Intermarriage and Immigrant Economic Assimilation in Sweden 2003

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Abstract

Intermarriage, or marital exogamy, is often seen as a key to immigrant assimilation. In this paper, intermarriage (especially between immigrants and natives) is studied for a large number of immigrant groups in Sweden using log-linear analysis and multinomial logistic regression. In total we analyze 39 different immigrant groups, and compare with natives. The data include about 850,000 married couples in Sweden 2003. Furthermore, the link between intermarriage and economic assimilation (employment and income) is analyzed for the working age population (20-59) using logistic regression. Theoretically we connect to a human capital framework in which marrying a native is assumed to increase the human capital accumulation of the individual immigrant and give access to a native network, which tends to increase his or her position in the labor market.

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Introduction

Intermarriage has for long been considered vital to immigrant assimilation. Many studies depict intermarriage as the key indicator of immigrant assimilation: A large proportion of inter-ethnic marriages is associated with a society where cultural and socioeconomic barriers have been overcome and immigrants have adopted the characteristics of the majority population. (Alba & Golden 1986; Lieberson & Waters 1988; Pagnini & Morgan 1990.) However, intermarriage is not only a measure of social and economic assimilation, but also a factor that potentially influences these kinds of assimilation. (Lieberson & Waters 1986; Kantarevic 2004)

In this paper we study the frequency of endogamous marriages and intermarriage (especially between immigrants and natives) for 39 immigrant groups in Sweden in 2003. Furthermore, we analyze the link between intermarriage and economic assimilation (employment and income). Theoretically we connect to human capital theory in which marrying a native is assumed to increase the human capital accumulation of the individual immigrant and give access to native networks, which tends to increase his or her position in the labor market.

While there has been a large number of studies on intermarriage dealing with the United States, and to some extent Canada and Australia, there has been much less attention to these issues in Europe. Most of Europe experienced net emigration to the New World (especially the United States) up to the Second World War, but have turned into net-immigration areas in the post-war period. Today, due to a long period of massive immigration, a large proportion of the European population is foreign born or children of foreigners (the second generation).

In many ways the immigrant population in Europe is very different from that of the United States, and the patterns of assimilation also differ a great deal. The higher prevalence of political refugees in the European immigration compared to the United States, especially the early 19th century immigrants, has implied greater difficulties to assimilate immigrants in European labor markets and societies in general. In addition, immigrants from developing countries seem to be more socially marginalized and excluded from the labor market in Europe than in the United States. These apparent differences in immigration patterns and immigrant assimilation between the United States and Europe make it difficult to draw conclusions about intermarriage and its impact on immigrant assimilation in Europe on the basis of American results. This calls for detailed European studies of intermarriage patterns and the relation, more generally, with immigrant assimilation.

In the 1940s and 1950s, Sweden received labor migrants from other Nordic or Western European countries, and in the 1960s also from the Balkans. Since the 1970s, this labor immigration has been gradually replaced by refugee immigration from Eastern European or non-European countries. In 2003, 12 percent of Sweden's population was foreign born and another 9 percent were second generation immigrants (Statistics Sweden 2004). About one third of the foreign born population was of Nordic origin, another third of European descent and the rest was from non-European countries. The largest single immigrant group was Finns, followed by immigrants from the former Yugoslavia. The third largest group came from Iraq and the fourth from Iran.

The degree of economic assimilation of immigrants in Sweden is much lower for non-European immigrants than for European immigrants, even when controlling for individual characteristics such as sex, age, civil status, educational level, time since immigration, etc.

(Gustafsson 2002; Bengtsson, Lundh & Scott 2005) Partly, this coincides with the fact that non-Europeans have been refugees while Europeans usually have entered as labor migrants, but variation in the integration in the labor market is large even among different refugee groups. The poor economic assimilation of recent non-European immigrant cohorts has been attributed to the low levels of language proficiency, lack of other sorts of 'Sweden-specific knowledge' and networks, and discrimination (Bengtsson, Lundh & Scott 2005). In relation to this, a marriage between an immigrant and a native may give the former access to Swedish networks of different kinds, a possibility to language training in the household, and insights of Swedish customs and labor market institutions.

This study deals with intermarriage and the connection between partner choice, on the one hand, and employment and earnings on the other, using the Swedish population registers of 2003. The data include about 850,000 married couples, where 7.5 percent of the husbands were foreign born. Only marriages that took place in Sweden from 1968 onwards and where both parties were alive and resident in Sweden in 2003 were included in the analysis.

We focus on two issues. Firstly, the pattern of endogamy among different immigrant groups and natives is analyzed using log-linear analysis and multinomial logistic regression. The data includes information on the country of birth of all individuals so that each married couple can be categorized as either endogamous or exogamous. We expect immigrants from Europe, in particular the Nordic countries, to be intermarried with natives to a higher extent than non-European immigrants. Europeans migrated to Sweden to work and have, on average, had a rather long period of adaptation. It is reasonable to assume that return migration among labor migrants is selected and negatively correlated to socioeconomic assimilation (see Klinthäll 2003). This, too, speaks in favor of a higher rate of intermarriage among Europeans. Non-European immigrants have entered more recently and are not fully integrated into the labor market yet. Furthermore, some sending regions are characterized by a familistic culture, where endogamous marriages are very important, and partner selection is thus influenced by traditional family values. (Wildsmith, Gutmann & Gratton 2003) It is likely that immigrants are carrier of such values which would influence marriages taking place in Sweden.

Secondly, the effect of intermarriage on the individual probability of having a job, and on the individual and household income is estimated using logistic regression and OLS. In the analysis, three types of marriages are distinguished: endogamous (both parties are natives or belong to the same immigrant group), exogamous unions between immigrant parties of different origin, and exogamous unions between an immigrant and a native. In the regressions, the standard human capital variables are controlled for (sex, age, age squared, civil status, educational level, time since immigration) together with variables reflecting the situation in the local labor market (unemployment rate, employment rate). In this part, it is expected that intermarriage, especially with natives, increases the individual's chances in the labor market, because such marriages typically provide a network leading into Swedish society and working life. A native spouse is also assumed to have a positive effect on the immigrant's human capital accumulation, in particular language proficiency.

Theory

While intermarriage as a social phenomenon has been analyzed by sociologists from different theoretical perspectives since the early 19th century, there are only few studies on the role of

intermarriage on immigrants' economic assimilation in the economic literature, which is the main focus of this paper.

Assimilation theory has long been the most influential way to explain immigrants' gradual integration and assimilation into the host society. It has successfully predicted the path of assimilation and marriage pattern of ethnic groups of European origin in the United States. (Alba & Golden 1986; Lieberson & Waters 1988; Pagnini & Morgan 1990.) According to the assimilation perspective, immigrants initially possess cultural and socioeconomic features that distinguish them from natives, which hinder interethnic marriages. The process of assimilation includes acculturation (e.g. learning the native language, adopting the cultural patterns of the native group) and structural assimilation (e.g. achieving socioeconomic status that is comparable to that of the native population). This process is completed when there are no perceived differences between the immigrant group and the native group. (Gordon 1964.) Assimilation weakens the ethnic attachment and increases contacts with potential partners from other groups, which increases the propensity of out-marriage. In this way, intermarriage is seen as the logic outcome of the assimilation process. (Lieberson & Waters 1988.)

The central variable of the assimilation model is time spent in the host society. Immigrants will be more likely to intermarry the longer they stay in the host society, but how long it would take until an immigrant group is totally assimilated depends on the cultural and socioeconomic differences compared to the majority population. Human capital generally has positive effects on intermarriage. Educated immigrants are more likely to move out of ethnic enclaves for further education or to get a job, they possess better language skills and may be willing to trade ethnic endogamy for educational endogamy. (Furtado 2006.)

Social stratification theorists have a similar perspective on assimilation, but argue that intermarriage is not only dependent on the willingness among different ethnic groups, there are also demographic and socioeconomic constraints on the community level. (Blau 1977.) The size of the minority group, availability of prospective partners and degree of racial, socioeconomic and residential heterogeneity influence the individual's likelihood of intermarriage. (Blau 1977; Blau, Blum and Schwarz 1982; Blau and Schwarz 1984; Blau, Beeker and Fitzpatrick 1984; South and Messner 1986).

If social stratification theory moderates the assimilation model, the segmented assimilation theory proposes an alternative that builds on the variation in the assimilation outcome. Some immigrant and descent groups in the United States have become quite similar to the native population, while others are marginalized and subject to discrimination. According to social stratification theorists, the way that new immigrants are incorporated in society is closely linked to the situation of previous immigrants with the same ethnicity. (Portes 1995; Zhou 1997; Skop 2001.) Thus, it could be expected that intermarriage varies between different ethnic groups. Furthermore, preference for endogamous marriages in some immigrant groups has been attributed to the influence of highly familistic cultures, for instance among Mexicans (Alvirez, Bean & Williams 1981; Hurtado 1995) and immigrants of Asian background (Hwang, Saenz & Aguirre 1987; Qian 1999; Liang & Naomi 1999; Qian, Blair & Ruf 2001).

The standard economic approach to intermarriage and immigrant socioeconomic assimilation (employment, occupation, income) is the human capital theory. Even though many studies on immigrant economic assimilation have been undertaken within this framework, few have included intermarriage.

The human capital perspective on immigrant economic assimilation is quite similar to the assimilation model. Upon the arrival in the host society, the human capital of the immigrant is partly devalued since formal and informal skills are invalid or hard to evaluate. Such skill deficiencies make the labor market careers of immigrants more difficult, but gradually a revaluation of the human capital can take place through improved host country language proficiency, job search activities and on the job training. (Chiswick 1978)

One crucial variable in the human capital approach to economic assimilation is time since immigration. The earnings of immigrants are in almost all studies positively correlated to the number of years since immigration. In which ways the immigrant's human capital is increased over time is seldom studied since data is lacking, with the exception of the improvements in language skills. (McManus 1985; Chiswick 1991; Chiswick and Miller 1994; Dustman 1994.)

The effects of ethnic relations on individual economic performance have also been studied. Borjas (1992, 1995, 1998) finds that the human capital of immigrant parents spill over to their children and that social, economic and cultural factors in an ethnic neighborhood has a similar effect. In this way, the assimilation period of the immigrant group is prolonged. Other studies find a positive effect of ethnic networks and neighborhoods on individual immigrants' labor market integration. (Battu, Mwake & Zenou 1984; Edin, Fredriksson & Åslund 2003.) For theoretical reasons, the access to native networks could be assumed to have a positive effect on immigrant economic assimilation, but this variable is rarely included in standard economic wage regressions.

The marriage premium literature has generally found a positive correlation between marital status and male earnings. This correlation has been explained in terms of self-selection and 'true' effects of marriage on individual productivity. For instance, the influence of the wife's education on husband's earning was found by Benham (1974) and Welch (1974). If there are spill-over effects of human capital within marriage, it is probable that intermarriage with a native would increase the human capital accumulation of the individual immigrant, e.g. language skills, adaptation to labor market and working life practice, and also give access to native networks which are important in job search activities. In both ways, intermarriage would improve the immigrant's position in the labor market. Thus, there are good theoretical reasons to include intermarriage in regressions on immigrant economic assimilation.

However, the results of such a study need to be analyzed with care because of problems with both causality and selection. When using cross sectional data, we are able to test whether there is a positive correlation between intermarriage with a native and individual immigrant earnings, but we do not know in which direction this influence goes. An immigrant with higher earnings might be more likely to marry a native, or, intermarriage with a native might increase human capital accumulation of the immigrant, thereby raising individual earnings. Influence may go in both directions, too. The most common way to come around the causality problem of cross sectional data has been to use panel data or longitudinal data. (Korenman & Newmark 1991; Breusch & Gray 2004; Maasouri, Millimet & Sarker 2005.)

Even when using panel data or longitudinal data, there is still the problem of endogeneity. If, for instance, immigrants who marry a native possess characteristics that make them more competitive in both the marriage market and labor market (e.g. age, education, language skills, etc.), then the population of intermarried immigrants would be a selected sub-sample of all married immigrants. (Kantarevic 2004.) In order to test the selection hypothesis, one or more individual features that influence the likelihood of intermarriage but not the labor

market outcomes must be identified. The validity and precision of such variables is of utmost importance for the possibility to evaluate the selection effect, and consequently, the intermarriage premium. Since we have no data that could be used to construct a variable that explains intermarriage but is exogenous in the employment and earnings equations, our interpretations of the results focus on the association between intermarriage and economic outcomes, while we can say little on the direction of causality.

Immigration to Sweden

Sweden has been subject to large-scale immigration since the Second World War. In total, almost 2.4 million people immigrated in the period 1946-2003, which should be related to a total population of 9 million people in 2003 (6.8 million in 1946). Even though the majority of immigrants have returned home, the immigrant population was over one million in December 2003, which was about 12 percent of the total population. [1]

-- Figure 1 about here

Post-war immigration to Sweden can be divided into two phases, based on its character, immigration policy and the economic context. The first phase covers the years from the end of the Second World War up to the early 1970s. Because the Swedish industry and infrastructure was not damaged during the war, Swedish companies quickly responded to the demand for Swedish products in the European market. The export led economic and industrial growth of the 1950s and 1960s increased the demand for labor in Sweden. The restrictive immigration policy of the inter-war period was abandoned, and during the 1950s and early 1960s immigration was in reality free for labor migrants.

-- Figure 2 about here

In 1946-1975 the vast majority of immigrants were labor migrants (including families), even though there were some refugees from communist countries. Most labor migrants came from the Nordic countries (about 60%), but there were also immigrants from the rest of Western Europe in the 1950s and from Yugoslavia, Greece and Turkey in the 1960s. (Lundh & Ohlsson 1999) Especially in the 1940s and 1950s, skilled foreign workers were recruited to the Swedish industry, but most labor migrants were unskilled, often even without experience of industrial work. The Fordistic organization of large scale industries made it possible to hire unskilled immigrant workers, with no or little language skills and no experience of Swedish organizations and working life. It has been shown that the labor migrants of these decades had no difficulties in finding a job. (Lundh & Ohlsson 1999) By 1970, the immigrant employment rate was higher than the native, and immigrants earned more than natives on average. (Wadensjö 1973; Ohlsson 1975; Bevelander 2000.)

The second phase of immigration started in the early 1970s and is still going on. During this period, the preconditions for labor immigration were different. The economic growth rate was generally lower than previously, the importance of the industrial sector for the total employment was declining gradually from the middle of the 1960s, and new jobs, mainly in the service sector, required Sweden-specific skills like language proficiency and/or higher

[1] The second generation of immigrants is not included in this figure. The number of children born in Sweden with one or two immigrant parents was about 0.8 million in 2003. The total number of people of foreign origin (including the second generation) was then 18 percent, or about one fifth of the total population.

education. In the early 1970s, the demand for foreign labor had already declined and the immigration policy had become more restrictive in relation to non-Nordic citizens. (Lundh & Ohlsson 1994, 1999) As a consequence, labor immigration from non-Nordic countries practically ceased in the 1970s. Nordic labor immigration, which was still free, declined too, as the standard of living and unemployment converged in the Nordic countries. As labor migration declined, immigration became dominated by refugees and tied movers. In the 1970s, refugees from Latin America predominated, during the 1980s refugees from the Middle East and in the 1990s refugees from the former Yugoslavia were of great importance.

-- Table 1 about here

Table 1 reports the total immigrant population in 2003, and shows that Finns was the largest immigrant group, followed by immigrants from Yugoslavia, Iraq, Bosnia-Herzegovina and Iran. The population of the 39 sending countries in table 1 is the one that is used in the calculations below (with some restrictions), representing 88 percent of the total immigrant population.

Several studies on immigrant economic assimilation in Sweden show that some European immigrant groups like Germans have about the same or even better job opportunities and earnings as natives, followed by other Europeans and North Americans. The labor market attachment of refugee immigrants, especially non-Europeans, is generally much worse even though there is a large variation between different countries. Also when controlling for individual features like sex, age, education, time since immigration etc., this hierarchy remains. Economic explanations of such differences focus on the existence of unobservable differences in human capital, especially host country-specific skills, discrimination and differentials in the access to networks. (Bengtsson, Lundh & Scott 2005; Bevelander & Lundh 2007.)

The change in the migration flows from labor migration to refugee and family reunion migration also involves a change in the composition of the countries of origin. Sweden of today is a multi-ethnic society, with sub-populations from nearly 200 countries, representing a great variety of languages, religions and cultures. This by itself makes intermarriage an interesting object of study, since data for a great number of sub-populations are available. The fact that refugee immigrants generally are less economically assimilated than labor migrants raises the question if intermarriage with a native is correlated to the individual's labor market outcome.

Data

The database used in this study contains records from different registers held by Statistics Sweden (mainly RAMS, LISA and RTB) for all individuals over 16 who resided in Sweden December 31, 2003. Immigrants are included provided they had a residence permit, which means that asylum seekers are not included. For each person information is available on individual characteristics (sex, age, educational level), country of birth, immigration year, and on labor market outcomes (employment status, occupation, earnings). For all married individuals, the year and place of marriage is also registered, and the partner if he or she is living in Sweden.

From this database a population including immigrants from 39 countries and natives has been extracted, containing all married couples with a registered marriage in Sweden from 1968 onwards.[2] This means that immigrants who already were married when they moved to Sweden are excluded, and so are couples who married outside Sweden.

Information on 'country of birth' is crucial to this study. The origin of immigrants is thought to reflect the ethnicity of that group, but in some cases different ethnic groups share the same nationality. Immigrants from Turkey, for instance, are either Christians or Muslims, and the same is true for immigrants from Syria. There is no information in the Swedish registers that could be used to distinguish individuals by religion or ethnicity; all we know is where the person was born and his or her citizenship. Whenever mentioned, 'natives' refer to all individuals born in Sweden, regardless of the country of birth of their parents. This means that "second generation immigrants" are counted as natives in this study.

One difficulty with country of birth is that geographical borders change over time. For example, the breakdown of former Yugoslavia and the Soviet Union, and the formation of a number of new states, makes the Swedish immigration records somewhat heterogeneous over time in terms of included countries. Most immigrants from the former Soviet Union after the breakdown have come from Russia. It is plausible that most immigrants during the communist period also were Russians, but they were registered as immigrants from the Soviet Union and could theoretically have come from any republic of that union. In this study the category 'Russia' refers to immigrants from Russia and former Soviet Union.

When Yugoslavia was hit by civil war and fragmentized in the early 1990s, immigrants were reported to be born in the new states of the Balkans, whether officially recognized or not. Immigrants of earlier cohorts, like migrants workers of the 1960s and 1970s, were registered as Yugoslavian, which included a majority of Serbs, but also quite a few Croatians and less frequently Bosnians. Statistics Sweden has made clear that it is possible for immigrants to change their record of 'country of birth' so that it fits current geographical borders, and quite a few Bosnians and Croatians have done so. Nonetheless, a significant number of immigrants from these countries have not changed their country of birth in the records, which implies that 'Yugoslavia' is more heterogeneous than either 'Bosnia-Herzegovina' or 'Croatia', including a mix of different ethnic groups dominated by Serbs.

In the regression, separate for males and females, we control for individual characteristics (age, age squared), human capital variables (educational level, adaptation time/time since immigration) and community level variables (type of commune, unemployment and employment levels). The variable 'type of commune' is based on a categorization by population size and density (Bevelander & Lundh 2007). It is included in the models in order to control for variations in population size and density at the commune level. The 'unemployment' rate of the commune is the share of the labor force in the ages 20-59 that are unemployed or in labor market policy programs. In a similar way, the employment rate of the commune is based on the number of employed individuals divided by the total population in the ages 20-59. The unemployment level is assumed to express the short term influence of business cycles on the local labor market. The employment level is assumed to indicate the labor market situation in a somewhat longer term, as it is dependent on the local distribution of employment between different sectors of the economy, the direction of the local

[2] To avoid the risk of backward identification of individuals in the registers we were not allowed to include information on country of birth for people from countries where the total number of immigrants was too low. These individuals have been aggregated into country groups.

population's education and occupational structure and the risk of early retirement. (Bevelander & Lundh 2004; Bevelander & Lundh 2007.) We expect that a low unemployment level and high employment level increase the probability of obtaining employment for the individual immigrant.

Results

We begin by looking at the extent of endogamy according to country of birth. As previously mentioned, we have data on the origin of husband and wife in all marriages recorded in Sweden for married couples present in Sweden in 2003. These data were cross-tabulated for 49 different countries or country groups. The count in each cell is a function of both the matching process and of the relative availability of partners, i.e. the marginal distributions of the rows and columns in the table. If we assume that there is no structure in the mating process the expected number of counts in each cell would solely be given by the marginal distributions. This situation is often referred to as the independence model in log-linear analysis. To test the presence of endogamy in the population we estimate a model that includes a separate parameter for each diagonal cell in the table, i.e. for each cell where the husband and wife are born in the same country or country group:

$$ln\, f_{ij} = u+h_i+w_j+d_k$$

where f_{ij} is the count in row i, column j, u is the grand mean, h_i is the row parameter (husband's country of birth) and w_j is the column parameter (wife's country of birth) and d_k is the diagonal parameter for cell k. The estimates of these diagonal parameters is shown in table 2 and express the extent to which the count in the diagonal cells differ from what we would expect in a situation where matching was completely random. As is quite clear form table 2 most countries are characterized by pronounced endogamy. The only exception is China where we get a much lower number of endogamous unions than could be expected from a random match. Most likely this is accounted for by adoptions of Chinese children by Swedish families.

Table 2 here

Looking first at Swedish born the number of endogamous unions is about four times as many as could be expected from a random mating process. Similar or somewhat higher degrees of endogamy are also found for most other Western European countries, while people born in the United States have a bit lower endogamy than Swedish born. Looking at Southern and Eastern Europe several of the countries show much higher levels of endogamy, and the same is true for people from the Americas, Asia and the Middle East.

Thus it seems clear that there is a strong tendency towards country endogamy in Sweden, and that this tendency in general gets stronger the farther away from Sweden we get. However, it is impossible to assess the determinants of this pattern using only this kind of tabulations. For example, we do not know the extent to which this pattern can be explained by differences in education, time since immigration, or place of residence. To do this we have estimated a multinomial logit model of the probability of being married exogamously to a Swedish born spouse and a non-Swedish born spouse compared to being married endogamously, controlling for education, time since immigration, population size in commune of residence, and country of birth. Only foreign born individuals are included in the sample. The results are shown in

table 3. The estimates of exogamy indicate the effect of the explanatory variables on the transformed probability of exogamy compared to endogamy, which is the reference category.

Table 3 here

In accordance with general assimilation theory, the number of years in Sweden increases the likelihood of being married to a native, but also of being exogamously married to a non-native. For women, the positive effect of time since immigration on exogamy is clear from five years onwards, while for men there is no statistically significant effect until after 15 years in the country. Assimilation theory would explain this by cultural and socioeconomic assimilation being a process and thus taking time. However, to a large extent this partner selection pattern is not a causal effect but the result of selective return migration. People married to someone from the same background are more likely to return to their native country than people married to someone from a different country. Furthermore, it has previously been shown that labor immigrants who are successful in the labor market are more likely to stay, while those who are less successful often choose to return (Klinthäll 2003). If there is a positive effect of being married to a native on job opportunities and earnings, which there are theoretical reasons to believe, then immigrants who are not exogamously married to natives would be overrepresented among return migrants.

More education is also connected with exogamy. The effects are somewhat stronger for exogamy with a Swedish born than for other types of exogamy, but the picture is basically the same. The effects are also somewhat stronger for women than for men, although the differences are not that large. This is what could be expected from a human capital approach to interethnic marriage. More educated people are less likely to live in ethnic enclaves and can be expected to meet more people of different origins. They are therefore more exposed to the risk of interethnic marriage. Immigrants with higher levels of education are also expected to be more prone to adopt foreign customs and cultures, and also have better language proficiency. Because there is a general educational assortative mating in the marriage market (see, e.g. Kalmijn 1998; Mare 1991; Henz & Jonsson 2003), more educated immigrants are more likely to find a partner who is willing to trade differences in ethnicity for similarities in education.

People living in larger cities are less likely to be intermarried with natives. The pattern is similar between the sexes but the effects are stronger for women. Those living in metro areas (Stockholm, Göteborg and Malmö) are least likely to be married to a native, while people in rural areas are most likely to have a native spouse. Partly this is likely to reflect a greater availability of people of the same origin in larger cities, and provided that people have a preference for endogamy they should be more likely to marry endogamously than people in rural areas and small towns where the chance of finding a spouse from the same country is much lower. It may, however, also reflect two types of selective internal migration. Firstly, being married to a native may increase the likelihood of leaving the big cities for the countryside, or decrease the likelihood of moving in the opposite direction once settled in a small city or in the countryside. Secondly, moving from the countryside or smaller cities to larger cities and metro areas may be part of a labor market career strategy or be done in order to live close to relatives and ethnic networks. Internal migration could then be part of a marriage strategy with the direct purpose of endogamous marriage or indirectly through the exposure to a larger group of prospective partners of the preferred ethnic origin.

Turning to country patterns it is quite clear that the likelihood of intermarriage with a native is highest for immigrants from Western Europe (Finland excluded), Italy, Spain and the United States, while it is considerably lower for immigrants from the Balkans, Eastern Europe and developing countries outside of Europe. However, the differences between the Balkans and Eastern Europe on the one hand and the Middle East, Asia, Africa and the Americas (United States excluded) on the other, are not so pronounced. Thus, when controlling for education, time since immigration and commune of residence we can identify two patterns of intermarriage: Immigrants from Western European countries (including Spain and Italy, but excluding Finland) and the United States have, relatively speaking, high levels of intermarriage with natives, and immigrants from other parts of the world have low levels of intermarriage.

This picture fits rather well with the predictions of assimilation theory, since these immigrant groups are culturally and socially quite close to the native population. In addition, however, there are selection in both immigration and return migration that bias the results. In the case of immigrants from Western Europe and the United States, many have come to Sweden in the first place because they had a native partner who they married in Sweden later on. There is also selection through return migration since those who married a native (or non-ethnic) partner have been less likely to move back home, and are therefore more likely to be in the sample 2003. The reason why Finland differs from this picture is the heavy labor migration from Finland to Sweden in the 1960s and early 1970s. Many of these migrants were only Finnish speaking and married other labor migrants from Finland and stayed in Sweden permanently.

Immigrants from outside Western Europe and the United States have typically come to Sweden as refugees or tied movers (to refugees). Therefore the selection mechanisms through immigration and return migration have probably not been as strong as for labor immigrants. Refugee immigrants have seldom connections to anyone in the native population before immigration, but sometimes to ethnic relatives and friends who have previously emigrated. Because of the situation in the home country from which they have fled, refugee immigrants have generally less opportunities to return to their country of origin. The rate of return migration of refugee immigrants is generally much lower than the corresponding rate for labor immigrants. (Lundh & Ohlsson 1999.) There may be different reasons why immigrants from the Balkans are more endogamous than other Western and Southern Europeans. One may be that the cultural distance is larger in terms of religion and language, another that quite a few immigrants from former Yugoslavia are refugees or tied movers.

We now turn to the question how intermarriage is associated with the economic assimilation of immigrants. Starting with employment we estimate the probability of being employed in November of 2003 for people 20-59 years of age, using logistic regression controlling for age, age squared, time since immigration, type of marital union (endogamous, exogamous with a native, exogamous with a non-native), population size in the commune of residence, employment rate in the commune, the unemployment rate in the commune and country of birth (see table 4). As was previously mentioned, the reason for including both the unemployment and employment rate is that the former is assumed to capture local responses in the demand for labor associated with business cycles, while the latter also picks up variations associated with the structure of the local economy.

Table 4 here

Looking first at the control variables, we find that they generally have the expected effects. The likelihood of being employed increases with age, but at a diminishing rate because people exit the labor force at higher ages due to pre-retirement or sickness. There is a positive effect on the likelihood of being employed of time since immigration and the level of education, which is also in line with our expectations. These effects are fairly similar for men and women, and have been found in other studies of immigrant economic assimilation in Sweden (Bevelander 2000; Scott 1999). Living in a small town, or in rural areas, increases the chance of employment for men, while women in metro areas have the highest likelihood of being employed.[3] As expected, people in areas with higher employment rates are more likely to be employed, while a higher unemployment rate is associated with a lower chance of being employed. (cf. Bevelander & Lundh 2007.)

Our main focus is on the association between intermarriage and employment. Controlling for the other variables in the model, we find that being exogamously married to a native is associated with a higher chance for the immigrant of being employed. This effect is quite similar for men and women. There appears to be no difference in the likelihood of employment between endogamously married immigrants and immigrants who were exogamously married with non-natives. Thus, the results indicate a basic association between marital integration (intermarriage with a native) and economic integration, measured by employment.

Another indicator of economic integration is income. We use two different income measures: individual income and household income. The former is the total income from employment/self employment, unemployment benefits, sickness insurance benefits, pre-retirement benefits, social welfare benefits and labor market program benefits. Household income is the sum of the individual income of husband and wife. We only study people aged 20-59 years with income exceeding 30,000 SEK per annum (corresponding roughly to a so called base amount in the Swedish social insurance system). Table 5 reports ordinary least squares estimates of log individual income and log household income. The percentage change in income associated with the variables is also reported in the table.[4]

Table 5 here

The control variables are associated with income in the expected way. Age, time since immigration and educational level are all positively associated with individual and household income for both men and women. As with employment, the positive effect of age is non-linear, declining at higher ages. This is also what has been found in previous research on income assimilation of immigrants in Sweden. (Scott 1999; Le Grand & Szulkin 2002.) Living in larger cities is also associated with higher income compared to smaller cities and especially compared to living in rural areas. Moreover, living in communes with higher employment rates is associated with higher income.

Given these variables and controlling for country of birth, it is quite clear that intermarriage (i.e. being married to a native) is associated with higher individual income of immigrants of both sexes. The effect is about the same for men and women. Just as in the case of employment, there is no effect on individual income of being exogamously married to a non-

[3] A more detailed analysis of the geographical dimension shows that there are big differences between different metro areas. The job opportunities for immigrants are much better in the Stockholm area that in Göteborg and Malmö. (Bevelander & Lundh 2007.)

[4] Since ln(income) is used as the dependent variable the percentage change is given by $100(e^{coeff}-1))$

native. Looking at total household income the pattern is similar but the effect of being married to a native is now larger for women than for men. Thus, also in the case of income assimilation there seems to be strong support for a connection between intermarriage and economic integration.

These findings are consistent with a human capital explanation, implying that the human capital of a native spouse and access to native networks contribute to human capital accumulation of immigrants. It influences job opportunities and earnings of immigrants directly, and in the case of females, also through the distribution of income within the household. However, since we use cross sectional data we must be aware that these associations do not necessarily imply a causal relationship. The association between intermarriage and immigrant economic assimilation is obvious, but the mechanisms behind it may be more complicated than just a causal effect of intermarriage on labor market outcome.

Conclusion

Assimilation theory predicts a rather long period of acculturation and structural assimilation before immigrant groups are completely assimilated. Depending on the differences to the majority population, the assimilation process takes more or less time and might even last for generations. Higher frequencies of intermarriage occur when the adaptation process is well on its way and the perceived ethnic and socioeconomic differences between the immigrant and the native groups have become quite small.

Since we are studying first generation immigrants, of which many have come quite recently, it is not surprising to find a clear tendency towards endogamy for basically all immigrant groups. We also find that endogamy is stronger for immigrants coming from culturally and geographically more distant countries and who arrived more recently. When controlling for education, time since immigration and population size, two intermarriage patterns appear: individuals from Western countries, excluding Finland, have a higher likelihood of being married to a native than people from the rest of the world including the Balkans and Eastern Europe.

Our results indicate a strong association between intermarriage with natives and economic integration in terms of employment and income. Immigrants that are married to a native are more likely to have a job, and also have a higher individual and household income. This pattern is similar for men and women, indicating that intermarriage is potentially important for both sexes. For female immigrants, the positive effect of intermarriage is larger on household income. This could be interpreted as a positive effect on the individual income of immigrants of being married to a native that is similar for both sexes, and an additional positive distributional effect within the household for female immigrants.

Intermarriage is seldom included in studies on immigrant economic assimilation. However, it is important to include it in the human capital approach to immigrant integration into the labor market. At the time of immigration, the ‘sender country-specific’ part of the human capital of immigrants is being devalued, and during an initial adaptation period in the host country the immigrant needs to learn the native language, other ‘host country-specific’ skills and get access to native networks that facilitate job search and the occupational career. To marry someone from the majority population contributes to shorten the adaptation period of the immigrant in two ways. Firstly, the human capital of the native spouse spills over to the

immigrant, who improves the language skills and gets better insights into the formal and informal rules regulating the labor market and working life. Secondly, being married to a native gives access to native networks, which makes job search and moves for occupational promotion more successful. Our results fit very well with such an explanation, although the nature of the data available does not permit a formal test of the causality between marital and economic assimilation.

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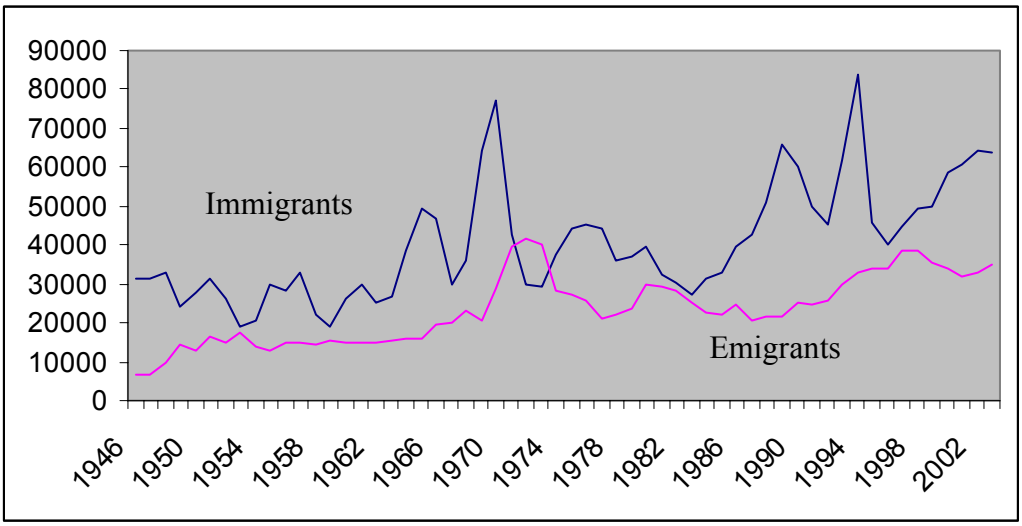

Figure 1: Immigration and emigration 1946-2003.

Source: Statistics Sweden.

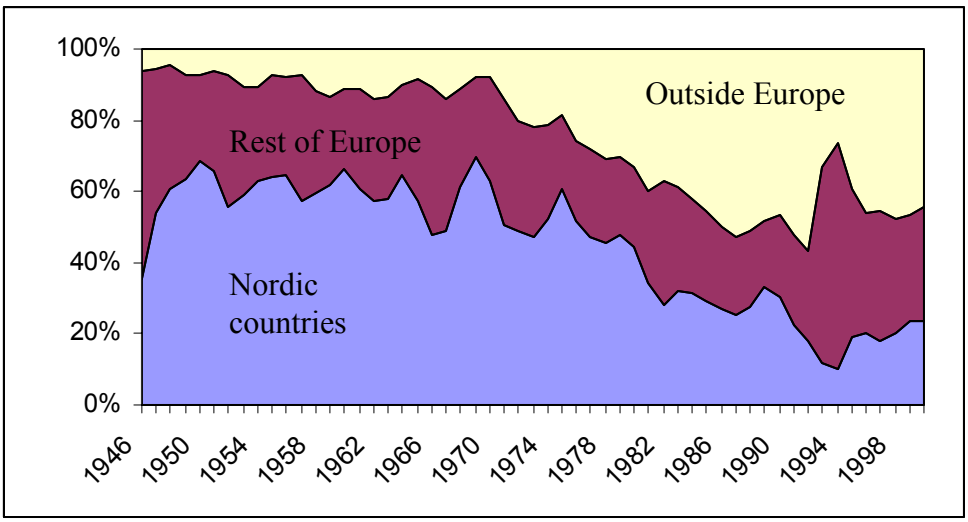

Figure 2: Immigration by region of origin, 1946-2003. (Percent.)

Source: See figure 1.

Table 1: The Swedish population by country of birth, 31 December 2003.

Country of birth	No. of inhabitants	Country of birth	No. of inhabitants
Nordic countries		**America**	
Sweden	7 897 595	Chile	27 528
Denmark	40 921	Colombia	8 169
Finland	189 341	Peru	5 107
Norway	45 087	USA	15 143
Rest	3 811	Rest	26 200
Western Europe		**Middle East**	
Austria	5 967	Iraq	67 645
France	6 155	Iran	53 241
Germany	40 217	Lebanon	20 811
The Netherlands	5 150	Syria	15 692
United Kingdom	16 428	Turkey	34 083
Rest	5 421	Rest	14 016
Southern Europe		**Africa**	
Bosnia-Herzegovina	53 949	Morocco	5 150
Croatia	5 726	Ethiopia	11 281
Greece	10 853	Rest	36 305
Italy	6 584	**Asia**	
Yugoslavia	75 099	Afghanistan	7 017
Rest	13 526	Philippines	6 484
Eastern Europe		India	12 349
Czechoslovakia	7 431	China	10 852
Estonia	9 964	South Korea	9 574
Hungary	13 794	Sri Lanka	6 096
Poland	41 608	Thailand	14 294
Romania	12 343	Vietnam	11 771
Russia (incl. former Soviet Union)	16 194	Rest	21 925
Rest	7 912	**Oceania**	3 382
		Unknown	479

Source: Statistics Sweden.

Table 2. Log linear estimates of the individual diagonal (endogamy) parameters. Couples married in Sweden and present 2003.

Country of birth	Estimate	exp(Est)	p-value
Nordic countries			
Sweden	1.420	4.1	0.0000
Denmark	2.262	9.6	0.0000
Finland	2.264	9.6	0.0000
Norway	1.549	4.7	0.0000
Western Europe			
France	2.625	13.8	0.0000
The Netherlands	3.858	47.4	0.0000
Germany	1.921	6.8	0.0000
Austria	2.549	12.8	0.0000
United Kingdom	2.081	8.0	0.0000
Southern Europe			
Italy	3.490	32.8	0.0000
Spain	3.553	34.9	0.0000
Greece	5.683	293.7	0.0000
Bosnia-Herzegovina	7.442	1705.6	0.0000
Yugoslavia	4.657	105.3	0.0000
Croatia	6.126	457.4	0.0000
Eastern Europe			
Estonia	4.260	70.8	0.0000
Poland	4.618	101.3	0.0000
Romania	6.519	677.7	0.0000
Hungary	4.667	106.4	0.0000
Russia	4.498	89.8	0.0000
Czechoslovakia	5.199	181.0	0.0000
America			
USA	0.687	2.0	0.0239
Chile	5.222	185.2	0.0000
Colombia	5.235	187.7	0.0000
Peru	5.837	342.9	0.0000
Africa			
Morocco	5.970	391.5	0.0000
Ethiopia	7.155	1279.9	0.0000
Middle East			
Lebanon	5.647	283.6	0.0000
Syria	6.099	445.3	0.0000
Turkey	6.290	539.0	0.0000
Iraq	7.496	1800.8	0.0000
Asia			
Afghanistan	10.530	37432.7	0.0000
Iran	5.857	349.6	0.0000
India	5.021	151.6	0.0000
Sri Lanka	6.858	951.8	0.0000
Thailand	4.066	58.3	0.0000
Philippines	5.220	184.9	0.0000
Vietnam	7.311	1496.7	0.0000
China	-12.702	0.0	0.9638
South Korea	3.513	33.6	0.0000
Groups of other countries			
Rest of Africa	4.912	135.9	0.0000

Rest of Asia	4.448	85.5	0.0000
Rest of EU25	3.602	36.7	0.0000
Rest of Europe except EU25 and the Nordic countries	4.429	83.8	0.0000
Rest of North America	4.153	63.7	0.0000
Rest of the Nordic countries except Sweden	5.152	172.8	0.0000
Rest of Oceania	1.311	3.7	0.1917
Rest of South America	4.116	61.3	0.0000
Unknown	7.645	2090.0	0.0000
N	851980		

Source: See table 1.

Table 3. Multinomial logit estimates of exogamy. Foreign born in included countries, married in Sweden and present 2003. (Endogamy is the base category).

	Men				Women			
	Exogamy, Swedish born spouse		Exogamy, non-Swedish born spouse		Exogamy, Swedish born spouse		Exogamy, non-Swedish born spouse	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Time since immigration								
0-4 (ref)								
5-9	0.058	0.421	0.031	0.726	0.143	0.019	0.046	0.535
10-14	0.051	0.455	0.031	0.707	0.212	0.000	0.163	0.022
15-19	0.139	0.042	-0.086	0.320	0.470	0.000	0.268	0.001
20-24	0.334	0.000	0.364	0.000	0.615	0.000	0.343	0.000
25-29	0.491	0.000	0.452	0.000	0.744	0.000	0.341	0.000
30-	1.158	0.000	0.730	0.000	1.141	0.000	0.321	0.000
Education:								
Basic 0-8 years (ref)								
Basic 9 years	0.866	0.000	0.479	0.000	0.596	0.000	0.547	0.000
High school 1-2 y.	0.971	0.000	0.540	0.000	0.987	0.000	0.589	0.000
High school 3 y.	1.152	0.000	0.629	0.000	1.302	0.000	0.838	0.000
University <3 y.	1.412	0.000	0.791	0.000	1.615	0.000	1.005	0.000
University 3+ y.	1.544	0.000	0.757	0.000	1.848	0.000	1.098	0.000
Post-graduate degree	1.312	0.000	0.781	0.000	1.697	0.000	0.930	0.000
Unknown	0.372	0.000	0.426	0.000	0.579	0.000	0.392	0.000
Commune of residence								
Pop. 20000-50000 (ref)								
>200000 (metro areas)	-0.346	0.000	0.122	0.021	-0.386	0.000	0.260	0.000
Pop. 50000-200000	-0.072	0.055	0.006	0.922	-0.131	0.000	0.070	0.221
Pop. 10000-20000	-0.174	0.000	-0.149	0.046	-0.271	0.000	-0.234	0.001
Pop. <10000 excl rural	0.030	0.668	0.039	0.747	-0.056	0.409	-0.083	0.475
Rural areas (<7inh/km2)	0.335	0.000	-0.088	0.587	0.607	0.000	-0.311	0.057
Country of birth								
Nordic countries								
Denmark (ref)								
Finland	-2.035	0.000	-2.393	0.000	-1.334	0.000	-1.027	0.000
Norway	0.504	0.000	0.546	0.000	1.003	0.000	0.942	0.000
Western Europe								
France	1.847	0.000	2.018	0.000	1.487	0.000	2.066	0.000
The Netherlands	0.657	0.001	0.942	0.000	0.128	0.511	0.399	0.146
Germany	0.183	0.042	0.700	0.000	0.294	0.001	1.081	0.000
Austria	1.248	0.000	1.996	0.000	0.884	0.000	1.775	0.000
United Kingdom	1.542	0.000	1.517	0.000	0.731	0.000	0.799	0.000
Southern Europe								
Italy	1.207	0.000	1.727	0.000	0.035	0.863	0.933	0.000
Spain	0.913	0.000	1.543	0.000	0.742	0.001	1.319	0.000
Greece	-1.021	0.000	-0.286	0.019	-2.221	0.000	-1.233	0.000
Bosnia-Herzegovina	-3.591	0.000	-1.096	0.000	-4.071	0.000	-0.787	0.000
Yugoslavia	-2.131	0.000	-0.859	0.000	-2.040	0.000	-0.427	0.000
Croatia	-1.639	0.000	0.395	0.015	-1.827	0.000	0.865	0.000
Eastern Europe								
Estonia	-0.378	0.032	0.411	0.058	0.183	0.304	1.104	0.000
Poland	-2.581	0.000	-1.813	0.000	-0.953	0.000	0.024	0.816
Romania	-2.458	0.000	-0.944	0.000	-1.496	0.000	0.022	0.878
Hungary	-1.469	0.000	-0.294	0.017	-1.259	0.000	-0.347	0.018

Russia	-1.541	0.000	0.159	0.390	0.542	0.000	1.559	0.000
Czechoslovakia	-1.715	0.000	-0.504	0.001	-1.454	0.000	-0.427	0.015
America								
USA	2.529	0.000	2.551	0.000	2.532	0.000	2.271	0.000
Chile	-1.741	0.000	-0.929	0.000	-1.258	0.000	-0.589	0.000
Colombia	-0.490	0.030	0.082	0.789	0.289	0.192	0.757	0.009
Peru	-1.053	0.000	0.121	0.640	0.007	0.973	0.758	0.002
Africa								
Morocco	-0.271	0.151	0.592	0.009	-0.968	0.000	0.712	0.004
Ethiopia	-2.583	0.000	-2.096	0.000	-2.092	0.000	-2.350	0.000
Middle East								
Lebanon	-1.876	0.000	0.395	0.000	-2.517	0.000	0.349	0.002
Syria	-2.690	0.000	0.370	0.001	-2.783	0.000	0.726	0.000
Turkey	-2.478	0.000	-0.627	0.000	-3.163	0.000	-0.610	0.000
Iraq	-3.172	0.000	-0.642	0.000	-3.779	0.000	-1.238	0.000
Asia								
Afghanistan	-3.215	0.000	-0.877	0.032	-3.356	0.000	-0.394	0.316
Iran	-2.270	0.000	-0.742	0.000	-2.706	0.000	-1.599	0.000
India	-1.092	0.000	-0.254	0.184	-0.459	0.000	-0.396	0.083
Sri Lanka	-1.965	0.000	-0.895	0.003	-0.339	0.040	-0.566	0.073
Thailand	-1.229	0.000	-0.666	0.070	3.120	0.000	2.768	0.000
Philippines	-1.748	0.000	-0.620	0.068	1.853	0.000	1.886	0.000
Vietnam	-4.675	0.000	-1.288	0.000	-1.629	0.000	-0.122	0.573
China	-3.160	0.000	-1.156	0.000	-1.112	0.000	0.093	0.586
South Korea	-0.660	0.003	-0.089	0.764	1.239	0.000	1.061	0.000
Constant	0.686	0.000	-1.216	0.000	0.389	0.000	-1.760	0.000
N	56996				67400			
Chisq	12500.01				13890.36			
Overall p	0				0			
Pseudo R2	0.1883				0.1936			

Source: See table 1.

Table 4. Logit estimates of being employed in November 2003. Foreign born in included countries, 20-59 years, married in Sweden and present 2003.

	Men		Women	
	Coefficient	p-value	Coefficient	p-value
Age	0.154	0.000	0.173	0.000
Age^2	-0.002	0.000	-0.002	0.000
Time since inmigration				
0-4 (ref)				
5-9	0.785	0.000	0.873	0.000
10-14	1.054	0.000	1.182	0.000
15-19	1.189	0.000	1.329	0.000
20-24	1.400	0.000	1.412	0.000
25-29	1.457	0.000	1.478	0.000
30-	1.785	0.000	1.641	0.000
Marital union				
Endogamous (ref)				
Exogamous-Swede	0.275	0.000	0.288	0.000
Exogamous-Non-Swede	0.027	0.512	0.037	0.305
Education:				
Basic 0-8 years (ref)				
Basic 9 years	0.099	0.046	0.241	0.000
High school 1-2 y.	0.205	0.000	0.699	0.000
High school 3 y.	0.540	0.000	0.887	0.000
University <3 y.	0.530	0.000	0.810	0.000
University 3+ y.	0.826	0.000	1.346	0.000
Post-graduate degree	1.190	0.000	1.489	0.000
Unknown	0.043	0.640	0.130	0.143
Commune of residence				
Pop. 20000-50000 (ref)				
>200000 (metro areas)	0.060	0.192	0.234	0.000
Pop. 50000-200000	-0.046	0.290	0.049	0.154
Pop. 10000-20000	-0.003	0.951	-0.038	0.358
Pop. <10000 excl rural	-0.147	0.074	-0.079	0.213
Rural areas (<7inh/km2)	-0.340	0.000	0.037	0.569
Commune empl. rate	0.039	0.000	0.027	0.000
Commune unemp rate	-0.059	0.000	-0.043	0.000
Country of birth				
Nordic countries				
Denmark (ref)				
Finland	0.186	0.001	0.260	0.000
Norway	0.087	0.241	0.118	0.055
Western Europe				
France	0.447	0.007	-0.357	0.013
The Netherlands	0.665	0.000	0.144	0.351
Germany	0.161	0.046	-0.021	0.771
Austria	0.502	0.001	0.134	0.343
United Kingdom	0.205	0.016	-0.034	0.719
Southern Europe				
Italy	-0.113	0.328	0.071	0.657
Spain	-0.225	0.104	0.021	0.882
Greece	-0.798	0.000	-0.859	0.000
Bosnia-Herzegovina	0.444	0.000	0.295	0.000
Yugoslavia	-0.101	0.144	-0.326	0.000

Croatia	-0.139	0.368	-0.326	0.020
Eastern Europe				
Estonia	0.009	0.981	-0.405	0.015
Poland	-0.237	0.007	-0.330	0.000
Romania	-0.071	0.638	-0.197	0.063
Hungary	-0.192	0.076	-0.274	0.003
Russia	-0.606	0.001	-0.806	0.000
Czechoslovakia	-0.081	0.572	-0.227	0.049
America				
USA	-0.334	0.000	-0.573	0.000
Chile	0.037	0.705	-0.186	0.018
Colombia	-0.251	0.256	-0.375	0.014
Peru	-0.294	0.175	-0.533	0.000
Africa				
Morocco	-0.838	0.000	-0.516	0.007
Ethiopia	-0.100	0.550	-0.282	0.040
Middle East				
Lebanon	-0.544	0.000	-0.897	0.000
Syria	-0.464	0.000	-0.865	0.000
Turkey	-0.321	0.000	-0.604	0.000
Iraq	-0.731	0.000	-0.994	0.000
Asia				
Afghanistan	-0.132	0.682	-0.920	0.009
Iran	-0.310	0.000	-0.558	0.000
India	-0.389	0.013	-0.440	0.000
Sri Lanka	0.016	0.953	-0.171	0.247
Thailand	-0.040	0.892	0.051	0.488
Philippines	0.060	0.858	-0.117	0.186
Vietnam	0.210	0.388	-0.020	0.899
China	-0.217	0.271	-0.722	0.000
South Korea	-0.527	0.018	-0.173	0.077
Constant	-5.407	0.000	-6.273	0.000
N	46980		60266	
Chisq	3058.9		6149.81	
Overall p	0.0000		0.0000	
Pseudo R2	0.0759		0.1051	

Source: See table 1.

Table 5. OLS estimates of annual income (ln income). Foreign born in included countries, 20-59 years, married in Sweden and present 2003.

	Individual income (>30000 SEK)						Total household income (>30000 SEK)					
	Men			Women			Men			Women		
	Coeff	%ch.	p	Coeff	%ch.	p	Coeff	%ch.	p	Coeff	%ch.	p
Age	0.053	5.429	0.000	0.065	6.737	0.000	0.060	6.208	0.000	0.077	7.975	0.000
Age^2	-0.001	-0.060	0.000	-0.001	-0.064	0.000	-0.001	-0.062	0.000	-0.001	-0.087	0.000
Time since immigration												
0-4 (ref)												
5-9	0.139	14.881	0.000	0.131	14.024	0.000	0.169	18.446	0.000	0.117	12.373	0.000
10-14	0.161	17.488	0.000	0.195	21.578	0.000	0.217	24.183	0.000	0.165	17.975	0.000
15-19	0.208	23.179	0.000	0.270	30.961	0.000	0.295	34.321	0.000	0.239	26.988	0.000
20-24	0.230	25.832	0.000	0.294	34.184	0.000	0.326	38.517	0.000	0.258	29.471	0.000
25-29	0.238	26.904	0.000	0.281	32.435	0.000	0.323	38.102	0.000	0.245	27.752	0.000
30-	0.306	35.800	0.000	0.304	35.481	0.000	0.377	45.749	0.000	0.290	33.628	0.000
Marital union												
Endogamous (ref)												
Exogamous-Swede	0.057	5.887	0.000	0.033	3.354	0.000	0.082	8.540	0.000	0.125	13.355	0.000
Exogamous-Non-Swede	0.006	0.555	0.552	-0.008	-0.782	0.364	0.003	0.278	0.754	-0.037	-3.600	0.000
Education:												
Basic 0-8 years (ref)												
Basic 9 years	0.016	1.626	0.105	0.072	7.498	0.000	0.025	2.562	0.007	0.043	4.363	0.000
High school 1-2 y.	0.066	6.840	0.000	0.126	13.448	0.000	0.072	7.470	0.000	0.120	12.761	0.000
High school 3 y.	0.169	18.398	0.000	0.189	20.825	0.000	0.162	17.558	0.000	0.184	20.207	0.000
University <3 y.	0.224	25.157	0.000	0.253	28.754	0.000	0.218	24.364	0.000	0.253	28.755	0.000
University 3+ y.	0.477	61.188	0.000	0.445	56.076	0.000	0.420	52.205	0.000	0.390	47.726	0.000
Post-graduate degree	0.717	104.838	0.000	0.783	118.896	0.000	0.607	83.490	0.000	0.609	83.950	0.000
Unknown	0.233	26.205	0.000	0.091	9.489	0.007	0.131	14.019	0.000	-0.032	-3.117	0.282
Commune of residence												
Pop. 20000-50000 (ref)												
>200000 (metro areas)	0.073	7.613	0.000	0.084	8.774	0.000	0.084	8.756	0.000	0.110	11.650	0.000
Pop. 50000-200000	0.018	1.826	0.022	0.014	1.404	0.043	0.024	2.453	0.001	0.036	3.632	0.000
Pop. 10000-20000	0.032	3.244	0.000	-0.004	-0.434	0.592	0.016	1.663	0.048	0.000	0.015	0.984
Pop. <10000 excl rural	-0.005	-0.535	0.710	-0.020	-1.971	0.107	-0.026	-2.590	0.050	-0.028	-2.760	0.017
Rural areas (<7inh/km2)	-0.099	-9.450	0.000	-0.027	-2.698	0.032	-0.089	-8.521	0.000	-0.094	-8.979	0.000
Commune empl. rate	0.011	1.130	0.000	0.004	0.389	0.000	0.013	1.262	0.000	0.010	1.001	0.000
Commune unemp rate	0.000	-0.001	0.998	-0.007	-0.658	0.002	-0.002	-0.185	0.444	-0.005	-0.533	0.007
Country of birth												
Nordic countries												
Denmark (ref)												
Finland	-0.004	-0.353	0.737	0.046	4.712	0.000	0.045	4.640	0.000	0.042	4.247	0.000
Norway	0.046	4.725	0.002	0.027	2.751	0.030	0.041	4.205	0.003	0.036	3.696	0.003
Western Europe												
France	-0.026	-2.611	0.364	-0.040	-3.887	0.280	0.079	8.178	0.002	0.003	0.276	0.933
The Netherlands	0.015	1.501	0.583	0.012	1.171	0.723	0.068	7.041	0.004	0.074	7.713	0.014
Germany	-0.039	-3.817	0.009	-0.026	-2.590	0.086	0.000	0.003	0.998	-0.002	-0.195	0.891
Austria	-0.013	-1.330	0.566	0.045	4.579	0.080	0.011	1.156	0.598	0.023	2.331	0.390
United Kingdom	-0.061	-5.925	0.000	0.015	1.524	0.499	0.004	0.418	0.792	0.034	3.492	0.105
Southern Europe												

Italy	-0.135	-12.655	0.000	-0.026	-2.558	0.462	-0.086	-8.234	0.000	0.038	3.901	0.253
Spain	-0.111	-10.483	0.000	0.029	2.894	0.376	-0.024	-2.348	0.374	0.031	3.160	0.293
Greece	-0.245	-21.718	0.000	-0.078	-7.512	0.002	-0.141	-13.123	0.000	-0.131	-12.239	0.000
Bosnia-Herzegovina	-0.071	-6.843	0.000	0.048	4.872	0.010	0.028	2.845	0.074	0.054	5.565	0.001
Yugoslavia	-0.125	-11.743	0.000	-0.028	-2.806	0.033	-0.055	-5.382	0.000	-0.050	-4.879	0.000
Croatia	-0.064	-6.199	0.032	-0.024	-2.364	0.459	-0.012	-1.180	0.688	-0.014	-1.429	0.631
Eastern Europe												
Estonia	-0.001	-0.117	0.987	-0.092	-8.828	0.060	-0.009	-0.929	0.898	-0.093	-8.851	0.028
Poland	-0.121	-11.414	0.000	-0.053	-5.191	0.000	-0.068	-6.564	0.000	-0.090	-8.572	0.000
Romania	-0.102	-9.722	0.001	-0.002	-0.183	0.944	-0.036	-3.493	0.188	-0.050	-4.846	0.027
Hungary	-0.096	-9.179	0.000	-0.035	-3.423	0.097	-0.049	-4.756	0.008	-0.053	-5.138	0.009
Russia	-0.240	-21.374	0.000	-0.146	-13.587	0.000	-0.246	-21.770	0.000	-0.141	-13.160	0.000
Czechoslovakia	-0.046	-4.516	0.128	-0.008	-0.794	0.758	0.002	0.237	0.926	-0.014	-1.376	0.570
America												
USA	-0.124	-11.626	0.000	-0.056	-5.486	0.013	-0.068	-6.609	0.001	-0.005	-0.513	0.800
Chile	-0.152	-14.059	0.000	-0.076	-7.301	0.000	-0.078	-7.491	0.000	-0.066	-6.415	0.000
Colombia	-0.149	-13.846	0.002	-0.087	-8.335	0.018	-0.081	-7.825	0.057	-0.063	-6.124	0.061
Peru	-0.310	-26.648	0.000	-0.216	-19.414	0.000	-0.194	-17.622	0.000	-0.138	-12.916	0.000
Africa												
Morocco	-0.338	-28.650	0.000	-0.129	-12.101	0.012	-0.215	-19.327	0.000	-0.208	-18.739	0.000
Ethiopia	-0.136	-12.674	0.000	-0.090	-8.611	0.006	-0.094	-8.977	0.001	-0.074	-7.125	0.008
Middle East												
Lebanon	-0.352	-29.653	0.000	-0.151	-14.054	0.000	-0.365	-30.570	0.000	-0.304	-26.231	0.000
Syria	-0.391	-32.338	0.000	-0.155	-14.400	0.000	-0.366	-30.665	0.000	-0.290	-25.157	0.000
Turkey	-0.352	-29.698	0.000	-0.127	-11.937	0.000	-0.284	-24.735	0.000	-0.244	-21.677	0.000
Iraq	-0.443	-35.788	0.000	-0.236	-21.047	0.000	-0.458	-36.766	0.000	-0.379	-31.512	0.000
Asia												
Afghanistan	-0.167	-15.395	0.043	-0.318	-27.234	0.001	-0.239	-21.237	0.004	-0.192	-17.484	0.028
Iran	-0.236	-21.039	0.000	-0.117	-11.073	0.000	-0.174	-15.962	0.000	-0.124	-11.693	0.000
India	-0.224	-20.059	0.000	-0.108	-10.268	0.000	-0.164	-15.143	0.000	-0.128	-11.978	0.000
Sri Lanka	-0.088	-8.393	0.114	-0.095	-9.064	0.005	-0.093	-8.899	0.079	-0.033	-3.211	0.233
Thailand	-0.146	-13.607	0.010	-0.048	-4.671	0.004	-0.158	-14.577	0.009	-0.026	-2.566	0.098
Philippines	-0.128	-12.025	0.027	-0.100	-9.517	0.000	-0.013	-1.314	0.780	-0.083	-7.919	0.000
Vietnam	-0.172	-15.835	0.000	-0.038	-3.754	0.389	-0.178	-16.314	0.000	-0.057	-5.545	0.105
China	-0.299	-25.835	0.000	-0.129	-12.098	0.000	-0.279	-24.312	0.000	-0.164	-15.089	0.000
South Korea	-0.103	-9.797	0.014	-0.035	-3.437	0.112	-0.068	-6.572	0.064	-0.041	-4.029	0.022
Constant	5.398		0.000	5.133		0.000	5.402		0.000	5.417		0.000
N	44086			53620			46225			59279		
F	159.16			196.51			211.95			256.77		
P(F)	0.0000			0.0000			0.0000			0.0000		
R2	0.207			0.206			0.263			0.243		

Source: See table 1.