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The impact of children on emigration: A study of EU-15 migrants in Sweden

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Abstract: The freedom of movement within the European Union is one of the pillars in which the EU is built and is encouraged as a mean to create a European citizenship. Even though economic reasons for moving within the EU are often common, other reasons such as family or education is important in migration decisions. As immigration from member states of the Union have risen since the Swedish accession, many also return to their country of origin and emigration rates from Sweden are high. Besides economic reasons for leaving Sweden, the family context also plays an important role in immigrants' decision to emigrate. The aim of this study is to explore what impact family life and especially the presence of children might have on out-migration together with socio-economic determinants of emigration. To analyze this, I use longitudinal population register data on EU-15 migrants in Sweden and applied event-history analysis. The results suggest that economic integration in Sweden plays an important part as being unemployed and having low income is associated with higher emigration propensities. Having no partner or a partner not born in Sweden is associated with a higher risk of leaving the country compared to those with a Swedish-born partner, but when information about children is included, having children seems to matter more than being in a relationship. A closer look at the country of birth of the children shows that having Swedish-born children inhibits the parents' emigration, while having foreign-born children increases the probability to emigrate. The results indicate that having a Swedish-born child provides motives to stay on in Sweden.

Keywords: Intra-EU, emigration, family, children, integration

1. Introduction

Since the beginning of the European integration project, with the forming of the European Steel and Coal Community (1951), free movement of individuals between the member states has been an essential goal. This has created an exceptional intercontinental space without international borders for citizens in any of the member states of the European Union. Citizens of the Union have today the possibility to move freely to any member state for various reasons (Recchi, 2005). Although the free movement of citizens initially was aimed for an economic active population, the implementation of the Schengen Treaty in 1992 introduced the legal concept of a common European citizenship. This treaty meant that all citizens of the member states, economically active or not, had the right to work and live in another member state (Baltoni, 2003). A Europe without international borders changes the traditional shape of migration and eases a trans-nationalization for the lives of the European citizens, as well as temporary, circular and onward migration (Castro-Martin & Cortina, 2015). Having almost no borders also means that the migration within the Union could be described more as internal migration rather than international migration (King 2002; King & Skeldon 2012).

Within the EU, where one chooses to move to become more varied and more individualized and the decision to move is today driven by a number of different reasons. Traditional motives to move to another country remain as career considerations and possibilities of earning a better salary still is an important trigger to leave the country of origin. Nonetheless, reasons that are not related to work, such as family, studies, retirement or lifestyle considerations have become an important aspect of intra-European migration (Gilmartin & Migge 2015; Santacreu, et al. 2009; Verwiebe 2014). This raises new questions on why and where people decide to migrate and also on the importance of networks and family relations, both before and after the move (Benton & Petrovic, 2013). This specially applies to individuals from the EU-15 countries¹ since their migration motives are due to a large diversity including traditional low-skilled economic migrants, highly educated young professionals, retirement migrants, students, lifestyle movers and binational family members. Migration motives that are driven by ambitions regarding career development but also for considerations about family, relationships considerations are also prevalent (Recchi, 2005).

¹ See appendix for list of countries

Cross-national marriages and personal relations are a prominent motive for moving within the EU-15. In contrast, the motives for migration among the majority of EU migrants from Eastern European countries moving to Western Europe resembles the traditional labour market migration flows during the 1950s and 1960s from Southern Europe to Western Europe (Kahanec, 2013).

An essential question of this relatively new intra-EU migration flow is therefore whether these migrants' intentions are to stay temporarily or whether they will settle permanently. Besides economic reasons for emigration, the family context also plays an important role in the decision to leave the host country (Dustmann, 2003). Research on intra-EU migration has largely focused on its economic impact on the receiving countries (Galgoczi, et al., 2009) and the demographic features has so far not gained the same attention as the economic part. This study pays attention to this topic and analyses the emigration from Sweden in relation to family trajectories with a special focus on how changes in family status affects the propensity to emigrate. Special attention will be given to the presence of children and whether it has any effect on the propensity to emigrate. Further, this study also looks into socio-economic determinants of out-migration.

To address this question, I use longitudinal population register data provided by Statistics Sweden which contains detailed information on the timing of migration and family events on all individuals living in Sweden. This makes it possible to construct a life-course trajectory for each individual migrant. The analysis is focused on adults (aged 18 or older at immigration) born in one of the EU-15 member states, plus Iceland and Norway, and who moved to Sweden for the first time during a ten-year period starting from 1998. These migrants are then followed to the event of emigration, censoring due to death or until the end of 2013.

The outline of the study is as follows. After the introduction, theories and literature related to emigration and family migration are followed by research questions and hypothesis. This is followed by background information about intra-EU migration and Nordic and EU-15 migrants in Sweden. In the following section, I present the data and method used in this study. Thereafter, the results, both descriptive and from an event-history analysis are presented, which are discussed in the last section.

2. Contextual background

2.1 Intra-EU migration

The freedom to move and to reside anywhere within in the European Union is one of the pillars on which the Union is built. EU citizens can move for educational purposes, for employment, to follow their partner or family or to find a new place to stay after retirement without the need of a residence or work permit. This right has mainly served as an economic purpose and to keep a balance between supply and demand on the labour market as well as to improve innovation, exchange knowledge and to create a sustainable growth (European Commission, 2010). After the Treaty of Maastricht in 1992, a concept of a European citizenship was introduced and this gave mobility a broader meaning when it became a way to create European citizens (Baltoni, 2003). Many initiatives have since then been launched to support migration within the Union with an intention to go beyond the economic advantage, of fostering cultural exchange and developing a European identity. These intentions have over the recent decades resulted in various programs, often targeted at young people, such as the student program Erasmus. But still, economic reasons are a central starting point in many EU migration decisions since different and unequal economic situations between member states exists (European Commission, 2010). Although, migration within the Union is encouraged, EU citizens represent only a minority of the total group of foreigners in many member states and the number of citizens that are residing for a long term in another member state are also low (Benton & Petrovic, 2013).

There are no real clear patterns in the EU migration since many of those who move are very diverse with respect to their motive for migration as well as with respect to country of origin and destination (Recchi, 2005). Surveys carried out among EU-citizens shows that, despite the dominance of economic objectives in intra-EU migration policy, family and personal relationships seem to be also important motives to move within the Union for citizens in the western EU. Work and quality of life were mentioned as second and third most important motives (Santacreu, et al., 2009).

2.2 Nordic and EU-15 migrants in Sweden

Since the 1930s, the number of immigrants to Sweden has exceeded the number of persons leaving the country. Sweden, that did not participate in the Second World War, had an economic advantage towards other countries that were marked by the war and the prerequisite

for an industrial expansion in the post-war period in Sweden were large. Low birth rates in the 1920s and 1930s also meant that there was a labour shortage at the time of the industrial expansion in the post-war period. The increasing demand for labour contributed to a liberalization of the Swedish immigration policy and in 1954, Sweden together with the other Nordic countries agreed on a joint labour market (Benton & Petrovic, 2013). This agreement meant that Nordic citizens now could live and work in any of the Nordic countries. During the post war period to the mid-1970s, the migration flows between the Nordic countries mostly went to Sweden due to the high demand for labour but also because of a slower economic development in the other Nordic countries. At the same time, the requirement for visas for non-Nordic citizens were successively phased out and it became easier for non-Nordic immigrants to receive residence and work permits. Labour migrants were also recruited from Southern European countries when the expanding Swedish industry had a demand for low-skilled workers (Lundh, 2010). In 1968, the Swedish government decided that immigration of non-Nordic citizens should be regulated. A reason for the regulation was that it was needed so that the resources of the country could be sufficient to provide the same living conditions for those living in Sweden (1967:18, 1967). The demand for labour migrants also decreased considerably when a large part of the industrial production in Sweden was transferred to developing countries (Castels, et al., 2014). Since then, the immigration to Sweden from the EU-15 countries have remained stable at about 2 000-3 000 persons per year during the 1980s and 1990s (Statistics Sweden, 2016a). Sweden joined the European Union in 1995 and the Swedish labour market was again available for the other member states and the immigration increased during the years after the accession (Statistics Sweden, 2016a).

Due to the moderately large intra-EU and Nordic movements to Sweden that followed during the post-war period, this group have constituted a relatively large proportion of the foreign born population during the 2000s, almost 40% in 2000 to 23% in 2015. The absolute numbers have varied between 5 900 and 8 100 migrations per year during this period. The decline in percentage is due to an increasing number of immigrants from other countries, for example Iraq, Somalia and Poland (Statistics Sweden, 2016b). Migrants from the Nordic and EU countries still constitute an important part of the immigration to Sweden. At the same time, a large share also leaves the country. About 30% of the immigrants from the EU who arrived during the past decade have left the country within 5 years. It is even more common for migrants of Nordic origin to leave; about 50% have left Sweden 5 years after immigration (Statistics Sweden, 2013). Despite the relative high levels of emigration, the net migration has

been positive during the 2000s and has varied between 4 000 and 8 000 during the 2000s (Statistics Sweden, 2016b).

In 2011, about 66% of migrants of Nordic origin and 60% of EU migrants in Sweden aged 20-64 were employed². This was lower than for the Swedish born population but more favorable than for many non-Western origin groups living in Sweden. The income level of migrants from the Nordic countries and EU are somewhat lower compared to Swedish born but at a higher level compared to foreign-born in general. The level of education of the two migrant groups are somewhat similar to Swedish-born and the percentage of migrants who at age 30 have a post-secondary education is higher for women than for men, about 58% for women and 40% for men³, and higher than that of non-Western groups of migrants in Sweden (Statistics Sweden, 2013).

3. Theory and research review

3.1 Theory on emigration

The decision to leave the host country may be a complicated socio-economic process and its degree and nature of selectivity varies depending on the reason for the first migration and also country of origin. This, in turn, depends on factors such as the selectivity of the original migration, conditions in the sending and receiving countries and other factors that might not be available to measure. Economic theory on emigration offers two main different perspectives on the issue, neoclassical theory and the new economics of labour migration (Constant & Massey, 2002).

The neoclassic (NE) approach to international migration is based on the notion of wage differentials between receiving and sending areas, as well as on the migrant's expectations for higher earnings in host countries (Todaro, 1969). If the migrant's expectations for higher earnings are not met (under- or unemployment, wages are lower than expected or because the physic costs of moving are higher than anticipated) the migrant are expected to emigrate. The emigration is then viewed as the outcome of a failed migration experience which did not yield

² There may be an underestimation of Nordic-born men who are employed due to a large share of border commuting, which is not defined as employed in the Swedish official statistics. For example, a person that lives in Sweden and continues to work in Finland will not be listed as employed in the Swedish administrative data.

³ However, men born in the Nordic and EU countries have a relative high share were information about educational level is missing.

the expected benefits. Consequently, emigration only involves those migrants who miscalculated the costs of migration and who did not obtain the benefits of higher earnings. Leaving the host country occurs as a consequence of their failed experiences abroad or because their human capital was not rewarded or expected. Migrants are seen as individuals who maximize not only their earnings but also the duration of their stay abroad to achieve permanent settlement in the host country.

According to the neoclassical theory, migrants are likely to move within the beginning of the stay in the host country but will decrease over time if their expectations are not met. Further, it predicts a negatively selectivity regarding wages, employment and occupational achievement in the host country (Constant & Massey, 2002). Selectivity concerning human capital depends on how it is rewarded in the country of origin and host country (Massey, 2008). The migrant's skills and education learned in his or her country of origin could be difficult to transfer to the host country. This means that it would be more rewarded in the country of origin and suggesting a positive selection regarding education attained before the move. On the other hand, human capital obtained in the new country will increase the immigrant's potential earnings there and at the same time improperly compensated in the home country. This suggests that there will be a negative selection regarding post-migration. The neoclassical theory also mentions the impact that social attachments can have on emigration. Family and friends in the origin country lower the costs to emigrate, both emotional and economically, and they imply a higher cost of remaining abroad. On the contrary, social attachments in the host country raise the cost of leaving while decreasing the cost of staying.

The new economics of labour (NELM) presents another perspective on emigration in which the out-migration is viewed as a logical outcome of a planned strategy (Cassarino, 2004). Migration is seen as a response to market failure in the country of origin rather than as an adjustment to international imbalances in labour markets (Stark, 1994). According to this model, migrations are often temporarily for a period of paid work and the aim is to either remit earnings or accumulate savings before an eventual return to the country of origin. The return is then an outcome of a successful experience in the host country during which migrants met their goals. Rather than a being a failure, leaving the host country represents the final stage of a well-prepared migration project. As Constant and Massey (2002) points out, in contrast to the NE model, NELM, highlights that migrants are positively selected regarding

income levels. Due to higher wages, the less time it will take for an immigrant to meet his or her income goal.

NELM have a similar starting point regarding unemployment as NE which implies that the migrant will leave if there is a lack of attachment to the labour market. Since NELM presents the migrant as a target earner, the impact of unemployment will be stronger than for the income maximizing migrant presented by NE. Since the motive for the NE migrant is to spend a long time in the host country and will therefore devote more to find a new one before leaving.

There are also differences between the two theories in the view of obtaining human capital. While the migrant according to NE are expected to maximize its income and move to wherever their human capital is mostly highly rewarded the migrant according to NELM, just want to accomplish a specific income target, and once that is accomplished they will emigrate regardless of the amount of human capital they have.

Social attachments under NELM generally works the same way as it does under NE. The NE migrants have left their family in the country of origin and the NE migrant's goal is to achieve lifetime earnings through permanent resettlement in the host country. This implies that they are willing to spend some time away from their family until they can reunite in the host country. Since the NELM migrants are target earners, leaving the family behind will lead them to work harder so that they can reach the earnings as fast as possible and then return. Considering the presence of a spouse in the host country, in contrast to NE, NELM theorizes that this leads to a higher probability of return since the spouse is a potential extra worker which contributes to reaching the target goal faster. Although the presence of children reduces the probability to return since they might reduce the woman's work effort. When it comes to other attachments such as country of birth, home ownership, citizenship, NELM does not theorize how it effects emigration, unless it means that the earnings target will be larger (Constant & Massey, 2002).

According to Cassarino (2004), both NE and NELM have several shortcomings. At first, the migrants and their motives to emigrate seem to be determined by financial or economic factors only and no attention is given to other factors that might be important, such as remittances and skills. Cassarino (2004) also states that both theories view the emigrant solely as "foreign-income bearers". Furthermore, NE and NELM does not make any reference to

where the migrants goes and since there is no assumption on the social, economic and political environment in the country of origin and Cassarino (2004) argues that the experiences in the two theories does not seem to be linked to each other. The theories give no explanation to how the individuals have planned and reshaped their strategies when emigration takes place and what role the family might have. Cassarino (2004) means that the hypothesis on the successful/failed migrant cannot fully explain the emigration experience. Instead, NE and NELM tend to isolate the migrant's decisions and strategies from their social and political environment, without relating them with conceptual factors in the country of origin. The Structural Approach to emigration gives further explanations, that it should not be seen only as an individual's decision; it might also be affected by situational and structural factors in the country where the migrant intends to go.

The structural approach to emigration is focused on the extent to which they may or may not have an impact on their origin societies once emigration takes place. This theory shows, just like NELM, that the financial and economic resources brought back to the country of origin are essential when it comes to the decision of leaving the host country. Whether the migrant have succeeded or failed abroad is studied by correlating the situation of the economy and society in the country of origin with the expectations of the person emigrating. Situational or contextual factors in origin countries need to be taken into account as a prerequisite to determine whether an emigration is a success or a failure. Emigration no longer viewed as being exclusively affected by the migration experience of the individual in host countries.

The structural approach has been questioned by other scholars such as transnationalism and social network theory (Cassarino, 2004). Transnationalism theory highlights the importance of social and economic links between migrant's host and origin countries. Further, the return is not necessarily permanent. It occurs once enough financial resources and benefits are gathered to sustain one's household and when conditions in the home country are favorable. The motivation for leaving the host country would be strong attachments to home and household since family ties are crucial. Similar, according to the social network theory, emigrants are viewed as bearers of palpable and impalpable resources. The migrants also have strong ties with their former places of settlement in other countries. Return to the country of origin is secured and sustained by cross-border networks of social and economic relationships that convey information. Emigration only constitutes a first step towards completion of one's migration project. The motivation for leaving the host country is embedded and shaped by

social, economic and institutional opportunities at home as well by relevance of own resources (ibid., 2004).

3.2 Research review

Emigration is closely related to the degree of integration in the host country and integration could be distinguished between social integration (partner, children) and economic integration (for instance employment and house ownership) (Heckmann, 2005). Usually, a negative relationship between integration and emigration is assumed. The greater the degree of integration, the less likely immigrants are to leave. However, recent studies indicate that a positive relationship might exist as well; immigrants that are economic better integrated into the host society may also be more willing to leave (de Haas & Fokkema 2011; Anniste & Tammaru 2014).

3.2.1 The negative relationship between integration and emigration

One of the key indicators of integration in the host country is whether an immigrant forms a union with a native, as marriage is an important aspect of social integration (Koelet & de Valk, 2013). The integrative benefits of intermarriage include, for example, that the immigrant tends to learn the host country language and that he or she might be helped to establish a position in the labour market (Dribe & Lundh, 2008). Consequently, migrants who marry or start a co-residential union with a native tend to be more willing to stay. In a Swedish context, Nekby's (2006) study on emigration propensities using longitudinal data from Swedish administrative registers show that marriage among immigrants in Sweden reduces the probability for emigration. Bijwaard & Wang (2013) examine family formation on the hazard of return migration among foreign students in the Netherlands by using panel data covering the years 1999–2007. They found that students who find a native partner are much less prone to leave, although this was not significant for students from EU-15 countries. Similar results have been found in other studies. Bijwaard & Wang (2013) found that migrants who find a native partner in the host country are less likely to return to the country of origin. In Kleinepiper et al.'s, (2015) study on Polish migrants in the Netherlands the authors showed that those who were in a union with a partner from the Netherlands were less likely to return to Poland. Also in Denmark, immigrants being married to a Danish citizen have a significantly lower propensity to leave Denmark compared to if the spouse is from another country (Jensen & Pedersen, 2007).

Childbearing and its effect on internal migration has been examined in numerous of studies, a few examples include White, et al. (1995) and Courgeau (1985). The general results are that a growing family size reduces the chances of couples to make job-related long distance moves. The major reason to this seems to be that the economic and psychological costs of moving from one region to another rises as the family grows, especially when some children are of school age. Similar mechanism could be found for international migration. In a paper by Dustmann (2003), the author explores reasons for international return migrations which are motivated by immigrant's concern about their children. The findings are that children in the family clearly inhibit return migration which are explained by the fear that migration might disrupt children's education. Similar findings have been made in other studies. Kleinepiper, et al. (2015) show that having children in the host country decreases the likelihood of return migration which is also the case when Bijwaard & Doeselaar (2014) examines the impact that marital changes can have on return migration. Also Dustmann (1994) and Steiner & Velling (1994) report that having young children meant an increased intended duration of stay of migrant workers in Germany. In Jensen & Pedersen's (2007) study on emigration from Denmark, the authors included a number of variables to capture the effects from family background. The results showed that the presence of children was of importance when it comes to the probability to stay in Denmark. Lower propensities to emigrate in the presence of children often are explained by that children raise the cost of migration, as shown in Klinthäll (1999). On the other hand, according to Long (1972) mobility is expected to be higher for individuals with children in pre-school ages.

While intermarriage and the presence of children is an important indicator of integration, research on emigration has shown that the degree of skills and labour market integration plays a major role in an immigrant's decision about whether to stay or not. In general, having a full-time job has a negative effect on emigration, and unemployed migrants (that is, those who failed to integrate economically) are more likely to leave the host country. More recent studies carried out in Denmark and the Netherlands also indicates that being integrated in the host country's labour market increases the duration of stay. Jensen & Pedersen (2007) found that, using a logit model on immigrants who arrived to Denmark between the years 1986–1995, a full time job had a negative effect on emigration and vice versa. The results of a paper by Bijwaard, et al. (2014) that focuses on labour market dynamics among immigrants in the Netherlands, indicates that those who fail to integrate economically are more likely to return to their country of origin.

The emigrants have often been found to be less successful economically than those who stay. In a study carried out by Borjas (1989) on scientists and engineers indicates that those who emigrate were less successful economically than those who remained in the host country. The same pattern of negative selectivity was found by Massey (1987) among unskilled Mexican migrants in the U.S. Likewise, in a study on Mexican migrants, Lindstrom & Massey (1994) presented results that indicated that emigrants were negatively selected when it came to human capital. Duleep (1994) characterized the emigration of foreigners from the U.S. as “mistaken migration”, migrants who were disillusioned due to wrong expectations and returned home soon after they arrived to the U.S. Studying Mexican migrants in the U.S., DaVanzo & Morrison (1981) and Massey & Espinoza (1997) also found that return migration often could be seen as a way to correct a “failed migration”.

A study performed by Hammarstedt (2004) on emigration from Sweden during a five-year period in the 1990s show that among those immigrants who were relatively well integrated on the Swedish labour market, the ones with the lowest income level chooses to emigrate. Further, in those groups that were less integrated the probability to emigrate were the lowest for those who had the lowermost incomes. Edin, et al. (2000) used longitudinal data on immigration to Sweden 1970–1990 to examine the extent and pattern of immigrant emigration and its consequences for measures of assimilation. The authors found that if immigrants are going to leave Sweden, they are likely to leave within five years after their arrival. For both economic and political migrants, the least economically successful are the ones most likely to leave Sweden.

3.2.2 The positive relationship between integration and emigration

The assumption about the negative relationship between integration and emigration has in recent years been challenged. Studies on the mobility patterns of highly skilled workers and students who study abroad have provided evidence of a positive relationship between integration and emigration (Bijwaard, 2010; de Haas & Fokkema, 2011). For example, when examining the economic success among immigrants in the U.S., Jasso & Rosenzweig (1988) found that skilled immigrants were the most prone to emigrate. When studying the duration of stay in Germany, the findings of Gundels & Peters (2008) indicated that highly skilled are more likely to emigrate than those who are less skilled. Findlay, et al. (2012) gives the explanation that a new type of migrants has emerged, a group that are a highly mobile class of professionals whose skills are in high demand, and who are willing to pursue interesting

career challenges in different places. These highly skilled migrants are economically successful and are well integrated into the labour market of the host society but on the other hand, not necessarily well integrated from a social perspective. The opposite occurs for international students, a category that grows in many parts of the world (Findlay, et al., 2012). This group often is more social integrated which would make it easier to establish in the host country labour market. Studies that have been carried out on international students and emigration have showed that most of them return to their home countries after finishing their studies (Bijwaard 2010; Bijwaard & Wang 2013).

Thus, instead of seeing emigration as a corrective move due to failed integration, emigration could be seen as a strategy pursued by the most capable migrants who have few problems integrating into new environments, but who are spatially very mobile. This suggests, in line with NELM, that the migration project could be seen as a well-planned strategy rather than a failure. For example, Strömgen, et al. (2011) found that immigrants from less developed countries living in Sweden are much more willing to stay than migrants from highly industrialized countries. And this is despite the fact that the latter are better integrated in the Swedish labour market. Also in Ireland, returnees have been found to be more skilled than those who remained abroad (Barret & Trace, 1998). Klinthäll (1999) found that the emigration of immigrants in Sweden originating from the U.S. and Italy were positive selected, high incomes were associated with high risk of returning whereas low incomes proved to be insignificant for the relative risk of emigration. Although, Klinthäll (1999) also states that migrants from different countries have different motives to move which in turn may affect the propensity to return the home country.

3.2.3 Migration and family transitions

As described above, the main focus in the economic literature on emigration has been on the behavior of labour migrants. Many migrants have non-labour reasons to migrate and their migration behavior might be different from labour migrants (Bijwaard & Doeselaar, 2014). For those who are joining their spouse in a new country, the personal situation in the host country might be as an important factor in explaining a return to the country of origin as the economic situation. Family and lifestyle might thus have a major impact on emigration decisions rather than income opportunities in different countries (Gibson & McKenzie, 2011). Kleinepier, et al. (2015) shows that both work circumstances and family transitions influence emigration among young adult Polish immigrants in the Netherlands. The authors' states

further that migration decisions (both ways) are better understood when taking the family dimension into consideration. Similar, Constant & Massey (2003) found that it may not be a necessary condition with higher wages and better employment opportunities in the country of origin for the decision to emigrate. Instead, familial and cultural considerations could be important in the decision to return to the country of origin or to a third country.

Migration could be a stressful life event and often lead to an increasing risk of union dissolution (Boyle, et al. 2008; Flowerdew & Al-Hamad 2004). A migration is often made as an improvement for both persons in a relationship (Mincer, 1978), although the move could turn out to be more beneficial for one of the movers than the other. In Becker's (1991) economic approach to marriage, the couple will stay married when the net gains from being together are greater than those from not being together. If the migration means that the gains from marriage for the "tied" mover may change, it may result in a divorce. Divorce and union dissolution has been shown to be a determinant of out-migration, Bijwaard & Doeselaar (2014) for instance found, using administrative panel data on the population of recent immigrated family migrants in the Netherlands, that the decision to emigrate is highly influenced by changes in their marital status, especially concerning divorces. A study made by Statistics Sweden (2015) on the emigration of family migrants in Sweden also pointed out that having experienced a union dissolution means a higher propensity to emigrate compared to those who still were in a union. When studying internal labour migrants in China by using a survey panel data set, Zhao (2002) finds that spousal separation appears to be a central factor causing a return to the area of origin. However, Bijwaard & Doeselaar (2014) found that the end of marriage for migrants from EU-15 countries did not significantly increase the emigration.

4. Research questions and hypothesis

Since the motives for migration among individuals from the western EU countries are diverse (Benton & Petrovic, 2013), while the majority of EU migrants from Eastern European countries moving to Western Europe resembles the traditional labour market migration flows during the post-war period (Kahanec, 2013), the focus in this study is the emigration of individuals born in an EU-15 or Nordic country. Another reason to solely put attention on EU-15 and Nordic migrants is that these countries have had similar possibilities to move to Sweden since the Swedish accession to the Union in 1995. Most of the Eastern European

countries joined the union relatively recent and therefore have not had the same chances to use the free movement within the union.

As discussed above, integrating into the host society, socially and/or economically, can both have a positive and negative effect on emigration. The concept of integration is highly complex and it is important to be aware of the normative, contested and politicized nature of the topic (Fokkema and de Haas, 2011). Following Heckmann (2005), integration in this study is distinguished between economic and social integration.

By the means of administrative register data and with focus on family ties, the aim of this study is to examine who is most likely to emigrate and whether the outcome differs depending on the social and economic attachment to Sweden. Further, this study will also look into if there are any differences in emigration propensities between men and women. The research questions are the following:

How does economic integration in Sweden shape differences in the emigration for individuals from different regions of origin?

The literature on highly skilled movers may be linked to the discussion of the “free movers” in the EU. This group has been described as privileged migrants who are highly skilled individuals from well-educated middle or upper class families who have opportunities to study or work abroad (Favell, 2008). This implies that migrants from the EU-15 and Nordic countries are expected to see their stay abroad as a part of a life-cycle plan and leaves the host country when their “goals” have been reached. The migration is thus rather seen as temporary than permanent. Economic integration is expected to have a positive relationship with out-migration. The emigrants will be positively selected when it comes to employment, earnings and education. However, being unemployed is also expected to elevate the propensity for emigration (Constant & Massey, 2002).

What significance do children have for the propensity to emigrate? Among those who have children, are there any differences in out-migration depending whether the migrant have a partner or not (i.e. due to a union dissolution)? Further, how do children born in Sweden affect the propensity to emigrate?

In line with previous research on the presence of having children in the host country (Kleinepier, et al. 2015; Dustmann 2003), this is expected to inhibit emigration. Although, the

literature and the presence of children does not always consider whether the child is born in the country of origin or in the host country. In this study, information about the child's birth country is included to be able to determine if there are any differences depending if the last child is foreign born or Swedish-born. The expected outcome is that having Swedish-born children will reduce the propensity to emigrate while foreign born will enhance it.

5. Data and method

The data used are derived from several of Statistics Sweden's administrative registers; the Total Population Register (Registret över Totalbefolkningen, RTB), the Historical Population register (Historiska befolkningsregistret, HBR), Multigenerational register (Flergenerationsregistret, FLERGEN) and the database STATIV. STATIV is a database that includes information from other registers at Statistics Sweden, for instance the Register on employment statistics (RAMS) and the Income- and Tax register (IoT). The population under study consists of those individuals who are born in one of the EU-15 member states or Iceland and Norway. Further, the studied group was aged 18 or older when entering Sweden for the first time during the period 1998–2007. Another prerequisite is that they were registered in Sweden at the end of their year of entry. The individuals are followed from their date of entry either to the date of first emigration, death or at the end of the observation window which is at the end of 2013. In total, the population under study includes 93,376 migrants of which 40,122 are women and 53,254 are men. See section 6.1.1 for further descriptive statistics.

5.1 Variables

5.1.1 Outcome variable

Information about an individual leaving the country is derived from registers. The outcome variable is the first emigration. To be registered as an emigrant, one should have the intention to settle abroad for at least 12 months and this information is self-reported. See section 5.2 below for more information about emigration regulations and registrations.

5.1.2 Independent variables

To be registered as an immigrant, one should have the intention to stay in Sweden for at least 12 months and have the permission to register in Sweden. Only persons who are registered are defined as immigrants. When registered as an immigrant, date of entry is also collected which in this study is the start of the observation period for each individual. Further, date of entry has been used to create *year of entry*.

Three *birth country groups* have been used; the Nordic countries, northwestern EU-15 countries and southern EU-15 countries⁴. The Nordic countries are categorized as a group due to the geographical proximity and countries outside of the Nordic countries have been divided into two groups, northwestern and southern EU-15 in order to try to capture the effects of recent economic developments in these countries.

Having a *partner* means that the migrant is either married or in a co-residential union with joint children. Those couples who are married are linked in the RTB while those with joint children are connected via the child through FLERGEN. Next, HBR has been used to see whether the two individuals are registered at the same address or not and, if that is the case, they are categorized as in a union. In this study, only opposite-sex couples are included.

The category *no partner* means either being single and never had a partner in Sweden or there could have been a divorce in a married couple. Having no partner but children includes mainly those migrants who have divorced from their spouse or separated from their co-residential partner in Sweden but it could also be so that the individual immigrated without the partner or that the partner has left Sweden. Since the registers only identifies couples that either are married or have joint child(ren), the former group in this category also certainly consist to a somewhat large extent of those who are in a co-residential relationship but without having a joint child. The variable *country of birth of last child* is time-varying, both when it comes to whether the last child is born in Sweden or in another country.

Activity shows whether the individual is employed, unemployed, not gainfully employed but with some income, student or aged 65 years or older. This information is derived from the STATIV database and is measured annually. Being employed means that the migrant's income and work-related benefits are larger than the current year's price basic amount⁵. Being unemployed is measured by having an income and work-related benefits that are lower than the current year's price basic amount and having an income from unemployment benefit funds/unemployment insurance. Being a student means that the individual has been registered in some form of education during the autumn semester or having an income due to studies. The category not gainfully employed but with some income indicates that the individual is not employed but with a statement of income from an employer or income from entrepreneurial

⁴ See appendix for list of countries

⁵ Price basic amount is calculated based on changes in the general price level (Consumer Price Index) and are established for the entire calendar year. See table 9 in the appendix for each year's value

activity during the year. Since the variable *Activity* is measured annually there is no information for the year the event (emigration) has occurred. Therefore, for all individuals irrespective of there has been an emigration or not, the variable at year t is measured at December 31 of the year before.

Earnings consist of incomes from salary from work, work-related benefits, unemployment benefits/insurances, retirement pension and incomes due to studies. Earnings equal zero are categorized as “no income” while those who have an income in Sweden is divided in low, medium and high. This variable is also measured annually and as with *Activity*, the value of the variable is measured when being under the risk of emigration at the end of the previous year.

Information about the migrants’ *Education* is derived from Statistics Sweden’s register of education through the STATIV database. The level of educational is measured annually as the highest completed degree and are categorized as five categorical groups measuring completion of primary, secondary and high post-secondary less than three years and post-secondary three years or longer. A fifth group contains those where information about education is missing. The characteristic of those with missing information on education is a low duration of residence in Sweden. It is likely that these individuals have simply not been caught up by surveys aimed at gathering information about education. This variable is measured at the end of the year at year $t-1$.

To gain Swedish *citizenship* could be seen as an indicator of integration and a decision to stay in Sweden (Statistics Sweden, 2011). Information about and changes in citizenship are collected from HBR. If the individual has more than one citizenship, there is a list prioritization of which citizenship that are presented in the register since only one citizenship are presented. For those that have Swedish citizenship and citizenship in another country, the Swedish are shown in HBR.

Home ownership is measured annually from the STATIV database, which in turn collects information from Fastighetstaxeringsregistret. The variable is categorized into three groups; either the immigrant owns the apartment or house he or she lives in or it could be rented. Not all individuals have information on the type of dwelling they live in, these are coded as missing and are mostly due to that they are registered on a house that are missing in

Fastighetstaxeringsregistret. Something that partly is a result due to late notifications to the register. This variable is measured at t-1.

Type of municipality is also derived from STATIV and therefore measured annually. Where the immigrants live are categorized into three broad groups; main cities (Stockholm, Göteborg and Malmö) which also includes surrounding suburbs; minor cities (municipalities with 50 000-200 000 inhabitants) and their suburbs; and the rest of municipalities have been grouped into a third group labeled “other”. As with the other variables that are measured annually, type of municipality is measured at t-1.

5.2 Regulations and registrations of immigration and emigration

It is mandatory for all immigrants who intend to stay in Sweden for twelve months or more to register their stay at the Swedish Tax Agency (information that is used in RTB). Citizens of a country outside of EU/EEA⁶ have to apply for a residence permit at the Swedish Migration Agency before registration at the Tax Agency. Citizens of an EU/ EEA-country have the right to reside in Sweden if they are able to economically support themselves. Family members of citizens of EU/EEA member states also have the right to reside in Sweden and this also includes family members that are not EU/EEA citizens. Unlike citizens in countries outside the EU/EEA, EU/EEA citizens are not obliged to register their intended stay in Sweden with the Swedish Migration Agency. This also means that the reason for their intended stay is not registered, that is, there is no information whether the reason to move to Sweden was work, studies or family.

Those who leave Sweden are supposed to unregister from the national registration if the expected stay abroad is at least 12 months. However, not all emigrants inform the authorities of their intention to leave Sweden. In those cases where the authorities find out that a person is no longer living at the registered address or at another address in Sweden they are deregistered as an “administrative removal”. This accounts for about 3% of all the emigrations in this study. Since the exact date of departure is unknown in these cases, it was assumed that these migrants have left Sweden on the day they were administratively removed from the register. The issue of non-registered emigrations is a problem in many registry-based datasets. Therefore one might expect that overall emigration rates are even higher than

⁶ European Economic Area

estimated in this study. The inclusion of a rich set of control variables might prevent strong biases in the results however (cf. Kleinepiper, et al. 2015; Bijwaard & Doeselaar 2014).

An individual need to have the intention to settle for at least for 12 months to register as an immigrant in many of member states of the EU or EEA. Twelve months is the recommended definition to be used according to the Regulation of Demographic statistics (EU, 2013). Some countries register immigrations and emigrations based on other time limits; Austria, Denmark (European Commission/Eurostat, 2013) and the Netherlands (cf. Bijwaard, 2010) for instance uses a three month limit while in Norway, Finland and Iceland the corresponding time limit is 6 months (Nordic Council of Ministers, 2016).

The Nordic countries have an agreement regulated by law concerning the registration of moves between the countries (SFS 2015:268, 2015). This agreement means that when a person register as an immigrant, the authorities of the host country informs the authorities in the sending country that the individual have made a cross-border move. The sending country then automatically deregister the migrant. This means that a person could be registered in only one of the Nordic countries at a time and also improves the accuracy of registered moves between the Nordic countries. Although some discrepancies occur since statistics on immigration and emigration between the Nordic countries that are based on information from each country are not completely in accord (cf. Nordic Council of Ministers, 2014). There are various reasons why this information differs but the main reason is probably due to a delay when the countries report immigration and emigration to each other. If there is a delay in the registration of a migration, there is a risk that the sending country does not have the time to include the information before the statistics for a specific year is published. Another reason could be if the migration is at the date of registration or the actual date of the migration (Statistics Sweden, 2013). According to the agreement, it is the date of registration in the receiving country that is supposed to be used in both sending and receiving countries (SFS 2015:268, 2015). Similar, but greater discrepancies have been reported on the migration between the member states of European Union (INE, 2013).

5.3 Data quality

If the emigration is not reported to the Swedish Tax Agency, it causes over-coverage in the administrative registers at Statistics Sweden and this have been reported to be a main quality risk for register-based studies (Statistics Sweden, 2015). Several studies on this matter indicate that RTB contains a significant number of individuals that no longer live in Sweden.

Many of these emigrants might not have any interest in reporting their move and many choose not to do it either. It could even be an advantage not to unregister and to keep the registration in Sweden (Statistics Sweden, 2013). During the period 1994–2004, different studies have shown that the over-coverage each year could be as many as 25 000-50 00 individuals each year (Statistics Sweden, 2010). In a later report, estimates suggest that as many as 57 000-74 000 individuals could be registered in Sweden while not living in the country (Statistics Sweden, 2014). Numbers which were confirmed by a more recent study based on a new methodology (Statistics Sweden, 2015). According to the latter, the largest estimated group assumed to have left the country without deregistering are individuals born in a country outside of Europe. However, persons born in a European country had the largest proportional increase of over-coverage during the 2000s. This applies especially from 2007 and onwards, rising up to 3% of the total European born population living in Sweden in 2010. The automatic deregistration between the Nordic countries could be an explanation to a somewhat lower over-coverage among the Nordic born population in Sweden, ranging from 1% to 2% during the 2000s⁷.

The fact that some of the countries in this study use different time limits for registration of immigration and emigration may cause higher emigration rates depending on which country the migration goes to. For instance, if an individual moves to Denmark for a working contract on three months, he or she will be registered as an emigrant in this study. While the same for a short-term move to Finland does not mean that there has been an emigration due to that one could reside for a longer period in Finland before you need to register as an immigrant.

5.3.1 Non-partnered in a co-residential relationship

Other limitations in the data set includes that the administrative data offers no opportunity to identify individuals in co-residential unions without children. In Sweden and many other EU countries, co-residential couples can be seen as almost equal to married couples nowadays. Marriage as an institution has become less important in young people's lives in Europe, and has instead being replaced by co-residential relationships to a larger extent than before (Mulder 2013; Sobotka & Toulemon 2008). A co-residential union without joint children are then incorrect classified as two single individuals and could imply that the number of couples in this study is underestimated. Although, once two individuals can be identified as being in a

⁷ Source: Statistics Sweden (2015), Statistics Sweden (2016c) and authors own calculations

union, it is possible to see when they started to live at the same property by matching their residential addresses in Historiska Befolkningsregistret (HBR). By doing so, it shows that among men, nearly 50% of those who immigrated without a partner and, according to the registers, formed a family in Sweden after their immigration to Sweden actually already were in a co-residential relationship when moving to Sweden. The share of single women who were living at the same address as their future spouse or parent to their mutual child was about 56%. This is most common for those immigrants who formed a union with a Swedish born, 50% of single immigrants who either married or had a child after their entry also lived with their partner upon entry. The corresponding for immigrants that forms a union with another foreign born is 25%.

5.4 Method

In this study, survival analysis is used for determining the risk of emigration depending on the variables mentioned in section 5.1. This method is widely used in demographic research and the longitudinal data used here is very suitable for this method (Hoem 1993 and Allison 1995). Survival analysis takes into consideration whether or not individuals experience a certain event, such as emigration or union dissolution. The method also accounts for the time until experiencing the event. Further, the population that are being studied are under risk of experiencing the event, in this case, to emigrate. Survival analysis involves the consideration of the time between a fixed starting point (immigration to Sweden) and a terminating event (emigration). The most important feature that distinguishes such data from other types is that the event will not necessarily have occurred in all individuals by the time of the study ends, and for these individuals, their full survival times are unknown. For instance, if you study duration of residence in a country after immigration, it is common for a proportion of individuals to remain in the country and the end of the observation window, and for these migrants, we know only a lower limit on their actual time to event.

The most commonly used multivariate approach for analyzing survival time data in medical research (Bradburn, et al., 2003), but also widely used in other sciences (Allison, 1995), is the Cox proportional hazards model. The Cox model describes the relation between the event of occurrence, as expressed by the hazard function and a set of covariates. The hazard is the instant event probability at a given time, given that the emigration has not yet occurred and the Cox model is written as:

$$h(t) = \lambda_0(t) \times \exp\{\beta_1 x_1 + \beta_2 x_2 + \dots + \beta_p x_p\}$$

where the hazard function $h(t)$ is dependent on (or determined by) a set of p covariates (x_1, x_2, \dots, x_p) , whose impact is measured by the size of the respective coefficients $(\beta_1, \beta_2, \dots, \beta_p)$. The term λ_0 is the baseline hazard, and it is the value of the hazard if all the x_i are equal to zero. The hazard may vary over time and is expressed by the 't' in h_t . One advantage with using a proportional hazard model is that the hazard function is estimated non-parametrically and there is no need to specify any particular distribution to represent survival times. (Allison, 1995).

Cox model can also easily be used with covariates that changes value over the course of observation. For a model with one time-constant covariate and one time-varying covariate, we only need to add (t) after the x s that are time-varying. A model with one time-constant covariate and one time-varying covariate is given by the following equation:

$$h_t(t) = \lambda(t) + \beta_1 x_{i1} + \beta_2 x_{i2}(t)$$

The equation shows that the hazard at time t depends on the value of x_1 and on the value of x_2 at time t .

The Cox proportional hazard model gives us hazard ratios (relative risks). The interpretation of hazard ratios is almost like odds ratios in logistic regression, the infinitesimal intensity of emigration is modeled, given that an individual has not yet emigrated.

There are three tests that are commonly used to test the hypothesis that a covariate has no effect. These are the Wald test, the score test and the likelihood ratio (LR) test and are commonly used to evaluate the difference between nested models (Allison, 1995). One model is considered nested in another if the first model can be generated by imposing restrictions on the parameters of the second. Most often, the restriction is that the parameter is equal to zero. In a regression model restricting parameters to zero is accomplished by removing the predictor variables from the model. The three tests consider whether constraining these parameters to zero significantly reduces the fit of the model. To perform an LR test, one must estimate both of the models one wishes to compare whereas one has a set of parameters, and a second model with all of the parameters from the first, plus one or more other variables. The LR test compares the log likelihoods of the two models and tests whether this difference is statistically significant. If the difference is statistically significant, then the less restrictive

model (the one with more variables) is said to fit the data significantly better than the more restricted model (UCLA: Statistical Consulting group, 2016).

6. Results

6.1 Descriptive statistics

6.1.1 Immigrants

Table 1 provides some descriptive statistics of the immigrants by region of birth and sex. The largest group of migrants is born in the Nordic countries, about 55% of the population under study. Migrants born in the western EU-15 constitutes about 37% while the rest 8% are born in the southern EU-15 countries. For all the three birth country groups, the majority of the immigrants were between 25 and 34 years old when entering Sweden. This especially applies to migrants born in the southern EU-15 countries (60%). Otherwise there are similar age patterns regardless region of birth except that it is slightly more common for Nordic born migrants to be 54 years old or older at entry than the other two groups. Considering family status at entry, it is most common to enter Sweden without being married or having a co-residential partner with joint children, about 70% of the Nordic born men and women, two thirds of the Western born men and 57% of the women while almost 8 of 10 southern born men were single when entering and correspondingly 72% of the women. Finally, there is an increasing inflow of migrants over the studied years.

Table 1. Distribution of immigrants by region of birth and sex

	Nordic countries		Northwestern EU-15		Southern EU-15	
	Men	Women	Men	Women	Men	Women
Age at immigration						
18-24	21%	33%	16%	18%	22%	21%
25-34	40%	35%	45%	43%	57%	58%
35-44	17%	13%	24%	22%	14%	14%
45-54	9%	8%	9%	8%	4%	3%
54>	12%	11%	6%	8%	3%	4%
	100%	100%	100%	100%	100%	100%
Family status at immigration						
Partner ^a	29%	29%	36%	43%	21%	28%
No partner	71%	71%	64%	57%	79%	72%
	100%	100%	100%	100%	100%	100%
Year of immigration						
1998	5%	7%	7%	7%	7%	7%
1999	6%	8%	7%	7%	6%	8%
2000	9%	10%	9%	9%	10%	8%
2001	10%	10%	10%	10%	11%	11%
2002	12%	11%	10%	9%	9%	10%
2003	12%	11%	9%	9%	8%	9%
2004	10%	10%	9%	9%	8%	9%
2005	11%	10%	10%	10%	9%	10%
2006	12%	11%	14%	14%	15%	14%
2007	12%	11%	15%	17%	17%	16%
	100%	100%	100%	100%	100%	100%
N	27 146	23 555	21 182	13 558	4 926	3 009

^a The partner does not necessarily entered Sweden at the same time or at all. Source: HBR, FLERGEN and RTB 1998–2007, author's computation using SAS 9.4

Table 2 presents whether the migrants had children or not at immigration and in what extent they got children in Sweden five years after they migrated to Sweden. It was very uncommon for migrants aged 18 to 24 upon entry to be accompanied by children. Migrants aged 35 to 34 when entering Sweden were those who at the highest degree came to Sweden and had their children with them. It was most common among women and men born in a northwestern EU-15 country, 43 respectively 37 percent had at least one foreign-born child at immigration. Migrants aged 25-34 at immigration were most prone to have children born after they moved to Sweden, irrespective their region of origin. It was slightly less common among Southern EU-15 migrants in these ages that did not have children upon entry to give birth after entry. Among those who did have children at entry, it was between 50 and 60 percent of the women and men from the different birth regions that had children after their move to Sweden.

Table 2. Non-emigrants five years after immigration by age at immigration, presence of children at immigration and after immigration, region of birth and sex, 1998–2011

	Nordic countries		Northwestern EU-15		Southern EU-15	
	Men	Women	Men	Women	Men	Women
Aged 18-24 at immigration						
No children at immigration	97%	97%	99%	97%	100%	98%
<i>Swedish-born after immigration</i>	22%	29%	15%	21%	12%	16%
Children at immigration	3%	3%	1%	3%	0%	2%
<i>Swedish-born after immigration</i>	15%	19%	11%	15%	8%	7%
N	1 587	2 618	1 899	1 470	632	413
Aged 25-34 at immigration						
No children at immigration	85%	81%	89%	85%	92%	93%
<i>Swedish-born after immigration</i>	38%	46%	36%	40%	28%	34%
Children at immigration	15%	19%	11%	15%	8%	7%
<i>Swedish-born after immigration</i>	58%	54%	58%	55%	59%	56%
N	4 271	3 656	5 822	3 513	1 761	1 126
Aged 35-44 at immigration						
No children at immigration	73%	68%	63%	57%	74%	74%
<i>Swedish-born after immigration</i>	19%	16%	25%	14%	25%	24%
Children at immigration	27%	32%	37%	43%	26%	26%
<i>Swedish-born after immigration</i>	25%	15%	29%	15%	32%	19%
N	2 299	1 506	3 139	1 814	435	285
Aged 45 or older at immigration						
No children at immigration	93%	94%	82%	89%	76%	88%
<i>Swedish-born after immigration</i>	2%	0%	2%	0%	4%	1%
Children at immigration	7%	6%	18%	11%	24%	12%
<i>Swedish-born after immigration</i>	4%	0%	8%	0%	2%	0%
N	3 361	2 688	2 202	1 639	217	157

Source: HBR, FLERGEN and RTB 1998–2011, author's computation using SAS 9.4

6.1.3 Emigrants

Table 3 provides some insight into the emigration dynamics and considers the share of emigrants and length of stay for the three regions of birth. The table presents emigration rates for all immigrants that entered Sweden and the emigration could have taken place during the period 1998 to 2013. Most prone to leave are Nordic born men and women where about two thirds of all migrants from the neighboring Nordic countries have left Sweden before the studied period ended in 2013. The total share of emigrants among those born outside the Nordic countries is about 50%. Hence, many of the immigrants, having arrived during the last 3 years of the observation window, are expected to exhibit a high proportion of incomplete migration spells. However, among those who leaves, Nordic born tend to leave faster, about 20% have left before they have spent one year in Sweden while the percentage for the other

groups varies between 6% and 9%. For all groups, out-migration is most frequent between 2-4 years after entry.

Table 3. Number of emigrants and non-emigrants, share of emigrants and share of emigrants by years since immigration, by region of birth and sex, 1998–2013

	Nordic countries		Northwestern EU-15		Southern EU-15	
	Men	Women	Men	Women	Men	Women
N of emigrants	18 159	15 254	10 594	6 665	2 696	1 489
N of non-emigrants	8 987	8 301	10 588	6 893	2 230	1 520
% of emigrants	67%	65%	50%	49%	55%	49%
% emigrants by years since immigration						
< 12 months	21%	23%	8%	9%	7%	6%
1-2 years	25%	25%	19%	19%	17%	17%
2-4 years	27%	27%	32%	32%	28%	28%
4-6 years	14%	13%	21%	20%	23%	24%
> 6 years	13%	13%	20%	20%	26%	25%
Sum	100%	100%	100%	100%	100%	100%

Source: HBR and RTB 1998–2013, author's computation using SAS 9.4

6.2 Multivariate results

One of the aims of this study is to examine how structural integration in Sweden affects the propensity to emigrate. A number of socioeconomic variables have been added to a multivariate model that estimates the relative risk of emigration for women and men born in the Nordic, northwestern EU-15 and southern EU-15 countries. The result of these variables is presented in table 4. The covariate *Activity* are measured with five categories and compared to being employed, not having a job clearly increases the risk to leave Sweden. The results are somewhat similar for the three groups of region of birth while being unemployed seem to have a stronger effect on the propensity to emigrate for men than for women. Students from the Nordic countries are the most prone group to emigrate with an emigration risk twice as high as those individuals that are employed. *Earnings* measure the level of income and individuals that does not have an income are the most prone to leave the country. This especially applies to women and men from southern EU-15 countries. While having a low income level means a lower propensity to emigrate for Nordic men, the other groups have elevated emigration risks if they have a low income. Being in the top of the income scale generally means a lower likelihood to emigrate. Individuals whose *educational level* is primary are showed to be less prone to emigrate than those who have a short post-secondary education. This applies especially to women and men from the southern EU-15 countries that have about half of the risk of the reference group. Migrants that are high educated, that is a post-secondary education longer than three years have more often a higher likelihood to

emigrate. This effect is somewhat stronger for men than for women. One reason for high emigration propensities for those where information is missing on education and earnings might depend on that some of them may already have deregistered or it might indicate that an emigration has already occurred. The likelihood to leave Sweden is decreasing with age. The older the migrants were at immigration, the lower is the propensity to leave, and this applies to all groups. Being a *citizen* in Sweden clearly means that the likelihood to leave is lower compared to not being a citizen. Further, the multivariate model shows that living in a rental apartment or similar gives an increasing propensity to leave compared to if you own your house or apartment. The effect of not owning your home on emigration seems to be clearest for women and men born in the Nordic countries. Compared to be living in the main cities of Sweden; Stockholm, Göteborg and Malmö, living in of the minor cities or another municipality lower the likelihood of leaving. For women and men from the Nordic countries, the risk of emigration is about 90 or 80 percent of the reference group while migrants that are born in a northwestern EU-15 country and do not live in one of the main or major cities, the risk is about 60 and 50 percent of the reference group for men and women. Concerning year of entry, the propensity to leave is increasing the later the migrant entered Sweden but there are some differences depending on region of birth. For migrants born in the southern countries of the EU-15 the risk to emigrate is higher the later they moved to Sweden compared to the other groups while Nordic born women and men does not have as a sharp rise as the latter.

To be able to analyze the effect on having a partner or not, table 5 presents a multivariate model with the relative risk to emigrate depending on the migrants' family situation; being either single, single due to union dissolution in Sweden, having a partner were the partner is Swedish-born or being partnered with another migrant. For Nordic born migrants, compared to having a Swedish-born partner, being single is associated with a strong propensity to leave Sweden, even stronger than those who are single due to a union dissolution in Sweden. For women born in a southern EU-15 country, there is no significant difference for emigration among those who had a union dissolution in Sweden compared to those who have a Swedish-born partner. Having a partner but with another migrant also means an increased likelihood to emigrate, although not as high as being non-partnered. The situation is similar for migrants born in the two other regions. For migrants from northwestern EU-15 countries, the highest risk to leave is found for those that have a partner that also are foreign born.

Table 4. Cox PH regression results estimating the relative risk of emigration by socio-economic integration outcomes, by region of birth and sex. 1998-2013

		Nordic countries			Northwestern EU-15			Southern EU-15					
		Men	Sig.	Women	Men	Sig.	Women	Men	Sig.	Women	Sig.		
Activity	Employed (ref.)	1.00		1.00	1.00		1.00	1.00		1.00			
	Unemployed	1.50	***	1.43	***	1.64	***	1.60	***	1.68	***	1.33	*
	Student	2.29	***	2.26	***	1.87	***	1.67	***	1.94	***	1.21	
	Aged 65 or older	0.35	***	0.33	***	0.27	***	0.40	***	0.31	***	0.29	**
	Not gainfully employed. some income	2.34	***	3.29	***	3.31	***	3.35	***	5.87	***	3.97	***
Earnings	Missing	0.96		1.52	***	1.62	***	1.87	***	2.29	***	2.68	***
	Low	0.75	***	1.09	*	1.31	**	1.32	**	1.00		1.38	*
	Medium (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	High	0.84	**	0.90	**	0.71	***	0.73	***	0.84		0.77	
Education	Primary	0.90	**	0.91	*	0.80	***	0.63	***	0.57	***	0.51	***
	Secondary	1.03		0.85	***	0.78	***	0.79	***	0.60	***	0.83	
	Post-secondary < 3 years (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	Post-secondary 3 > years	1.38	***	0.98		1.47	***	1.19	***	1.13	*	1.00	***
	Missing	3.41	***	3.44	***	3.18	***	2.96	***	2.12	***	2.16	***
Age at entry	18-24	1.33	***	1.09	***	1.03		0.83	***	0.95		0.87	*
	25-34 (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	35-44	0.76	***	0.79	***	1.13	***	1.10	**	0.89	*	0.76	**
	45-54	0.62	***	0.56	***	1.00		0.80	***	0.56	***	0.46	***
	55 or older	0.65	***	0.54	***	0.77	**	0.57	***	1.00		0.48	**
Citizen	Swedish citizen (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	Other citizenship	3.52	***	3.61	***	2.69	***	3.01	***	3.42	***	2.37	***
Home ownership	Home owned (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	Home not owned	2.39	***	2.30	***	1.91	***	1.71	***	1.74	***	1.90	***
	Missing	1.42	***	1.28	**	1.05		0.90		1.10		1.28	**
Municipality	Main cities (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	Minor cities	0.93	***	0.97		0.91	***	0.76	***	1.06		1.10	
	Other	0.94	**	0.83	***	0.58	***	0.46	***	1.00		1.03	
Year of entry	1998 (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
	1999	0.98		1.00		1.05		1.18	**	1.45	***	1.05	
	2000	1.03		1.16	***	1.23	***	1.23	***	1.47	***	1.14	
	2001	1.13	**	1.39	***	1.69	***	1.40	***	1.96	***	1.27	**
	2002	1.15	***	1.42	***	1.53	***	1.42	***	1.73	***	1.55	***
	2003	1.20	***	1.47	***	1.75	***	1.62	***	2.49	***	2.36	***
	2004	1.29	***	1.52	***	1.95	***	1.71	***	2.49	***	1.61	***
	2005	1.25	***	1.31	***	2.09	***	1.73	***	1.90	***	2.00	***
	2006	1.30	***	1.39	***	1.86	***	1.82	***	2.55	***	2.03	***
	2007	1.58	***	1.58	***	2.34	***	2.07	***	2.50	***	2.44	***
-2 LOG L (with covariates)		403 846		335 752		229 237		138 263		49 589		26 350	

* p< 0,1, ** p<0,05, ***p<0,01. Source: HBR, STATIV 1998–2013 and RTB 1998–2013, author's computation using SAS 9.4

Table 5. Cox PH regression results estimating the relative risks of emigration by family status, region of birth and sex. Risks relative to that the partner is born in Sweden. 1998-2013

	Nordic countries		Northwestern EU-15		Southern EU-15							
	Men	Sig.	Women	Sig.	Men	Sig.	Women	Sig.				
No partner	8.35	***	7.35	***	4.62	***	4.41	***	3.64	***	3.54	***
No partner due to union dissolution in Sweden	2.34	***	1.69	***	1.61	***	1.44	***	1.54	***	1.00	
Partner not born in Sweden	5.60	***	4.29	***	5.34	***	4.47	***	3.13	***	2.74	***
Partner born in Sweden (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
-2 LOG L (with covariates)	399 431		331 535		226 722		136 989		49 262		26 107	

Standardized for activity, earnings, education, age at entry, citizenship, home ownership, municipality and year of entry. Source: HBR, FLERGEN, STATIV 1998–2013 and RTB 1998–2013, author’s computation using SAS 9.4. * p< 0,1, ** p<0,05, ***p<0,01

To further explore the impact of social integration in Sweden, information about whether the migrant has children or not is included in the model. In table 6 below, it is possible to see that the difference in emigration risks in having a partner or not almost disappears in the presence of children. Instead it is having children or not that have an effect on emigration propensities. For Nordic born, being single with no children is associated with a strong increase in emigration propensities, about 2.5 times higher than those women and men that are in a union with children. On the other hand, being single and having children lowers the risk for emigration, especially for women born in a northwest or southern EU-15 country, these migrants have almost half of the risk to emigrate compared to those in a family with children. A difference to when only studying whether in a union or not, being in a union with no children indicates an increased propensity to move in this model. This effect is somewhat higher for men than for women.

Table 6. Cox PH regression results estimating the relative risks of emigration by family status, region of birth and sex. Risks relative to migrants with a partner and children. 1998-2013

	Nordic countries		Northwestern EU-15		Southern EU-15							
	Men	Sig.	Women	Sig.	Men	Sig.	Women	Sig.				
No partner, no children	2.57	***	2.69	***	1.62	***	1.42	***	1.98	***	1.93	***
No partner, children	0.97		0.81	**	0.62	***	0.54	***	0.83	**	0.56	**
Partner, no children	1.79	***	1.55	***	1.42	***	1.23	***	1.49	***	1.43	***
Partner, children (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
-2 LOG L (with covariates)	401 456		333 304		228 720		138 055		49 431		26 240	

Standardized for activity, earnings, education, age at entry, citizenship, home ownership, municipality and year of entry. Source: HBR, FLERGEN, STATIV 1998–2013 and RTB 1998–2013, author’s computation using SAS 9.4. * p< 0,1, ** p<0,05, ***p<0,01.

When information about country of birth of the last born child is included, the group of immigrants being single without children still has an increased likelihood to emigrate. It is now possible to distinguish between those singles whose last born were born in either Sweden or in another country. The model presents a significant increased risk to emigrate if the last born child is foreign born for women and men born in the Nordic countries and for men from southern EU-15. For those singles whose last child were born in Sweden, the results indicate that there might be a lower propensity to move out for migrants born outside of the Nordic countries although the estimates do not significantly differ from the reference group. Estimates for Nordic born men indicate a higher propensity to leave if they are single and having at least one Swedish born child. Being in a union without children is, as in the previous model, linked to an elevated risk of out-migration. In the previous model, being in a union and having children gave a low risk and when adding birth country of the last child, there are differences between whether the child is born in Sweden or in another country. If the last child was born in another country, it is closely related with a higher risk of emigration compared to if the child was born in Sweden.

Table 7. Cox PH regression results estimating the relative risks of emigration by family status, region of birth and sex. Risks relative to migrants with a partner and last child born in Sweden. 1998-2013

	Nordic countries		Northwestern EU-15		Southern EU-15							
	Men	Sig.	Women	Sig.	Men	Sig.	Women	Sig.				
No partner, no children	3.86	***	3.98	***	2.55	**	2.19	**	2.52	***	2.58	***
No partner, last child foreign born	2.19	***	1.70	***	1.19		0.89		2.05	**	0.99	
No partner, last child Swedish born	1.13	*	0.94		0.87		0.78		0.82		0.66	
Partner, no children	2.74	***	2.34	***	2.38	***	2.02	***	1.97	***	1.96	***
Partner, last child foreign born	3.76	***	3.67	***	3.53	***	3.03	***	2.52	***	3.38	***
Partner, last child Swedish born (ref.)	1.00		1.00		1.00		1.00		1.00		1.00	
-2 LOG L (with covariates)	400 414		332 289		227 917		137 558		49 369		26 168	

Standardized for activity, earnings, education, age at entry, citizenship, home ownership, municipality and year of entry. Source: HBR, FLERGEN, STATIV 1998–2013 and RTB 1998–2013, author’s computation using SAS 9.4. * p< 0,1, ** p<0,05, ***p<0,01.

7. Discussion

It is essential to know more about family life decision in relation to patterns of settlement and emigration in order to gain a better understanding of the drivers of the growing intra-European migration faced by most EU countries. This study contributes to the literature by focusing on family ties and what effects the presence of children might have on the propensity to emigrate.

Emigration is an important feature of EU and Nordic migrants in Sweden, which is in sharp contrast with the low levels of overall return migration among many other immigrants groups in Sweden (for example asylum and family migrants) (Statistics Sweden, 2015). The high level of emigration is at least partly attributable to the free movement of persons across the EU and especially between the Nordic countries where there have not been any institutional hinders to move between the countries since the mid-1950s.

7.1 Structural integration

I began by estimating a model containing a set of socio-economic variables such as employment, earnings and education to try to outline if the migration to the country of origin is positive or negative associated with economic integration in Sweden. A negative

relationship would mean that the least economically successful would be the ones that are the most prone to emigrate and the migration would then be seen as a “corrective” move. Being integrated to the labour market would then inhibit emigration. If there is a positive relationship between integration and out-migration, the most successful migrants are expected to leave.

The result indicates that those who leave are the ones that are the least successful and the least economically integrated and which would be in line with many of the studies that have been made on emigration. The result applies to both women and men and migrants that are unemployed or not gainfully employed, have an increased risk for emigration. Having a low income or if there is no information also means that the propensity to leave is higher for the least successful migrants. The higher risk for leaving among migrants without information about income could be explained by that the migrant either might be working in another country, especially for Nordic born since it is common with border commuting between the Nordic countries, and therefore no income is registered in Sweden, or it is also possible that the migrant already has left Sweden but not informed the authorities. Another possible explanation could be that the migrant works in Sweden but on a foreign contract which then would mean that the salary is paid in another country. When the contract ends, the migrant will leave. Migrants with high income are less prone to emigrate and strengthen the impression that those who are well integrated are less likely to leave (as in Hammarstedt, 2004 and Edin et. al, 2000 among others). Owning your own house could mean that the migrant is well economic integrated and thus further facilitates a longer or permanent stay in Sweden (cf. Alba & Logan, 1992) and migrants doing so in this study have a considerably lower risk to emigrate. Results that could be interpreted that it is the highly skilled migrants that are leaving and thus be interpreted as a positive relationship between integration and return tendencies is that migrants with the highest level of education are the most prone to leave. Another aspect of emigration propensities that I wanted to study was if there are any differences between women and men. The results from the model with socio-economic variables implies that similar patterns in emigration occurs for both sexes something that might be due to that women and men migrate on the same premises.

In Borjas & Bratsberg (1996) empirical analysis on emigration they show that the skill composition of the emigrant flow depends on the type of selection that generated the immigrant in the first place. This means that the immigrant pool left behind in Sweden differs from the original immigrant flow. Since the first multivariate model implies that those who

are not employed or have a low income, that is the least skilled migrants, tend to leave. The ones that stay are thus those who are the most skilled and this would suggest that the net migration flow in this context is positively selected. Economic integration in Sweden does not, as hypothesized, have a positive relationship with out-migration. Instead, structural integration seems to make the migrants to stay in Sweden.

Although, the variables used in this study probably does not fully explain all socio-economic and contextual aspects of emigration. To do so, information such as wage differentials and unemployment rates, both in Sweden and in the country of origin (as for instance in Klinthäll, 1999) should be included.

7.2 Social integration

To be able to look closer to what impact family situation may have on emigration, I started with a model that included whether the migrant were single (never had a partner in Sweden), single due to union dissolution or had a partner either born in Sweden or in another country. As shown in many other studies about the propensity to emigrate, having a native partner in Sweden prolongs the duration of stay in the host country and constrains the propensity to emigrate. Being in a relationship with a Swedish-born partner could make the move to Sweden to be seen as permanent rather than temporary. It would also help the migrant to be able to better integrate economically and have help to establish themselves in the labour market (Dribe & Lundh, 2008). For all three birth country groups, those individuals who are single both those who have not had a partner in Sweden and those who experience a union dissolution in Sweden has an increased risk to emigrate. Single migrants tend to be younger than those who were in a union when they entered Sweden and their motive for coming to Sweden might be different and the cost for moving is lower when you do not have any family obligations (Klinthäll, 1999). Having experienced a union dissolution in Sweden does not have as strong effect on emigration propensities as the other group of singles something that might be due to that there still are some bonds to Sweden which make the migrant less prone to migrate.

If the partner is born in another country than Sweden means an increased risk to emigrate and indicates that migrants within the EU are a highly mobile group, with or without a partner. For women and men born in a northwestern EU-15 country, being in a union with a non-Swedish partner gives a higher likelihood for out-migration than those being single.

Something that is contrary to that having a partner would higher the costs to migrating and therefore compels it.

When adding information about whether the migrant have children or not shows that rather than being in a union or not, it becomes clear that children, and being in a union or not per se, plays an important role when it comes to the propensity to emigrate. Those with children are the least prone to migrate, irrespective of if the migrant has a partner or not. This could be explained by that those with family obligations are the least mobile (c.f. White, et al. 1995 and Kleinepier, et al. 2015). Being single and having children means, in most cases, that there has been a union dissolution. This result does not follow the literature that points to higher propensities to emigrate when there has been a union dissolution. The presence of children could have a stronger effect, making the immigrant less mobile or the former partner might still be in Sweden, making it more difficult for one of them to emigrate. Another possible explanation to that an end of a union does not significantly increase emigration is that the migrant is more prone to migrate anyway and the decision to stay or not does not depend on their family status. The out-migration could be more dependent on other factors, such as labour market participation. It could also be in that way that the migrant is well integrated in the Sweden and might be more independent and therefore the ‘need’ for emigration will be less upon a union dissolution. Much of the research on emigration that depends on changes in family life, such as marital status has been made on migrants born outside of EU and the Nordic countries, groups that might have a more family oriented reason for immigration and when that tie no longer exist there might be an increased risk of leaving the host country (Bijwaard & Doeselaar 2014 and Statistics Sweden 2015).

The presence of children showed to be of significant importance and this was further explored by expanding this category with whether the child is born in Sweden or abroad. According to this model, if the last born child were born in another country than Sweden, the propensity for both those migrants with and without a partner have a considerably increased risk to emigrate. Having lower emigration propensities when having children born in the host country is in line with the study carried out by Kleinepier, et al. (2015). Although it is more likely that those migrants that are in a relationship with a Swedish-born partner are included in this group rather than the groups where the last child has been born in another country, something that is associated with a lower risk to leave. However, according to these results, having Swedish born children clearly works as an indicator to stay for the parents. The term “anchor children” are often used in literature concerning immigrants in the U.S. intentions to stay when the child

becomes a U.S. citizen. In an EU context, citizenship in another EU member states does not have to be of importance due to the almost same rights within the union for all citizenships. Instead, one reason to stay on might be the fairly generous family- and child friendly policies in Sweden, making it easier, especially for mothers to combine work and family life. While parents from the Nordic countries have similar system in their country of origin, it might be of more importance for parents from the western and southern EU-15 countries where the combination of having a family and full-time work might be tough to accomplish.

The results from the models with information about family life and the presence of children implies that the ones who are most likely to stay in Sweden are those that are socially integrated by either having a Swedish partner or Swedish born children. The cost of having children is not visible for those with foreign-born children. One possible explanation could be that the child is in pre-school age and the parent(s) wishes that the child should go to school in the country of origin. Another aim of this thesis was to see if there were any differences in emigration behavior between women and men. As with the socio-economic model, the results from the models that measured social integration does not imply that there are any differences.

Administrative register data are used for the analyses in this thesis and in contrary to surveys, these registers do not suffer from important problems like recall error and small numbers. Although, the data entails some disadvantages. Residence and stay in Sweden has to be reported by the persons themselves making migration data always prone to underreporting. In contrast to the classic immigration waves, recent intra-EU migrants tend to be highly mobile, which makes their behavior more difficult to capture in population registers. First, registration in the population registers is obligatory only for those who intend to stay in Sweden for 12 months or more. Not every migrant will thus be recorded in the population register, implying that the number of short-term immigrants is underestimated. Furthermore, particularly deregistration from population registers when leaving Sweden is prone to underreporting, because there are no clear advantages of reporting to move. The registered time in the population data of Sweden is thus for some individuals larger than the true duration of stay in the country. These limitations indicate that various complementary data collections strategies could be needed to better capture the highly mobile EU-15 and Nordic migration flows. Despite the limitations, this thesis contributes to the knowledge on EU-15 and Nordic migrants residing in Sweden. The results show the importance of focusing on the family behavior of these migrants in order to also understand their migration behavior.

The link between family and migration decisions may be particularly important for migrants born in EU and Nordic countries as there are few to no institutional restrictions on mobility between the EU member states. It would be interesting to further explore the relationship between having children and emigration by including more information about the child. That could for example be whether the child is in school age and if the child lives with its mother or father after a union dissolution. Further study may also take a closer look on the characteristics of the former partner among those migrants that have experienced a union dissolution in Sweden.

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9. Appendix

Table 8. List of countries

Nordic countries	Northwestern EU-15	Southern EU-15
Denmark	Belgium	Greece
Finland	France	Italy
Iceland	Ireland	Portugal
Norway	Italy	Spain
	Luxembourg	
	The Netherlands	
	Great Britain	
	Germany	
	Austria	

Table 9. Price basic amount⁸

Year	Basic Amount, SEK
2013	44 500
2012	44 000
2011	42 800
2010	42 400
2009	42 800
2008	41 000
2007	40 300
2006	39 700
2005	39 400
2004	39 300
2003	38 600
2002	37 900
2001	36 900
2000	36 600
1999	36 400
1998	36 400

⁸ Rounded to the nearest hundred