning families with young children, the average PISA score in the country of origin is positively associated with return propensities for families in which the oldest child is below 7. These families might view schooling considerations for their children as most relevant with regard to the return decision. However, the described relationships break down when including the regressor into the country subgroup analysis, indicating that they are driven by a difference in PISA scores between Western and non-Western sending countries.

Alternatively, and also in line with Tiebout sorting, parents with children could also be more likely

[10]The scaling unit of the PISA 2012 variable are standard deviations from the OECD average PISA score. The covered OECD and non-OECD countries are Albania, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Latvia, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mexico, Montenegro, the Netherlands, New Zealand, Norway, Peru, Poland, Portugal, Qatar, Romania, Russian Federation, Serbia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom, United States, Uruguay, Vietnam. For more information on the PISA 2012 test see OECD (2014) and https://www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-i.htm.

	PISA countries		PISA countries
First child born abroad 0-6	0.0238***		0.0331***
	(0.00507)		(0.00698)
First child born abroad 7-16	-0.0111***		-0.0180***
	(0.00197)		(0.00259)
First child born in DK 0-6	-0.00757***		-0.0187***
	(0.00232)		(0.00299)
First child born in DK 7-16	-0.00470***		-0.00598***
	(0.00164)		(0.00215)
PISA	0.00424***	Log GDP per capita (GDP)	1.10e-06***
	(0.00126)		(7.12e-08)
PISA*First child born abroad 0-6	0.0114*	GDP*First child born abroad 0-6	1.99e-06***
	(0.00591)		(2.31e-07)
PISA*First child born abroad 7-16	-0.00123	GDP*First child born abroad 7-16	3.92e-07***
	(0.00211)		(1.17e-07)
PISA*First child born in DK 0-6	0.00288	GDP*First child born in DK 0-6	5.67e-07***
	(0.00198)		(1.55e-07)
PISA*First child born in DK 7-16	0.00122	GDP*First child born in DK 7-16	7.28e-07**
	(0.00201)		(1.09e-07)
Children <16 in HH	-0.00656***		-0.00346***
when oldest child >16	(0.00134)		(0.00130)
Male out of LF	0.0283***		0.0307***
	(0.00282)		(0.00284)
Female out of LF	0.0206***		0.0219***
	(0.00153)		(0.00155)
Dummy variables:			
Years since imm. male	Yes		Yes
Years since imm. female	Yes		Yes
Female age at imm.	Yes		Yes
Male age at imm.	Yes		Yes
Year	Yes		Yes
Observations	98,916		98,916
R-squared	0.092		0.144

Notes: OLS estimation. Standard errors clustered on household level. Constant included.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 5: Linear probability regressions: Schooling considerations and family return to origin.

to return to wealthier countries in which both schooling and many other public services are of better quality. Instead of the average PISA score specifications in the second column in Table 5 include log GDP per capita in the otherwise similar specification as in the first column. A higher R-squared value suggests that GDP per capita seems to explain more of the variation than the first specification. Thus higher return rates of couples with pre-school age children to countries with better schooling quality seem to be associated with higher per capita income in the destination countries which is potentially correlated with the quality of many public services of importance for parents with young children. This makes drawing conclusions from the estimation results in Table 5 regarding higher return propensities to countries with higher average school performance difficult.

On the other hand, non-economic factors might play a role for return decisions, such as the preference for living and raising children in the society of the home country. First evidence for such considerations is provided by Dustmann (2003). Dustmann finds that a higher share of daughters in the family increase out-migration propensities among Turkish immigrant families. This could be due to preferences of parents with regard to their children's future labor market and family plans. Different return propensities might be caused by gender dependent investment decisions in the children's human capital and subsequent country specific earnings perspectives.

Moreover, estimating differential outmigration probabilities of families with respect to the relative share of daughters or sons in the family addresses an endogeneity concern. Migration and fertility choices are likely to be jointly determined. Different return propensities between families with daughters and sons provides evidence for a causal effect of children on return migration with the argument that the gender of the children is exogenously determined. Table 6 presents results for Denmark which are in line with findings by Dustmann for Germany. Families from Turkey having more daughters than sons are statistically significantly more likely to return. In the specification including only couples from Turkey, the coefficient for the number of daughters is statistically significant at the 5% level. In general, more children in the family makes return migration less likely. This relationship is statistically significant for couples from non-Western and other Western countries.

Still, a potential threat to causal identification in the analysis using the number of children and daughters is that having more daughters than sons could already be an endogenous outcome. Earlier literature has documented economic effects of a so-called son-preference in countries such as India (Tarozzi, 2012; Hu and Schlosser, 2012), China (Ebenstein, 2007) and Turkey (Arnold

	All countries	All countries	Nordic countries	Other Western countries	Non-Western countries	
					Turkey	Remaining countries
Number of children	-0.0046***	-0.0050***	-0.0064	-0.0034	-0.0011***	-0.0038***
	(0.0003)	(0.0004)	(0.0074)	(0.0032)	(0.0003)	(0.0005)
Number of daughters		0.0009	-0.0003	-0.0019	0.0007**	0.0008
		(0.0006)	(0.0112)	(0.0022)	(0.0003)	(0.0007)
Male out of LF	0.0440***	0.0446***	0.0547***	0.0870***	0.0254***	0.0272***
	(0.0020)	(0.0022)	(0.0115)	(0.0072)	(0.0030)	(0.0014)
Female out of LF	0.0254***	0.0264***	0.0495***	0.0562***	0.0053***	0.0245***
	(0.0013)	(0.0011)	(0.0141)	(0.0047)	(0.0008)	(0.0025)
Yrs since imm. male	-0.0022***	-0.0023***	-0.0056***	-0.0025***	-0.0004***	-0.0017***
	(0.0001)	(0.0001)	(0.0017)	(0.0006)	(8.54e-05)	(9.49e-05)
Yrs since imm. female	-0.0008***	-0.0008***	-0.0082***	-0.0022***	-0.0001*	-0.0005***
	(0.0001)	(0.0001)	(0.0017)	(0.0006)	(7.77e-05)	(8.27e-05)
Dummy variables						
Female age at imm.	Yes	Yes	Yes	Yes	Yes	Yes
Male age at imm.	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	101,138	101,138	7,659	24,076	15,871	69,403
R-squared	0.0553	0.0553	0.0976	0.0553	0.03	0.043

Notes: OLS estimation. Standard errors clustered on household level. Constant included.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table 6: Linear probability regressions: Family return to origin country.

and Kuo, 1984). Cultures in these countries might treat sons differently from daughters when it comes to marriage arrangements and inheritances, for example (Das Gupta et al., 2010). Affecting parents' preferences towards having a son or a daughter, this has eventually an effect on fertility rates, too. This imposes a threat to causal identification in case having more daughters than sons is directly related to return plans or omitted characteristics affecting return propensities. Further disentangling fertility decisions and the timing of migration can yield more insights into a causal effect of children on return migration of families. By augmenting the estimated specifications from Table 4 the following analysis can provide improved evidence for cultural identity being an explanatory factor for the return of immigrant families.

Table 7 restricts the sample to parents only. A dummy variable controls for whether the oldest child is a girl. The results indicate indeed an effect for the gender of the oldest child on return migration propensities in the subsample of couples from Turkey. Having a girl below 16 as the first born child in the household is associated with slightly higher return propensities compared to families in which the first born child, born before immigration, is a boy. The effect is weakly statistically significant at the 10% level. There is no empirical evidence for an effect of having

	All countries	Nordic countries	Other Western	Remaining countries	Turkey
First born child*girl	-0.0012	-0.0117	-0.00327	0.000463	0.00114*
	(0.0010)	(0.0351)	(0.00701)	(0.000716)	(0.000647)
First born child > 16	-0.0159***	-0.0155	-0.0157**	-0.0101***	-0.00448***
	(0.0186)	(0.0186)	(0.00664)	(0.00102)	(0.000952)
Years since migration male	-0.0022	-0.0124***	-0.00358***	-0.00119***	-0.000487***
	(9.50e-05)	(0.000751)	(7.50e-05)	(0.000101)	(8.54e-5)
Years since migration female	-0.0008	-0.00806***	-0.00366***	-0.000418***	-0.000129***
	(9.34e-05)	(0.000812)	(7.09e-05)	(8.65e-05)	(7.77e-05)
Female age at imm. dummies	Yes	Yes	Yes	Yes	Yes
Male age at imm. dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Observations	81,748	3,242	12,706	55,403	12,244
R-squared	0.041	0.117	0.050	0.025	0.021

Notes: Coefficients from linear probability model estimation. Only couples with children.
Robust standard errors in parentheses clustered on household level. Constant included.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table 7: Linear probability regressions: Family return to origin country. Couples with children.

a boy or a girl as first child in Denmark among couples from the other sending country groups. The presented results support the hypothesis that considerations related to children affect family return decisions from Denmark. Moreover, relatively higher return probabilities among families in which the oldest child is a girl compared to those with a boy as an oldest child point into the direction of considerations related to parents' preferences towards gender roles and identity being relevant for the return decision.

5 Earnings, Family Ties and Return Migration

Borjas (1987) argues that cross-country differences in returns to skills, which are reflected in the dispersion of the countries' income distributions, are a major determinant of the composition of international migration flows. Following that argument, a country like Denmark with a relatively narrow income distribution would be particularly attractive in terms of earnings incentives for immigrants from more unequal countries from the lower end of the income distribution. If returns to skill are positively correlated across countries these migrants tend to earn less than the native population in the destination country. For Denmark, Nannestad (2004) provides empirical evidence that immigrants from non-Western countries, on average, have a lower level of education and earn less than the native population. Extending the Borjas (1987) model, Borjas and Bratsberg (1996) account for the possibility of temporary migration spells in their theoretical framework. According

to the theory, return migration accentuates the initial selection of immigrants with respect to their labor market skills. Empirical evidence for the Nordic countries suggests that, in line with theory, return migrants are better educated and earn higher wages than those staying permanently in the host country (Nekby, 2004; Longva, 2001).

However, the links between earnings of immigrants, family ties and selection into return migration have not yet been analyzed. For permanent emigration decisions of families, Borjas and Bronars (1991) argue that family ties weaken individual self-selection patterns, because one partner in a couple is likely to be a tied mover who does not migrate due to own labor market incentives. Figure 2 shows standardized annual earnings of the primary earner among couples in which the primary earner works more than 60% in the labor market. Log-standardized earnings are calculated by taking logs of a standardized earnings measure which is constructed following Borjas et al. (2015): An individual's annual gross labor income is divided by the average gross earnings of the whole immigrant population also working 60% or more in the same calendar year, age, years since migration and country of origin group, separately for males and females and by country of origin group.[11] Comparing standardized earnings accounts for the composition of the compared groups with respect to age, years since migration, origin country group and calendar year separately for males and females.

Log-standardized earnings distributions in Figure 2 are presented for couples in which the primary earner works more than 60% of full working time in a given year, in Panel A for male primary earners and in Panel B for female primary earners. Figure 2 compares primary earners' annual log-standardized earnings for returning and non-returning couples from all countries of origin. The top row of Figure 2 shows that for male as well as for female primary earners the returners' distributions almost first order dominate the distributions of the non-returners showing a strong positive self-selection into return migration on the income of the primary earner. Previous analysis in section 4 has shown that the presence of children is related to the timing of return migration. Figure 2 shows the selection patterns according to primary earner's income separately for couples with children below the age of 16. The distributional dominance appears to be slightly weaker, but, overall, no strong differences to the distribution functions for the whole sample can be observed neither for male nor for female primary earners. The bottom row in Figure 2 shows the distribution functions for dual-earner couples.[12] Here, selection on primary earner's standardized

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[11]Gross labor income is the sum of income from employment and non-negative freelance income. Age and years since migration groups are constructed in five year intervals.

[12]Among dual-earner couples the sample restriction requires that both partners are employed and work more than

earnings is still positive, at least for the upper part of the distribution. However, the patterns are weaker compared with the graphs in the top row.
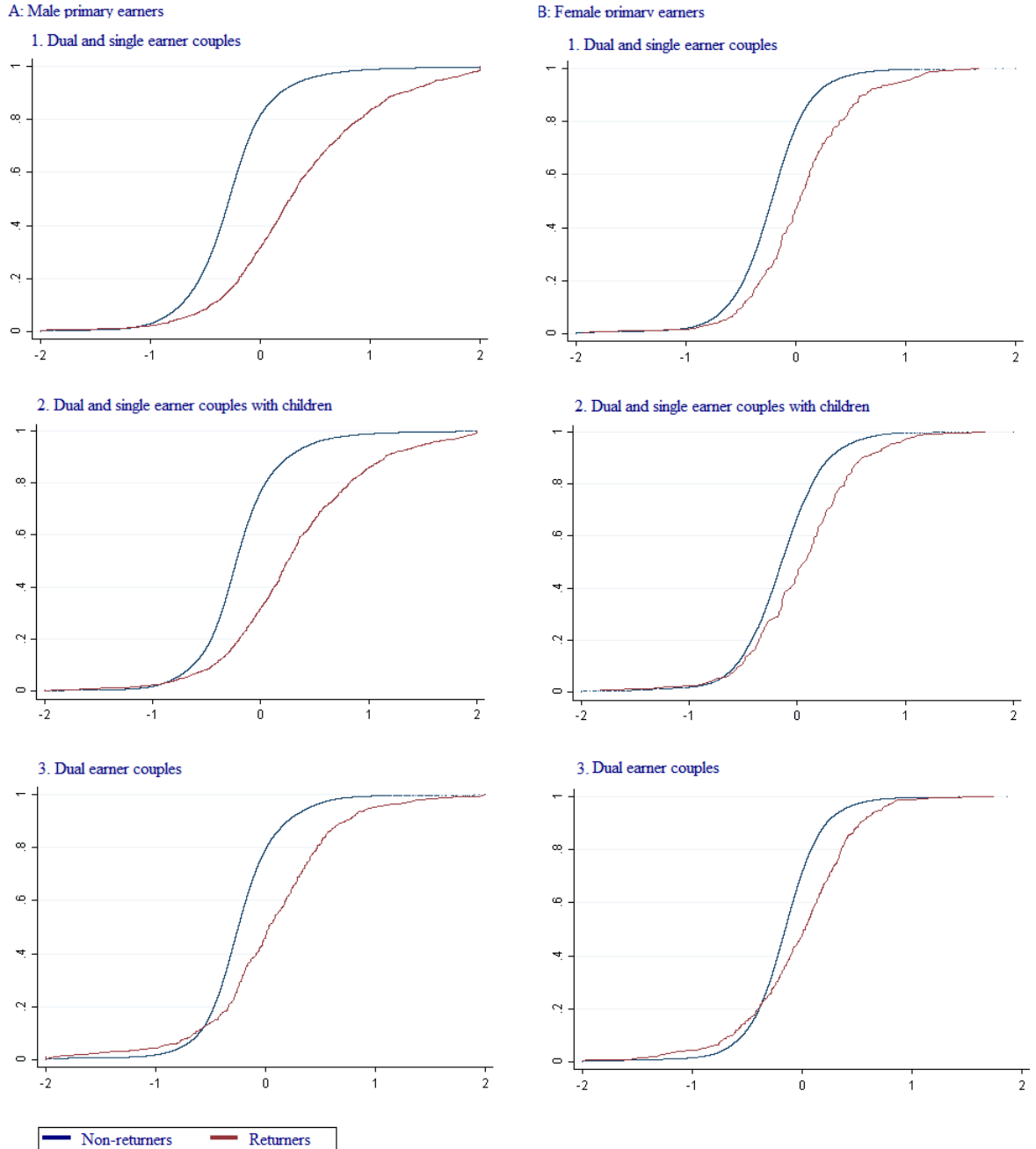

Figure 2: Cumulative distribution functions for log-standardized earnings.

Figure A1 in the appendix reveals that positive selection of male as well as female primary earners is driven by the selection patterns of return migrants from the non-Nordic countries. Figure A1 reveals relatively stronger self-selection in terms standardized earnings for male and female primary

60%.

earners in couples from non-Western countries compared with those from the Nordic countries and from other Western countries. Klugman (2011) presents a ranking of countries showing that Western and in particular Nordic countries have relatively low levels of inequality in the distribution of disposable incomes as indicated by the GINI coefficent. Theory would predict this selection into return migration to be particularly strong among immigrants coming from countries with a relatively wide income distribution (Borjas and Bratsberg, 1996). The empirical findings in Figure A1 are in line with these theoretical predictions. An alternative hypothesis to which immigrants who have lower earnings due to a bad job realization would return to their country of origin, cannot be confirmed with Figures 2 and A1.

Figure 2 indicates a weaker selection on primary earner's income into return migration for dual-earner couples, in which both partners work in the labor market more than 60%. Borjas and Bronars (1992) argue that family ties weaken self-selection into migration on individual earnings as the labor market characteristics of an accompanying family member are different from those of the one who initiates the move. A potential explanation for a weaker self-selection on the primary earner's income might be conflicting individual migration interests resulting in a co-location problem if both spouses participate in the labor market. This argument has been applied and empirically confirmed for internal migration in the United States (Costa and Kahn, 2000) as well as in the international context for emigration decisions of couples (Borjas and Bronars, 1992); a priori it is an open question how self-selection into joint return migration of partners will be affected by labor market considerations on the household level. The co-location problem outlined in the family migration literature might as well apply to return migration. Coordination on whether and when to return becomes more difficult if both partners' incentives are not perfectly correlated across locations. Selection on primary earner's income might be stronger if the career opportunities and location preferences of the secondary earner are of minor importance for the joint migration decision. Along the same lines also the presence of children could weaken self-selection into return migration according to primary earner's income: Factors related to children might be important for the return decision of parents as suggestive evidence in Figure 1 indicates. This could explain slightly weaker self-selection pattern related to income of the primary earner. However, there is not strong evidence confirming this conjecture in Figure 2.

Extending the empirical model described in Section 2, the following analysis will further investigate the link between individual earnings of the partners and return decisions in the light of different household characteristics and the presence of children. The following analysis restricts attention

to couples in which the primary earner works more than 60% of the full working time in the labor market, the partner being either (self-)employed with lower gross annual earnings, unemployed or out of the labor force. Figure 2 showed that couples returning from Denmark are positively selected on the primary earner's log standardized earnings. Figure A1 shows that this is particularly driven by migrant couples coming from non-Nordic countries.

Tables 8 and 9 confirm the descriptive evidence: The tables present coefficient estimates for log earnings for singles as well as for primary earners in couples, Table 8 for males and 9 for females. When pooling single-earner and dual-earner couples together, selection on the primary earner's log annual income is positive for males and females, but becomes weaker for dual-earner couples only. Furthermore, specification 1 in both tables shows that the estimated marginal effects of log income on return propensities of single males and females who work more than 60% are very similar to those for primary earners in couples. Figure 2 did not provide strong evidence for different selection patterns according to primary earner's income for couples with children. The size of the coefficient estimates indicates that for couples with children positive selection into return migration on primary earner's income seems to become weaker. This holds for all couples as well as for dual-earner couples separately. The estimates for female primary earners in dual-earner couples are statistically insignificant, though.

Table 10 presents estimation results for all couples, separately for male and female primary earners and by return country group. The regressions are estimated pooling couples with and without children. As above the specifications include a regressor for log annual earnings of the primary earner. Additionally, an interaction term between primary earner's log annual earnings and the presence of children in the household accounts for potential heterogeneity in the selection patterns on income for couples with and without children. For all country groups the selection on primary earner's income for couples without children, the reference group, is estimated with a positive coefficient sign. The positive selection on primary earner's income for couples without children is statistically significant for male and female primary earners from the non-Western countries, for female primary earners from the Nordic countries and for male primary earners from the other Western countries. The coefficient estimate for the interaction is negative for all country groups, indicating weaker self-selection on primary earner's income in the presence of children. The estimates are statistically insignificant for the other Nordic and the other Western countries. Weaker self-selection in log earnings of male as well as female primary earner in the presence of children is statistically significant at the 1% level only for the non-Western countries.

	Singles	All couples		Dual-earner couples	
	All	All	With children	All	With children
Children <16 in HH	-0.0117*** (0.00303)	-0.00946*** (0.00158)	-	-0.0167*** (0.00240)	-
Prim.earner log annual inc.	0.0232*** (0.00140)	0.0331*** (0.00143)	0.0305*** (0.00156)	0.0185*** (0.00322)	0.0110*** (0.00340)
Sec.earner log annual inc.				-0.00281 (0.00338)	-0.00559 (0.00345)
Partner out of labor force		0.0156*** (0.00145)	0.0166*** (0.00149)		
Yrs since imm. female		-0.000581*** (0.000155)	-0.00150*** (0.000151)	-0.00110*** (0.000272)	-0.000979*** (0.000287)
Yrs since imm. male	-0.00320*** (0.000100)	-0.00186*** (0.000144)	-0.000752*** (0.000166)	-0.00153*** (0.000259)	-0.001178*** (0.000267)
Dummy variables:					
Female age at imm.	-	Yes	Yes	Yes	Yes
Male age at imm.	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Observations	65,530	46,897	35,664	13,259	9,158
R-squared	0.022	0.045	0.040	0.040	0.030

Notes: OLS estimation. Standard errors clustered on household level. Constant included.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 8: Linear probability regressions: Earnings and return migration, all countries, male singles and primary earners.

| | Singles | All couples | | Dual-earner couples | |
	All	All	With children	All	With children
Children <16 in HH	-0.0176*** (0.00129)	-0.0180*** (0.00249)	-	-0.0241*** (0.00384)	-
Prim.earner log annual inc.	0.0118*** (0.00143)	0.0159*** (0.00269)	0.00897*** (0.00272)	0.0114 (0.00714)	0.00692 (0.00606)
Sec.earner log annual inc.				0.00296 (0.00637)	0.00175 (0.00520)
Partner out of labor force		0.0216*** (0.00325)	0.0231*** (0.00334)		
Yrs since imm. female	-0.00262*** (0.0000917)	-0.00169*** (0.000263)	-0.000798*** (0.000235)	-0.000922** (0.000431)	-0.000483 (0.000338)
Yrs since imm. male		-0.00105*** (0.000234)	-0.000776*** (0.000275)	-0.00163*** (0.000398)	-0.00109*** (0.000341)
Dummy variables:					
Female age at imm.	Yes	Yes	Yes	Yes	Yes
Male age at imm.	-	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Observations	49,602	12,005	8,036	3,768	2,482
R-squared	0.021	0.044	0.027	0.063	0.050

Notes: OLS estimation. Standard errors clustered on household level. Constant included.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 9: Linear probability regressions: Earnings and return migration, all countries, female singles and primary earners.

	Nordic countries		Other Western countries		Non-Western countries	
	Female primary earner	Male primary earner	Female primary earner	Male primary earner	Female primary earner	Male primary earner
Children <16 in HH	-0.0324	-0.0148	-0.0254**	-0.0147**	-0.0209***	-0.0107***
	(0.0327)	(0.0157)	(0.0107)	(0.00652)	(0.00257)	(0.00165)
Prim.earner log ann.inc.	0.0944**	0.0258	0.00848	0.0326***	0.0119***	0.0297***
	(0.0441)	(0.0171)	(0.0125)	(0.00755)	(0.00332)	(0.00241)
Log annual inc.*children	-0.000645	-0.0259	-0.0114	-0.00534	-0.0179***	-0.0112***
	(0.0794)	(0.0213)	(0.0166)	(0.0100)	(0.00542)	(0.00300)
Yrs since imm. female	-0.0158**	-0.00421	-0.00290*	-0.00331***	-0.000559***	-0.000451***
	(0.00653)	(0.00297)	(0.00158)	(0.00104)	(0.000159)	(0.000104)
Yrs since imm. male	0.00584	-0.00619**	-0.00236	-0.00246**	-0.000410***	-0.000881***
	(0.00632)	(0.00297)	(0.00154)	(0.000999)	(0.000139)	(9.96e-05)
Dummy variables:						
Female age at imm.	Yes	Yes	Yes	Yes	Yes	Yes
Male age at imm.	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	650	2,459	1,520	6,438	9,835	38,000
R-squared	0.288	0.103	0.082	0.057	0.030	0.032

Notes: OLS estimation. Standard errors clustered on household level. Constant included.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table 10: Linear probability regressions: Earnings, children and return migration.

In line with descriptive evidence, regression analysis revealed that those with higher earnings are more likely to return from Denmark. This holds for singles as well as primary earners in couples and confirms theoretical predictions by Borjas and Bratsberg (1996). It goes against an alternative hypothesis that immigrants with low earnings return because of having a bad job realization. Both partners in a couple are attached to the labor force seems to weaken self-selection on the primary earner's income. The presence of children also seems to weaken self-selection patterns. Theory and former empirical evidence on the self-selection of outmigration of emigrants (Borjas and Bratsberg, 1996) suggest that return migration accentuates the selection of the initial migration flow. The presented findings for primary earners in couples are in line with these previous results and theoretical arguments. Moreover, results for return migration of couples from Denmark suggest that self-selection on primary earner's income is weaker in couples where both partners are attached to the labor market. An explanation for these findings might be that potential co-location problems for couples weaken self-selection due to the partners' conflicting interests and the challenge to coordinate on an optimal joint return migration decision. The analysis has also addressed the role of children in return migration decisions. The presence of children also seems to reduce positive

self-selection on primary earner's income. This result is driven by immigrant couples from the non-Western origin countries. In the presence of children other factors might be important for families returning with children which could weaken selection patterns on parents labor market characteristics. E.g. results in the first subsection revealed that schooling considerations might be relevant when it comes to return migration decisions of immigrant families from Denmark.

6   Conclusion

This paper has analyzed the role of family ties for return migration of migrant couples. Using using Danish administrative data from 1981 to 2005 different considerations have been studied which might affect return migration in the family context. Restricting attention to couples in which both partners have immigrated from the same country of origin, living together in Denmark, returning is defined as partners jointly emigrating in the same year to their country of origin according to the official migration register. Return propensities vary considerably depending to the country of origin. Both couples and single migrants are most likely to return when coming from another Nordic country. Return propensities are lower for those from other Western countries and lowest for migrants from non-Western countries.

The presence of children in the household plays a role for the return decision of migrant couples. Having children is associated with lower return propensities, which is statistically significant for the non-Western countries. Regression analysis reveals that return migration to non-Western countries is more likely among families with a higher share of daughters. This effect is driven by Turkish immigrant couples. Identifying a causal link more clearly and disentangling endogenous return migration from fertility decisions, it can be shown that there is a significantly different effect of having a girl compared to a boy as the first child in the family for the subsample of Turkish immigrant couples.

From a policy perspective it is of interest though, through which channels the presence of children affects return decisions of families: A possible factor that might play a role here could be schooling considerations. Altruistic parents might evaluate differences in labor market and schooling prospects between the host and the home country. Then, return propensities should be higher for couples with children at an age where these considerations can be expected to be most relevant. In line with Tiebout sorting, return propensities could be expected to be positively related

to schooling quality in the return countries. This can be confirmed with the data: Couples are significantly more likely to return if their child is below school age. Moreover, results suggest that return migration probabilities for couples with young children are higher to countries with higher average PISA test scores. However, as an explanatory variable, GDP per capita in the country of origin has a larger explanatory power for relatively higher return propensities of couples with children.

Another potentially important argument playing a role for return decisions for families could be preferences related to cultural background. If parents want their children to grow up in the home country instead of abroad because of considerations related to cultural identity, this can as well influence return decisions. The differential effect of having a boy or a girl provides some support for this channel. Return propensities of couples with daughters are particularly high for Turkish immigrants while labor market perspectives for women can be expected to be better in the egalitarian Nordic countries.

This paper has also investigated how family ties and the presence of children are associated with the selection into return migration on partners' labor market income. Analyzing earnings and return migration of couples in which the primary earner works more than 60% in the labor market revealed that those couples returning are positively selected on the income of the primary earner. In line with theory, selection patterns to non-Western countries with mostly more dispersed income distributions are stronger than for the Nordic or Western return countries. Analysis reveals that positive selection on primary earner's income is less strong in couples in which both partners are closely attached to the labor market. These findings hold for male as well as female primary earners. When analyzing country groups separately, statistically significant results are only obtained for immigrant couples from the non-Western origin countries. Results suggest that selection on primary earner's income is weaker among couples with children. This finding can be explained by the argument that if the secondary earner's labor market attachment or considerations related to children play an important role in the couple's return migration decision, the selection according to labor market characteristics of the primary earner might drive return migration to a lesser extent.

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Appendix

	Only families w. oldest child born abroad	Only families w. oldest child born in DK
Age dummies		
1	-0.0236	-0.00419
	(0.0322)	(0.00545)
2	-0.0179	-0.0130**
	(0.0318)	(0.00512)
3	-0.0408	-0.00506
	(0.0316)	(0.00544)
4	-0.0510	0.00358
	(0.0360)	(0.00600)
5	-0.109***	-0.00137
	(0.0299)	(0.00535)
6	-0.101***	0.0128*
	(0.0300)	(0.00767)
7	-0.103***	0.00188
	(0.0299)	(0.00621)
8	-0.119***	0.000265
	(0.0293)	(0.00589)
9	-0.109***	-0.00266
	(0.0297)	(0.00501)
10	-0.113***	0.000645
	(0.0296)	(0.00504)
11	-0.125***	0.00166
	(0.0293)	(0.00507)
12	-0.133***	0.00992
	(0.0290)	(0.00969)
13	-0.119***	-0.00256
	(0.0296)	(0.00557)
14	-0.133***	0.00805
	(0.0291)	(0.00893)
15	-0.129***	-0.00215
	(0.0292)	(0.00551)
16	-0.130***	0.0137
	(0.0293)	(0.0119)
Male out of LF	0.0203***	0.0134***
	(0.00581)	(0.00371)
Female out of LF	0.0163**	0.00566
	(0.00782)	(0.00696)
Dummy variables		
Yrs since imm. male	Yes	Yes
Yrs since imm. female	Yes	Yes
Female age at imm.	Yes	Yes
Male age at imm.	Yes	Yes
Year	Yes	Yes
Observations	9,246	12,037
R-squared	0.092	0.051

Notes: Coefficients from linear probability model estimation. Only couples with children.
Robust standard errors in parentheses clustered on household level. Constant included.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

Table A1. Linear probability regressions: Couples with children. Return according to age of oldest child.
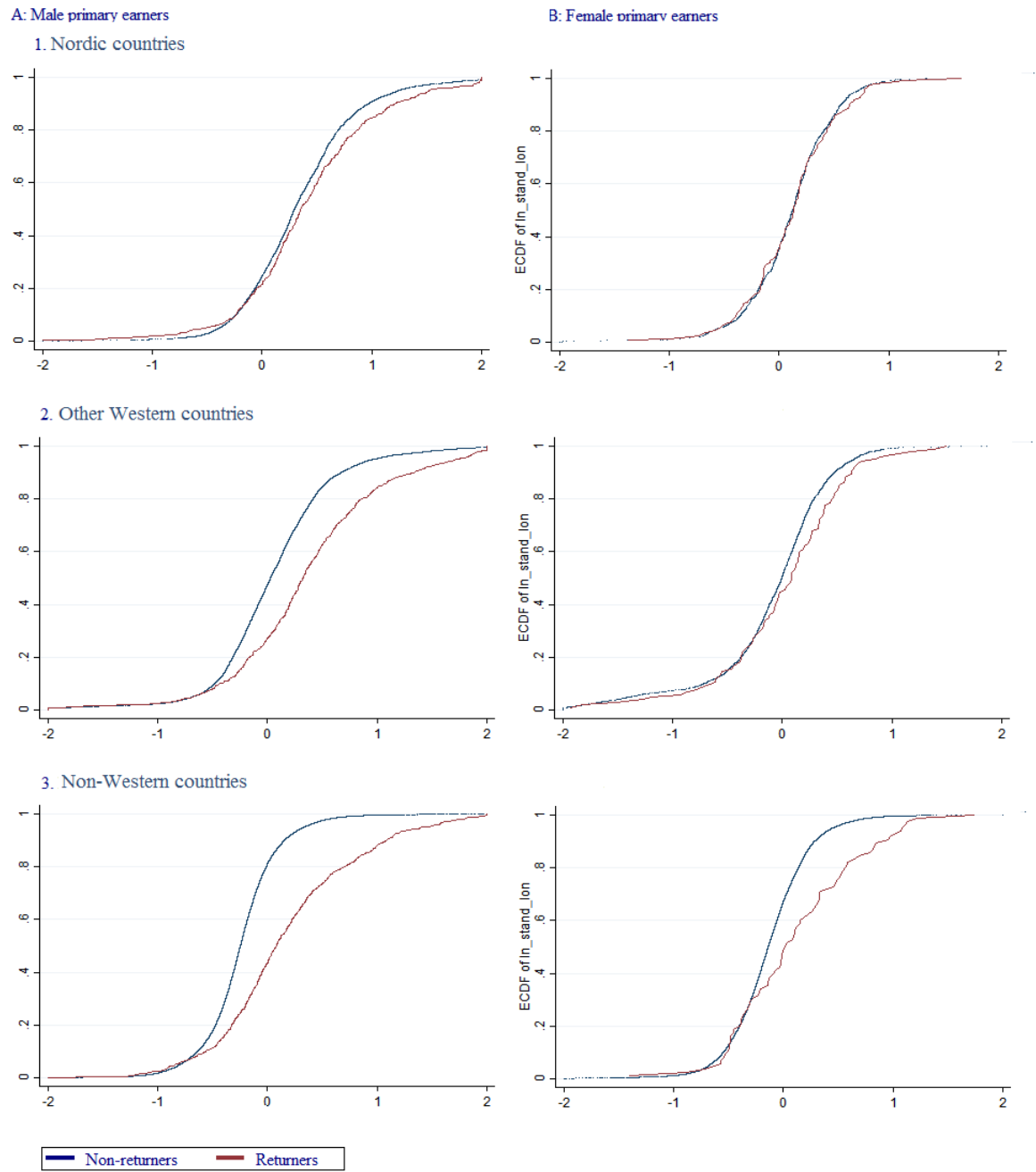
Figure A1. Cumulative distribution functions for log-standardized earnings, by country of origin group.

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