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Abstract: Previous studies come to contradictory conclusions regarding the relationship between immigrants' social contacts and their labor market integration. This paper tackles this impasse by exploring the short and long-term effects of social contacts on immigrant labor market outcomes using data collected in the Swedish Level-of-Living survey in 2010. Results from Cox and OLS regressions show that social contacts provide meaningful resources in the initial transition period, but loose importance over time in the host country. The findings moreover reveal substantial heterogeneity by reason for migration. Social contacts provide family related migrants and labor migrants with significant resources in their job search, while social contacts are not able to facilitate labor market entry among refugees. Regarding longer-term integration, earnings differences by social contacts are small. However, compared to other migrants, labor migrants continue to experience an advantage in the labor market. The implications of these findings are that distinguishing between short and long-term integration contributes to our understanding of the association between immigrants' social contacts and their labor market integration. Moreover, information provided by social contacts assists family related migrants and labor migrants in their job search.

Keywords: social contacts, immigrant integration, international migration

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Introduction

Increasing and predicted future high rates of immigration have led to rising concerns about integration in Europe. Statistics reveal not only large differences between native and immigrant labor market outcomes, but also highlight distinctions among immigrants. In Sweden, employment rates are persistently lower among immigrants from Africa and Asia than among immigrants from other European countries (Alden and Hammarstedt, 2014; Eriksson, 2011; le Grand and Szulkin, 2002). Employment is also lower among immigrants who move for family reunification or as refugees than among labor migrants, among immigrants with low education and those who have been in Sweden for a short period of time. Similar patterns are observed in other European countries (cf. Ruiz and Vargas-Silva, 2017). Despite these large differences, little is known about the mechanisms underlying immigrants' diverging integration patterns.

Due to limited power in explaining labor market differences solely based on country of birth or education, migration researchers have increasingly turned to social contacts as one potential factor facilitating labor market integration. Indeed, they may provide immigrants with important insights into the foreign labor market. However, the literature remains inconclusive as to whether social contacts promote or inhibit immigrant labor market integration. Differences in results may, in part, be due to unaddressed endogeneity and inconsistencies in measurement across studies. Few data sets provide information on whether individuals got their friends or their job first. However, the order of events is important, as migrants may select into friendships as well as jobs (Mouw, 2006, 2003). Notably, some studies minimize endogeneity concerns by measuring immigrants' contacts prior to the move, or use refugee assignment policies to control for immigrants' selection into ethnic enclaves (Kalter and Kogan, 2014; Damm, 2009; Edin, Fredriksson, and Åslund, 2004). Additionally, the literature operationalizes labor market outcomes and social contacts in a variety of ways. Different measures likely influence the results by tapping alternative mechanisms. For instance, some studies focus on the number or kind of contacts, others measure whether migrants live or work in ethnic enclaves, while yet others use detailed network data (Xie and Gough, 2011).

This paper contributes to the previous literature by studying the short and long-term effects of social contacts on immigrant labor market integration in Sweden. Data from the Level-of-Living survey for Foreign-borns was collected in 2010 and provides retrospective information on immigrants' social contacts at arrival. This measure allows me to minimize endogeneity concerns, as social contacts temporally precede labor market outcomes. Still,

considering that respondents are asked retrospectively, the variable may suffer from recall problems. This approach is similar to the one used by Kalter and Kogan (2014). To study the relationship between social contacts and labor market entry, I estimate Cox regressions on time to first job and present results from two models. The first model controls for immigrants' social contacts, reason for migration and a set of controls. The second model additionally includes interactions between social contacts and the reason for migration. This allows me to estimate differential effects of social contacts on labor market entry for family related, refugee and labor migrants. Regarding longer-term economic integration, the study presents OLS regression estimates on positive earnings and the natural logarithm of earnings at interview. Similarly, two models are shown. The first controls for the main effects, while the second additionally allows for interactions between social contacts and the reason for migration.

The factors that promote or inhibit immigrants' labor market integration are of particular interest to researchers and policy makers. Motivated by the surge in international migration, European countries are increasingly concerned about their capacity to integrate newcomers. Sweden experienced a particularly strong influx of migrants over recent years. Between 2000 and 2015, the immigrant population increased from about 1 to 1.7 million, making up 17% of the total Swedish population in 2015 (Statistics Sweden, 2017). This can be compared to 14% in the U.K. and Germany and 12% in France (OECD, 2017). This makes Sweden an interesting case for studying the mechanisms underlying immigrants' labor market integration. Gaining better insight into different integration trajectories is also important for promoting immigrants' welfare and transition into the host country society.

The paper is organized as follows. The next section discusses the theoretical background. This is followed by a description of the Swedish context, as well as, the data and methods used in the empirical analysis. Then I present the descriptive statistics and empirical findings. Finally, I discuss the results and conclude.

Theoretical Background

Forming social contacts

Measuring social contacts at arrival minimizes endogeneity concerns but does not alleviate them. For one, individuals incorporate their family and friends' previous migration experience in the decision to move. Analyzing migration between Germany and Poland, Kalter (2011) finds that prior migration experience of close family members significantly increases one's own risk of making a first trip, while the inclination to continue migrating is

strengthened by the experience of other household members and relatives. Studies from the U.S. also show a positive relationship between social capital and the decision to migrate. Massey and Espinosa (1997) find that people with ties to migrant family members and who live in communities where U.S. migration is prevalent are far more likely to migrate illegally than those without access to these social resources. Moreover, they show that once someone has migrated, human capital and social ties that they established on their first trip become important indicators of the likelihood that they continue moving.

The reason for migration may similarly influence the social context immigrants arrive into in the host country. Labor migrants are likely to prepare for the move and select both the destination and timing of the migration with economic costs and benefits in mind. This is may make them less dependent on social contacts. By contrast, refugees have little preparation for the trip. They additionally face more bureaucratic hurdles and restrictions to entering the labor market than other migrants. Migrants, who come to the host country to reunite with their family, are much more likely to benefit from their network than other migrants.

Social contacts and labor market outcomes

Regarding the role social contacts play in the labor market, this paper builds on Lin's (2001) definition, according to which social contacts/capital are "resources embedded in a social structure that are accessed and/or mobilized in purposive actions." The focus in this conceptualization lies on the information or help that social contacts can provide individuals with, while the contacts themselves remain secondary. Lin (2001), additionally, explores four mechanisms through which social contacts can affect individuals' labor market outcomes: influence, information, social credentials and confidence/self-esteem. Social contacts can impact individuals' labor market outcomes through *influence* if their friends and contacts get in touch with the firm and put in a word for them. Friends may also provide individuals with *information* about the labor market and job offers. Social contacts can act as *social credentials* if they confirm the job applicants' competence for the position. Finally, social contacts may reinforce individuals' *confidence* in the job search through motivation.

There is considerable heterogeneity in the empirical literature regarding the association between social contacts and labor market outcomes. While some studies reveal a positive association, others find evidence of a negative relationship between an individual's contacts and their employment chances. Previous research has shown that the association is contingent on a number of factors. The following discussion focuses on variation in the association by the type of contacts individuals have, the type of jobs they enter and time spent

in the host country. Variation by time in the host country constitutes the focus of this paper.

Social contacts may be differently related to labor market outcomes, depending on whether they are strong or weak. Granovetter (1973) argues that weak ties (for instance, friends or acquaintances) are more useful in the job searching process, while individuals' strong ties (such as, family) often have access to similar information as individuals themselves. Bian, Huang and Zhang (2015) find empirical evidence that weak ties provide individuals with information about potential jobs in China. By contrast, strong ties are more useful for influence or favouritism; favouritism being when employers hire referrals from entrusted employees or influential social contacts. Their results also show that both strong and weak ties are related to better job matching, but only influence/favoritism is related to higher wages.

The social standing and employment status of contacts also play a significant role for the resources they provide (cf. Andersson, 2017). Especially when studying immigrants and ethnic groups, discrimination is an important factor to consider. Using experimental data collected in Sweden, Arai, Bursell and Nekby (2016) and Bursell (2014) find extensive ethnic discrimination in the Swedish labor market against applicants with Arabic and North African names. This evidence indicates that labour market discrimination may make it more difficult for some immigrants to integrate economically. Behtoui and Neergaard (2010) and Behtoui (2008) also show that immigrants are less likely to be able to find a job through informal methods than native Swedes. Moreover, jobs found through informal methods do not pay as well for immigrants as for natives. These results suggest that social contacts may also be discriminated against and thus be less resourceful in the job search. Regarding the social context more broadly, Hällsten et al. (2018) find that ethnic closure in friendship networks is positively associated with youth's orientations to parents' culture in Sweden and negatively with orientations to Swedish culture. However, individuals with a rich occupational social contact network tend to be oriented towards both the majority and parental culture.

Studies also show that the relationship between social contacts and labor market outcomes depends on the type of job individuals enter. Analyzing the association between contacts and immigrants' labor market entry in Germany, Kalter and Kogan (2014) find that immigrant networks have a positive effect on lower skilled employment but do not help immigrants find higher skilled jobs. While Damm (2009) finds that an increase in enclave size improves refugee labor market outcomes irrespective of skill group in Denmark, Edin et al. (2004) find this positive effect only for less skilled immigrants in Sweden. Joona and Wadensjö (2012) show that connections to self-employed individuals decrease immigrants'

likelihood of unemployment in Sweden, but also lead to future employment in similar occupations and lower incomes over time.

This paper focuses on heterogeneity by immigrants' time in the host country. Previous studies analyze a variety of labor market outcomes. However, it remains unclear whether some of the contradictory findings on the relationship between social contacts and labor market integration are due to differences in the timing of the outcome. This paper fills this gap in the literature by differentiating between labor market entry and earnings at interview. In the initial transition period, information provided by social contacts is likely to assist immigrants' job search. However, over time in the host country social contacts immigrants had when they arrived may decline in importance. They may actually have a negative impact on longer-term economic outcomes, as migrants who arrived into a network of social contacts may be less likely to branch out and make more useful contacts.

Hypotheses

Two hypotheses have been put forth in the migration literature to explain how social contacts and labor market outcomes may be related. On the one hand, social contacts can improve immigrant labor market outcomes by providing immigrants with information about the host country's labor market (Lafortune and Tessada, 2012; Aguilera and Massey, 2003). Considering that migrants often lack basic knowledge about where to look and how to apply for jobs in the host country, they are particularly reliant on this information. Employers, moreover, pay workers obtained through informal channels more because they believe them to be more productive, less likely to leave and better prepared for the company culture. Fernandez, Castilla, and Moore (2000) find empirical evidence that employers recognized the value of social capital and paid referral bonuses to people within their company. This reduced their recruiting costs. This explanation will be called the *"information hypothesis"* in the rest of the paper.

To account for the finding that social contacts and labour market outcomes are negatively related, scholars have turned to the *"entrapment hypothesis"*, according to which the type of resources immigrants have access to through their social contacts are considerably lower compared to natives (Portes and Rumbaut, 2001; Portes, 1998; Portes and Sensenbrenner, 1993; Bonacich, 1972). The entrapment hypothesis builds on the idea that outside discrimination, in-group sanctioning or convenience can make immigrants' contacts less valuable in the host country. Moreover, with time in the country, social contacts may impede immigrants from forming more helpful connections in the host country. Spatially or

socially defined ethnic or immigrant groups are less prone to integrate than individual immigrants. An implicit assumption underlying the entrapment hypothesis is then that individuals who have social contacts are less likely to make new connections. In this way, they can isolate immigrants from information about the broader labour market.

Based on these hypotheses, we may expect that social contacts provide immigrants with important information that in the short term can help them find employment. Here we distinguish between friends and acquaintances, family and no contacts. However, over time in the host country, immigrants' contacts may actually have a negative impact on longer-term economic outcomes (as indicated by earnings at interview), as migrants who arrived into a network of social contacts may be less likely to branch out and make more useful contacts. Labor market-related motivations for the move are also expected to provide immigrants with important insights that help to speed up the job search. The significance of labor market-related motivations to move likely diminishes as migrants have more time to gain direct experience on the host country labor market. This leads us to a set of testable implications regarding short and long-term integration:

Hypothesis 1a. Social contacts help speed up migrants' entry into the labor market (information hypothesis).

Hypothesis 1b. When migration is spurred by labor market motives job entry is facilitated.

Over time in the host country:

Hypothesis 2a. Arriving into a network of social contacts has an impeding impact on immigrants' earnings at interview (entrapment hypothesis).

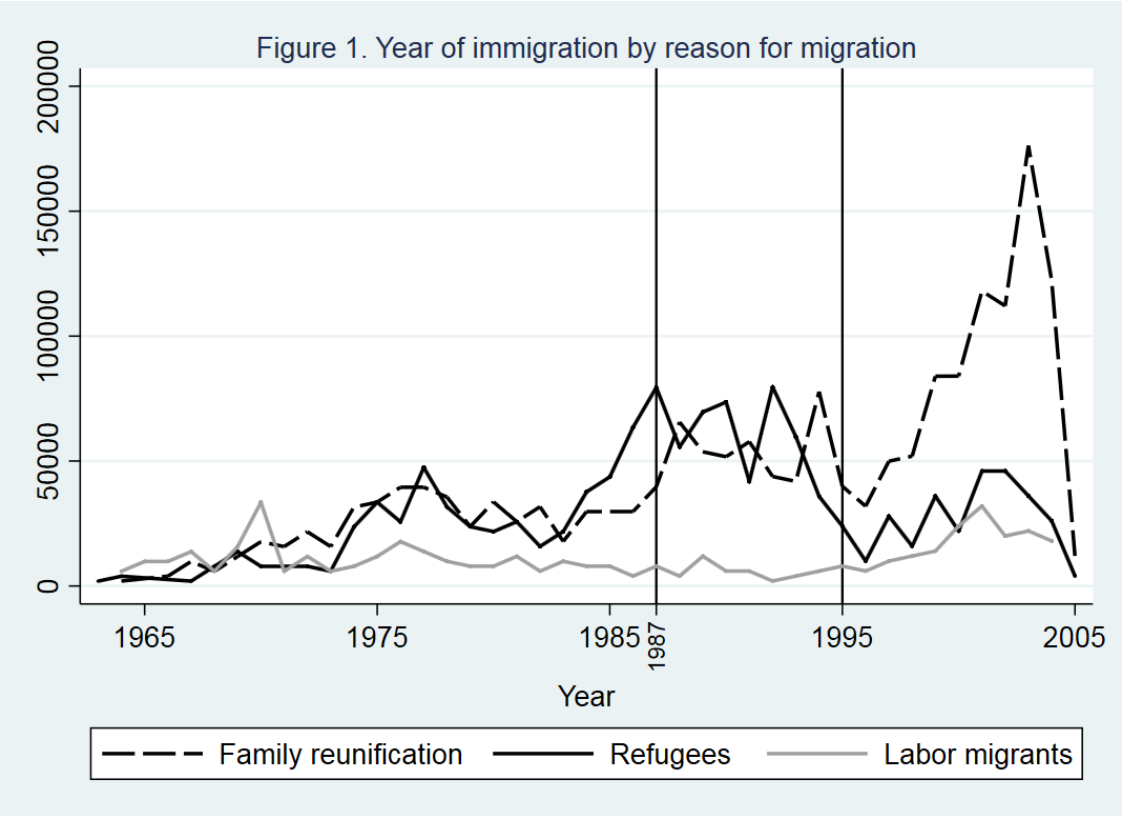
Hypothesis 2b. Earnings differences by reason for migration at interview are smaller than the employment gap after arrival.

The Swedish Migration Context

Historically, Sweden mainly received immigrants from other Nordic countries. During the 1950s and 60s, larger numbers of labor migrants from Italy, Finland, Greece, and Yugoslavia came (Andersson, 2007; Wadensjö, 2007). However, since the 1970s and continuing until today, immigration to Sweden is mainly characterized by refugee and family reunion immigration. Recent immigrants are predominantly from countries outside of Europe, especially from Western Asia (Turkey, Lebanon, Syria, Iraq and Iran), Africa (Ethiopia, Somalia) and Latin America (Chile). Of all immigrants living in Sweden today, 41% come from outside of Europe. The remaining two thirds come from neighbouring Nordic and non-

Nordic European countries.

Immigration policy influences both immigration flows and integration patterns. In comparison to other European countries, Swedish immigration policy has been characterized as welcoming. However, the context of reception has changed considerably over the years. Figure 1 shows that immigrants interviewed in the survey arrived over the time period 1960-2005. It also reveals considerable variation in the year of immigration by reason for migration. Family related migrants began arriving in larger numbers in the late 1970s. Over the 1990s, the number of family reunifications increased, peaking shortly after 2000. Refugees included in the sample predominantly immigrated in the 1990s. The vertical line in the year of 1987 indicates the first big wave. For labor migrants, we observe an increase in immigrations around 1970, presumably due to Finnish labor migration. The vertical line in 1995 indicates the year in which Sweden joined the EU. Subsequently, we see a moderate increase in labor migration. In the following, I discuss some of the policy changes related to family related, refugee and labor migration that occurred over this period.



Family reunification occurs when migrants' family members, such as a partner or children, join them in the host country. Family members need to apply for a residence permit prior to immigration and partners have to prove that their relationship is serious (Migrationsverket, 2018). A legislative change in 2000 moreover allowed for family reunification in the absence of prior cohabitation. Importantly, this facilitated intermarriage between Sweden and immigrants (Rosén, 2010).

Refugees are persons fleeing, for instance civil war or natural disaster (Green, 2017). In contrast to family related migrants, refugees can apply for their residence permit after immigration. According to Eriksson (2011), the average process time for refugee applications was seven months between 2006 and 2009. Generally, refugees are not allowed to work until granted a residence permit. However, if the expected process time is longer than four months or they provide documents supporting their application, they can look for work without a permit. Between 1985 and 1991, additionally, a settlement policy was in place assigning refugees to different areas in Sweden once they had been granted a residence permit (Nekby and Pettersson-Lidbom, 2017; Edin et al., 2004).This meant that refugees could not simply move to an area with many job openings or where their social contacts had settled down. This policy was amended in the early 1990s and subsequently abandoned.

Labor migrants are required to apply for a work permit before entering the country, unless they come from one of the other Nordic countries or another EU-member state. Sweden joined the EU in 1995 and since then migrants from other EU-member states have been able to work and reside in Sweden without having to apply for a residence permit. Beyond specific differences by reason for migration, Swedish immigration policy can be summed up as open and hospitable between 1960 and 2005.

Data and Methods

This paper analyses data from a supplement to the Swedish Level-of-Living survey (LNU) that focuses on individuals born abroad and their children (LNU-UFB). The LNU survey was first conducted in 1968 and thereafter has been replicated in 1974, 1981, 1991, 2000 and 2010. LNU uses a multidimensional approach, covering a wide range of questions. To supplement the interview data, register information has been added. In 2010, LNU-UFB was initiated. It was designed to examine the living conditions of immigrants in Sweden and contains questions that are identical to those found in the LNU 2010 data, as well as rich information on respondents' migration experiences, language fluency, employment and social networks in the home country and in Sweden.

The data was collected through face-to-face and telephone interviews conducted in 2010-2012. A representative sample of the foreign born population, who had been in the country for at least five years, was selected from Swedish register data. This was done using a stratified sampling technique to ensure that immigrants from different regions of birth were represented in the data. The sampling frame included seven region of birth groups, each of which was divided into three age categories (18–30 years, 31–55 years, and 56–74 years). Each age category comprised of 350 potential respondents, and each region of birth group was composed of 1,050 persons who were approached to participate. (Göransson and Johansson, 2012). In total, 3,451 interviews were conducted. The response rate was 50% (to be compared to the response rate of 61.5% for the LNU 2010 survey).

Given the study's focus on labor market outcomes, the analytical sample is restricted to persons older than 15 at immigration (excluding 1,143 observations) and younger than 65 at the interview (excluding 384 observations). The analysis, moreover, focuses on the three most prevalent reasons: family reunification, refugees and labor migration. Students and migrants, who moved for other reasons, are dropped from the analysis due to small sample sizes (excluding 125 observations). Finally, the analytical sample is restricted to individuals with recorded year of immigration (excluding 23 persons). This leaves us with an analytical sample of 1,776 persons.

Variables

The outcome variables are months to first job and earnings at interview. Short-term labor market integration is measured by the months between immigration to Sweden and entry into the first job. The variable is censored at four years considering the focus on short-term labor market entry.[i] Longer-term labor market integration is operationalized using earnings at interview (in 2010). Average length of stay in Sweden is 20 years by the time of the interview. In line with this, 90% of the immigrants state that they intend to stay in the country for the next five years. In this way, it is reasonable to assume that most immigrants have had time to establish themselves on the labor market by the interview. While this allows me to measure long-term integration, considering that the sample is conditioned on having stayed until the interview, the longer the time in the host country the more selected the group.[ii] Information on earnings come from Swedish register data that were linked to the survey. Earnings are defined as taxable income from wage-employment, which excludes income from self-employment, sickness pay, and parental leave allowances. Specifically, I analyze two outcomes: a dummy for positive earnings and the natural logarithm of earnings.

The variable of most interest is immigrants' social contacts at arrival in Sweden. The survey includes the question "Did you know someone before you came here (to Sweden)?" Seeing that this is a retrospective question, it may be imprecise due to recall problems.[iii] Respondents could answer, "Yes, I knew friends or acquaintances", "Yes, family", "Yes, others" and "No." In case of a positive answer, respondents could choose multiple categories. For example, they could say that they knew friends as well as family. I recoded the variable to differentiate between friends and/or acquaintances, family and no contacts. Friends and/or acquaintances comprise of respondents who had friends, acquaintances or others in Sweden prior to arrival. *Family* includes individuals with only family or both family and friends. The number of respondents who knew both family and friends is small (78 individuals or 4% of the sample).[iv] Finally, migrants who answered that they did not know anybody in Sweden prior to arrival are classified as having *no contacts*.

Information on the reason for migration comes from two questions. Respondents were asked, "On what grounds is your first residence permit founded?" and "What was your main reason for moving to Sweden?" Due to many missing values in the second question, the question regarding the residence permit was the main source of information. Still, for migrants from one of the Nordic countries and EU-member states, who did not need a residence permit; the reason for migration was used.

Methods

In the first part of the analysis, I used event history analysis to estimate time to first job in Sweden. Persons enter the risk set (i.e., the observation window) at immigration. I calculated time at risk in months. The event of interest is entry into the first job in Sweden. Episodes are censored four years after immigration or at the time of the interview. I started by plotting survival estimates by reason for migration and social contacts to look at raw differences in the time to first job. Next, I estimate two different Cox models.[v] The first model controls for social contacts, reason for migration, as well as education and individual characteristics. The second model additionally includes interactions between social contacts and reason for migration, allowing us to test for differences in the association between social contacts and labor market entry by reason for migration. This is important considering that migrants are likely to have differential probabilities of arriving into a network of social contacts in Sweden and entering the labor market by reason for migration.

The second part of the analysis examines the relationship between immigrants' social contacts prior to immigration and longer-term labor market outcomes, using earnings at

interview. I estimated the likelihood of having positive earnings, as well as, earnings differences among immigrants using OLS regression. Again, I ran two models, one without interactions and a second one including interactions between social contacts and reason for migration. OLS coefficients for ln(earnings) can be interpreted as the percentage change resulting from a one unit change in each variable on real earnings received in Sweden.

Descriptive statistics

Table 1 provides descriptive statistics of the variables included in the analysis. Variable means are shown by reason for migration and for the total sample. For each indicator the highest group mean is indicated in bold. As shown in the first row of Table 1, average time to first job is about 20 months. Refugees tended to take longer to find employment (roughly two years), while labor migrants often entered their first job within about a year of immigration.[vi] In the sample, 75% had positive earnings in 2010. This is somewhat higher than foreign-born employment rate of 67% at the national level (OECD, 2017). This may be because, on average, migrants in the sample have been in the country for a longer time than the immigrant population in Sweden. Mean earnings at the time of the interview are approximately 190,000 Swedish crowns.

Table 1 also shows that about 60% of the migrants who came to Sweden for family reunification had family contacts, while 21% said that they had friends and/or acquaintances in Sweden. The latter group predominantly immigrated after 2000 and about 60% were married to a Swedish spouse by the interview. This suggests that they may have moved to marry a partner whom they had not lived with previously. In which case, they may have said that they had a friend or acquaintance in Sweden, rather than family. The remaining 18% reported having no contacts in Sweden.[vii] Among refugees, 42% had no contacts in Sweden prior to arrival, while roughly a third of labor migrants had friends and/or acquaintances, family or no contacts, respectively.

The models also control for educational attainment, a set of individual characteristics and region of birth. Table 1 shows that most immigrants had intermediate or high education at the interview (nearly 80%). This is somewhat higher than at the national level, where 74% of foreign-borns had intermediate or high education in 2010 (Statistics Sweden, 2018). Group means also show that the region of birth is strongly correlated with the reason for migration in the Swedish context.[viii] More than 60% of labor migrants came from the Nordic countries or an EU-15 member state. Refugees were predominantly from Africa, but also often from the rest of Europe and Latin America. Family related migrants were mainly from Asia, as

well as the Nordic countries or an EU-15 member state and Africa. The last row in Table 1 shows that more than half of the sample consists of immigrants who moved for family reunification, 36% arrived as refugees and 13% moved for work.

TABLE 1
IMMIGRANT CHARACTERISTICS BY RESIDENCE PERMIT
(PROPORTION WITHIN EACH GROUP)

	Family reunification	Refugees	Labour migrants	Total
Months to first job	21	**23**	14	21
Earnings at interview (in 100 SEK)	1910.61	1856.97	**2508.41**	1968.94
Positive earnings	**0.77**	0.71	**0.77**	0.75
Ln(earnings)	7.39	7.56	**7.78**	7.50
Social contacts at arrival				
Friends and/or acquaintances	0.21	0.18	**0.33**	0.22
Family	**0.62**	0.40	0.30	0.50
No contacts	0.16	**0.42**	0.37	0.28
Education				
Low education	0.21	0.20	**0.25**	0.21
Intermediate education	0.35	**0.42**	0.29	0.37
High education	0.45	0.38	**0.46**	0.43
Individual characteristics				
Female	**0.67**	0.41	0.40	0.54
Age at immigration	27	**29**	25	27
Age at interview	46	**51**	**51**	48
Unmarried	0.19	0.17	**0.31**	0.20
Married	**0.60**	0.58	0.51	0.58
Divorced	0.21	**0.25**	0.18	0.22
Children	0.82	**0.87**	0.79	0.83
Region of birth				
Nordic countries and EU-15	0.28	0.09	**0.64**	0.26
Rest of Europe	0.13	**0.16**	0.12	0.14
Africa	0.25	**0.42**	0.07	0.29
Asia	**0.20**	0.10	0.11	0.15
Latin America	0.14	**0.24**	0.05	0.16
Year of immigration	**1992**	1988	1985	1990
Observations	914	632	230	1,776
Percent of total immigrant sample	51	36	13	

Empirical Results

Entering the labor market

Do immigrants who arrived into a network of social contacts experience smoother entry into the labor force? To answer this question, I start by plotting raw survival estimates on time to first job in Sweden in Figure 2. Panel a in Figure 2 shows that migrants, who moved for family reunification, and had friends and/or acquaintances in Sweden entered their first job faster than their peers with family or no contacts. About 70% of family related migrants with family and/or acquaintances entered employment within the first year. After this the slope flattened out and after four years about 80% had entered the labor market. As shown in panel b, for refugees we observe a flatter curve. After four years in Sweden, roughly 65% had entered the labor market. Differences by social contacts were small. Labor migrants entered their first job at a faster rate and most were employed after four years. Differences by social contacts emerged in the second year and after four years labor migrants with family contacts had the highest employment levels, followed by their peers with friends and/or acquaintances and no contacts, respectively.

Figure 2. Survival estimates showing time to first job by reason for migration and social contacts

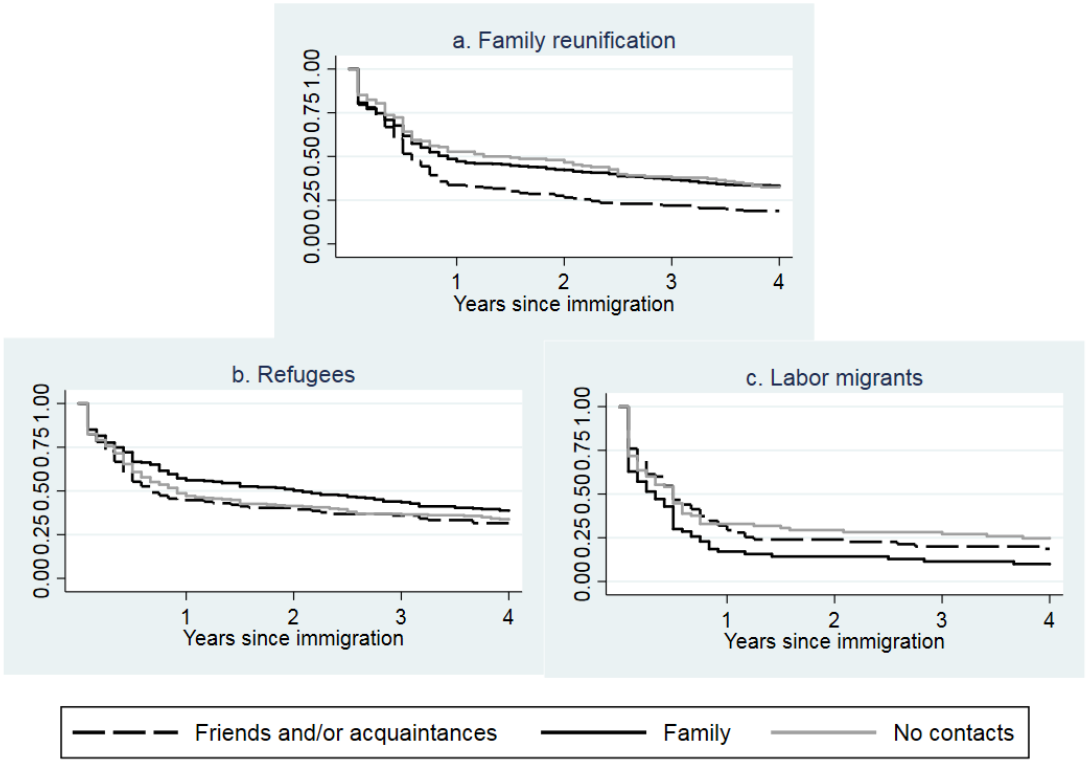


Table 2 shows estimates from Cox regressions on months to first job. In rows 2 and 3, we find no significant differences in time to first job by social contacts. The coefficients for reason for migration indicate that refugees often took longer to find their first job than migrants, who came to Sweden for family reunification. By contrast, labor migrants generally entered employment more quickly. These estimates provide support for hypothesis 1b. Namely, immigrants whose primary motive for moving was work-related experienced smoother entry into the labor market. However, I find no (positive) association between social contacts and time to first job, as I would expect according to the *information hypothesis* (hypothesis 1a).

Figure 3 shows estimates for the interaction terms from the second model. The interaction terms allow us to compare the association between time to first job and social contacts depending on whether migrants arrived as family related, refugee or labor migrants. The reference category consists of family related migrants, who had friends and/or acquaintances when they arrived in Sweden. As noted before, this group may have moved to marry a partner whom they had not lived with previously, leading them to say that they had a friend or acquaintance in Sweden, rather than family. Bars below zero indicate negative coefficients (i.e., longer time to first job), while bars above zero indicate positive coefficients (i.e., shorter time to first job). The model includes the same set of controls as the regression in Table 1. Estimates for the full Cox regression are provided in Table A1 in the Appendix.

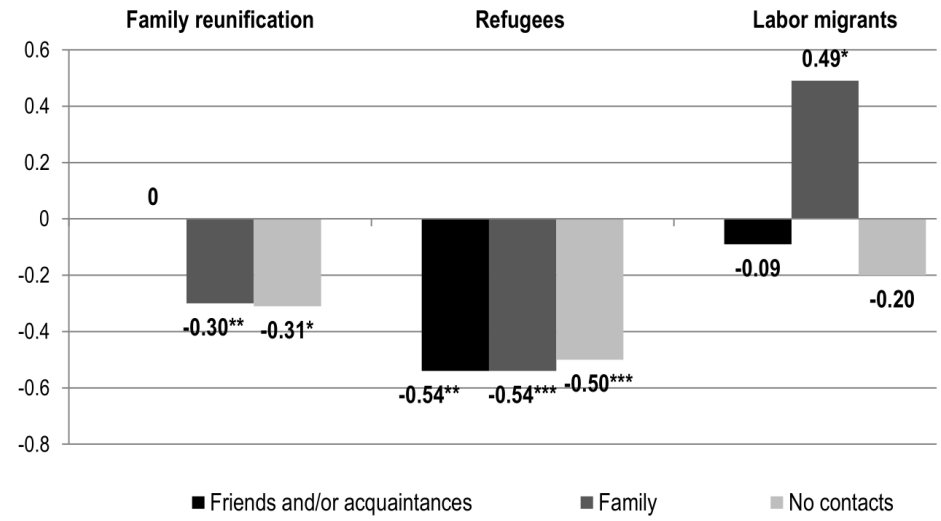
Figure 3 reveals considerable heterogeneity in the association between social contacts and labor market entry by reason for migration. Family related migrants with family or no contacts took significantly longer to find their first job than their peers with friends and/or acquaintances in Sweden. Looking at refugees, we find that they had a longer time to first job than family related migrants. Moreover, there was little interaction between social contacts and labor market entry in this group. Labor migrants with family in Sweden entered the labor market significantly faster than both family related and labor migrants with friends and/or acquaintances or no contacts in Sweden.

TABLE 2
ASSOCIATION BETWEEN SOCIAL CONTACTS
AND MONTHS TO FIRST JOB

	Months to first job	
	B	SE
Social contacts (ref. Friends and/or acquaintances)		
Family	-0.09	(0.10)
No contacts	-0.14	(0.11)
Reason for migration (ref. Family reunification)		
Refugees	-0.26**	(0.10)
Labor migrants	0.28*	(0.13)
Education (ref. Low education)		
Intermediate education	0.21*	(0.10)
High education	0.23*	(0.10)
Female	-0.40***	(0.08)
Age at immigration (ref. 15-20 years)		
20-25 years	0.80***	(0.12)
26-34 years	1.02***	(0.13)
35+ years	1.05***	(0.14)
Region of birth (ref. Rest of Europe)		
Nordic countries and EU-15	-0.02	(0.13)
Africa	-0.46***	(0.12)
Asia	-0.25	(0.14)
Latin America	-0.14	(0.12)
Year of immigration quintiles (ref. 1963-1979)		
1980-1988	-0.10	(0.11)
1989-1994	-0.26*	(0.12)
1995-2001	-0.42***	(0.12)
2002-2005	-0.49***	(0.13)
Observations	1,776	

Notes: Cox regression estimates. Standard errors in parentheses. Additional controls: Region of residence (at arrival in Sweden) included as fixed effects. ***Significant at the 0.1 percent level. ** Significant at the 1 percent level. *Significant at the 5 percent level.

Figure 3. Interaction terms for Cox regressions on months to first job



Notes: Cox regression on months to first job. The reference category consists of Family reunification migrants with friends and acquaintances in Sweden at arrival. Controls are as in Table 2, see Table A1 for the complete set of regression estimates.

***Significant at the 0.1 percent leve. **Significant at the 1 percent leve. *Significant at the 5 percent level.

In sum, these results show that social contacts help speed up labor market entry among family related and labor migrants, as predicted by the *information hypothesis*. Among family related migrants, friends and/or acquaintances in Sweden are especially beneficial for entering the labor force. This is potentially due to the group's high intermarriage rates by the interview (cf. Nekby, 2010). Among labor migrants, family contacts are especially valuable for finding a job. When arriving in a new country, family or strong contacts may provide more reliable resources. However, among refugees having social contacts does not seem to reduce time to first job. This finding may be due to discrimination (cf. Behtoui and Neergaard, 2010) and differences in the type of resources refugees' social contacts provide compared to family related and labor migrants' social contacts.

Earnings at interview

In the next part of the paper, I study the relationship between immigrants' social contacts at arrival, reason for migration and earnings at interview. Table 3 shows estimates from OLS regressions on positive earnings and ln(earnings). Model 1 in Table 3 shows that migrants who arrived without contacts are less likely to have positive earnings than their peers with friends and/or acquaintances or family in Sweden. The coefficients for reason for

migration indicate no significant difference between the groups. Model 2 shows that, among those with positive earnings, migrants with family contacts in Sweden generally had 19% higher earnings at interview than those with friends and/or acquaintances or no contacts. This is roughly equivalent to an earnings increase of about 36,000 Swedish crowns from the average of 190,000 in the sample (see Table 1). The coefficients for reason for migration indicate that labor migrants had 29% higher earnings than family related migrants and refugees, or roughly 55,000 Swedish crowns higher earnings.

Although Model 1 and 2 provide somewhat different results, both reveal a positive association between social contacts and earnings at interview. Model 1 shows that having no contacts, versus having friends and/or acquaintances or family in Sweden, is negatively associated with positive earnings. In Model 2, especially family contacts are beneficial for higher earnings. These estimates are contradictory to the *entrapment hypothesis* (hypothesis 2a), which suggests that having friends and/or acquaintances or family in Sweden at arrival may have an impeding impact on immigrants' longer-term economic outcomes. Regarding hypothesis 2b, according to which earnings differences by reason for migration at interview are smaller than the employment gap at arrival, the regressions provide inconclusive results. Model 1 shows no difference in the likelihood of having positive earnings by reason for migration, but Model 2 reveals that labor migrants have significantly higher earnings than family related migrants or refugees.

Figure 4 illustrates the interaction effects between social contacts and reason for migration with panels a and b showing the estimates for positive earnings and ln(earnings), respectively. Results for the full models are reported in Table A2 in the Appendix. Figure 4 is set up similar to Figure 3. The reference category is again family related migrants, who had friends and/or acquaintances in Sweden. Figure 4. panel a shows no interaction between the likelihood of having positive earnings and contacts at arrival among family related migrants. Looking at refugees, we find that those without contacts had a lower likelihood of having positive earnings than their peers with social contacts, as well as family related migrants. Labor migrants with friends and/or acquaintances were more likely to have positive earnings than labor migrants with family or no contacts at arrival, and family related migrants. Figure 4. panel b reveals no significant earnings differences by contacts at arrival for family related migrants and refugees. However, labor migrants with family or no contacts had significantly higher earnings than family related migrants and labor migrants with friends and/or acquaintances in Sweden.

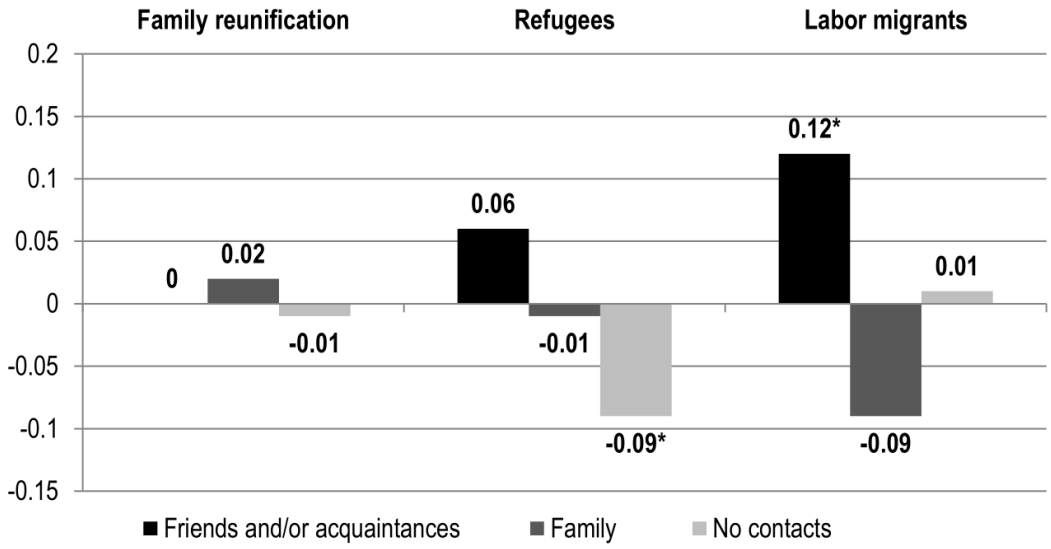
TABLE 3
RELATIONSHIP BETWEEN SOCIAL CONTACTS AND EARNINGS AT INTERVIEW

	Positive earnings		Natural logarithm of earnings	
	B	SE	B	SE
Social contacts (ref. Friends and/or acquaintances)				
Family	-0.03	(0.03)	0.19*	(0.08)
No contacts	-0.08**	(0.03)	0.17	(0.10)
Reason for migration (ref. Family reunification)				
Refugees	-0.03	(0.02)	0.07	(0.08)
Labor migrants	0.01	(0.03)	0.29**	(0.11)
Education (ref. Low education)				
Intermediate education	0.17***	(0.03)	0.19	(0.10)
High education	0.23***	(0.03)	0.29**	(0.10)
Female	-0.01	(0.02)	-0.09	(0.07)
Age at interview (ref. 20-35 years)				
36-45 years	-0.03	(0.04)	0.39***	(0.12)
46-55 years	-0.06	(0.04)	0.41**	(0.13)
56+ years	-0.23***	(0.04)	0.34*	(0.14)
Marital status (ref. Unmarried)				
Married	-0.01	(0.03)	0.07	(0.09)
Divorced	-0.03	(0.03)	-0.01	(0.11)
Children	0.05	(0.03)	-0.13	(0.10)
Region of birth (ref. Rest of Europe)				
Nordic countries and EU-15	-0.02	(0.03)	-0.18	(0.11)
Africa	-0.07*	(0.03)	-0.32***	(0.10)
Asia	-0.07*	(0.03)	-0.17	(0.11)
Latin America	0.05	(0.03)	-0.14	(0.11)
Time in Sweden quintiles (ref. 5-10 years)				
11-17 years in Sweden	0.07*	(0.03)	0.23*	(0.11)
18-23 years in Sweden	0.10**	(0.04)	0.43***	(0.12)
24-32 years in Sweden	0.07	(0.04)	0.25	(0.14)
32+ years in Sweden	0.13**	(0.04)	0.25	(0.15)
Constant	0.70***	(0.05)	6.97***	(0.16)
R^2	0.12		0.10	
Observations	1,776		1,327	

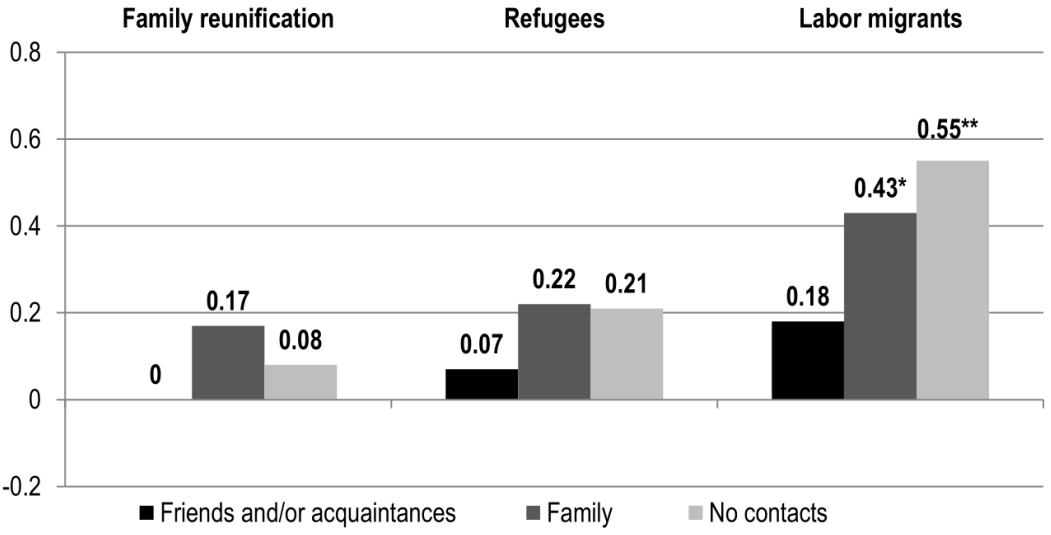
Notes: OLS regression estimates. Standard errors in parentheses. Additional controls: Region of residence at interview in Sweden) included as fixed effects. ***Significant at the 0.1 percent level. ** Significant at the 1 percent level. *Significant at the 5 percent level.

Figure 4. Interaction terms from OLS regressions on positive earnings and ln(earnings)

a. Positive earnings



b. Ln(earnings)



Notes: OLS regression on the likelihood of having positive earnings and ln(earnings). The reference category consists of Family reunification migrants with friends and acquaintances in Sweden at arrival. Controls are as in Table 3, see Table A2 for the complete set of regression estimates.

***Significant at the 0.1 percent level. **Significant at the 1 percent level. *Significant at the 5 percent level.

Combining the findings on positive earnings and ln(earnings), we find no association between social contacts and the likelihood of having positive earnings or ln(earnings) at interview, among family related migrants. This finding suggests that the impact of social contacts at arrival fades with time in the host country, as family related migrants make new contacts and gain direct labor market experience in the host country. Refugees with social

contacts have a similar likelihood of having positive earnings at the interview as family related migrants, while refugees without contacts are less likely to have positive earnings. Concerning earnings, refugees (with and without contacts) have earnings that are en par with family related migrants' earning at interview. This indicates that labor market differences between refugees and family related migrants are small at the interview. By contrast, labor migrants, as a group, experience an advantage on the labor market at interview, compared to other migrants. Labor migrants with friends and/or acquaintances are more likely to have positive earnings than family related migrants, refugees and labor migrants with family or no contacts in Sweden. Additionally, labor migrants with family and no contacts tend to have higher earnings at interview.

Conclusion

Previous studies that have investigated social contacts and labor market outcomes come to different results regarding the association between the two variables. Some papers find that social contacts promote immigrants' economic integration, while others observe a negative association. In an effort to get a better understanding of the relationship between contacts and labor market outcomes, some studies have turned to exploring variation by the type of contacts individuals have (Bian et al., 2015; Behtoui and Neergaard, 2010; Behtoui, 2008). Others papers have shown that the relationship between social contacts and job entry and earnings depends on the type of job individuals enter (Kalter and Kogan, 2014; Joona and Wadensjö, 2012; Damm, 2009; Edin et al., 2004). This study tries to contribute to the empirical puzzle by analyzing the relationship between social contacts and short and long-term labor market outcomes.

The analysis is conducted using data collected in the Level-of-Living survey for Foreign-borns in 2010, which provides retrospective information on immigrants' contacts prior to arrival in Sweden. Short-term labor market integration is investigated using a retrospective measure of labor market entry after immigration and the longer-term outcomes are positive earnings and ln(earnings) at interview. Results from Cox regressions presented differences in time to first job by social contacts and reason for migration, as well as interactions between the two. The models also controls for differences in time to first job by educational attainment, gender, age at immigration, region of birth, year of immigration and region of residence at arrival in Sweden.

We find that social contacts are associated with shorter duration to first job among family related and labor migrants. This finding confirms the *information hypothesis*,

according to which information via social contacts is helpful for the initial job search after arrival. Our results for family related and labor migrants are, moreover, in line with previous research showing that the likelihood of entering any job is higher when one has social contacts in the country of arrival (Kalter and Kogan, 2014; Damm, 2009; Edin et al., 2004). However, among refugees, social contacts do not reduce the time it takes to find employment. This finding may be due to labor market discrimination (Arai et al., 2016; Bursell, 2014; Behtoui and Neergaard, 2010; Behtoui, 2008). If unemployment is disproportionately more common among refugees' social contacts, they are less likely to be able to provide refugees with meaningful resources and helpful information for the job search than other migrants' social contacts.

In order to assess the relationship between social contacts and longer-term economic outcomes, OLS regressions on the likelihood of having positive earnings and the natural logarithm of earnings at interview are run. Among family related migrants, social contacts are not related to the likelihood of having positive earnings or ln(earnings) at interview. While labor migrants tend to have higher earnings, differences between refugees and family related migrants are small at the interview. These findings are contrary to the *entrapment hypothesis*, which suggests that arriving into a network of social contacts has an impeding impact on immigrants' longer-term economic outcomes. Instead of observing a negative association between social contacts and earnings at interview, we find little association at interview.

The analysis presented in this paper has a number of limitations. The survey does not include information on how immigrants have found their jobs. Hence, this paper does not show whether immigrants' contacts enhance respondents' employment opportunities through direct job referrals or assistance in the job search. Still, Behtoui (2016) finds that social resources are associated with better labor market outcomes in Sweden, whether or not persons reported getting their current job with someone's help. Another limitation is that immigrants are selected conditional on having stayed in the country until the interview. This is a common limitation in survey analysis but potentially an important factor when interpreting the results. Immigrants who returned or moved on to a third country are excluded from the survey and the outcome is conditioned on the propensity of staying.

Regarding the external validity of this study, our results revealing a positive association between social contacts and short-term labor market integration in Sweden are likely a lower bound estimate compared to other labor markets. The less regulated a labor market the higher the use of social contacts and informal job search methods. The Swedish labor market is highly unionized and regulated. Sweden, moreover, has an effective

alternative information channel in the nationwide system of public employment offices. In this way, the Swedish labor market differs significantly from the U.S. and Canadian labor markets, while being closer to the Danish and German labor markets. Considering that we still observe a considerable association between social contacts and time to first job among family related and labor migrants in the Swedish labor market provides strong evidence of a positive association between contacts and immigrants' labor market entry.

Moreover, the variation in results by reason for migration highlights the significance of distinguishing between reasons for migration. Labor migration has constituted the focus of the migration literature. In the light of changing migration patterns, there is a clear need to incorporate immigrants' heterogeneity in analyses (King, 2002). Further analysis with a specific focus on each of the migrant groups, on short and long-term economic outcomes using the same measures and investigating potential causal relationships would additionally be worthwhile.

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Appendix

TABLE A1
ASSOCIATION BETWEEN SOCIAL CONTACTS
AND MONTHS TO FIRST JOB WITH INTERACTION TERMS

	Months to first job	
	B	SE
Social contacts (ref. Friends and/or acquaintances)		
Family	-0.30**	(0.12)
No contacts	-0.31*	(0.15)
Reason for migration (ref. Family reunification)		
Refugees	-0.54**	(0.19)
Labor migrants	-0.09	(0.21)
Interactions		
Refugees x Family	0.30	(0.22)
Refugees x No contacts	0.34	(0.24)
Labor migrants x Family	0.89***	(0.27)
Labor migrants x No contacts	0.21	(0.30)
Education (ref. Low education)		
Intermediate education	0.21*	(0.10)
High education	0.22*	(0.10)
Female	-0.42***	(0.08)
Age at immigration (ref. 15-20 years)		
20-25 years	0.80***	(0.12)
26-34 years	1.03***	(0.13)
35+ years	1.06***	(0.14)
Region of birth (ref. Rest of Europe)		
Nordic countries and EU-15	-0.05	(0.13)
Africa	-0.46***	(0.12)
Asia	-0.27*	(0.13)
Latin America	-0.15	(0.12)
Year of immigration quintiles (ref. 1963-1979)		
1980-1988	-0.10	(0.11)
1989-1994	-0.26*	(0.12)
1995-2001	-0.42***	(0.12)
2002-2005	-0.47***	(0.13)
Observations	1,776	

Notes: Cox regression estimates. Standard errors in parentheses. Additional controls: Region of residence (at arrival in Sweden) included as fixed effects. ***Significant at the 0.1 percent level. **Significant at the 1 percent level. *Significant at the 5 percent level.

TABLE A2
RELATIONSHIP BETWEEN SOCIAL CONTACTS
AND EARNINGS AT INTERVIEW WITH INTERACTION TERMS

	Positive earnings		Natural logarithm of earnings	
	B	SE	B	SE
Social contacts (ref. Friends and acquaintances)				
Family	0.02	(0.03)	0.17	(0.11)
No contacts	-0.01	(0.05)	0.08	(0.15)
Reason for migration (ref. Family reunification)				
Refugees	0.06	(0.05)	0.07	(0.16)
Labor migrants	0.12*	(0.06)	0.18	(0.18)
Interactions				
Refugees x Family	-0.09	(0.06)	-0.02	(0.19)
Refugees x No contacts	-0.13*	(0.07)	0.06	(0.21)
Labor migrants x Family	-0.23**	(0.08)	0.08	(0.26)
Labor migrants x No contacts	-0.10	(0.08)	0.30	(0.25)
Education (ref. Low education)				
Intermediate education	0.18***	(0.03)	0.19	(0.10)
High education	0.23***	(0.03)	0.30**	(0.10)
Female	-0.01	(0.02)	-0.08	(0.07)
Age at interview (ref. 20-35 years)				
36-45 years	-0.03	(0.04)	0.40***	(0.12)
46-55 years	-0.06	(0.04)	0.41**	(0.13)
56+ years	-0.22***	(0.04)	0.33*	(0.14)
Marital status (ref. Unmarried)				
Married	-0.01	(0.03)	0.07	(0.09)
Divorced	-0.03	(0.03)	-0.01	(0.11)
Children	0.05	(0.03)	-0.13	(0.10)
Region of birth (ref. Rest of Europe)				
Nordic countries and EU-15	-0.01	(0.03)	-0.18	(0.11)
Africa	-0.07*	(0.03)	-0.33***	(0.10)
Asia	-0.07*	(0.03)	-0.17	(0.11)
Latin America	0.04	(0.03)	-0.14	(0.11)

Continued

TABLE A2 CONTINUED

	Positive earnings		Natural logarithm of earnings	
	B	SE	B	SE
Time in Sweden quintiles (ref. 5-10 years)				
11-17 years in Sweden	0.06	(0.03)	0.23*	(0.11)
18-23 years in Sweden	0.10**	(0.04)	0.43***	(0.13)
24-32 years in Sweden	0.07	(0.04)	0.26	(0.14)
32+ years in Sweden	0.13**	(0.04)	0.25	(0.15)
Constant	0.65***	(0.05)	6.99***	(0.18)
R^2	0.10		0.10	
Observations	1,776		1,327	

Notes: Ordinary Least Squares regression estimates. Standard errors in parentheses.
Additional controls: Region of residence (at interview in Sweden) included as fixed effects.
***Significant at the 0.1 percent level. ** Significant at the 1 percent level.
*Significant at the 5 percent level.

[i] I tried a number of different cut-off points. I reran the analysis censoring the data at 2 years, 6 years and without restrictions. The results were robust to these changes.

[ii] Nekby (2006) shows that immigrant emigrants are selected in terms of education and income. Consequently, the findings should not be extrapolated to the entire immigrant population in Sweden.

[iii] I ran additional analyses estimating separate models for migrants who had been in Sweden 1-14 years, 15-27 years and 28 years and longer, assuming that migrants who had been in Sweden for longer by the interview were more likely to have recall problems. Results did not reveal major inconsistencies, suggesting that recall bias is not driving the results.

[iv] Additional analyses revealed that the results are robust to including "family and friends" as a separate category in the model or counting them as friends and/or acquaintances.

[v] Results were robust to changing the model to a piecewise exponential model.

[vi] Results were robust to using the year in which the residence permit was granted rather than the year and month of immigration.

[vii] Considering that the question may have been misinterpreted by respondents, I recoded the variable so that all migrants, who moved for family reunification, had family contacts in Sweden and reran the analysis. The results remained similar.

[viii] Considering the high correlation between reason for migration and region of birth, I estimated models without region of birth controls. The results were robust to leaving region of birth out of the models.

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