Are unemployed immigrants more likely to be hired by high-growth firms? Evidence from matched employer-employee data

Sven-Olov Daunfeldt[*,†]**, Dan Johansson**[**] **and Hans Seerar Westerberg**[***]

16 January, 2016

The number of refugees in Europe has increased dramatically in recent years, and many countries are now facing great challenges to integrate these refugees into their societies. Using matched employer-employee data from Statistics Sweden that cover 223,721 hires in 2010, we investigate whether high-growth firms are particularly important in providing job opportunities for immigrants that have problems in entering the labor market. This question is of importance since most new jobs in any given point in time are created by a small number of high-growth firms, and because policies are increasingly targeted towards these firms. Our results indicate that unemployed individuals in general are less likely to be hired by high-growth firms. We furthermore find no difference in the odds of being hired by high-growth firms between immigrants and non-immigrants that are unemployed. Rapidly growing firms are thus selective in their hiring decisions, and value recent work experience when recruiting employees. Policies that are focused towards high-growth firms might therefore not help immigrants that face difficulties in entering the labor market.

Keywords: Firm growth; Gazelles; High-growth firms; Immigration; Integration; Labor market; Matching models; Resource based theory; Interaction effects; Logit ; Odds ratio

JEL classification: D22; J15, L25, L26.

[*] Sven-Olov Daunfeldt, HUI Research, Stockholm, Sweden and Dalarna University, Falun, Sweden. e-mail: sven-olov.daunfeldt@hui.se
[**] Dan Johansson, HUI Research, Stockholm, Sweden and Örebro University, Örebro, Sweden. e-mail: dan.johansson@oru.se
[***] Hans Seerar Westerberg, HUI Research, Stockholm, Sweden and Örebro University, Örebro, Sweden. e-mail: hans.westerberg@hui.se

1. Introduction

A serious refugee situation has arisen in Europe, with the number of refugee arrivals approaching one million by the end of 2015 (IOM, December 2015). The large inflow of refugees constitute one of the greatest demographical changes in Europe since World War II (OECD, 2015), and puts increasing pressure on policymakers around Europe.

Immigrants to Europe have experienced major difficulties entering the labor market, which has resulted in much lower employment rates and longer unemployment periods among immigrants than native workers (Eurostat, 2015d). This is troublesome since long periods of unemployment might erode human capital and act as a sorting criterion when hiring employees, resulting in persistent high unemployment rates (Phelps, 1972; Heckman & Borjas, 1980; Arulampalam et al., 2001). Long-term unemployed individuals are also more likely to suffer from depression, anxiety and low self-esteem, implying that long unemployment periods among immigrants might be associated with high social costs (Paul and Moser, 2008).

The large inflow of refugees means that the problem of integrating immigrants into the European labor markets is becoming increasingly more urgent to solve. However, despite its importance, few studies have investigated which firms are creating jobs for immigrants. One notable exception is Coad et al (2014a), who analyzed what characterized employees and new hires among high-growth firms (HGFs) in the Swedish knowledge-intensive sectors during 1999-2002. Their results indicated that young people, poorly educated workers, immigrants, and individuals who experienced longer unemployment periods were more likely to be employed by HGFs. However, when recruiting new employees, HGFs seemed to hire employees from other companies instead of unemployed individuals. Immigrants were still more likely to be hired by HGFs, but Coad et al. (2014a) made no distinction here between unemployed immigrants and those that were recruited from other companies.

The focus on HGFs is motivated since it is well known that most firms do not grow, whereas a small number of HGFs show a remarkable ability of creating jobs (Henrekson & Johansson, 2010; Coad et al., 2014b). NESTA (2009), for example, indicated that the six percent fastest growing firms in the UK created about half of all jobs in the economy during 2002-2008. Similar results have also been presented in other studies (e.g., Storey, 1994; Daunfeldt et al., 2013). The remarkable ability of HGFs to generate job

opportunities has led researchers to argue that policies should be re-directed towards promoting their growth. Shane (2009), for example, argues that policymakers should start promoting potential HGFs instead of supporting start-ups since the latter have low growth ambitions and probabilities of survival. Mason & Brown (2013) also present several policies, such as support for sales, marketing and internationalization, which can be implemented to increase the number of HGFs in the economy. These ideas have also been embraced by policymakers. The European Commission (2010), for example, emphasized support for high-growth SMEs as a political objective in its Europe 2020 strategy.

But are policies focused on HGFs also likely to be beneficial for the large group of immigrants that are now entering the European labor markets? The only evidence on the employment decision of HGFs (Coad et al., 2014a) is so far based on data for Swedish knowledge-intensive firms, which are unlikely to provide jobs for immigrants that are marginalized at the labor market. Coad et al (2014a) did not either investigate whether the effect of unemployment on the probability of being hired by a HGF differed for immigrants and natives. Using matched employer-employee data from Statistics Sweden (SCB), we therefore investigate employers' hiring of immigrants across industries in Sweden during 2007-2010, and focus our analyses on whether those immigrants that had proven difficulties in entering the labor market were more likely to be hired by HGFs.

Sweden is of particular interest to study because of its high share of immigrants and its high inflow of refugees relative other European countries. About 16 percent of the Swedish population were born in another country in 2014, while the average within the European Union was about 14 percent (Eurostat, 2015b,c). Sweden also had the greatest number of asylum applicants in Europe in relation to its number of inhabitants and labor force in 2014, with 8.5 asylum applicants per 1000 inhabitants. Sweden accommodated more than three times the number of asylum seekers per capita as Germany (Eurostat, 2015a,c). The number of asylum seekers has since then been increasing rapidly and reached 163,000 in 2015 (Migrationsverket, 2015), which corresponds to 16,6 asylum applicants per 1000 inhabitants.

Immigrants also have documented difficulties in entering the Swedish labor market (Ekberg and Hammarstedt, 2002; Ekberg, 2009; Ekberg, 2012), and their problems to enter the labor market seem to be large compared to other countries within Europe

(Koopmans, 2010). The unemployment rate among foreign born individuals in Sweden (20-64 years) was, for example, 14.0 percent in November 2015; while the corresponding figure for native born workers was only 3.9 percent. A reason for concern is also that as much as 33 percent of all unemployed immigrants were long-term unemployed, i.e., had been unemployed for more than 180 days. The employment rate was also significantly higher among native born individuals (84.4 percent) than among those that were foreign born (68.2 percent) (Statistics Sweden, 2015a).

We find that that immigrants in general are more likely to be hired by a HGF, but also that unemployed individuals are much less likely to be recruited by HGFs than non-HGFs. We find no evidence that the effect of being unemployed on the probability of being hired by HGFs depends on the immigrant status of the individual. HGFs thus seem selective in their hiring decisions, implying that policies targeted towards HGFs are not likely to improve the labor market position of unemployed immigrants.

Theories that can explain whom HGFs hire are discussed in the next section, while the matched employer-employee dataset is described in Section 3. The estimated model and the results are then presented in Section 4. Finally, Section 5 summarizes and draws conclusions.

2. Theoretical background

Unemployed individuals are heterogeneous in terms of talents, skills and experience, and employers have different needs of these attributes. However, good matches between employees and employers are often difficult to obtain. Employers may have trouble in finding the employees that they want, whereas employees may not find suitable employers that match the skills and expertise that they can offer.

One reason behind the sub-optimal allocation of employers and employees is that the matching process is characterized by asymmetric information and search costs (Mortensen and Pissarides, 1999). Asymmetric information occurs since employers have more information about the position that they offer than job-seekers, while the latter group has more information about their particular skills. Employers might then have incentive to hide facts for the job-seekers in order to get the best applicant, whereas employees have an incentive to hide information that might prevent them from getting the position that they strive for. The time it takes for them to find each other will result

in search costs, which will be determined by how much time employers and employees spend in searching for each other.

It is reasonable to assume that firms, given the matching problem described above, want to minimize their expected transaction costs when hiring an employee. A transaction is the process by which a product or service change position in the market, and it can be more or less smooth depending on the conditions under which the transaction takes place (Williamson, 1979). Higher search costs when completing the recruitment of an employee therefore means that firms' transaction costs will be higher.

The presence of symmetric information also implies that the transaction costs will be influenced by how risky the employers estimate the recruitment to be. As employers cannot ensure that new employees will be sufficiently productive, transaction costs might arise *after* the firms have completed their recruitments. Lindbeck and Snower (1994), for example, noted that employers face labor turnover costs when they want to dismiss employees, and when they need to train new recruits. Labor turnover costs also arise because incumbent employees (so-called insiders) refuse to cooperate and even harass newly recruited employees.

HGFs will face both higher search costs and labor turnover costs than non-HGFs because they need to recruit more employees. Matching theories implies that firms will find better matches the longer they search for suitable employees, but they will then also incur higher search costs. As noted by Coad et al. (2014a), HGFs need to hire employees fast in order to take advantage of their growth opportunities. This implies that HGFs need to spend less time in searching for new employees, and therefore might hire marginalized group at the labor market to a greater extent than non-HGFs.

The predictions of whom HGFs will hire are totally different if we instead rely on Penrose's (1959) resource-based theory of firm growth, which implies that firm growth is primarily determined by idiosyncratic configurations of resources.

In this case, growth is naturally inevitable as the knowledge stock and experience of the employees accumulates over time. However, firms also need to spend more resources (e.g., on-the-job training) to handle their increasing growth. Increasing growth might then distract firms to the extent that they fail to maintain their past level of productivity.

This is commonly known as the "Penrose effect", and arises because firms grow faster than they can manage without a decrease in productivity.

As a consequence of the "Penrose effect", Coad et al. (2014a) argue that HGFs will spend more time to recruit new employees and managers that can handle fast growth without a fall in productivity. This implies that HGFs will hire individuals with high human capital and extensive work experience. They might also want to minimize risks in order to lower the expected transaction costs when hiring a new employee. According to Penrose's resource-based view, we thus expect that HGFs will hire employees with previous work experience and not unemployed individuals. We also expect that HGFs will value human capital and therefore be more likely than non-HGFs to hire individuals with higher education and more training.

The theoretical models presented above thus have a different answer to whom rapidly growing firms will hire. Models that are based on the resource-based view suggest that HGFs want to maintain their high growth rates, and that they therefore are likely to hire well-trained, low-risk workers with an accompanying productivity that is easy to identify. On the other hand, matching models implies that rapidly growing firms are subjected to higher search costs when recruiting than non-HGFs. This implies that HGFs are more likely to hire from the readily available pool of unemployed, and may employ individuals without extensively evaluating them before hiring. HGFs might therefore be more likely to hire individuals whose productivity level is harder to estimate, such as immigrant

3. Data

3.1 Data sources

We investigate the hiring decision of HGFs using matched employer-employee data from Statistics Sweden (SCB), covering the period 2007-2010. The data are from LISA (Longitudinell Integrationsdatabas för Sjukförsäkrings- och Arbetsmarknadsstudier) – a database on all legal residents of Sweden that within the registry year are at least sixteen years old. It contains a wealth of demographic and financial information on individuals, and is generated from a number of sources such as individual tax statements, financial records, birthplace registries, and school records. We use this database to control for individual characteristics that might influence whether the individual was hired by a HGF, including region of origin, age, gender, education and family composition.

The employment status of the individuals in LISA is based on data from Registrerad Arbetsmarknadsstatistik (RAMS). This database is collected in November each year and consists of all individuals in Sweden aged 16 and older, corresponding to roughly 7.5 million individuals in 2007. We use RAMS to distinguish between individuals that are classified as employed or not employed in November each year. Following the recommendation by the International Labour Organization (ILO), an individual is in RAMS classified as employed if the gross wage is estimated to correspond to at least four working hours during November. The group of not employed individuals in is very heterogeneous, and consists of unemployed, students and retired individuals.

Register data from the Swedish Public Employment Service (Arbetsförmedlingen) are the used to identify unemployed individuals. All individuals that were registered as full-time unemployed or participating in some kind of labor market program by the end of November are defined as unemployed. However, the use of two different data-sets means that about 4.3 percent of all individuals that were filed as employed in RAMS were also classified as unemployed in the data from the Swedish Public Employment Service. The majority of these conflicting observations (64 percent) consist of individuals that are engaged in a labor market program, and therefore have labor income that corresponds to more than four working hours in November. These individuals do not have a regular job, and we therefore choose to classify them as unemployed.

The remainder of the conflicting observations are likely to be caused by individuals that have a loose connection to the labor market. For example, a part-time worker who happens to be employed in November with a wage income corresponding to at least four working hours will be filed as employed according to RAMS. However, this individual will be classified as unemployed if also filed as a job seeker or engaged in a labor market program by the end of November. The individuals that are classified as employed in RAMS but unemployed in the data from the Swedish Public Employment Service are thus likely to have a loose relationship to the labor market, and we therefore define them as unemployed in our main model specification.[1]

Firm-specific data on number of employees and sales are collected from Företagsdatabasen (FTG), a database that includes information on corporate firms - excluding the financial sector, collective owned housing enterprises (bostadsrättsföreningar) and businesses engaged in the farm, forestry and hunting sector. For a meaningful comparison between firms, we have restricted our sample to only include limited liability companies. Limited liability firms are selected since we want to focus our analysis on firms that are more likely to accept risk and pursue growth (Bradley et al., 2011). Finally we collect data on firm age from *Företagens och arbetsställenas dynamik* (FAD), which records firm structure changes over time such as new entries and bankruptcies.

3.2 Defining high-growth firms

A problem when analyzing the hiring decision of rapidly growing firms is the lack of consensus on how HGFs should be defined, which means that numerous definitions have been used in the HGF-literature (Daunfeldt et al., 2014). As noted by Delmar and Davidsson (1997), researchers that want to investigate HGFs need to take make choices regarding: (i) the indicator of growth; (ii) the measurement of growth (relative vs. absolute change); (iii) the length of the study period; and (iv) the process of growth.

The choice of growth indicator refers to which variable that should be used to calculate firm growth rates. Number of employees and sales are the two most commonly used growth indicators in the literature (Delmar et al, 2003; Daunfeldt et al., 2014). They tend

---

[1] We have also performed estimations where these individuals are classified as employed instead. All results remain qualitatively similar and are available from the authors upon request

to be modestly correlated (Shepherd and Wiklund, 2009; Coad, 2010), but results do not seem to be sensitive to which one is chosen (Daunfeldt et al., 2014). However, they represent two very different phenomena (Delmar et al., 2003). Growth in number of employees shows how resources grow within the firm, whereas sales growth indicates product or service acceptance in the market. In order to take into account that firm growth is a multidimensional construct, we choose to use both as growth indicators in this paper.

Following Coad et al (2014a), we identify HGFs with respect to their relative growth rate. It is well known that relative growth rates tend to favor smaller firms, whereas absolute growth measures are biased toward larger firms (Delmar et al., 2003). We therefore also control for firm size in all estimations. Note that relative growth can be measured in many different ways, e.g., percentage change, taking log-difference or scaling down by initial size. We follow Tornqvist's et al. (1985) recommendation to use the log difference to calculate the growth rate of the individual firm since it is symmetric for positive and negative growth rates. Thus, real changes in either indicator gives the same percentage change, regardless of being positive or negative.

When it comes to the length of the study period, most previous studies have used a three- or four-year period when identifying HGFs (Coad et al., 2014b). We follow the same approach, which means that firm growth rates are calculated as:

$$HGF(E_{it}) = ln\, E_{i2010} - lnE_{i2007} \tag{1a}$$

$$HGF(S_{it}) = ln\, S_{i2010} - lnS_{i2007} \tag{1b}$$

The final choice relates to researchers' ability to distinguish between organic and acquired growth in the data. Organic growth refers to growth that is internal to a firm, while acquired refers to gains in growth that occur through external acquisitions or mergers. In accordance with most studies, we cannot distinguish between these growth modes in the data and therefore use a measure of total growth (i.e. the sum of organic and acquired growth) when defining HGFs.

Given the choices described above, HGFs can be identified in two different ways. The first method defines HGFs as a certain share of the fastest growing firms during a particular period, i.e., the 1% or 3% of firms that had the highest growth rate. One disadvantage

with this method is that it cannot be used to compare the share of HGFs across time or across countries (Coad et al., 2014b).

The second approach defines HGFs as firms growing at, or above, a particular pace. Eurostat and the OECD have, for example, recommended that HGFs should be defined as firms with at least 10 employees in the start-year and annualized employment growth exceeding 20% during a 3-year period (Eurostat-OECD, 2007). This definition is used in many studies (Bravo-Biosca, 2010; Du and Temouri, 2015; Nordic Council of Ministries, 2010; Hölzl, 2014; Teruel Carrizosa and De Wit, 2011), but has also been criticized since the use of the firm size threshold level means that many firms are excluded from the analysis. In Sweden, for example, the Eurostat-OECD definition of high-growth firms have shown to exclude almost 95 percent of all firms and 40 percent of all created jobs (Daunfeldt et al., 2015).

To summarize, we choose to use a relative growth measure and define high-growth firms as the 3 percent fastest growing firms during a three-year period to make our results comparable to Coad et al. (2014a). This means that our definition of HGFs is restricted to surviving firms, i.e., firms that were active during the whole 2007-2010 study period. Furthermore, we omit firms that had no employees throughout the whole period since we want to analyze whether individuals that are hired by HGFs differ in any respect from those that are hired by non-HGFs. These firms correspond to about 13 percent of all observations in FTG. As a robustness check, we also identify HGFs as the 5 percent fastest growing firms.

3.3 Independent variables

We use the region of origin of the individual to distinguish between different types of immigrants, and also to identify whether the individual is a second-generation immigrant. The following independent variables are included in our analysis to capture immigrant status (variable names in *italics*):

- *Second*. A dummy variable that captures whether the individual is a second generation immigrant. It equals one if the individual is born in Sweden and both parents are born outside Sweden, otherwise zero.
- *Nordic*. A dummy variable that equals one if the individual is born in Norway, Finland, Denmark or Iceland, otherwise zero.

- *Eu25*. A dummy variable that equals one if the individual is born in a country that belonged to the European Union in 2004 (excluding Finland, Denmark and Sweden), otherwise zero.

- *Eur*. A dummy variable that equals one if the individual is born in another country in Europe than the Nordic countries and EU25, otherwise zero. Note that this variable captures immigrants that have been born in Romania and Bulgaria since they joined the EU in 2007. Individuals born in Turkey are also included here.

- *Africa*. A dummy variable that equals one if the individual is born in Africa, otherwise zero.

- *S_Am*. A dummy variable that equals one if the individual is born in South America, otherwise zero.

- *Asia*. A dummy variable that equals one if the individual is born in Asia, otherwise zero.

- *Other*. A dummy variable that equals one if the individual is born in a country that is not captured by the variables above, otherwise zero. Individuals born in the former Soviet Union, North America, Oceania, as well as unknowns and foreign born individuals with at least one Swedish parent, are included here

Note that our classification of immigrants includes all individuals that are foreign born. This means that the variables that are capturing immigrant status include both labor immigrants as well as refugees. It is reasonable to assume that the difficulties in entering the labor market are much larger for the latter group, and we therefore also perform a robustness check where we try to distinguish between different types of immigrants (see Section 5.1).

We also control for other characteristics, both individual and firm-specific, that might influence the hiring decision of high-growth forms. Other control variables used in the analysis are therefore:

- *Female*. A dummy variable that equals one of the individual is a woman, and zero if a man.

- *Age* (from 16 years old and older)*.

- *Married*. A dummy variable that equals one if the individual is married or cohabiting, and zero if single.

- *Child*. A dummy variable that equals one if children under the age of 18 is present in the household, otherwise zero.

- *Educational attainment*. *Primary*=1 if completed primary school; *High* =1 if completed a 3-year high-school education; and *Uni*=1 if completed a university program of at least three years. The baseline is those individuals that have less than 9 years of schooling..

- *Firm age* – This variable ranges from 4 to 25 years. For most firms firm age is calculated by subtracting each year in our data set with entry year in the FAD database.[2]

- *Firm size*. Number of employees in the firm in year *t-1*, i.e., the year before hiring.

3.4 Summary statistics for incumbent employees in HGFs

Our sample is restricted to those individuals that were hired by a limited liability firm in 2010, but were classified as unemployed or employed in another firm in 2009. Our sample hence consists of individuals that in 2010 either changed jobs or were unemployed before getting hired. Our final sample consists of 223,721 individuals, of which 73.5 percent were job changers and 26.5 percent were unemployed in 2009.

Descriptive statistics are presented in Table 1 for all new hires, and for those that were hired by employment-HGFs and sales-HGFs, respectively. When comparing all new hires with the subsamples of new hires into HGFs, we do not observe any large differences in whether the new employees were foreign born or not.

[Table 1 about here]

Employees that were hired by HGFs have, on average, fewer days in unemployment, are slightly older, have fewer children, and are more likely to be women. Individuals that are hired by HGFs have in general also obtained a higher degree of educational attainment; 26 percent of those that were hired by HGFs had attended university for two years or more in both HGF samples, which can be compared with 22 percent in the full sample. Slightly lower means are also apparent for the remaining educational variables in the HGF

---

[2] Firms that are not recorded in FAD, but observed in FTG are considered new firms once they enter FTG (11-12 percent of the matched sample). Finally, firms that in FAD are founded at a later point but has prior appearance in FTG are recoded according to their first appearance (11-14 percent of the matched sample).

samples. Finally, HGFs that hire new employees in the end of their growth period are, on average, about 4 years younger and had considerably fewer employees than non-HGFs[3].

In order to investigate whether HGFs are more likely to hire unemployed immigrants than non-HGFs, we exclude job-switchers and reduce our sample to those individuals that were unemployed in 2009, but became employed during 2010 (Table 2). Our results show that the share of Swedish born individuals is nine percentage points lower than the corresponding share in Table 1. It is thus more common that foreign born individuals are hired from unemployment compared with individuals that are born in Sweden. Unemployed Swedish born individuals are even less likely to be hired by HGFs compared those that are born outside Sweden. These figures constitute descriptive evidence that foreign born individuals are more common to be employed by HGFs. Note finally that the composition of foreign born workers is marginally different if we choose to define HGFs in terms of employment or sales.

[Table 2 about here]

Of all the 223,721 individuals hired in 2010, 59,253 (26.5%) were unemployed in 2009. This implies that the majority of all recruitments in 2010 were from other companies. The share of new hires that were unemployed in 2009 is much lower among HGFs, where only about 18 percent (employment-HGFs) and 16 percent (sales-HGFs) of the newly hired employees were recruited from unemployment. HGFs thus seem less common than non-HGFs to hire individuals that are unemployed.

In Table 3, we present the corresponding descriptive statistics for employees that were hired from other firms. The results indicate that the distribution of foreign born employees is almost identical when we compare all firms with the HGFs. Hence, contrast to the subsample of previously unemployed, there is no tendency of an overrepresentation of foreign born that were hired into HGFs from other firms.

[Table 3 about here]

---

[3] The last figure is heavily influenced by outliers. If we instead look at the age and the size of the median firm for new employees, firms in the full sample was 9 years old and had 62 employees. In the HGF sample, the median firm was 4 years old and had 41 employees.

4. Whom is hired by high-growth firms?

4.1 Empirical Method

We are capturing the employment decision of HGFs by a dichotomous variable, HGF_{i10} that takes the value one if an individual i is hired by a HGF in year 2010, and zero if the individual is hired by a non-HGF. This means that the question of which individuals are hired by high-growth firms needs to be answered using an empirical model that is suitable when the dependent variable only takes two possible outcomes.

Coad et al (2014a) have previously analyzed the employment decision of HGFs using a Probit model. However, in contrast to their study, we are interested to investigate if HGFs are more likely than non-HGFs to provide employment opportunities for immigrants that have difficulties in entering the labor market. We therefore want to investigate the interaction effect of being foreign born and unemployed, i.e., whether the effect of unemployment on being hired by a HGF differs between immigrants and non-immigrants. However, it is well known that interaction effects are difficult to interpret in non-linear models.[4] The reason is that the estimated coefficient of the interaction term in a linear model captures its marginal effect on the dependent variable, while the full interaction effect is different from the marginal effect of the interaction term in a non-linear model (Ai and Norton, 2003; Norton et al., 2004).

Buis (2010) showed that that one possibility to handle this problem is to estimate a logit model where the dependent variable is measured in the odds metric, and then use a margins command in Stata to get interaction effects for every possible combination of the immigrant term. Following this approach, we first define how being an immigrant (I_i=1) influence the odds of being hired by HGFs compared to the odds of being hired by a non-HGF. The odds for immigrants being hired by a HGF is the ratio of the probability (p) minus the probability, which depends on whether individual i is an immigrant (I_i) and on a number of other covariates (X_i):

---

[4] Ai and Norton (2003), for example, found 72 papers in economics journals during 1980-2000 that analyzed interaction terms in non-linear model. However, none interpreted the interaction effects correctly.

$$\frac{p(HGF_{i,10} = 1 | I_i = 1)}{1 - p(HGF_{i,10} = 1 | I_i = 1)} = \exp(\beta_I + \boldsymbol{\beta}'\boldsymbol{X}), \tag{1}$$

where $\boldsymbol{X}$ is a vector of variables that are assumed to influence the odds of being hired by a HGF. It includes an unemployment dummy ($U_{i,09}$) that takes the value one if the individual was unemployed in 2009, and zero if employed by another firm; and it also includes the individual's gender, age, marital status, educational attainment, and the presence of children in the household in 2009. Following Coad et al (2014a), we also include a vector of firm-specific characteristics in order to control whether the decision to be hired by a HGF is related to the age or the size of the firm. Finally, a vector of industry- and region-specific fixed effects are included to control for time-invariant heterogeneity at the industry and regional level, respectively.

The odds for non-immigrants being hired by HGFs is then:

$$\frac{p(HGF_{i,10} = 1 | I_i = 0)}{1 - p(HGF_{i,10} = 1 | I_i = 0)} = \exp(\boldsymbol{\beta}'\boldsymbol{X}). \tag{2}$$

The odds ratio for being an immigrant is then the odds for immigrants being hired by HGFs divided by the odds for non-immigrants being hired by HGFs, i.e;

$$\frac{\exp(\beta_I + \boldsymbol{\beta}'\boldsymbol{X})}{\exp(\boldsymbol{\beta}'\boldsymbol{X})} = \exp(\beta_I) \tag{3}$$

The odds ratio thus measures the expected number of immigrant being hired by a HGF for every immigrant being hired by a non-HGF. Note that the estimated coefficient will measure the effect of being an immigrant holding all other variables constant at zero.

An interaction term, $I_i * U_i$, is also included in the vector of explanatory variables, $\boldsymbol{X}$, since we want to investigate if the effect of unemployment on the odds of being hired by a HGF is different for immigrants and individuals that are born in Sweden. However, the estimated coefficient of the interaction term will only measure the odds of being hired by a HGF change for immigrants that are being unemployed (I_i=1; U_i=1) compared to the baseline. Therefore, following Buis (2010) suggestion, we calculate every combination of the interaction term to study if the effect of unemployment on the odds of being hired by HGFs differs between immigrants and non-immigrants.

4.2 Results

Estimates regarding which individuals are hired by HGFs are presented in Table 4 for both employment-HGFs and sales-HGFs. All results are presented as odds ratios, meaning that our estimates can be interpreted as the expected number of individuals hired into a HGF for every individual hired into a non-HGF. An estimated coefficient that is less than one indicates that its corresponding variable is negatively related to the probability of being hired by a HGF, whereas an estimate that is larger than one indicates a positive association. Note that the baseline becomes important when evaluating the economic significance of the results since the odds show the effects when all other variables are held constant (Buis, 2015). Our estimated baseline indicate that we expect to find 0.16 individuals hire into a HGF for every person hired into a non-HGF.

We find some support for Coad et al's (2014) finding that immigrants are more likely to be hired by employment-HGFs than non-immigrants. The odds for individuals that have been born in Eastern Europe increases by (1.34-1) * 100 = 34%. This means that the odds for being hired into a HGF is changing from 0.16 (the baseline) to 0.21 (1.34*0.16 = 0.21) for Eastern European immigrants, which is an economically significant change. We also find weak indications (significant at the 10%-level) that the odds of being hired into a HGF are higher for immigrants from Africa (25%) and Asia (13%). On the other hand, we find no indications that immigrants have higher odds of being hired by a sales-HGFs than non-immigrants. Employment-HGFs thus seem to be more likely to hire immigrants when recruiting new personnel, whereas immigrant status is less important in explaining the hiring decision of sales-HGFs.

Note that immigrants which are switching job positions are included in the estimated effect of being an immigrant on the odds of being hired by a HGF. We cannot therefore conclude from this estimate how being an unemployed immigrant affects the probability of being hired by a HGF. However, the odds of being hired by an HGF is clearly much lower for an unemployed individual. According to the results presented in Table 4, the odds decreases by (0.59-1)*100 = 41%. This implies that only 0.09 (0.59*0.16) unemployed individuals are expected to be hired into a HGF for every unemployed hired

by a non-HGF. Thus, HGFs are not a general recruitment base for individuals who are unemployed and have difficulties in entering the labor market.

But is the effect of being unemployed on the probability of being hired by a HGF different for immigrants and non-immigrants? The interaction terms in Table 4 ($I_i * U_i$) tells us how much the effect of being unemployed differs depending on the immigrant status of the individual. However, as noted by Buis (2010), every combination of the immigrant and unemployment indicator needs to be taken into account if we want to interpret interaction effects using odds ratios. In Table 5, we therefore present the odds of being hired by a HGF for every combination of our immigrant status and unemployment indicator. The results indicate that the odds of being hired by a HGF is consequently higher for those individuals that are already employed - regardless of whether the individuals is an immigrant or not. The interaction effect on the expected number of new hires into a HGF is thus mainly influenced by the employment status of the individual (i.e., if U = 0, or U = 1), and not whether the individual is a first – or second-generation immigrant (i.e., if I = 0, or I = 1).

Note that the estimates discussed so far can be misleading because they are relative to the baseline odds of each regional origin category, which means that they do not take into account that the baseline odds can differ substantially between regional origins. We therefore also follow Buis (2010) recommendation and compute the marginal effect as the difference between the expected odds of immigrants and non-immigrants that are employed and unemployed in 2009, respectively. These results tell us how much the effect of unemployment differs between first – and second generation immigrants and those individuals that are born in Sweden with at least one Swedish born parent. The estimates are presented in the last columns in Table 5 and show that the effects of unemployment on the odds of being hired by a HGF are very similar for immigrants and non-immigrants. Hence, HGFs do not seem to provide unemployed immigrants with job opportunities that would not have been available otherwise.

[Table 5 about here]

Turning to our control variables (see Table 4), we can observe that men, older individuals and individuals that have no children under the age of 18 have higher odds of being hired by a HGF. However, the estimated effects are not economically significant. The level of

education does not seem to influence the odds of being hired by a HGF, indicating that HGFs do not value higher education more than non-HGFs when recruiting employees. Finally, individuals that are hired into a HGF are more likely to be hired by a young and small firm compared to those that are hired into a non-HGF. This support previous findings (Henrekson and Johansson, 2010; Daunfeldt et al., 2014), indicating that most HGFs typically are young and small.

5. Robustness checks

5.1 Distinguishing between refugees and labor immigrants

All individuals that are born outside Sweden have so far been identified as immigrants. This means that the estimated effects of being an immigrant on the odds of being hired by a HGF are based on a highly heterogeneous sample, consisting of both labor immigrants and refugees. We do not have access to any information that makes it possible to distinguish between these two types of immigrants in the data, although we know that refugees obviously should have much larger difficulties in entering the labor market than labor immigrants.

However, labor immigration was very common in Sweden post World War II but was reduced to a minimum after 1972. The reason was not a parliamentary decision, but rather that the trade unions influenced the labor immigration policy by their representation in the government immigration board. The Swedish Trade Union Confederation LO (*Landsorganisationen*) encouraged their member organizations to be more restrictive with issuing work permits for foreign workers in February 1972. This restriction was motivated by the need to protect union members from foreign competition, and by difficulties in assimilating labor immigrants into the Swedish society. As a consequence, labor immigration from non-Nordic countries was drastically reduced or even ceased. From 1972 and onwards, the majority of immigrants were filed as refugees and relatives (Johansson, 2008). Labor immigration remained low in Sweden until 2008, when the restrictive policy of labor immigration of non-European citizens was liberalized.

We also know that it is mainly individuals born in Africa, Asia, and South America that have applied for asylum in Sweden (Calleman & Herzfeld Olsson, 2015). As a robustness check, we therefore exclude all foreign born individuals that came to Sweden between

1971 and 2008 or was born within the EU25 or in a Nordic country. This selection strategy means that we can distinguish refugees from labor immigrants with a high degree of security, even though we do not have any information in the data that makes it possible to directly identify each individuals' reason to immigrate.

In Table 6 and 7 we present the results in where we have restricted our immigrant indicators to only include those individuals that immigrated to Sweden from Eastern Europe, Africa, South America and Asia during 1971-2008. This means that the estimated effects of immigrant status on the odds of being hired by a HGF will capture immigrants that travelled to Sweden as refugees or relatives. The remaining individuals and regional origins are here defined as non-immigrants, and thus constitute the control group.

[Table 6 about here]

[Table 7 about here]

The results are in accordance with the main findings (Table 4 and 5), indicating that our results are not sensitive to the exclusion of labor immigrants. One possible explanation is that labor immigration from these regions were quite limited before 1971, which means that the previously estimated effects mainly captured the effects of refugee immigration. One small difference is that the odds of Eastern Europeans being hired by HGFs increases from 34% to 39%, and that the odds of Africans being hired by HGF decreased and now is not significantly different from one (i.e., no effect).

The marginal effects that are presented in Table 7 also indicate that unemployment reduces the probability of getting hired by HGFs for both immigrants and natives. This confirms our earlier results that HGFs are not more or less likely to hire unemployed immigrants compared to unemployed natives.

5.2 Different growth rate cut-off level for high-growth firms

Another concern is that there exist no standard way to identify HGFs in the literature (Coad et al, 2014b). We have used the two most common growth indicators (employment and sales), and defined HGFs as the 3% fastest growing firms during a 3-year period. In order to test whether the results are sensitive to our chosen growth rate cut-off level, we re-estimate our main model when HGFs are defined as the 5 percent fastest growing

firms. The results are in most cases qualitatively similar and in line with the findings in our main regression, see Table 8 and Table 9 below.

[Table 8 about here]

[Table 9 about here]

There are, however, some small differences in comparison to our main findings that are interesting. First, the odds for immigrants from Africa being hired by HGFs increases by 27%. This implies that for every immigrant from Africa being hired into a non-HGF, 0.5 (1.27*0,394 = 0.5) are hired into a HGF. Second, the negative effect of unemployment on the odds of being hired by a HGF is somewhat reduced compared to our main findings. Finally, the probability of being hired by a HGF decreases with 11% for non-immigrants that are unemployed, whereas the corresponding decrease is as large as 22% for immigrants from Africa that are unemployed. The negative effect of unemployment on probability of being hired by a HGF is thus larger for immigrants from Africa than for individuals that are born in Sweden and are not classified as second-generation immigrants.

5.3 Industry differences in the hiring decision of HGFs

Industry differences are seldom investigated in previous studies on HGFs, and results are most often based on economy-wide data or data from selective industries, such as the manufacturing industry (Coad, 2009).

In their previous study on the hiring decision of HGFs, Coad et al (2014a) applied data from the Swedish knowledge-intensive industries. There might, however, exist large differences between industries that might influence the likelihood of HGFs hiring immigrants and unemployed. Employees in the knowledge-intensive service sector are, for example, characterized by a relatively high level of human capital and might therefore be less likely to hire unemployed immigrants. This is also something that Coad et al (2014) acknowledge, writing (p. 317): "our findings regarding the prevalence of outsiders being hired by HGFs are conservatively estimated. Extending the research on hires in HGFs to other industries would be a valuable complement to our findings".

We have the possibility to fill this gap since our data include hires across all industries in Sweden. . As a last robustness check, we therefore investigate if our results are different

across industries, The question that we want to answer is whether groups of individuals that have problems in entering the labor market are more likely to be hired by HGFs in certain industries?

In order to answer this question, we use the European Union's NACE standard to divide firms into five different industries and then estimate equation (1) separately for:: (1) Manufacturing (NACE=10-33); (2) Construction (NACE=41-43); (3) Retail (NACE=47); (4) Hospitality (NACE=55-56); and (5) Information and technology (NACE=58-63). We have selected these industries to get variation between industries regarding the degree of technological knowledge, and the likelihood of receiving policy interventions. The manufacturing industry is, for example, frequently studied (Coad, 2009) and policy interventions are often targeted towards firms within this industry (Daunfeldt et al., 2015). Industries such as hospitality and retailing have, on the other hand, received much less attention in the firm growth literature.

The industry-specific results are presented in Table 10-15 (employment-HGFs), and in Table 16-21 (sales-HGFs).

[Table 10-15 about here]

In general, we find no evidence that immigrants have higher or lower odds of being hired by HGFs compared to non-HGFs. The only exception is that some immigrant groups have higher odds to be hired by HGFs than non-HGFs in the information and technology industry. This result holds for both employment-HGFs and sales-HGFs, confirming Coad et al's (2014a) finding that immigrants in knowledge-intensive industries are more likely to be hired by HGFs.

According to the estimates presented in Table 10, being an immigrant from Eastern Europe increases the odds to be hired by an employment-HGF rather than a non-HGF by 27%. The results also indicate that being an immigrant from Africa, South America and Asia increases the odds of being hired by a HGF in the knowledge-intensive service industry.

In accordance with our results for all industries, being unemployed lowers the odds of being hired by HFGs in four out of five studied industries. The only exception is the hospitality industry, where the odds of being hired by a HGF rather than a non-HGF is not significantly different for unemployed individuals. This implies that fast-growing firms

within the hospitality industry do not value work experience as much as HGFs in other industries, or might have less options than HGFs in other industries when hiring employees.

[Table 16-21 about here]

6. Conclusions

The number of refugees that seeks asylum in Europe has increased dramatically in recent years, and countries within the European Union are now facing great challenges to integrate these refugees into their societies. This means that policymakers need to start thinking about which firms that are creating jobs for immigrants that have difficulties in entering the labor market. However, despite its importance, very few studies have previously investigated this question.

We focus our analysis on the hiring decision of HGFs since they generate most of all new jobs in the economy at a given point in time. These firms have therefore received increased attention from both researchers and policymakers, and support for high-growth small and medium-sized enterprises (SMEs) is mentioned as a political objective in the European Commission's (2010) Europe 2020 strategy. However, we still have little knowledge on which type of jobs these firms create. Do they hire individuals that are already employed, or do they provide jobs for groups of immigrants that have problems entering the labor market?

Our analysis is based on matched employer-employee data from Statistics Sweden, covering newly hired employees in 2010. This kind of data are not readily available, and might explain the lack of previous studies. Sweden is particularly interesting to study considering its high inflow of immigrants, and documented difficulties in integrating them into the labor market.

We have showed that theory gives us no clear answers whether HGFs are more likely than non-HGFs to hire unemployed immigrants. Resource-based models of firm growth predict that firms experiencing rapid growth hire individuals that complement the human capital of the existing workforce, i.e., that HGFs should be more likely to hire individuals that already are employed, are equipped with industry experience and with better education. Matching models, on the other hand, typically suggest that rapidly

growing firms do not have time to find perfect matches and therefore needs hire individuals that have difficulties in entering the labor market, and instead provide them with more on-the-job training.

Our results indicated that unemployed individuals were, irrespective of growth indicator, less likely to be hired by a HGF compared to a non-HGF. HGFs thus seem to value work experience when hiring, suggesting that they perceive the costs of finding able and well matched competences lower than the costs associated with new hires that lack proper industry experience or relevant education. We thus have reasons to believe, contrary to studies such as Barringer et al (2005) and Coad et al. (2014a), that rapidly growing firms are selective in their hiring decisions and less important job creators for individuals that have problems in entering the labor market.

On the other hand, immigrants are in general more likely to be hired by a HGF than a non-HGF. Employment-HGFs were, for example, more likely to hire immigrants than non-HGFs. This result is, however, driven by recruitments from other companies. We found no evidence that the effect of unemployment on the odds of being hired by HGF was different for immigrants and non-immigrants. This implies that HGFs are not of special importance in providing job opportunities for unemployed immigrants.

In contrast to Coad et al (2014a), we were also able to study whether the hiring decision of HGFs differed across industries. Our results indicated that unemployed immigrants in general were not more likely to get hired by HGFs, irrespective of industry. However, the effect of being unemployed on the odds of being hired by a HGF differed substantially across industries. Finally, HGFs within the hospitality industry were as likely as non-HGFs to hire unemployed individuals. It thus seems to exist some differences among HGFs in different industries when it comes to the recruitment of individuals that have difficulties in entering the labor market.

We believe that more research is needed to understand why HGFs are more reluctant than non-HGFs to hire those that are unemployed. In particular, we need a deeper understanding of how policies can be designed to better integrate the newly arrived refugees into the European labor markets. Our results implies that policies targeted towards high-growth firms at least will not be particularly effective.

References

Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models.*Economics letters*, *80*(1), 123-129.

Arulampalam, W. (2001). Is unemployment really scarring? Effects of unemployment experiences on wages. *Economic Journal*, F585-F606.

Bravo-Biosca, A. (2010), Growth dynamics exploring business growth and contraction in Europe and the US, NESTA Research report, November, London

Buis, M. L. (2010). Stata tip 87: Interpretation of interactions in non-linear models. *The Stata Journal*, *10*(2), 305-308.

Calleman & Herzfeld Olsson (2015). Arbetskraft från hela världen Hur blev det med 2008 års reform? Delegationen för Migrationsstudier. Delmi Report no. 2015:9

Coad, A., Daunfeldt, S. O., Johansson, D., & Wennberg, K. (2014). Whom do high-growth firms hire?. *Industrial and Corporate Change*, *23*(1), 293-327.

Coad, A. (2010). Exploring the processes of firm growth: evidence from a vector auto-regression. *Industrial and Corporate Change*, *19*(6), 1677-1703.

Davidsson, P., & Delmar, F. (2006). High-growth firms and their contribution to employment: The case of Sweden 1987–96. *Entrepreneurship and the Growth of Firms. Cheltenham: Elgar*, 156-178.

Daunfeldt, S. O., Elert, N., & Johansson, D. (2014). The economic contribution of high-growth firms: do policy implications depend on the choice of growth indicator?. *Journal of Industry, Competition and Trade*, *14*(3), 337-365.

Daunfeldt, S. O., Lang, Å., Macuchova, Z., & Rudholm, N. (2013). Firm growth in the Swedish retail and wholesale industries. *The Service Industries Journal*,*33*(12), 1193-1205.

Davidsson, P., & Delmar, F. (1997). High-growth firms: characteristics, job contribution and method observations.

Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of business venturing*, *18*(2), 189-216.

Du, J., & Temouri, Y. (2015). High-growth firms and productivity: evidence from the United Kingdom. *Small Business Economics*, *44*(1), 123-143.

Ekberg J (2009). Invandringen och de offentliga finanserna. Rapport no 3. Expertgruppen för studier i offentlig ekonomi (ESO). Stockholm: Finansdepartementet.

Ekberg, J. (2012). Invandrare på arbetsmarknaden i Sverige under den globala krisen. *Arbetsmarknad & Arbetsliv*, *18*(1), 43-51.

Ekberg, J., & Hammarstedt, M. (2002). 20 år med allt sämre arbetsmarknadsintegrering för invandrare. *Ekonomisk debatt*, *30*(4), 343-353.

European Commission (2010). Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth: Communication From the Commission. Brussels, Belgium: European Commission Publications Office.

Eurostat (2015a). Asylum and first time asylum applicants - monthly data. URL (consulted on October 26, 2015): http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00189

Eurostat (2015b). Foreign-born population. URL (consulted on October 26, 2015): http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00178

Eurostat (2015c). Population on 1 January. URL (consulted on October 26, 2015): http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00001

Eurostat (2015d). Migrant integration statistics - employment URL (consulted on 18 January, 2016): http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant_integration_statistics_-_employment

Heckman, J. J., & Borjas, G. J. (1980). Does unemployment cause future unemployment? Definitions, questions and answers from a continuous time model of heterogeneity and state dependence. *Economica*, 247-283.

Henrekson, M., & Johansson, D. (2010). Gazelles as job creators: a survey and interpretation of the evidence. *Small Business Economics*, *35*(2), 227-244.

Hölzl, W. (2014), "Persistence, survival and growth: a closer look at 20 years of fast-growing firms in Austria", Industrial and Corporate Change, Vol. 23 No. 1, pp. 199-231.

IOM (2015), "Irregular Migrant, Refugee Arrivals in Europe Top One Million in 2015: IOM". URL (Consulted on January 18, 2016): https://www.iom.int/news/irregular-migrant-refugee-arrivals-europe-top-one-million-2015-iom

Johansson, J. (2008). " Så gör vi inte här i Sverige. Vi brukar göra så här": Retorik och praktik i LO: s invandrarpolitik 1945-1981.

Koopmans, R. (2010). Trade-offs between equality and difference: Immigrant integration, multiculturalism and the welfare state in cross-national perspective.*Journal of ethnic and migration studies*, *36*(1), 1-26.

Lindbeck, Assar and Dennis J. Snower. 1984. "Involuntary Unemployment As an Insider-Out- sider Dilemma." Seminar Paper no. 309, Insti- tute for International Economic Studies, Univer- sity of Stockholm, Sweden

Mason, C., & Brown, R. (2013). Creating good public policy to support high-growth firms. *Small Business Economics*, *40*(2), 211-225.

Migrationsverket (2016). Applications for asylum received, 2015 (consulted on January 15, 2016):
http://www.migrationsverket.se/download/18.7c00d8e6143101d166d1aab/1451894593595/Inkomna+ans%C3%B6kningar+om+asyl+2015+-+Applications+for+asylum+received+2015.pdf

Mortensen, D. T., & Pissarides, C. A. (1999). New developments in models of search in the labor market. *Handbook of labor economics*, *3*, 2567-2627.

NESTA (2009) The vital 6 per cent: How high-growth innovative businesses generate prosperity and jobs, National Endowment for Science, Technology and the Arts (NESTA), London

Norton, E. C., Wang, H., & Ai, C. (2004). Computing interaction effects and standard errors in logit and probit models. *Stata Journal*, *4*, 154-167.

OECD (2015). Migration Policy Debates, September 2015. URL (consulted on 22 September 2015): http://www.oecd.org/migration/Is-this-refugee-crisis-different.pdf

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational behavior*, *74*(3), 264-282.

Penrose, E. T. (1959). The Theory of the Growth of the Firm. *Great Britain: Basil Blackwell and Mott Ltd*.

Phelps, E. S. (1972). The statistical theory of racism and sexism. *The american economic review*, 659-661.

Shane, S. (2009). Why encouraging more people to become entrepreneurs is bad public policy. *Small business economics*, *33*(2), 141-149.

Shepherd, D., & Wiklund, J. (2009). Are we comparing apples with apples or apples with oranges? Appropriateness of knowledge accumulation across growth studies. *Entrepreneurship Theory and Practice*, *33*(1), 105-123.

Statistics Sweden (2015a). Grundtabeller AKU, 15-74 år, månad enligt internationell definition. URL (consulted January 2016):
http://www.scb.se/sv_/Hitta-statistik/Statistik-efter-amne/Arbetsmarknad/Arbetskraftsundersokningar/Arbetskraftsundersokningarna-AKU/23265/23272/Tvarsnittsdata---originalvarden-ej-sasongsrensad/262724/

Statistics Sweden (2015c). Befolkning 2000-2014 och prognos 2015-2060 efter inrikes och utrikes födda. URL (consulted August 2015): http://www.scb.se/sv_/Hitta-statistik/Statistik-efter-amne/Befolkning/Befolkningsframskrivningar/Befolkningsframskrivningar/14498/14505/Aktuell-befolkningsprognos/Sveriges-framtida-befolkning-20152060/273428/

Storey, D. J. (1994). *Understanding the small business sector*. Cengage Learning EMEA.

Teruel Carrizosa, M. and De Wit, G. (2011), "Determinants of high-growth firms: why do some countries have more high-growth firms than others?", working paper, Departament d'Economia, Universitat Rovira i Virgili, Tarragona.

The European Commission (2010). Communication From the Commission. (2010). Europe 2020 A strategy for smart, sustainable and inclusive growth. *COM (2010)*, *2020*(3).

Törnqvist, L., Vartia, P., & Vartia, Y. O. (1985). How should relative changes be measured?. *The American Statistician*, *39*(1), 43-46.

Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. *Journal of Law and Economics*, 233-261.

Table 1: Descriptive statistics for all new hires (N=223,721) in non-HGFs and HGFs in 2010. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs).

Variable	Non-HGFs (Employment)				HGFs (Employment)				Non-HGFs (Sales)				HGFs (Sales)			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	Min	Max	Max	Mean	SD	Max	Max
Swe	0.83	0.38	0	1	0.82	0.38	0	1	0.82	0.38	0	1	0.82	0.38	0	1
Second	0.04	0.20	0	1	0.04	0.20	0	1	0.04	0.20	0	1	0.04	0.20	0	1
Nordic	0.02	0.13	0	1	0.02	0.14	0	1	0.02	0.13	0	1	0.02	0.15	0	1
Eu25	0.02	0.13	0	1	0.02	0.14	0	1	0.02	0.14	0	1	0.02	0.14	0	1
Eur	0.03	0.17	0	1	0.03	0.16	0	1	0.03	0.17	0	1	0.02	0.15	0	1
Africa	0.01	0.10	0	1	0.01	0.11	0	1	0.01	0.10	0	1	0.01	0.11	0	1
S_Am	0.01	0.10	0	1	0.01	0.11	0	1	0.01	0.10	0	1	0.01	0.11	0	1
Asia	0.04	0.19	0	1	0.04	0.19	0	1	0.04	0.19	0	1	0.04	0.19	0	1
Other	0.01	0.09	0	1	0.01	0.09	0	1	0.01	0.09	0	1	0.01	0.09	0	1
unemployed	0.27	0.45	0	1	0.17	0.38	0	1	0.27	0.44	0	1	0.17	0.38	0	1
Female	0.35	0.48	0	1	0.36	0.48	0	1	0.35	0.48	0	1	0.37	0.48	0	1
Age	35.79	11.94	17	80	37.4	12.44	17	72	35.87	11.97	17	80	37.55	12.37	17	73
Married	0.30	0.46	0	1	0.33	0.47	0	1	0.30	0.46	0	1	0.33	0.47	0	1
Child	0.40	0.49	0	1	0.39	0.49	0	1	0.40	0.49	0	1	0.39	0.49	0	1
Primary	0.10	0.30	0	1	0.09	0.29	0	1	0.10	0.30	0	1	0.09	0.29	0	1
High	0.66	0.47	0	1	0.64	0.48	0	1	0.66	0.47	0	1	0.63	0.48	0	1
Uni	0.22	0.41	0	1	0.24	0.43	0	1	0.22	0.41	0	1	0.25	0.44	0	1
Firm age	12.51	7.78	4	25	8.23	6.47	4	25	12.28	7.76	4	25	8.50	6.99	4	25
Firm Size	992.8	2311.	1	19969	167.	405.4	1	3065	946.2	2260.	1	19969	256.42	542.64	1	3065
Obs	201,540				22,181				212,294				11,427			

Table 2: Descriptive statistics for individuals that were employed in another firm in 2009 and hired into non-HGFs and HGFs in 2010 (N=59,253). HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs).

Var	Non-HGFs (Employment)				HGFs (Employment)				Non-HGFs (Sales)				HGFs (Sales)			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	Min	Max	Max	Mean	SD	Max	Max
Swe	0.75	0.43	0	0.75	0.71	0.45	0	1	0.75	0.43	0	1	0.71	0.46	0	1
Second	0.05	0.21	0	0.05	0.05	0.21	0	1	0.05	0.21	0	1	0.05	0.21	0	1
Nordic	0.02	0.13	0	0.02	0.02	0.14	0	1	0.02	0.13	0	1	0.03	0.16	0	1
Eu25	0.02	0.15	0	0.02	0.03	0.17	0	1	0.02	0.15	0	1	0.03	0.17	0	1
Eur	0.06	0.23	0	0.06	0.05	0.23	0	1	0.06	0.23	0	1	0.04	0.20	0	1
Africa	0.02	0.14	0	0.02	0.03	0.17	0	1	0.02	0.14	0	1	0.03	0.17	0	1
S_Am	0.01	0.11	0	0.01	0.02	0.15	0	1	0.01	0.11	0	1	0.02	0.15	0	1
Asia	0.07	0.25	0	0.07	0.08	0.27	0	1	0.07	0.25	0	1	0.08	0.27	0	1
Other	0.01	0.10	0	0.01	0.01	0.11	0	1	0.01	0.10	0	1	0.01	0.12	0	1
unemployed	1.00	0.00	1	1.00	1.00	0.00	1	1	1.00	0.00	1	1	1.00	0.00	1	1
Female	0.32	0.47	0	0.32	0.35	0.48	0	1	0.32	0.47	0	1	0.35	0.48	0	1
Age	34.51	12.08	17	34.51	34.13	11.77	18	66	34.48	12.07	17	66	34.79	11.99	18	65
Married	0.25	0.43	0	0.25	0.25	0.43	0	1	0.25	0.43	0	1	0.26	0.44	0	1
Child	0.37	0.48	0	0.37	0.36	0.48	0	1	0.37	0.48	0	1	0.37	0.48	0	1
Primary	0.12	0.33	0	0.12	0.13	0.33	0	1	0.12	0.33	0	1	0.13	0.33	0	1
High	0.71	0.45	0	0.71	0.65	0.48	0	1	0.71	0.45	0	1	0.66	0.48	0	1
Uni	0.13	0.34	0	0.13	0.19	0.39	0	1	0.13	0.34	0	1	0.19	0.39	0	1
Firm age	12.61	8.00	4	12.61	6.88	5.45	4	25	12.40	7.98	4	25	7.22	6.23	4	25
Firm Size	1293.85	2807.04	1	1293.85	139.09	291.64	1	3065	1253.61	2768.26	1	19969	186.50	387.48	1	3065
Obs	55,376				3,877				57,292				1,961			

29

Table 3: Descriptive statistics for all individuals that were employed in another firm 2009 and hired into non-HGFs and HGFs in 2010 (N=164,468). HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs).

	Non-HGFs (Employment)				HGFs (Employment)				Non-HGFs (Sales)				HGFs (Sales)			
Var	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	Min	Max	Max	Mean	SD	Max	Max
Swe	0.85	0.35	0	1	0.84	0.36	0	1	0.85	0.35	0	0.85	0.85	0.36	0	1
Second	0.04	0.20	0	1	0.04	0.20	0	1	0.04	0.20	0	0.04	0.04	0.20	0	1
Nordic	0.02	0.13	0	1	0.02	0.14	0	1	0.02	0.13	0	0.02	0.02	0.14	0	1
Eu25	0.02	0.13	0	1	0.02	0.14	0	1	0.02	0.13	0	0.02	0.02	0.14	0	1
Eur	0.02	0.14	0	1	0.02	0.15	0	1	0.02	0.14	0	0.02	0.02	0.14	0	1
Africa	0.01	0.08	0	1	0.01	0.09	0	1	0.01	0.08	0	0.01	0.01	0.09	0	1
S_Am	0.01	0.09	0	1	0.01	0.09	0	1	0.01	0.09	0	0.01	0.01	0.09	0	1
Asia	0.03	0.17	0	1	0.03	0.17	0	1	0.03	0.17	0	0.03	0.03	0.16	0	1
Other	0.01	0.08	0	1	0.01	0.08	0	1	0.01	0.08	0	0.01	0.01	0.08	0	1
unemployed	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0.00	0.00	0.00	0	0
Female	0.36	0.48	0	1	0.36	0.48	0	1	0.35	0.48	0	0.35	0.38	0.49	0	1
Age	36.28	11.84	17	80	38.19	12.46	17	72	36.39	11.89	17	36.39	38.13	12.38	17	73
Married	0.32	0.47	0	1	0.34	0.47	0	1	0.32	0.47	0	0.32	0.34	0.47	0	1
Child	0.42	0.49	0	1	0.40	0.49	0	1	0.41	0.49	0	0.41	0.40	0.49	0	1
Primary	0.09	0.28	0	1	0.09	0.28	0	1	0.09	0.28	0	0.09	0.08	0.28	0	1
High	0.64	0.48	0	1	0.64	0.48	0	1	0.64	0.48	0	0.64	0.63	0.48	0	1
Uni	0.25	0.44	0	1	0.25	0.43	0	1	0.25	0.43	0	0.25	0.27	0.44	0	1
Firm age	12.47	7.69	4	25	8.51	6.63	4	25	12.23	7.67	4	12.23	8.77	7.11	4	25
Firm Size	878.79	2081.25	1	19969	173.68	425.37	1	3065	832.64	2029.84	1	832.64	270.91	568.46	1	3065
Obs	146,164				18,304				155,002				9,466			

30

Table 4: Logistic regression, odds ratio of being hired by an HGF. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs).

Variables	Employment-HGFs		Sales-HGFs	
	I_1^a	$I_1 * U_1^b$	I_1	$I_1 * U_1$
Regional origin				
Second	1.027	1.045	0.999	1.030
	(0.04)	(0.10)	(0.05)	(0.13)
Nordic	0.979	1.008	0.992	1.347
	(0.06)	(0.14)	(0.08)	(0.23)
EU25	1.077	1.088	1.009	1.195
	(0.06)	(0.13)	(0.08)	(0.19)
Eur	1.336***	0.925	1.047	0.818
	(0.07)	(0.09)	(0.08)	(0.11)
Africa	1.251*	1.266	1.017	1.383
	(0.12)	(0.18)	(0.12)	(0.25)
S_Am	0.981	1.713***	0.928	1.732**
	(0.09)	(0.25)	(0.11)	(0.33)
Asia	1.131*	1.176*	0.900	1.420**
	(0.05)	(0.10)	(0.06)	(0.15)
Other	0.906	1.453*	0.951	1.520
	(0.09)	(0.27)	(0.12)	(0.35)
Controls				
Unemployed	0.594***		0.593***	
	(0.01)		(0.02)	
Baseline	0.152***		0.046***	
	(0.02)		(0.01)	
Female	0.946**		0.883***	
	(0.02)		(0.02)	
Age	1.011***		1.011***	
	(0.00)		(0.00)	
Married	0.995		0.985	
	(0.02)		(0.02)	
Child	0.947***		0.952*	
	(0.02)		(0.02)	
Primary	0.969		1.135	
	(0.05)		(0.09)	
High	1.007		1.171*	
	(0.05)		(0.08)	
Uni	0.974		1.116	
	(0.05)		(0.08)	
Firm age	0.922***		0.933***	
	(0.00)		(0.00)	
Firm size	0.999***		1.000***	
	(0.00)		(0.00)	
chi2	73443.663		77058.509	
N	223,688		223,694	

Note: [a] I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b] U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

Table 5: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs). I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effects of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.14***	0.07***	0.14***	0.07***	-0.06***	-0.06***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.02)	(0.01)
Nordic	0.14***	0.07***	0.15***	0.09***	-0.06***	-0.07***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
EU25	0.14***	0.07***	0.16***	0.09***	-0.06***	-0.07***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Eur	0.14***	0.08***	0.16***	0.07***	-0.06***	-0.08***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Africa	0.14***	0.07***	0.17***	0.11***	-0.06***	-0.06***
	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)	(0.01)
S_Am	0.14***	0.07***	0.15***	0.14***	-0.06***	-0.01
	(0.00)	(0.00)	(0.01)	(0.02)	(0.01)	(0.02)
Asia	0.14***	0.07***	0.15***	0.09***	-0.06***	-0.06***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Other	0.14***	0.07***	0.13***	0.10***	-0.06***	-0.03
	(0.00)	(0.00)	(0.01)	(0.02)	(0.02)	(0.02)
	Odds of being hired to an sales HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.06***	0.04***	0.07***	0.04***	-0.03***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Nordic	0.06***	0.04***	0.08***	0.06***	-0.03***	-0.02*
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
EU25	0.06***	0.04***	0.07***	0.05***	-0.03***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Eur	0.06***	0.04***	0.06***	0.03***	-0.03***	-0.04***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Africa	0.06***	0.04***	0.08***	0.05***	-0.03***	-0.03**
	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)	-(0.01)
S_Am	0.06***	0.03***	0.07***	0.07***	-0.03***	0.00
	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)	(0.01)
Asia	0.06***	0.03***	0.06***	0.04***	-0.03***	-0.02***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Other	0.06***	0.04***	0.07***	0.05***	-0.03***	-0.01
	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)	(0.01)

Table 6: Logistic regression, odds ratio of being hired by an HGF. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs). Regional origin redefined in order to include refugees only.

Variables	Employment-HGFs		Sales-HGFs	
	$I_1{}^a$	$I_1 * U_1{}^b$	I_1	$I_1 * U_1$
<u>Regional origin</u>				
Eur	1.395***	0.823*	1.109	0.719*
	(0.08)	(0.08)	(0.09)	(0.10)
Africa	1.206	1.223	0.989	1.464*
	(0.12)	(0.18)	(0.12)	(0.28)
S_Am	0.982	1.593**	0.930	1.612*
	(0.09)	(0.24)	(0.11)	(0.32)
Asia	1.118*	1.137	0.890	1.388**
	(0.06)	(0.10)	(0.06)	(0.16)
<u>Controls</u>				
Unemployed	0.609***		0.611***	
	(0.01)		(0.02)	
Baseline	0.155***		0.046***	
	(0.02)		(0.01)	
Female	0.945***		0.883***	
	(0.02)		(0.02)	
Age	1.011***		1.011***	
	(0.00)		(0.00)	
Married	1.000		0.987	
	(0.02)		(0.02)	
Child	0.946***		0.952*	
	(0.02)		(0.02)	
Primary	0.955		1.130	
	(0.05)		(0.09)	
High	0.992		1.166*	
	(0.05)		(0.08)	
Uni	0.962		1.114	
	(0.05)		(0.08)	
Firm age	0.922***		0.933***	
	(0.00)		(0.00)	
Firm size	0.999***		1.000***	
	(0.00)		(0.00)	
chi2	73474.666		77084.901	
N	223,688		223,694	

Note: [a] I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b] U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

Table 7: Odds and marginal effect of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs). Regional origins redefined to refugees. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
European refugees	0.14***	0.08***	0.16***	0.07***	-0.06***	-0.10***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
African refugees	0.14***	0.07***	0.17***	0.11***	-0.06***	-0.06***
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.02)
S_Amn refugees	0.14***	0.07***	0.15***	0.13***	-0.06***	-0.01
	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)	(0.02)
Asian refugees	0.14***	0.07***	0.15***	0.09***	-0.06***	-0.06***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
European refugees	0.06***	0.04***	0.07***	0.02***	-0.03***	-0.04***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	-(0.01)
African refugees	0.06***	0.04***	0.08***	0.06***	-0.03***	-0.02*
	(0.00)	(0.00)	(0.04)	(0.02)	(0.00)	-(0.01)
S_Amn refugees	0.06***	0.04***	0.07***	0.06***	-0.03***	-0.01
	(0.00)	(0.00)	(0.02)	(0.03)	(0.00)	(0.01)
Asian refugees	0.06***	0.03***	0.06***	0.04***	-0.03***	-0.02***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)

Table 8: Logistic regression, odds ratio of being hired by an HGF. HGFs are defined as the 5% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs).

Variables	Employment-HGFs		Sales-HGFs	
	$I_1{}^a$	$I_1 * U_1{}^b$	I_1	$I_1 * U_1$
Regional origin				
Second	0.979	1.115	1.014	1.034
	(0.03)	(0.08)	(0.05)	(0.11)
Nordic	0.992	1.075	0.923	1.358*
	(0.05)	(0.11)	(0.06)	(0.19)
EU25	1.035	1.168	1.040	1.281
	(0.05)	(0.11)	(0.07)	(0.16)
Eur	1.174***	1.015	1.180*	0.771*
	(0.06)	(0.07)	(0.08)	(0.09)
Africa	1.273**	1.100	1.097	1.274
	(0.10)	(0.12)	(0.12)	(0.20)
S_Am	0.983	1.653***	0.958	1.454*
	(0.07)	(0.19)	(0.09)	(0.25)
Asia	1.031	1.205**	1.039	1.320**
	(0.04)	(0.08)	(0.06)	(0.12)
Other	0.955	1.252	0.917	1.500*
	(0.08)	(0.18)	(0.10)	(0.30)
Controls				
Unemployed	0.665***		0.614***	
	(0.01)		(0.02)	
Baseline	0.394***		0.100***	
	(0.04)		(0.01)	
Female	0.941***		0.919***	
	(0.01)		(0.02)	
Age	1.008***		1.010***	
	(0.00)		(0.00)	
Married	0.981		0.980	
	(0.01)		(0.02)	
Child	0.963**		0.969	
	(0.01)		(0.02)	
Primary	0.939		1.087	
	(0.04)		(0.07)	
High	0.946		1.165*	
	(0.04)		(0.07)	
Uni	0.904*		1.160*	
	(0.04)		(0.07)	
Firm age	0.922***		0.911***	
	(0.00)		(0.00)	
Firm size	1.000***		0.999***	
	(0.00)		(0.00)	
chi2	71007.717		75602.023	
N	223688		223694	

Note: $^a I_1$ =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^b U_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

Table 9: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009. HGFs are defined as the 5% fastest growing firms in terms of number of employees (Employment-HGFs) and sales (Sales-HGFs). I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0 \| U_1 - U_0)$	$P(I_1 \| U_1 - U_0)$
Second	0.29***	0.17***	0.28***	0.18***	-0.11***	-0.10***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Nordic	0.29***	0.17***	0.33***	0.21***	-0.11***	-0.12***
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.00)
EU25	0.29***	0.17***	0.33***	0.22***	-0.11***	-0.11***
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.00)
Eur	0.29***	0.17***	0.30***	0.16***	-0.11***	-0.14***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	-(0.01)
Africa	0.29***	0.17***	0.50***	0.28***	-0.11***	-0.22***
	(0.00)	(0.00)	(0.04)	(0.02)	(0.00)	-(0.02)
S_Am	0.29***	0.17***	0.34***	0.32***	-0.12***	-0.02
	(0.00)	(0.00)	(0.02)	(0.03)	(0.00)	(0.01)
Asia	0.29***	0.17***	0.31***	0.20***	-0.12***	-0.11***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Other	0.29***	0.17***	0.29***	0.21***	-0.11***	-0.08**
	(0.00)	(0.00)	(0.02)	(0.03)	(0.00)	(0.00)

	Odds of being hired to an sales HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0 \| U_1 - U_0)$	$P(I_1 \| U_1 - U_0)$
Second	0.10***	0.06***	0.10***	0.06***	-0.04***	-0.04***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Nordic	0.10***	0.06***	0.10***	0.09***	-0.04***	-0.02
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
EU25	0.10***	0.05***	0.11***	0.08***	-0.04***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Eur	0.10***	0.06***	0.10***	0.04***	-0.04***	-0.06***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Africa	0.10***	0.06***	0.11***	0.07***	-0.04***	-0.04***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
S_Am	0.10***	0.06***	0.10***	0.08***	-0.04***	-0.02
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Asia	0.10***	0.05***	0.10***	0.07***	-0.04***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Other	0.10***	0.06***	0.09***	0.08***	-0.04***	-0.01
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)

Table 10: Logistic regression: Odds ratio of being employed in an HGF within selected industries. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs).

var	Manufacturing $I_1{}^a$	Manufacturing $I_1 * U_1{}^b$	Construction $I_1{}^a$	Construction $I_1 * U_1{}^b$	Retail $I_1{}^a$	Retail $I_1 * U_1{}^b$	Hospitality $I_1{}^a$	Hospitality $I_1 * U_1{}^b$	Information/Tech $I_1{}^a$	Information/Tech $I_1 * U_1{}^b$
Second	1.077	0.953	1.117	1.46	1.004	1.3	0.862	0.818	1.136	0.852
	-(0.15)	-(0.31)	-(0.13)	-(0.37)	-(0.13)	-(0.37)	-(0.17)	-(0.37)	-(0.13)	-(0.34)
Nordic	0.934	0.946	0.549**	2.667**	0.799	0.34	1.154	1.379	1.487*	1.282
	-(0.15)	-(0.39)	-(0.11)	-(0.85)	-(0.20)	-(0.36)	-(0.46)	-(1.23)	-(0.28)	-(0.75)
EU25	0.83	1.025	1.846***	1.243	1.042	1.416	0.881	1.591	1.098	0.699
	-(0.18)	-(0.46)	-(0.27)	-(0.36)	-(0.30)	-(0.73)	-(0.25)	-(0.69)	-(0.21)	-(0.44)
Eur	1.137	0.811	1.385	0.745	1.198	1.558	1.502	1.09	2.019***	0.496
	-(0.18)	-(0.23)	-(0.31)	-(0.27)	-(0.25)	-(0.53)	-(0.39)	-(0.42)	-(0.39)	-(0.29)
Africa	1.59	0.519	0.868	2.566	0.649	2.835	1.889	0.553	1.424	2.016
	-(0.65)	-(0.38)	-(0.46)	-(2.09)	-(0.40)	-(2.26)	-(0.69)	-(0.29)	-(0.70)	-(1.50)
S_Am	0.849	2.263	1.819*	2.106	0.876	0.326	0.784	0.919	1.492	3.207*
	-(0.32)	-(1.25)	-(0.54)	-(0.95)	-(0.32)	-(0.36)	-(0.24)	-(0.53)	-(0.40)	-(1.75)
Asia	1.33	0.756	1.369	1.34	0.907	1.563	1.238	0.779	1.046	1.168
	-(0.23)	-(0.23)	-(0.30)	-(0.49)	-(0.16)	-(0.46)	-(0.20)	-(0.21)	-(0.17)	-(0.45)
Other	0.774	1.287	0.865	1.586	0.878	0.44	1.199	1.59	0.873	2.211
	-(0.28)	-(0.94)	-(0.32)	-(1.09)	-(0.31)	-(0.50)	-(0.40)	-(0.86)	-(0.24)	-(1.20)
<u>Controls</u>										
Unemployed	0.331***		0.534***		0.521***		0.983		0.730***	
	-(0.02)		-(0.03)		-(0.04)		-(0.11)		-(0.07)	
Baseline	0.060***		0.152***		0.289***		0.360***		0.529*	
	-(0.01)		-(0.03)		-(0.07)		-(0.10)		-(0.16)	
Female	0.980		0.947		0.682***		0.883		0.960	
	(0.06)		(0.08)		(0.03)		(0.07)		(0.05)	
Age	1.033***		1.012***		1.014***		1.004		0.991**	
	(0.00)		(0.00)		(0.00)		(0.00)		(0.00)	
Married	0.887*		1.011		1.057		1.026		1.019	
	(0.05)		(0.05)		(0.08)		(0.11)		(0.06)	
Child	0.990		0.959		1.002		1.057		0.927	
	(0.05)		(0.04)		(0.05)		(0.09)		(0.05)	
Primary	1.260		1.265		0.918		0.888		1.077	
	(0.20)		(0.20)		(0.22)		(0.20)		(0.32)	
High	1.263		1.761***		1.035		1.010		0.701	
	(0.19)		(0.26)		(0.23)		(0.21)		(0.20)	
Uni	1.103		1.714***		1.228		1.423		0.489*	
	(0.17)		(0.28)		(0.28)		(0.31)		(0.14)	
Firm age	0.932***		0.925***		0.936***		0.840***		0.989**	
	(0.00)		(0.00)		(0.00)		(0.01)		(0.00)	
Firm size	0.999***		1.000***		0.999***		0.998***		1.000***	
	(0.00)		(0.00)		(0.00)		(0.00)		(0.00)	
chi2	13465.17		7993.487		6506.334		4035.906		5838.358	
N	41440		24006		19254		10999		15787	

Note: [a] I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b] U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

Table 11: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Manufacturing firms. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an sales HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.09***	0.03***	0.09***	0.02***	-0.06***	-0.07***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Nordic	0.09***	0.03***	0.12***	0.04***	-0.06***	-0.09***
	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)	(0.02)
EU25	0.09***	0.03***	0.09***	0.02**	-0.06***	-0.06***
	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)	(0.02)
Eur	0.09***	0.03***	0.08***	0.02***	-0.06***	-0.07***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)
Africa	0.09***	0.03***	0.11**	0.02	-0.06***	-0.10**
	(0.00)	(0.00)	(0.05)	(0.01)	(0.00)	(0.03)
S_Am	0.09***	0.03***	0.07***	0.05**	-0.06***	-0.02
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Asia	0.09***	0.03***	0.09***	0.02***	-0.06***	-0.07***
	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.02)
Other	0.09***	0.03***	0.08***	0.03	-0.06***	-0.05
	(0.00)	(0.00)	(0.03)	(0.02)	(0.00)	(0.03)

Table 12: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Construction firms. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an sales HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.19***	0.11***	0.19***	0.16***	-0.08***	-0.03
	(0.00)	(0.01)	(0.02)	(0.04)	(0.01)	(0.04)
Nordic	0.19***	0.11***	0.11***	0.19***	-0.08***	0.08
	(0.00)	(0.01)	(0.02)	(0.05)	(0.00)	(0.05)
EU25	0.19***	0.11***	0.36***	0.24***	-0.08***	-0.13
	(0.00)	(0.01)	(0.05)	(0.06)	(0.00)	(0.07)
Eur	0.19***	0.12***	0.25***	0.10***	-0.08***	-0.15**
	(0.00)	(0.01)	(0.06)	(0.03)	(0.00)	(0.06)
Africa	0.19***	0.12***	0.16*	0.18	-0.08***	0.02
	(0.00)	(0.01)	(0.09)	(0.11)	(0.00)	(0.14)
S_Am	0.19***	0.11***	0.34***	0.41***	-0.08***	0.07
	(0.00)	(0.01)	(0.10)	(0.14)	(0.00)	(0.17)
Asia	0.19***	0.11***	0.25***	0.17***	-0.08***	0.08
	(0.00)	(0.01)	(0.05)	(0.05)	(0.00)	(0.08)
Other	0.19***	0.12***	0.15***	0.13*	-0.08***	0.02
	(0.00)	(0.01)	(0.06)	(0.08)	(0.00)	(0.09)

Table 13: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Retail firms. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^bU_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
Second	0.13***	0.07***	0.15***	0.08***	-0.07***	-0.06**
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.02)
Nordic	0.13***	0.07***	0.14***	0.02***	-0.07***	-0.11***
	(0.00)	(0.00)	(0.03)	(0.02)	(0.00)	(0.04)
EU25	0.13***	0.07***	0.15***	0.10**	-0.07***	-0.06
	(0.00)	(0.00)	(0.04)	(0.04)	(0.00)	(0.06)
Eur	0.13***	0.06***	0.14***	0.11***	-0.07***	-0.03
	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.04)
Africa	0.13***	0.07***	0.09	0.13**	-0.07***	0.04
	(0.00)	(0.00)	(0.06)	(0.06)	(0.00)	(0.09)
S_Am	0.13***	0.07***	0.12***	0.02	-0.07***	-0.10**
	(0.00)	(0.00)	(0.04)	(0.02)	(0.00)	(0.05)
Asia	0.13***	0.06***	0.12***	0.09***	-0.07***	-0.03
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Other	0.13***	0.07***	0.15***	0.03	-0.07***	-0.13**
	(0.00)	(0.00)	(0.05)	(0.03)	(0.00)	(0.06)

Table 14: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Hospitality firms. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^bU_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
Second	0.10***	0.09***	0.09***	0.06**	-0.01	-0.02
	(0.00)	(0.01)	(0.02)	(0.02)	(0.01)	(0.03)
Nordic	0.10***	0.08***	0.11**	0.13	-0.01*	0.02
	(0.00)	(0.01)	(0.04)	(0.10)	(0.01)	(0.11)
EU25	0.10***	0.08***	0.10***	0.17***	-0.02**	0.07
	(0.00)	(0.01)	(0.03)	(0.06)	(0.01)	(0.06)
Eur	0.10***	0.08***	0.16***	0.12***	-0.01*	-0.03
	(0.00)	(0.01)	(0.04)	(0.03)	(0.00)	-(0.05)
Africa	0.10***	0.09***	0.14***	0.08***	-0.01	-0.07
	(0.00)	(0.01)	(0.05)	(0.03)	(0.01)	-(0.06)
S_Am	0.10***	0.09***	0.09***	0.07**	-0.01	-0.02
	(0.00)	(0.01)	(0.03)	(0.03)	(0.01)	(0.04)
Asia	0.10***	0.09***	0.13***	0.08***	-0.01	-0.05*
	(0.00)	(0.01)	(0.02)	(0.02)	(0.01)	(0.03)
Other	0.10***	0.08***	0.15***	0.20**	-0.01*	0.05
	(0.00)	(0.01)	(0.05)	(0.08)	(0.01)	(0.09)

Table 15: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Information- and Technology firms. HGFs are defined as the 3% fastest growing firms in terms of number of employees (Employment-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^bU_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of Regional origin (I) and unemployed in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
Second	0.17***	0.14***	0.19***	0.13***	-0.03**	-0.06
	(0.00)	(0.01)	(0.02)	(0.05)	(0.01)	(0.05)
Nordic	0.17***	0.14***	0.25***	0.26*	-0.03**	0.01
	(0.00)	(0.01)	(0.04)	(0.14)	(0.01)	(0.15)
EU25	0.17***	0.14***	0.18***	0.09*	-0.03**	-0.09
	(0.00)	(0.01)	(0.03)	(0.05)	(0.01)	(0.06)
Eur	0.17***	0.14***	0.33***	0.11*	-0.03**	-0.22**
	(0.00)	(0.01)	(0.06)	(0.06)	(0.01)	(0.09)
Africa	0.17***	0.14***	0.25***	0.32**	-0.03***	0.07
	(0.00)	(0.01)	(0.12)	(0.17)	(0.01)	(0.21)
S_Am	0.17***	0.13***	0.27***	0.51**	-0.03***	0.23
	(0.00)	(0.01)	(0.07)	(0.24)	(0.01)	(0.25)
Asia	0.17***	0.14***	0.17***	0.15***	-0.03**	-0.02
	(0.00)	(0.01)	(0.03)	(0.05)	(0.01)	(0.06)
Other	0.17***	0.14***	0.15***	0.25**	-0.03***	0.10
	(0.00)	(0.01)	(0.04)	(0.11)	(0.01)	(0.12)

Table 16: Logistic regression: Odds ratio of being employed in an HGF within selected industries. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs).

var	Manufacturing $I_1{}^a$	$I_1*U_1{}^b$	Construction $I_1{}^a$	$I_1*U_1{}^b$	Retail $I_1{}^a$	$I_1*U_1{}^b$	Hospitality $I_1{}^a$	$I_1*U_1{}^b$	Information/Tech $I_1{}^a$	$I_1*U_1{}^b$
Second	1.062	0.923	0.634*	2.766**	1.293	1.255	0.460*	2.558	1.252	0.637
	(0.19)	(0.38)	(0.14)	(0.99)	(0.20)	(0.45)	(0.14)	(1.40)	(0.20)	(0.40)
Nordic	1.044	1.129	0.548	4.383***	1.014	1.153	0.954	3.540	1.418	2.111
	(0.21)	(0.51)	(0.18)	(1.92)	(0.31)	(0.92)	(0.49)	(3.26)	(0.36)	(1.52)
EU25	0.536	1.739	1.700**	1.153	1.171	1.233	1.241	0.663	1.289	1.577
	(0.17)	(1.02)	(0.34)	(0.46)	(0.41)	(0.85)	(0.40)	(0.45)	(0.31)	(1.05)
Eur	0.872	1.006	0.950	0.687	1.273	1.847	1.600	0.806	1.641	1.950
	(0.19)	(0.38)	(0.34)	(0.40)	(0.32)	(0.75)	(0.50)	(0.44)	(0.45)	(1.14)
Africa	1.720	0.224	1.117	1.114	0.416	5.567	2.578*	0.681	3.068*	0.415
	(0.85)	(0.26)	(0.82)	(1.36)	(0.42)	(6.51)	(1.08)	(0.41)	(1.56)	(0.49)
S_Am	1.110	1.341	2.063	1.071	0.653	1.901	0.550	1.634	1.939*	4.114*
	(0.46)	(0.99)	(0.79)	(0.70)	(0.34)	(1.72)	(0.26)	(1.27)	(0.62)	(2.67)
Asia	1.057	1.298	1.265	0.892	0.799	2.106	1.083	1.149	1.481*	1.913
	(0.25)	(0.48)	(0.42)	(0.51)	(0.20)	(0.81)	(0.23)	(0.42)	(0.28)	(0.80)
Other	1.312	0.741	1.024	1.245	1.121	0.841	0.980	1.519	1.020	3.112
	(0.51)	(0.64)	(0.53)	(1.13)	(0.48)	(0.97)	(0.45)	(1.16)	(0.36)	(1.92)
Controls										
Unemployed	0.380***		0.753***		0.425***		0.898		0.595***	
	(0.03)		(0.06)		(0.05)		(0.14)		(0.08)	
Baseline	0.021***		0.035***		0.187***		0.097***		0.550	
	(0.01)		(0.01)		(0.06)		(0.04)		(0.20)	
Female	0.912		0.992		0.625***		1.009		0.820**	
	(0.07)		(0.12)		(0.04)		(0.10)		(0.06)	
Age	1.032***		1.011***		1.016***		0.997		0.985***	
	(0.00)		(0.00)		(0.00)		(0.01)		(0.00)	
Married	0.876		0.998		1.093		0.793		1.049	
	(0.06)		(0.07)		(0.11)		(0.12)		(0.09)	
Child	0.956		0.988		0.963		1.152		0.995	
	(0.06)		(0.06)		(0.07)		(0.12)		(0.07)	
Primary	1.362		1.124		0.856		1.465		0.756	
	(0.29)		(0.24)		(0.24)		(0.50)		(0.27)	
High	1.460		1.379		0.857		1.632		0.590	
	(0.29)		(0.28)		(0.22)		(0.52)		(0.20)	
Uni	1.401		1.276		1.021		2.082*		0.472*	
	(0.29)		(0.29)		(0.27)		(0.70)		(0.16)	
Firm age	0.963***		0.995		0.899***		0.943***		0.926***	
	(0.00)		(0.00)		(0.01)		(0.01)		(0.01)	
Firm size	0.999***		1.000***		0.999***		0.996***		1.000	
	(0.00)		(0.00)		(0.00)		(0.00)		(0.00)	
chi2	10862.594		9293.053		5982.088		3682.141		6222.260	
N	41,440		24,006		18,540		11,231		15658	

Note: $^a I_1$ =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^b U_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

Table 17: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Manufacturing firms. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.05***	0.02***	0.05***	0.02***	-0.03***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Nordic	0.05***	0.02***	0.08***	0.03**	-0.03***	-0.05**
	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)	(0.02)
EU25	0.05***	0.02***	0.03***	0.02**	-0.03***	-0.01
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Eur	0.05***	0.02***	0.04***	0.01***	-0.03***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)
Africa	0.05***	0.02***	0.07**	0.01	-0.03***	-0.06*
	(0.00)	(0.00)	(0.03)	(0.01)	(0.00)	(0.03)
S_Am	0.05***	0.02***	0.05***	0.02	-0.03***	-0.03
	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)	(0.02)
Asia	0.05***	0.02***	0.04***	0.02***	-0.03***	-0.02**
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)
Other	0.05***	0.02***	0.08***	0.02	-0.03***	-0.07*
	(0.00)	(0.00)	(0.03)	(0.01)	(0.00)	(0.04)

Table 18: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Construction firms. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.06***	0.04***	0.04***	0.07***	-0.02***	-0.03
	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)	(0.02)
Nordic	0.06***	0.04***	0.04***	0.11***	-0.02***	-0.08**
	(0.00)	(0.00)	(0.01)	(0.03)	(0.00)	(0.03)
EU25	0.06***	0.04***	0.12***	0.09***	-0.01***	-0.02
	(0.00)	(0.00)	(0.02)	(0.03)	(0.00)	(0.04)
Eur	0.06***	0.05***	0.06***	0.03**	-0.02***	-0.03
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Africa	0.06***	0.05***	0.07	0.05	-0.01***	-0.02
	(0.00)	(0.00)	(0.05)	(0.05)	(0.00)	(0.01)
S_Am	0.06***	0.04***	0.12***	0.09*	-0.01***	-0.03
	(0.00)	(0.00)	(0.05)	(0.05)	(0.00)	(0.07)
Asia	0.06***	0.05***	0.07***	0.05**	-0.01***	-0.03
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.01)
Other	0.06***	0.05***	0.07*	0.06	-0.01***	-0.01
	(0.00)	(0.00)	(0.03)	(0.04)	(0.00)	(0.05)

Table 19: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Retail firms. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^bU_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
Second	0.07***	0.03***	0.10***	0.05***	-0.04***	-0.05**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.02)
Nordic	0.07***	0.03***	0.09***	0.04	-0.04***	-0.05
	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.04)
EU25	0.07***	0.03***	0.09***	0.04*	-0.04***	-0.05
	(0.00)	(0.00)	(0.03)	(0.02)	(0.00)	(0.04)
Eur	0.07***	0.03***	0.09***	0.07***	-0.04***	-0.02
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Africa	0.07***	0.03***	0.03	0.07*	-0.04***	-0.05
	(0.00)	(0.00)	(0.03)	(0.04)	(0.00)	(0.05)
S_Am	0.07***	0.03***	0.05*	0.04	-0.04***	-0.01
	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.04)
Asia	0.07***	0.03***	0.05***	0.05***	-0.04***	-0.01
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.02)
Other	0.07***	0.03***	0.10**	0.03	-0.04***	-0.08
	(0.00)	(0.00)	(0.04)	(0.03)	(0.00)	(0.05)

Table 20: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Hospitality firms. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. $^bU_1$ =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0\|U_1 - U_0)$	$P(I_1\|U_1 - U_0)$
Second	0.05***	0.04***	0.03***	0.05**	-0.01**	0.02
	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)	(0.02)
Nordic	0.05***	0.04***	0.05*	0.13	-0.01**	0.08
	(0.00)	(0.00)	(0.03)	(0.10)	(0.00)	(0.1)
EU25	0.05***	0.04***	0.06***	0.04*	-0.01**	-0.03
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Eur	0.05***	0.04***	0.08***	0.04**	-0.01**	-0.04
	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.03)
Africa	0.05***	0.04***	0.09**	0.05**	-0.01**	-0.04
	(0.00)	(0.00)	(0.04)	(0.02)	(0.00)	(0.04)
S_Am	0.05***	0.04***	0.03**	0.04*	-0.01**	0.01
	(0.00)	(0.00)	(0.01)	(0.03)	(0.00)	(0.03)
Asia	0.05***	0.04***	0.06***	0.04***	-0.01**	-0.02
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.02)
Other	0.05***	0.04***	0.06**	0.07*	-0.01**	0.01
	(0.00)	(0.00)	(0.03)	(0.04)	(0.00)	(0.05)

Table 21: Odds and marginal effects of being unemployed in 2009 for all combinations of regional origin and unemployment status in 2009 within Information- and Technology firms. HGFs are defined as the 3% fastest growing firms in terms of sales (Sales-HGFs. I_1 =1 if second or first generation immigrant; I_0 =0 if born in Sweden with at least on parent born in Sweden. [b]U_1 =1 if unemployed in 2009; U_0 =0 if working in other firm.

	Odds of being hired to an employment HGF for every combination of regional origin (I) and unemployment status in 2009 (U)				Marginal effect of being unemployed in 2009 for immigrants and non-immigrants	
	$I_0 * U_0$	$I_0 * U_1$	$I_1 * U_0$	$I_1 * U_1$	$P(I_0|U_1 - U_0)$	$P(I_1|U_1 - U_0)$
Second	0.08***	0.07***	0.10***	0.04*	-0.01*	-0.05*
	(0.00)	(0.01)	(0.01)	(0.03)	(0.01)	(0.03)
Nordic	0.08***	0.06***	0.11***	0.13	-0.01**	0.02
	(0.00)	(0.01)	(0.03)	(0.09)	(0.01)	(0.09)
EU25	0.08***	0.06***	0.11***	0.08	-0.01*	-0.02
	(0.00)	(0.01)	(0.02)	(0.05)	(0.01)	(0.06)
Eur	0.08***	0.06***	0.13***	0.15**	-0.02**	0.03
	(0.00)	(0.01)	(0.03)	(0.08)	(0.01)	(0.08)
Africa	0.08***	0.06***	0.26**	0.06	-0.01*	-0.20
	(0.00)	(0.01)	(0.13)	(0.07)	(0.01)	(0.15)
S_Am	0.08***	0.06***	0.17***	0.35*	-0.02**	0.19
	(0.00)	(0.01)	(0.05)	(0.19)	(0.01)	(0.20)
Asia	0.08***	0.06***	0.11***	0.14***	-0.02**	0.03
	(0.00)	(0.01)	(0.02)	(0.05)	(0.01)	(0.05)
Other	0.08***	0.06***	0.08***	0.20**	-0.02**	0.12
	(0.00)	(0.01)	(0.03)	(0.10)	(0.01)	(0.10)