Labour Market Outcomes of Migrant Women in Västerbotten and Norrbotten

Elena Kotyrlo

This paper examines the earnings development and labour force participation of female immigrants compared to Swedish-born women in Västerbotten and Norrbotten (Sweden). A total of 10% of the women residing in these two counties have a foreign background. Female immigrants, mostly originating from Finland, Norway, Thailand, Iraq, and the former Soviet Union, vary greatly in their cultural and family values, education, and job experiences. Ethnic and geographical differences in labour market outcomes are hypothesized in the paper. The study is based on panel data analysis of registered individual data for the period 1995–2009. The data presented here show that differences in earnings and labour force participation can be explained by individual characteristics such as age, education, civil status, and years since migration. Ethnic differences diminish with integration period, though not in each group of immigrants. Gaps in labour outcomes are less evident for skilled immigrants. The ethnic differences are also less pronounced for female labour immigrants compared to women who immigrated for other reasons. There is a slight geographical variation in labour market outcomes, but no obvious trends are seen in the spatial distribution of them.

Introduction

In general, Arctic local labour markets, like labour markets in other sparsely populated areas, are more fragile because geographic isolation and a harsh climate make job creation and use of labour more costly compared to other regions. Oil, gas and other natural resource extraction is usually associated with development of the northern economies and labour market growth. In contrast to other Arctic nations, there are no highly profitable hydrocarbon deposits located in the north of Sweden. Labour demand in the forest industry, playing an important role there, has been reduced considerably due to technological improvements. The economic trends of outmigration of

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population from remote areas to cities and from north to south are also observed there. Despite these facts, the population in the north of Sweden has remained stable over decades. This has been achieved due to the location of educational and research centers there. The universities in the two largest cities, Umeå and Luleå, are not only major employers; they facilitate creating jobs in many other industries. The north of Sweden can be considered as a successful example of an Arctic economy based on a skilled labour force, attracting qualified workers from all over the world. Despite substantial distances between local labour markets, the level of earning is competitive across municipalities. This paper provides empirical analysis, which illustrates the equity of labour possibilities even for vulnerable groups of society. The analysis is based on two northern counties, Västerbotten and Norrbotten, and focuses on earnings development of women with children recently immigrated to Sweden and their involvement in the labour market.

Sweden is a country of high immigration of labour immigrants from Nordic countries and EU15 countries, and of refugees from Asia and Africa, the share of which has been growing in recent years (Schröder, 2007). A total of 10% of the women living there have a foreign background, and this proportion reaches 40% along the border with Finland (SCB 2010). Female immigrants – who mostly come from Finland, Norway, Poland, Thailand, Iran, and the former Soviet Union – vary greatly in their cultural and family values, education, and job experiences. Sweden is known for its remarkable integration policies that enable positive social and economic outcomes for immigrants (Bevelander & Pendakur 2012). However, in the past few decades immigrant integration in Sweden has not been as efficient as in the past (Bengtsson & Scott 2011). First-generation immigrants have higher unemployment rates and lower earnings compared to natives, but these differences diminish in second-generation immigrants (Scott 1999).

The purpose of this paper is to study labour market outcomes, especially earnings and labour force participation (LFP), of first-generation immigrant women in comparison with Swedish-born women in Västerbotten and Norrbotten. Differences in earnings and LFP can be related to the geographical distribution of the workers and to local labour market conditions. The local labour markets in the counties have been characterized by a relative growth of female employment in cities and a considerable decline in employment opportunities in remote areas (Keskitalo et al. 2013). However, it is hypothesized that ethnic determinants, including individual characteristics such as years since migration (YSM), age, education, civil status, and the presence of children, prevail in local labour markets. On the base of previous studies on labour outcomes of immigrants in Sweden (Bennich-Björkman et al. 2002; Bratsberg et al. 2007; Hansen & Lofstrom 2009; Malm 2005; Rosholm & Vejlin, 2010; Scott 1999; Vikman 2013), it is also expected that the ethnic differences are not as important for female labour immigrants compared to women who immigrated for family reasons or as refugees.

The empirical analysis includes earnings, LFP, and other characteristics for 21,344 women in 29 municipalities who had at least one child at any time during the study period. The municipalities were characterized by unemployment rates, types of municipality, and sex ratios, and the municipalities were aggregated into local labour market areas that were identified by Statistics Sweden (SCB) as groups of municipalities that are assumed to be self-sufficient in terms of jobs and labour supply.

SCB classifies immigrants by geography of origin into fifteen groups. Based on the assumption that immigrant groups are homogenous in terms of labour market characteristics, immigrant women were aggregated in the study into the following four types: 1) the Nordic countries other than Sweden, 2) Europe, except the Nordic countries, the former Yugoslavia, and countries that made up parts of the former Soviet Union, 3) the group of countries among which refugees make up the majority of immigrants, including Turkey, North Africa and the Middle East, Central and Southern Africa, Iraq/Iran, and the former Yugoslavia (called the "refugee" group), and 4) immigrants from the rest of the world, including the former Soviet Union, Asia, South America, North America, Japan, and Oceania (called "the others"). The empirical estimation supports ethnic differences in earnings and LFP.

This study provides a better understanding of labour market outcomes of female immigrants with children. This can help to further the development of integration, labour market, and family policies to decrease employment inequality between Swedish and immigrant women. The results support a firm growth in earnings with increase of integration period. The estimates suggest that after five years since in-migration the gap in earnings between Swedish-born and immigrant mothers disappears for the majority of ethnic groups.

The rest of the paper is organized as follows. Section 2 discusses findings on earnings development and the LFP of female immigrants. The hypotheses, methods of conducting the empirical study, and a description of the data are presented in Section 3. Section 4 contains the empirical results and Section 5 provides the conclusions of the study.

Background

At present, immigration to Sweden consists of 35% refugees, 18% immigrants with residence rights given to European Economic Area nationals, 20% labour immigrants, 13% students, and 12% others. Bi-national marriages are one of the important channels of immigration (Frändberg & Vilhelmson 2011; Haandrikam 2014), and this has increased in recent years due to globalization, EU expansion, travelling, living and working abroad, and Internet bride services (Ellegård & Vilhelmson 2004). Municipalities accept quota refugees granted by residence permit in Sweden within the UN Refugee Agency activity (Lemaître 2007). This eventually reduces population and economic decline in the remote areas, by increasing the size of transfers to municipal budgets and growing demand on public services and other services and goods. Refugees are assigned to municipalities throughout Sweden upon agreements between the Swedish Integration Board and the municipalities regarding the number of refugees that the municipalities can handle (ibid). The immigrants attend an integration programme and receive a monetary allowance for approximately 24 months (ibid). It is expected that after the programme, immigrants of working age will be able to enter the labour market and support themselves (ibid). Immigrants can attend public Swedish language courses and vocational training to adapt to the national labour market.

Labour market outcomes of immigrants in developed countries have been studied in significant detail. As a rule, both earnings and the LFP increase the longer an immigrant resides in their new country, although the level of earnings of immigrants never reach that of natives (e.g. Borjas 1989;

and Chiswick 1978 for US; Barth et al. 2004, Hammarstedt 2003; Scott 1999; and Wikström et al. 2014 for Sweden). The earnings gap between immigrants and natives is even larger for women (UK: Lemos 2009; Wikström et al. 2014). This is explained by the fact that gender roles are considerably different in the source and host countries, and the assimilation process is more likely to be achieved among subsequent generations of immigrants. This earnings gap is also related to country-specific capital, such as language, the acceptance of a new culture, and the jobs that immigrant workers take that are often abandoned by native workers (Hammarstedt 2000). Immigrants have higher unemployment rates and lower LFP, especially among immigrants who come as refugees (Bennich-Björkman et al. 2002; Bratsberg et al. 2007; Hansen & Lofstrom 2009; Malm 2005; Rosholm & Vejlin 2010; Scott 1999). However, employed immigrant women tend to work longer on average (UK: Lemos 2013). Ethnicity is found to play a remarkable role in differences in earnings and LFP (Sweden: Bengtsson & Scott 2006; Hammarstedt 2000; Denmark: Rosholm & Vejlin 2010).

Labour supply depends on the number of children in an immigrant family (Bratsberg et al. 2007) and on the time women spend caring for their families. Generous welfare systems and strong family support might reduce women's achievements in the labour market. Olofsson and Malmberg (2011) provide evidence that bride immigrants are less successful in the labour market. On the contrary, single mother immigrants often enter the labour market faster than married women, although the age of the child affects the timing of labour market entry (Vikman 2013).

The population in the counties has remained rather stable over time. About 40% of the northern population resides in the two municipalities of Umeå and Luleå, and about 30% reside in the other coastal municipalities, and these municipalities provide the majority of employment opportunities (SCB). The level of employment of women with children of pre-school age in the counties, as well as Sweden in general, is very high even compared to EU countries (Böhlmark 2006; Wikström et al. 2014). The migration of young people in Sweden from remote areas to cities within the region is quite remarkable. This affects the age structure (Keskitalo et al. 2013) and influences the labour supply in the local labour markets. In several municipalities, female out-migration has prevailed and this has influenced sex ratios (SCB). Female underrepresentation in the counties has been an issue of public debates (Keskitalo et al. 2013).

Hypotheses, Methods and Data

Hypotheses

Dynamics in earnings and LFP were expected due to a common economic growth and integration process. The differences between Swedish-born and immigrant mothers were assumed to diminish with increasing investment in country-specific human capital, although cultural dissimilarities and family characteristics can be critical for labour supply and the size of earnings.

The study was aimed to capture several dimensions. Firstly, local labour market opportunities for an individual were compared. This was possible to do because the counties consist of less than 20 functional regions aggregated by SCB, and are considered in the paper as local labour markets. Local labour markets were assumed to provide differences in levels of employment and earnings or fixed

effects. The expected effects might be related to less opportunities in the remote areas, compared to cities and surrounding municipalities. Another expected disparity in labour outcomes across municipalities was connected to local labour markets on the border with Finland, presumably sharing labour markets with Finnish towns. This might distort the statistics on the actual local labour market situation, because residents on the Swedish side can commute on a daily basis to Finland. Therefore, people permanently employed in Finland but living in Sweden would not be registered as having earnings in the data.

Secondly, immigration by origin was taken into account as potentially correlating with disadvantages in the labour market. Besides, labour immigrants' outcomes were compared to outcomes of other immigrants. It was hypothesized that labour immigrants were better off in the labour market than women coming for marriage, accompanying their spouses, or for asylum. Civil status of immigrants was considered as an important determinant of vulnerability in the labour market. It was assumed that women married to a Swedish-born partner, in general, were safer than married to an immigrant partner, and the latter were less vulnerable than single mothers. This was because of long-run perspectives of residing in Sweden for women in mixed couples and better opportunities of married women to split housework and care-giving between the spouses and, therefore, to increase their labour supply. However, only married Swedish women were considered as a reference to simplify the analysis.

Methods

Panel data analysis was employed to study dynamics in earnings and LFP. It was based on the ordinary least squares method, since a large number of observations does not suggest visible similarities or dissimilarities between individuals. The earnings equation consisted of two sets of dummies distinguishing local labour markets and two sets of dummies for groups of immigrants by origin. The variables of interest and other explanatory variables are described below. The same approach was applied for estimation LFP on the base of a linear probability model as justified by Aia and Norton (2003). To test the effect of local labour markets on the border with Finland, a battery of regressions with the exception of individuals residing in Haparanda, Övertornio or Överkalix was run. Sampling weights were used in the estimation, because there was a large variation in the number of observations in groups of immigrants. Weights were calculated as the inverse of the size of the respective immigrant group.

Earnings were considered as incomes from both employment and self-employment, and individuals with zero earnings were also included in the analysis. LFP was equal to one if an individual's earnings were greater than zero in the considered year. Full-time and part-time jobs were not distinguished, therefore LFP and earnings can reveal different dynamics for ethnic groups. If part-time jobs were more common among certain group of immigrants, this would be seen in relatively high LFP and low level of earnings.

Data

The study is based on registered individual data for the period 1995–2009 collected by SCB and compiled into the Swedish Longitudinal Integration Database for Health Insurance and Labour Market Studies. The Demographic Data Base of Umeå University was the source of the data. Two per cent of native women of reproductive age and married to a Swedish-born partner and residing in Västerbotten and Norrbotten were selected randomly as the reference group (5652 observations in 2009). The entire female immigrant population of working age residing in Västerbotten and Norrbotten was included in the sample.

There were 5034 women from the Nordic countries other than Sweden; 1919 from Europe, except the Nordic countries, the former Yugoslavia, and countries that made up parts of the former Soviet Union; 4213 from countries among which refugees make up the majority of immigrants; and 4560 from the rest of the world observed in the sample in 2009. The largest groups of immigrants by country of origin were from Finland, Asian countries, Central and Southern Africa, Iran/Iraq, the former Soviet Union, and from countries in Central and Northern Europe (see **Appendix 1**). Earnings were defined as incomes from employment and self-employment and were scaled according to the consumer price index (1994 = 100%). The LFP value took a value of one if non-zero earnings were observed, otherwise it was zero. The set of explanatory variables were primarily based on variables found to be important in similar papers studying differences in earnings and employment rates between natives and immigrants (e.g. Barth et al. 2004; Blanchflower & Oswald, 1994; Borjas 1987; Card 1995; Nekby 2002). These variables consisted of age and age squared, three levels of education attainment for the individual and their partner (compulsory schooling, secondary and post-secondary education of less than two years, post-secondary education of two years or longer), the number of children of various ages, YSM and YSM squared, the civil status of the immigrant woman (married to a Swedish-born partner, married to an immigrant partner, or single), the reason for immigration (labour or other), dummy variables for fifteen migrant groups by country of origin and four aggregate types of migrant women, and local labour market characteristics. The local labour market characteristics consisted of unemployment rates, types of municipality (city, city fringe, remote area), and sex ratios as the number of men per woman. Descriptive statistics are presented in **Appendix A1**.

Empirical Results

Data Description

Local Labour Markets

Annual immigration rates at the municipal level are 0.5%–2% in Västerbotten and Norrbotten, and the immigration rate is 1% at the national level. The share of foreign-born persons is 9% in Norrbotten and 8% in Västerbotten compared to 15% for Sweden as a whole (calculated from SCB data). The 29 municipalities in the studied region were divided into the following three groups: 1) cities with populations over 50 thousand people (Umeå, Skellefteå, and Luleå) that provide the majority of jobs in the counties (called "city"); 2) the eleven municipalities that surround these cities

and that, together with the cities, constitute the main labour markets (the "fringe" group), and 3) "remote" areas with isolated local labour markets. Local labour market unemployment rates served as a measure of opportunities available to a person searching for a job. Sex ratios might reflect an overrepresentation of men in the labour market and, therefore, reduced employment opportunities for women. The distribution of female immigrants according to place of residence and country of origin is presented in Figure 1. There were six municipalities where females exceeded the male population by no more than 2%. However, the overrepresentation of men in several municipalities reached 10%.

Individual Characteristics

The average age of the women in the sample was 39.5 years (**Appendix A1**). Native women were slightly older because younger people more often make decisions to leave, although immigrant groups are considerably heterogeneous. The average YSM of immigrants from Finland and Denmark was 27–28 years and they had an average age of 38.5 years. On the contrary, female refugees from Somalia, who dominated the group of immigrant women from Central and Southern Africa, arrived in Sweden 5 years ago on average compared to an average YSM in the entire sample of 10 years, and their average age was 31.3 years.

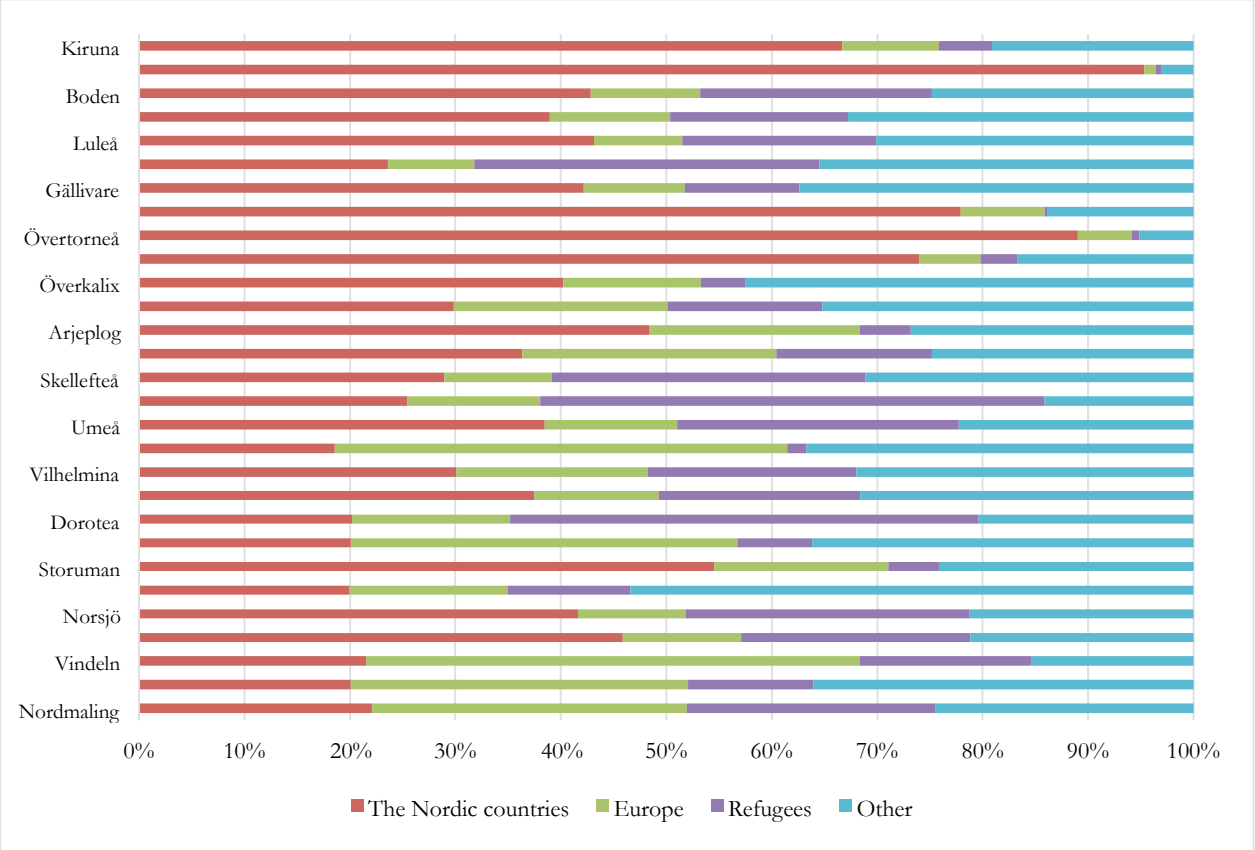

Figure 1: Female immigrant distribution by place of residence and country of origin (panel data 1995–2009).

There were considerable differences in education levels between the groups. The proportion of women with a university education was the highest among immigrants from North America, Japan, Oceania and the former Soviet Union (68% and 64% in 2009, respectively) whereas the majority of Swedish-born women in the sample had only completed secondary school education (62% in 1995 and 55% in 2009). In the group consolidated as "refugees", over 40% had only completed primary education or lower (Figure 2).

Family

It was assumed that women of different cultural backgrounds would diverge in labour supply while having small children. A dummy variable was constructed to show the presence of children 1-5 years old (children of pre-school age), and this was included in the estimations of the interactions with types of immigrants. It was also expected that the number of children per women would vary significantly between the groups. Therefore, estimates were controlled by the number of children aged 0–3 years, 4–6 years, 7–10 years, 11–15 years, and 16–17 years. In 40%–50% of the observations, women originating from the "refugee" groups had pre-school age children. In other groups, 20%–30% of the observations had children of these ages. The highest numbers of school-age children were in groups of Swedish-born women and immigrants originating from Central and Southern Africa, Iraq/Iran, and the former Yugoslavia. In half of the observations they had at least one school-age child. Women originating from Southern Europe and the former Soviet Union had fewer children, and only one out of three had a school-age child.

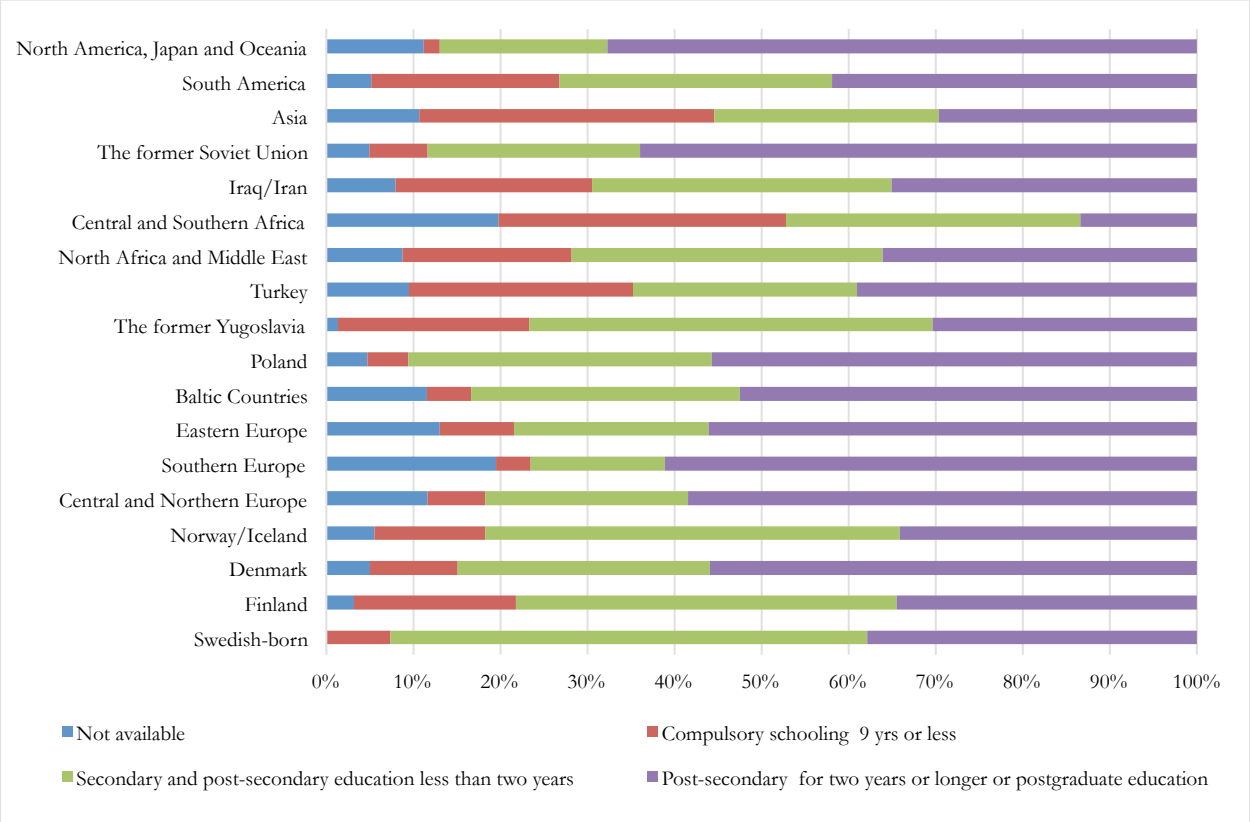

Figure 2: Distribution of women of different origin by education in 2009.

Couples residing in one household were considered to be a couple even though marriage was not necessarily registered. According to the study design, an individual was observed only if she had at least one child 0–18 years of age. The proportion of single immigrant mothers was quite high in all groups and exceeded 60% among women originating from Central and Southern Africa and Southern Europe (**Appendix A1**). The proportion of immigrant women married to an immigrant partner was about 50% or greater among "refugee" groups, except those from Central and Southern Africa. The latter groups were characterized by a lower proportion of those married to Swedish-born men, which ranged from 3% to 12%. Women from Finland and Denmark had approximately equal proportions of those married to Swedes and partners from "the other" countries. There were greater proportions of mixed couples among immigrants originating from Norway and Iceland, Asia, and the former Soviet Union.

Labour Market Outcomes

Labour immigrants were defined as having earnings at the year of immigration. The proportion of labour immigrants was relatively low except for women originating from European countries, and about 30% of that group had earnings during the year of their immigration (**Appendix A1**).

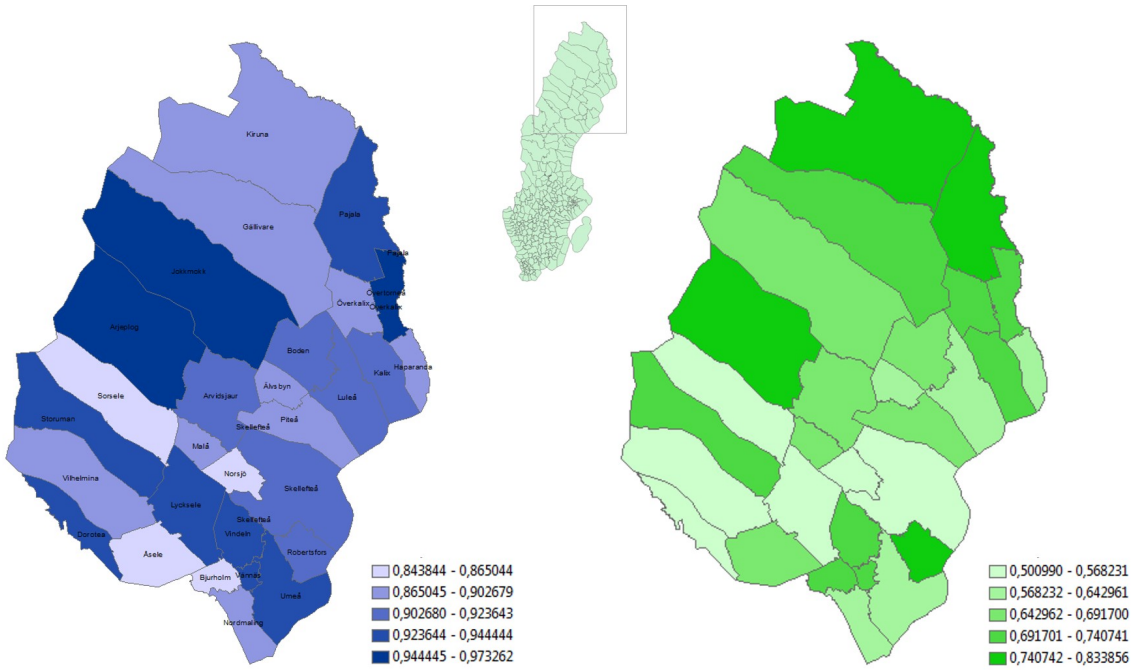

Figure 3: The proportion of women in each municipality having earnings from employment or self-employment among Swedish-born (left) and immigrant women (right). Panel data 1995–2009.

There were large differences in LFP between the country groups. The lowest proportions were observed among women from countries in the "refugee" group (40%–55%), and the highest participation (91%) was seen for Swedish-born women. The employment rate among migrants originating from the Nordic countries and Poland was 75%, and it ranged from 55% to 75% in the

other groups (**Appendix A1**). Some differences were observed in terms of the geographical distribution of employment for immigrant and Swedish-born women, but there was no evidence for any tendencies in terms of cities vs. remote areas or coastal vs. inland municipalities (Figure 3).

Unemployment was still considered equal to one if a person had non-zero unemployment allowances or income from a job-training program during the year of observation. Although the period of unemployment can vary from one to twelve months out of the year, the duration was not available in the data. The lowest proportion of unemployed women was among those originating from Denmark, Central and Northern Europe, Southern Europe, and North America, Japan, and Oceania (14%–18%). The highest proportions of unemployed women were from the former Soviet Union (32%), former Yugoslavia (28%), Baltic Countries (26%), South America (25%,) and Finland (24%). Remarkably, female "refugees" had lower unemployment rates (19%–21%). The large discrepancy between LFP and unemployment in this group means that a large share of women from the "refugee" groups are neither employed nor registered as unemployed and searching for a job. The geographical distribution of unemployment reveals a similarity between native and immigrant women in terms of a higher probability of having income related to unemployment allowances in the municipalities on the border with Finland and inland from the coast (Figure 4). However, even here it was still the case that the proportion of unemployed immigrants was greater than that of Swedish-born women.

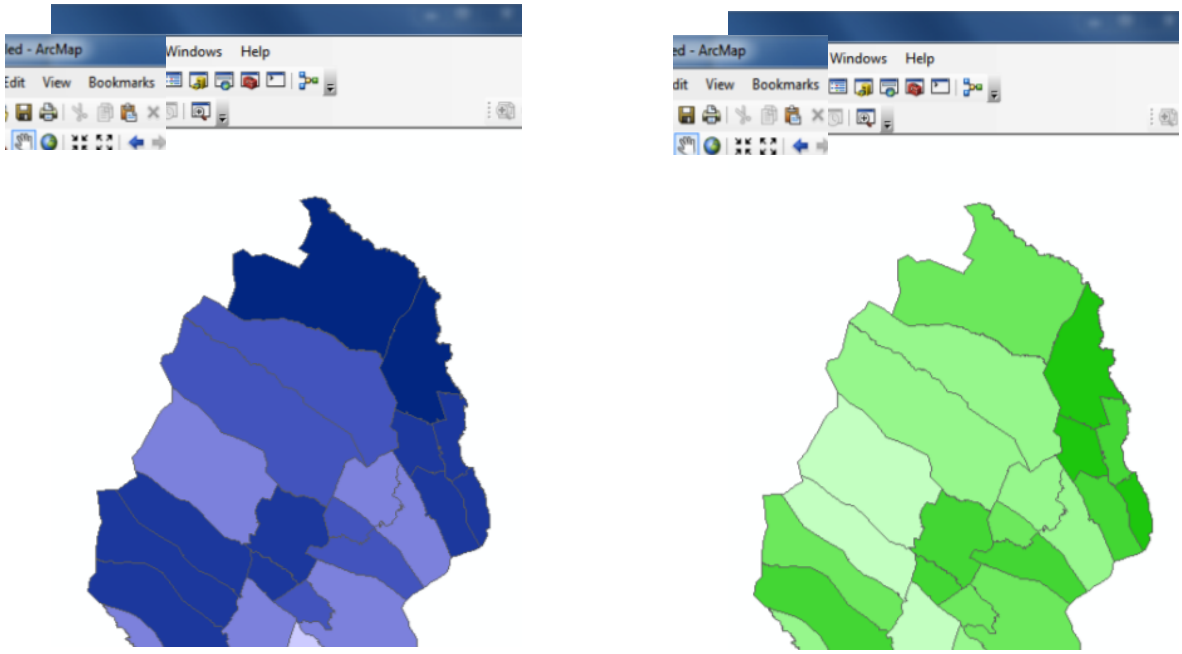

Figure 4: The proportion of women with registered incomes from unemployment allowance or vocational training grants among Swedish-born (left) and migrant women (right). Panel data 1995–2009.

The lowest earnings were among immigrants in "refugee" groups, and these were two to three times lower compared to Swedish-born women and female immigrants from the Nordic countries and Poland. Earnings of women from the other European countries were about 20% lower than those of women from the Nordic countries, but about 20%–25% higher than immigrants from "the other" countries. Earnings of Finnish-born women were lower by about 30% compared to Swedish-born women. This advocated the effect of distortion of statistics, since the Finnish population is more pronounced in the Swedish border municipalities with Finland.

Earnings grew over time for all groups studied in this paper (Figure 5), and the raw data demonstrated that group differences remained constant over time (Figure 6). However, these differences tended to diminish in certain groups when controlling for a set of variables, as described below and shown in Figure 7. Despite a growth of earnings, labor supply dynamics were declining in groups of Swedish-born and migrants from Europe, whereas in other groups positive trends were changed by decrease in LFP. This can be interpreted as growth proportion of women working full time, but decline in the proportion of labour participants in each group.

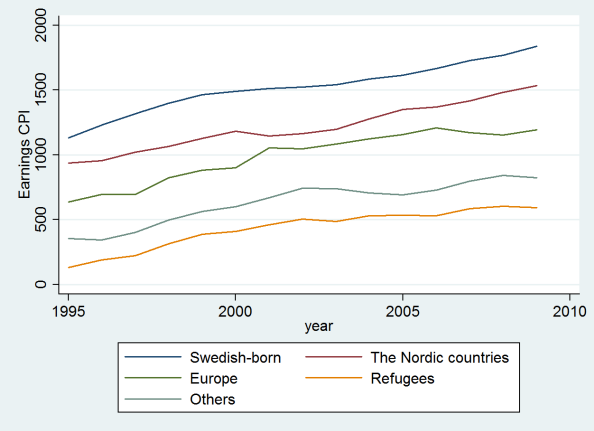

Figure 5: Female earnings development in hundreds SEK a year by groups of immigrants corrected by the consumer price index (CPI).

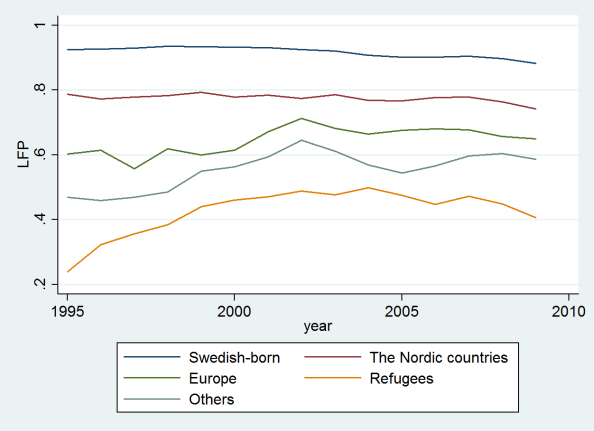

Figure 6: Female LFP by groups of immigrants.

Estimates

The main findings are described below and the estimates are exhibited in Appendix 3. Earnings and LFP regression models were estimated for the entire sample and for a sub-sample of married women. The discussed parameters were significant at a confidence level of 95%. The effects of socio-demographic characteristics, which were included in the estimates, are described first.

In general, earnings were characterized by a positive trend over time of 0.3%–0.5% per year. This trend was greater in the group of "refugee" women and increased earnings about 0.8% a year, and it added about 1% for married women. Immigrant women from the Nordic countries experienced a decrease in earnings of about 0.3% a year on average. LFP decreased over time for groups of immigrant women, except the "refugee" group, by 0.5%–1.4%. Earnings were positively associated with education level. Women with more than 12 years of education earned about 9% more than those with only compulsory schooling, and those with post-secondary for two years or longer or

postgraduate education earned more than 16% more than those with only compulsory education. Their labour supply increased by 4% and 12%, respectively. The YSM is assumed to capture the assimilation process. There was about a 3% yearly increase in female earnings and a 2.6% increase in labour participation per each year since migration.

Immigrant women married to a Swedish-born partner were more successful in the labour market compared to women with an immigrant partner, and single women were less successful than married women. Immigrant women in mixed couples earned 19% more than single women and 13% more than women married to an immigrant partner, and their employment rates were greater by 27% and 6%, respectively. This supports the hypothesis of an influence of specific human capital on labour market outcomes because women with a native partner have better opportunities to obtain such capital due to learning host-country customs within the family. However, the effect of civil status was the opposite for labour immigrants. Single female labour immigrants earned 57% more than women who were not employed during their first year of immigrating to Sweden, female labour immigrants married to an immigrant partner earned 52% more, and those married to a Swedish-born partner earned 28% more. In particular, single female labour immigrants were employed on 41 percentage points more often than those married to a Swedish-born partner.

On average, the presence of children 0–3 years old in the household was linked to lower levels of earnings by about 9%–10% and lower labour supply by about 12%–13%. Estimates revealed greater than average earnings of women originating from the Nordic countries and having children of pre-school age. Earnings of other groups of women did not exhibit any association with the presence of pre-school age children. However, married Swedish-born women experienced a 3.4% decrease in earnings when having small children. Immigrant women from the Nordic countries increased their LFP by 12% when having preschool children.

As discussed earlier, earnings and employment rates among immigrant women were less on average than for Swedish-born women. Immigrant women's actual LFP rates and their participation after controlling for the set of variables as well as their earnings deficits relative to native-born women are depicted in Figures 7 and 8. Immigrants originating from Denmark and Poland and having a relatively long period of assimilation had better labour outcomes compared to other groups. The differences in the raw data were rather large and exhibited 22 percentage points gap in earnings between Swedish-born women and women from Finland. Respective gaps in earnings between Swedish-born women and women Southern Europe are 31.2 pp, Central and Southern Africa (29.6 pp), South America (27.3 pp), and North America, Japan, and Oceania (35 pp). However, the gaps diminished with increasing periods of integration, especially for women from Denmark, Poland, and the former Soviet Union (Figure 7). This supports the hypothesis of the importance of country-specific human capital and human capital in general and reveals that integration, measured in economic outcomes, can be quite successful even in first-generation immigrants.

Employment rates were lower in all groups of immigrant women compared to Swedish-born women. These differences in employment rates ranged from 8% for immigrants from Poland to 42% for immigrant women from Iran/Iraq. The reduction was even greater for married women from these two countries at 12% and 53%, respectively. However, after having been in Sweden for five

years, the labour supply exceeded the reference level for immigrant women originating from Denmark, the Baltic countries, Poland, and the former Soviet Union (Figure 8).

Besides the "refugee" groups, which in general are characterized by lower levels of human capital, shorter periods since immigration, and reasonably distinguished labour market outcomes, two groups (Finland and North America, Japan, and Oceania) need comments. It can be hypothesized that women from North America, Japan, and Oceania mostly come to Sweden as wives to breadwinners and do not consider becoming employed in Sweden despite their high level of human capital.

The influence of local labour markets on labour market outcomes was tested by two sets of regional characteristics. The first set consisted of city types and unemployment rates. Women from the Nordic countries residing in cities and city fringe areas had about 2% greater earnings than Swedish-born women, whereas women from other groups earned about 5%–10% less on average. Employment rates for migrant women, except women from the Nordic countries, residing in cities and their suburbs were about 4%–9% lower than those residing in remote areas.

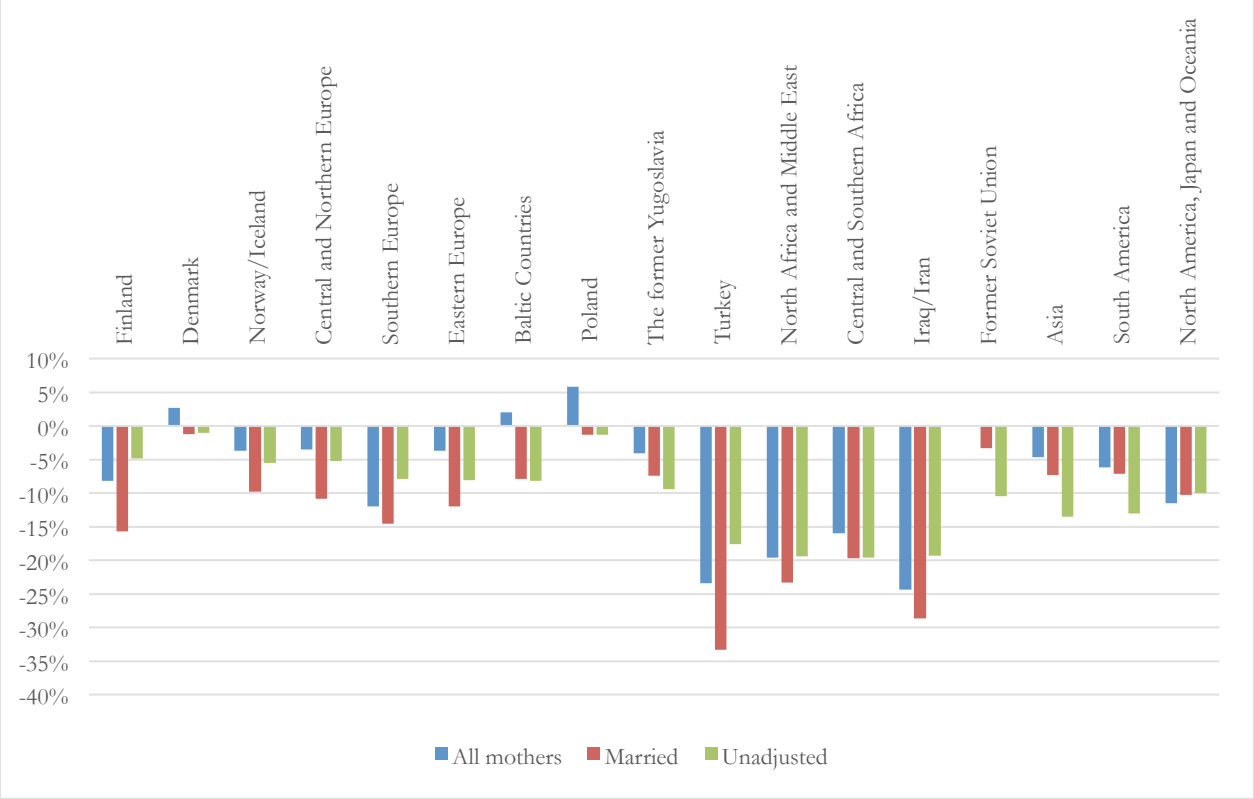

Figure 7: Earnings' deficits of immigrant women's by marital status relative to Swedish-born women after five years since immigration. The blue and red bars show the differences after controlling for the set of explanatory variables. The green bars depict the differences in the raw data.

The second set of characteristics consisted of local labour market dummies with the largest city, Umeå, as the reference. The most remarkable result was a -8% effect on earnings and LFP in two municipalities bordering Finland. In general, however, regional differences did not play a crucial role in employment opportunities and the size of earnings. The interaction between ethnic group labour

market outcomes and local labour markets was not pronounced. The main finding concerning these interactions was that Swedish-born women and immigrant women from the Nordic countries had lower earnings and LFP when residing in remote areas, but immigrant women from the former Soviet Union, Asia, South America, North America, Japan, and Oceania had lower earnings and employment rates in the cities. Earnings of immigrant women were slightly higher in the remote areas of Norrbotten.

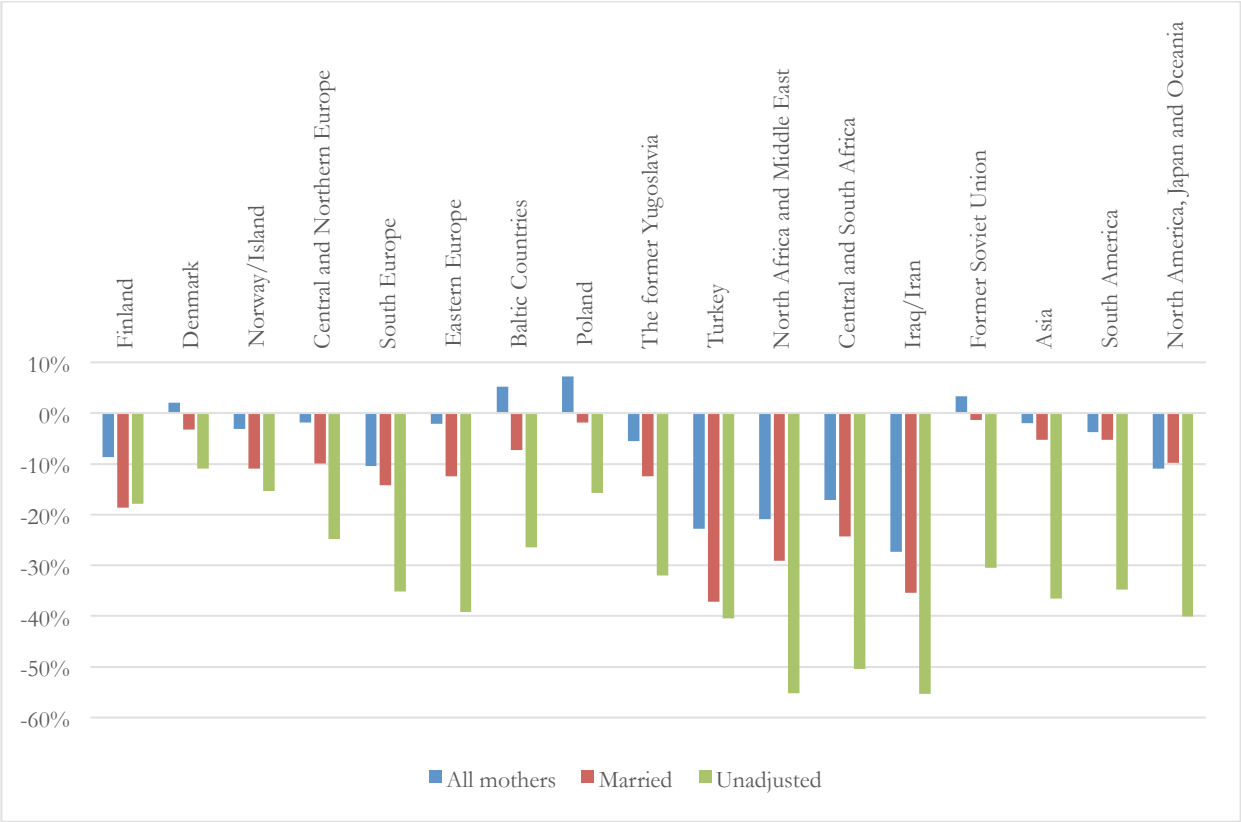

Figure 8: Immigrant women's LFP rate deficits relative to Swedish-born women after five years since immigration. The blue and red bars show the differences after controlling for the set of explanatory variables. The green bars show the differences in the raw data.

The estimates of regressions, where individuals from three border municipalities were excluded, are not presented in the paper, but available upon request. Differences between Swedish-born and Finnish mothers did not disappear after eliminating "the border effect".

Conclusions

Arctic labour markets have been experiencing a remarkable growth over past decades. Mainly, this has been due to exploration of natural resource deposits and new technologies of their extraction. There was a challenge to attract inhabitants to the Arctic and preserve a structure of settlements under changes in technologies or depletion of resources, reducing labour demand. This paper presented northern economies which are not based primarily on resource extraction. Two northern

counties of Sweden, Västerbotten and Norrbotten, have attracted skilled workers by developing markets in education and research. Differences in job opportunities in the counties for Swedish-born and immigrant women with children were studied in the paper.

Variations in earnings and LFP were investigated for fifteen ethnic groups and four aggregate types of immigrants including those from the Nordic countries, from other European countries, from countries with a predominance of refugees among the immigrants, and the group of all other countries combined. This study confirms that earnings of immigrant women are significantly lower with respect to Swedish-born women and that LFP is also considerably lower in immigrant groups. However, these differences decline significantly the longer the immigrants have been in Sweden. Even the earnings and LFP of "refugee" immigrants, which were significantly lower on average, still increased during the study period. Other differences between the ethnic groups were not pronounced.

There were slight differences in the geographical distribution of labour outcomes. The earnings of immigrant women were slightly higher in the remote areas of Norrbotten, and women from the Nordic countries residing in cities and city fringe areas had greater earnings and employment rates compared to those living in remote areas. However, women from other groups had reduced earnings and employment when living in cities and fringe areas. Women' labour market outcomes were visibly lower in the municipalities bordering Finland, and this was presumably because these municipalities share labour markets with Finnish towns and this distorted the statistics on the actual local labour market situation. The estimates, however, did not support any effect on a particular group of immigrants.

Human capital, especially host country-specific human capital, plays an important role in labour market outcomes. This study shows that integration as measured in economic outcomes can be quite successful and can be achieved in first generation immigrants. Controlling for civil status and labour immigration in the analysis reveals that they are essential for labour market outcomes. In particular, to be married to a Swedish partner can be associated with a more rapid accumulation of country-specific human capital. This brings an overall 19% increase in earnings and a 27% increase in employment rates among all immigrant groups. However, the outcomes of female labour immigrants demonstrate better earnings development for single immigrant women and women with an immigrant partner, who earned 57% and 52% greater on average, respectively, than women who were not employed during the first year of immigration. This can be explained by a buffering role of marriage in the integration process. The presence of children is not linked to noticeable losses in earnings or decreases in labour supply except for having children 0–3 years old. It is likely that the allocation of time between housework and formal employment depends more on cultural features and ethnic habits than on the actual number of children.

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