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Wapler, Rüdiger; Hochfellner, Daniela

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Do High-Skilled Immigrants find Jobs Faster than Low-Skilled Immigrants?

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Do High-Skilled Immigrants find Jobs Faster than Low-Skilled Immigrants?

Daniela Hochfellner
University of Michigan and Institute for Employment Research (IAB), Germany[a]

Rüdiger Wapler
Institute for Employment Research (IAB), Germany[b]

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Abstract

This paper investigates the role that pre-immigration skills play in immigrants job-finding processes in Germany. We first show theoretically that the job-finding rate for the high-skilled varies depending on their search strategy: if they are prepared to look for both unskilled as well as skilled jobs (cross-skill matching), then their expected time to find a job is lower compared to the low-skilled. However, if the high-skilled are only prepared to look for and take up skilled jobs (ex post segmented matching), it might be that the high-skilled actually need longer to find a job. We then provide empirical evidence by studying the labour-market integration process of Ethnic Germans, one of the largest immigration groups in Germany, using novel German administrative data. Applying proportional hazard models, our estimates generally support the theoretical predictions: in case of cross-skill matching, the job finding rate of the high- and low-skilled does not differ significantly. However, if the length of time a job match holds is accounted for, then we do find that the high-skilled are significantly faster than the low-skilled. If the high-skilled only search for skilled jobs, the likelihood of finding a job is about 50% lower compared to the low-skilled.

Keywords: Job-Search; Migration; Labour-Market Integration; Survival Analysis

JEL-Classification: J61; J64; J15

[a] danielah@umich.edu
[b] ruediger.wapler@iab.de

Introduction

Many industrialised countries are facing large demographic changes leading *c.p.* to a decline in the size of their labour-force population. One of the strategies often applied to counteract this development is to try and increase immigration by making it more attractive. For example, in Germany a new law came into effect on 1st April 2012 ("Federal Recognition Act") which aims to increase the transferability of degrees obtained outside of Germany to the German labour market. Hence, the aim is that immigrants will find jobs more easily and therefore quickly.

As this act is relatively new, it is too early to fully analyse its influence on the integration process. In particular, to the best of our knowledge, there are no analytical studies which focus on how immigrants of different skill-levels perform on the German labour market within the new legal framework with regard to the transferability of their pre-migration skills.[1] Instead, this paper studies a large immigration group which have always had the rights introduced to all immigrants with the new Act in 2012 – namely the Ethnic Germans (*(Spät-)Aussiedler*). Thus, by looking at the immigration process of Ethnic Germans, we provide evidence how the new act might affect the transferability of pre-migration skills in the job-finding process, in particular of current high-skilled immigrants. We use a new high-quality administrative dataset based on the German pension and unemployment insurances that holds information both on, for example, the skill-level of every job Ethnic Germans worked in prior to immigrating to Germany, as well as the skill-level of the job when starting their employment career in Germany. Hence, we are able to analyse not only how long Ethnic Germans need to find a job but also whether they can (at least to some degree) transfer their skills from abroad to the German labour market. Focusing on Germany may also be of wider interest as Germany has the third highest stock of migrants in the world after the U.S. and Russia (see United Nations, 2011, p. 21).

There is a huge literature on the labour-market integration process of immigrants starting with, for example, Chiswick (1978); Borjas (1985) and more recently Chiswick and Miller (2009a,b); Hirsch *et al.* (2013); Friedberg (2000); Damm (2009). These studies mostly focus on how immigrants pre-migration skills influence assimilation and wage growth rates. We depart from this strand of literature by analysing the role pre-migration skills play in the job-search process of immigrants. Perhaps the paper that comes closest to ours in the way it compares immigrants in both their source and destination country is that by Konietzka and Kreyenfeld (2002) who also focus on Ethnic Germans. However, their study is based on a very small sample of Ethnic Germans and they only investigate discrete transitions. With the novel data we use, we are able to identify day-by-day transitions, thereby allowing us to study the immigration process using continuous duration models. Other related studies that focus on the labour-market performance of Ethnic Germans but not specifically on their job-search process are by Schmidt (1994); Bauer and Zimmermann (1997) and more recently Glitz (2012).

Our paper complements the existing literature in two ways: First we show theoretically how different job search strategies influence job search durations of the high-skilled and further that outcomes differ because of the heterogeneity of productivity signals between groups. Second, our administrative data allows us to provide empirical evidence to test the theoretical projections by

[1] First purely descriptive results can be found in Brussig *et al.* (2013).

studying job transitions of Ethnic Germans after immigrating to Germany, accounting for differences of Ethnic Germans coming from Poland, Rumania, and the Former Soviet Union (FSU). As Ethnic Germans have always had the right to have foreign degrees accredited, our result furthermore have important implications for the job-search process of high-skilled immigrants affected by the new law.

The setup of the paper is as follows: In the next section we provide more details about Ethnic Germans and their accreditation rights. We then present a formal model showing both the influence of the uncertainty associated with a degree obtained in a foreign country as well as how this uncertainty varies between different skill levels. We theoretically show that the duration of the job-search process for the high-skilled varies greatly depending on the search strategy used. If the high-skilled are prepared to look for both unskilled as well as skilled jobs (which – as in Albrecht and Vroman (2002) – we call cross-skill matching), then the expected time they need to find a job is lower than that of the low-skilled. However, if the high-skilled are only prepared to look for and take up skilled jobs (called ex post segmented matching), then this result may be reversed. In this case, it is possible that the high-skilled actually need longer to find a job. We empirically test which effect dominates using Cox survival-analysis models.

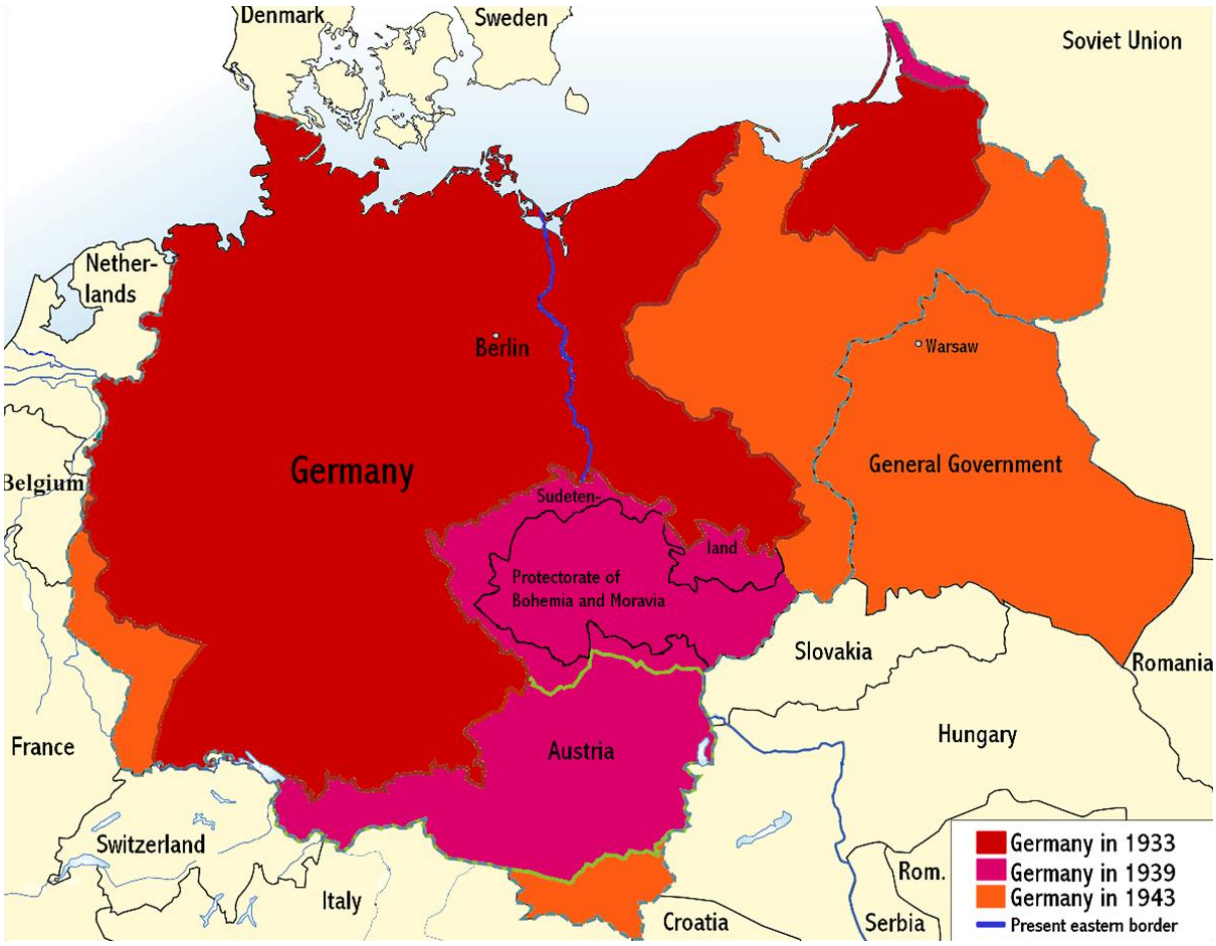
Our empirical results show that first – when we do not account for the type of job high-skilled take up – the time needed to find a job is not significantly different between the low- and high-skilled. However, this result is reversed when we change the "quality" of a job match, i.e. assume it must last at least 180 days. Second, if high-skilled only search for high-skilled jobs, we confirm our theoretical findings and find significantly longer job-search times of a very large magnitude (50% lower hazard rate). In addition, we also show that there are large differences depending on where an Ethnic German emigrated from. Hence, even though all Ethnic Germans have the same legal rights and especially the same accreditation rights, this does not translate into similar labour-market integration success.

Historical Background

Ethnic Germans are a particular immigration group with special privileges because of their German background. The territory of the German Reich until 1933 was larger than Germany is now. It comprised regions which are nowadays part of mostly Eastern European countries. After World War II, the former German territory was not included within the German borders anymore. About 15 million people who were born in the German territory before the end of World War II (see Figure 1) no longer lived in Germany after the reallocation of the territories. The vast majority of them were subsequently resettled further East (for example to the Former Soviet Union or Rumania) and lived as stigmatised Germans in another country. Often, their German identity was denied and they were not allowed to live their German culture and habits (Baaden, 1997). A high percentage were expelled or escaped and moved back to Germany immediately after the end of World War II. These immigrants are called Ethnic Germans by law (*Bundesvertriebenengesetz*), as well as all refugees or expellees from Poland, the Former Soviet Union, Hungary and Rumania who moved back to Germany after 1950. Thus, Ethnic Germans -– German diaspora and their descendants – are treated as immigrants with German origin because

they were affected by the aftermath of the Third Reich. This in turn grants Ethnic Germans full social security entitlements upon entry to Germany that other immigrants are not able to claim.

Figure 1: German Territory 1933 – 1943



Source: `http://commons.wikimedia.org/wiki/File:Nazi_Germany.svg`

The three most important countries from where Ethnic Germans emigrated were Poland, Rumania, and the FSU (see Figure 2). However, until the fall of the "iron curtain", it was very difficult for both the Ethnic Germans and their relatives to leave their home countries. Until 1987, about 1.6 million moved back to Germany in two huge waves. This can be explained with changing legal conditions regarding emigration in the different countries of origin. Different emigration agreements between Germany and the East European countries enabled different Ethnic-German populations better or worse access to Germany (Baaden, 1997). With the end of the cold war in 1998, the emigration agreements became more flexible and since then about 3 million Ethnic Germans re-settled to Germany. Until the early 1990s, the number of immigrating Ethnic Germans increased which lead to a legal limitation of their immigration (see Glitz, 2012, for more details). Legal changes and the introduction of certain immigration rules (e.g. the immigration application has to be submitted and granted before entry to Germany) made it much more difficult to immigrate since then. By now, immigration of Ethnic Germans can be

considered as completed. In 2006, less than 8,000 Ethnic Germans immigrated to Germany.[2] In addition, return migration is not widespread among Ethnic Germans as they would lose their German pension entitlements.

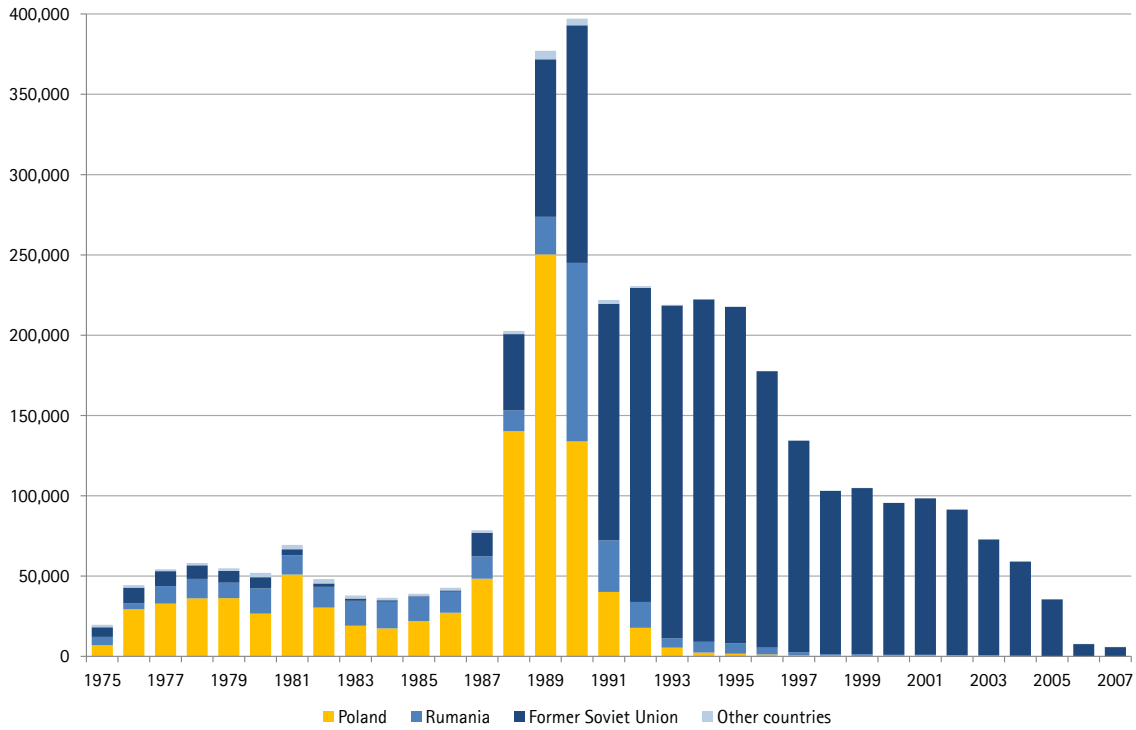
As can be clearly seen from Figure 2, Ethnic Germans came to Germany at different times depending on their country of origin. However, this is not the only important difference between them. Whereas Ethnic Germans that immigrated in the eighties on average could speak German quite well upon entry (see Mika and Tucci, 2006) as German can be considered as their first language (Meng, Katharina, 2001, p. 462), Ethnic Germans immigrating in the early 1990s, on average, could speak only little German, or no German at all (see Klekowski von Koppenfels, 2003).

Ethnic Germans and their direct relatives are allowed to immigrate to Germany and receive German citizenship automatically after arrival in Germany. More distant family members are allowed to immigrate with them but keep their original citizenship and can only apply for a German citizenship after a minimum duration of eight years. Besides eligibility for German citizenship and therefore unrestricted access to the German labour market, they are entitled to claim all kinds of welfare benefits, such as unemployment, health, and pension benefits (Konietzka and Kreyenfeld, 2002; Mika and Tucci, 2006). To facilitate their integration, Ethnic Germans are additionally granted financial moving subsidies, e.g. low-interest loans, a lump-sum payment, language courses and educational or occupational further training. Ethnic Germans participating in these measures receive a monthly integration subsidy payment which is equivalent to the amount of regular unemployment benefits (Klekowski von Koppenfels, 2003). However, the most important fact for our study is their legal right to a formal accreditation procedure of their educational certificates (see Englmann and Müller, 2007, for more details). The accreditation procedure for Ethnic Germans constitutes an exception in the past until the introduction of the Recognition Act in 2012. Until then, Ethnic Germans were the only immigrant group entitled to an accreditation procedure for all professional or vocational qualifications ("de-facto" recognition). Numerous accreditation offices only conducted procedures for Ethnic Germans, as other immigrants were not entitled to de facto recognition. In the context of the debate on potential labour shortages, this privilege was extended to all other immigrants to Germany in 2012.

Despite these labour-market privileges, studies have shown that Ethnic Germans still face numerous problems on the labour market. They often face high unemployment rates and long durations in unemployment (Hochfellner and Wapler, 2010) and have difficulties finding a job in their occupations (Konietzka and Kreyenfeld, 2002). In addition, these poor starting conditions have long-term consequences (Mika and Tucci, 2006). This could be an indication that the accreditation of foreign degrees does not perform well when looking at labour-market entries, which might also apply to the new accreditation law introduced in 2012.

[2] See `http://www.bpb.de/gesellschaft/migration/dossier-migration/56395/aussiedlermigration`.

Figure 2: Immigration of Ethnic Germans to Germany, 1975 – 2007



Source: `http://www.bund-der-vertriebenen.de/infopool/spaetauss1.php3`

Model

Our theoretical model is based on matching theory as described in Pissarides (2000). Hence, we are assuming that there are labour-market frictions leading to the simultaneous existence of people looking for jobs and firms looking for workers. In the baseline version of the theory, both firms and workers are homogeneous. We depart from this assumption and base our analysis on Albrecht and Vroman (2002) where both firms and workers are heterogeneous.[3] We assume that workers can be either low- or high-skilled (ignoring the fact whether these skills were obtained at home or abroad for the moment) and that an (exogenously given) fraction μ of the population is low-skilled. Firms are also assumed to be heterogeneous and offer two types of jobs which are either unskilled or skilled. The unskilled jobs can be performed by both the high- and low-skilled whereas the skilled jobs can only be performed by high-skilled workers.

The rate at which job-seekers and firms come together is given by the matching technology which we specify as:

$$m = m(u_l + u_h, v_n + v_s) \tag{1}$$

where u_j is the mass of unemployed workers and $j \in \{l, h\}$ is the index noting the individual skill level, v_i the mass of vacancies and $i \in \{n, s\}$ is the job index which is either unskilled (n)

[3] See Dolado *et al.* (2009) who extend Albrecht and Vroman (2002) by introducing on-the-job search. This extension does not alter the main results found in Albrecht and Vroman (2002) and is not of importance here as we are primarily interested in the time span from the time a person migrates to Germany until they find their first job.

or skilled (s). Labour-market tightness θ is defined as the ratio of vacancies to job-seekers:

$$\theta = \frac{v_n + v_s}{u_l + u_h}$$

Hence, the contact rate of a firm is given by:

$$p(\theta) = \frac{m}{v_n + v_s} = m(1/\theta, 1) \tag{2}$$

Similarly, the contact rate for job-seekers is:

$$f(\theta) = \frac{m}{u_l + u_h} = \theta p(\theta) \tag{3}$$

where $p'(\theta) < 0$ and $f'(\theta) > 0$.

We define the share of the unskilled in the pool of the unemployed as $\phi = u_l/(u_l + u_h)$. This implies that the number of low-skilled unemployed is given by $u_l = \phi u$ and analogously, the number of high-skilled unemployed is $u_h = (1 - \phi)u$. Defining the share of low-skilled vacancies as $\xi = v_n/(v_n + v_s)$ and because low-skilled workers can only take up unskilled jobs implies that their job-finding rate is $\xi f(\theta)$. High-skilled workers find unskilled and skilled vacancies at the same rate. Hence, their job-finding rate is $f(\theta)$.

Turning to firms, the rate at which unskilled vacancies are matched with low-skilled workers is given by $\phi p(\theta)$. If the benefits for a high-skilled individual of taking up an unskilled job are higher than remaining unemployed and waiting for a match with a skilled job, then they too will accept unskilled job offers. Albrecht and Vroman (2002) call this *cross-skill matching* and show that it occurs if the productivity differences between the two types of jobs as well as the share of the high-skilled population are not not too large. Hence, in a cross-skill matching equilibrium, high-skilled workers match with unskilled jobs at the rate $(1 - \phi)p(\theta)$.

Flow Equilibrium

Assuming time-constant arrival rates (Poisson-distributed arrivals) in a small time interval dt, a mass of $\xi f(\theta)\phi u dt$ low-skilled individuals leave unemployment and find jobs. Jobs are assumed to be destroyed at the exogenous rate δ. Hence, the number of low-skilled who lose their jobs in any period is $\delta(\mu - \phi u)dt$. Therefore, the steady-state flow equilibrium for the low-skilled is:

$$\xi f(\theta)\phi u = \delta(\mu - \phi u) \tag{4}$$

The corresponding equation for high-skilled workers is:

$$f(\theta)(1 - \phi)u = \delta((1 - \mu) - (1 - \phi)u) \tag{5}$$

Combining these two equations leads to an unemployment rate for the low-skilled of:

$$\tilde{u}_l = \frac{\phi u}{\mu} = \frac{\delta}{\delta + \xi f(\theta)} \tag{6}$$

and for the high-skilled:

$$\tilde{u}_h = \frac{(1-\phi)u}{1-\mu} = \frac{\delta}{\delta + f(\theta)} \tag{7}$$

From equations (6) and (7) it can be seen that the low-skilled have a higher unemployment rate than the high-skilled.

Equations (6) and (7) hold if there is a cross-skill matching equilibrium. It is shown in Albrecht and Vroman (2002) that this is more likely to be the case (i) the smaller the spread between the productivities on unskilled and skilled jobs and/or (ii) the greater the fraction of the workforce that is low-skilled (the larger μ is).

If there is no cross-skill matching in equilibrium, then high-skilled workers will never search for unskilled jobs. So whereas labour-market flows for the low-skilled remain unchanged and hence (6) is still valid, the condition for high-skilled workers now becomes:

$$(1-\xi)f(\theta)(1-\phi)u = \delta((1-\mu) - (1-\phi)u) \tag{8}$$

The difference between equations (5) and (8) is that now the high-skilled are only matched with skilled vacancies which represent a fraction $(1-\xi)$ of all vacancies. From this it follows that the unemployment rate is now given by:

$$\tilde{u}_h = \frac{\delta}{\delta + (1-\xi)f(\theta)} \tag{9}$$

Comparing equation (9) with the low-skilled unemployment rate (6) it can immediately be seen that it is now no longer clear that the high-skilled unemployment rate is lower and hence the unemployment duration is shorter for the high-skilled. Thus, only under the parameter conditions necessary to create a cross-skill matching equilibrium is it clear that the high-skilled have shorter unemployment spells. If they are not better off from accepting unskilled jobs and only look for high-skilled jobs, then they may need longer to find jobs than the low-skilled.

Exit Rates for Different Countries of Origin

Regardless of whether a vacancy is for a skilled or an unskilled position, both jobs and workers have many unobservable characteristics (see Pissarides, 2000, chap. 6). Hence, in the following, we assume that when a firm and worker meet, the firm receives a noisy signal $\hat{y}_j = y_j + \epsilon_j$ about the worker's productivity, where ϵ_j is normally distributed with mean 0 and variance $\sigma^2_{j,k}, k \in \{Poland, Rumania, FSU\}$. As discussed in Baaden (1997) or Blaschke (1989), the Ethnic Germans living in the FSU had the most obstacles to showing their German roots whereas, for example, those living in Poland had far less problems in this respect. We label this "cultural distance" and assume that this has as a consequence that there are also less economic interactions between people living in Germany and Ethnic Germans in countries where they have to hide their German roots. This then translates into a higher variance with respect to the productivity

signal.[4]

Due to the uncertainty about a worker's productivity on a job, when firms and workers meet, they do not automatically form a match. Instead, matches are only formed when the expected productivity is at least as high as a certain reservation productivity $y^R_{j,k}$. Therefore, the fraction of acceptable job contacts is:

$$\int_{y^R_{j,k}}^{Y_i} dF_{j,M}(y_{j,k}|\sigma^2_{j,k}) = 1 - F_{j,M}(y_{j,k}|\sigma^2_{j,k}) \tag{10}$$

where $F_{j,M}(y_{j,k}|, \sigma^2_{j,k})$ is the distribution function of the worker's true productivity and Y_i is the maximum productivity level associated with jobs of type $i, i \in \{n, s\}$.

From (10) and (3), workers find jobs at the rate:

$$f_{j,k}k(\theta) = \left(1 - F_{j,M}(y_{j,k}|, \sigma^2_{j,k})\right) \theta p_{j,k}(\theta) \tag{11}$$

Thus, a higher variance $\sigma^2_{j,k}$ translates into a lower job-finding rate. Hence, if potential employers have the least information about degrees (and hence productivity) of people coming from the FSU, then we expect that these migrants also have the longest job-search times. If it is further assumed that the (absolute) variance is higher for high-skilled workers as the differences between, for example, university degrees obtained at home and abroad are bigger, then the negative effect on the job-finding rate is higher for high-skilled relative to low-skilled within each migrant group.

Summing up, it becomes clear from the theoretical model that the high-skilled may need longer to find jobs than the low-skilled. This holds in general if there is an ex post separation equilibrium, i.e. the high-skilled only search for skilled jobs. The second reason why they may be at a disadvantage is that there may be larger productivity differences within the group of high-skilled than the low-skilled. This larger variance has a negative effect on the job-finding rate.

Thus, the theoretical model shows that it is by no means clear whether the low- or high-skilled find jobs more quickly. Before testing which effect dominates empirically, we first describe the data and then provide some descriptive findings.

Data

Since Ethnic Germans receive the German citizenship immediately upon arrival, they are not identifiable in many of the widely used datasets. As a consequence, previous analyses of this group of immigrants have typically relied on surveys and suffered from small samples.[5] Brück-Klingberg *et al.* (2011) also use an administrative dataset that is similar to the one used here. In fact, the labour-market information in our dataset is identical to theirs. However, in contrast to the data used in this paper, Brück-Klingberg *et al.* (2011) neither have any information about the country of origin of an Ethnic German nor on their labour-market biography in that country.

[4] See Dustmann *et al.* (2011) for a similar model where the productivity signal differs between referred and external job-applicants and Brück-Klingberg *et al.* (2011) where the signal differs between natives and immigrants.

[5] For example, Konietzka and Kreyenfeld (2002) base their analysis on 117 Ethnic Germans.

For this reason, our empirical analysis is based on BASiD[6], a new administrative dataset provided by the Institute for Employment Research (IAB) of the German Federal Employment Agency.[7] BASiD combines information from the German pension system with administrative data from the IAB. The dataset is a 1% disproportional stratified sample of all individuals between 15 and 67 years of age who contributed to the pension insurance in 2007. As the pension insurance is mandatory for most workers (exceptions are self-employed and civil servants), approximately 90% of the German population are registered within the public pension system (Himmelreicher and Stegmann, 2008). BASiD contains all activities of a person, including schooling, employment and job characteristics, benefit receipt, and sickness that are relevant to calculate pension entitlements. Additionally, socio-economic information for every person is available as well as numerous workplace characteristics such as plant size and workforce composition. The data is arranged in a daily longitudinal episode format, covering the period 1975 – 2009.

We identify Ethnic Germans via their entitlements to the Act on Foreign Pensions (*Fremdrentengesetz (FRG)*). This is an existing pension agreement that grants Ethnic Germans pension claims financed by the public German pension insurance for employment periods in their country of origin. More precisely, the German pension system treats this foreign schooling and professional experience in exactly the same way as if Ethnic Germans had been in the German education system or worked in Germany at that time. The German pension insurance records the complete employment history before entry to Germany and assigns earning points to each job proportional to the qualification of the occupational activity. As a rule, high skilled people receive higher monetary entitlements (Mika *et al.*, 2010). To claim these entitlements Ethnic Germans have to proof their foreign education and employment career which means that the data holds highly reliable information on pre-migration employment (see Hirsch *et al.*, 2013). This enables us not only to calculate the date when Ethnic Germans entered Germany, but also to generate a indicator measuring the qualification-level of their job before entry to Germany to see if skills obtained abroad are transferable to the German labour market.

The German pension insurance rates every foreign job according to the respective legislation of the FRG, the industry worked in, the type of insurance provider (e.g. blue collar vs. white collar worker), and the qualification obtained and required for the jobs. By combining this information, the German pension insurance constructs a variable containing 585 categories which describe the occupation in the county of origin (see Mika *et al.*, 2010). For instance, category 422 defines that the person in the data is eligible to claim entitlements according to the FRG for an employment period in which she had a job in the energy and fuel industry on a higher qualificatory level (master craftsman). These categories are then aggregated to reflect the "Blossfeld" scheme (see Blossfeld, 1987; Schimpl-Neimanns, 2003). This occupational classification system assigns each job to one of 12 (not including missings) categories ranging from simple manual occupations to highly complex specialised occupations. The "Blossfeld" category „simple manual occupations", for instance, contains occupations such as brewer, cellarman, glassblower, electrician, or typographer (see Mika *et al.*, 2010). We obtain our pre-migration job skill-level measure by first sorting the twelve "Blossfeld" tasks into high-skilled, skilled, and low-skilled occupations. We then use these three condensed categories to classify the skill-level of the last job prior to

[6] Version 1 (BASiD 5109 v1)
[7] See Hochfellner *et al.* (2011) for a detailed description (in German).

entry to Germany.[8] The following table gives an overview of important variables in the dataset regarding the socio-economic characteristics of the Ethnic Germans in the data.[9]

Table 1: Socio-Economic Characteristics of Ethnic Germans Upon Arrival in Germany

Men	2,825
Women	4,057
Country of origin	
Poland	2,420
Rumania	741
Former Soviet Union	3,721
Mean age at entry	
Total	33.8
Poland	30.9
Rumania	33.2
FSU	35.8
Skill level in last job in country of origin	
Low-Skilled	53.7
Skilled	25.4
High-Skilled	13.2
Unknown/Never employed	7.7

As can be seen from Table 1, there are more women (roughly 60% of the sample) than men in the dataset. This is because the data represents a disproportional stratified 1% sample of all people who contributed to the German pension insurance in 2007. When applying sample weights women and men are represented in a ratio of 1:1. The dominance of Poland and the FSU which could already clearly be seen in Figure 2 is also visible in Table 1. Table 1 also shows the qualificatory status of the Ethnic Germans based on our simplified "Blossfeld scheme". We present these findings in more detail in the next section.

Descriptive Findings

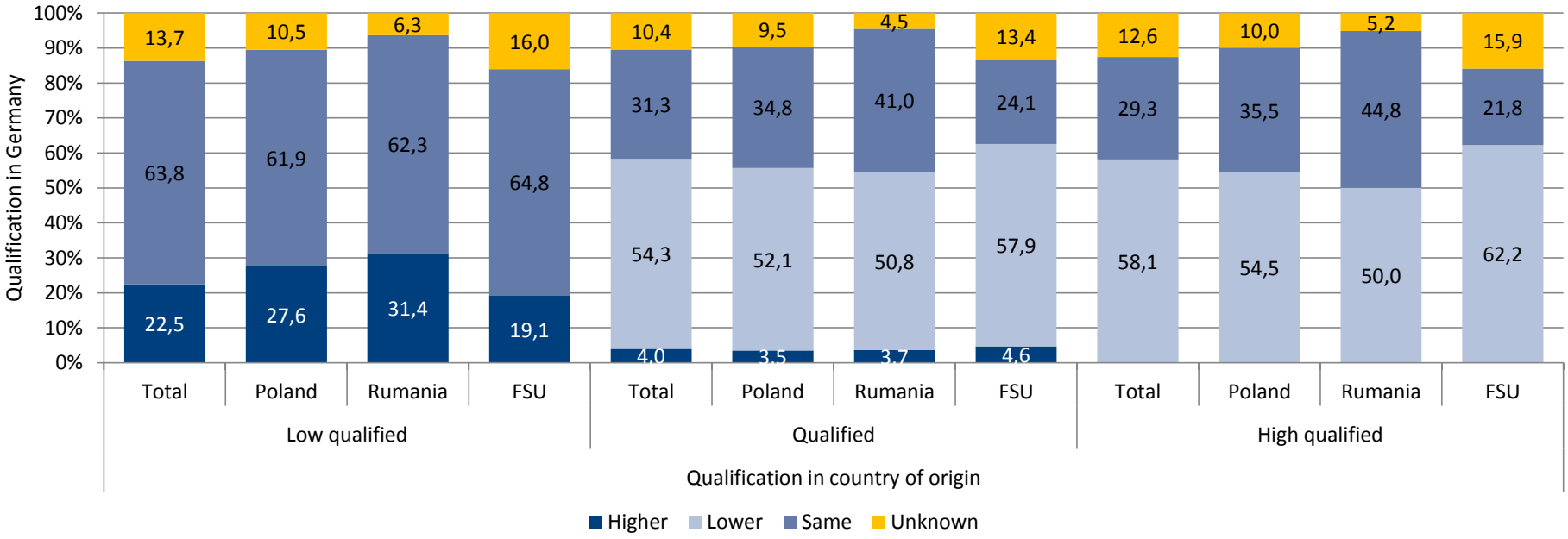
Ethnic Germans differ both as to when they immigrated to Germany and with regard to their qualificatory structure in their country of origin. As we are interested not only in the qualification in the country of origin, but moreover in how Ethnic Germans can translate these skills into the German labour market, Figure 3 compares the qualificatory status of the last job in the country of origin with the first job in Germany.

Amongst the low-skilled in their country of origin, over 60% are also employed as low-skilled in Germany. Perhaps somewhat surprisingly, roughly a fifth manage to find employment with a

[8] Appendix A.1 provides more details.

[9] The original dataset contains information on 8,455 Ethnic Germans. We restrict our sample to the three largest immigration groups, namely Ethnic Germans from Poland, Rumania and the Former Soviet Union. This reduces the size of the analyses sample to 8,140. For 248 people we have no labour-market information. Further, as we can only determine the qualification for spells in 1975 or later, we drop all immigrants who migrated before 1975. Further data restrictions to exclude accounts with missing information reduce the final sample to 6,882.

Figure 3: Qualification of Last Employment in Country of Origin and First Employment in Germany

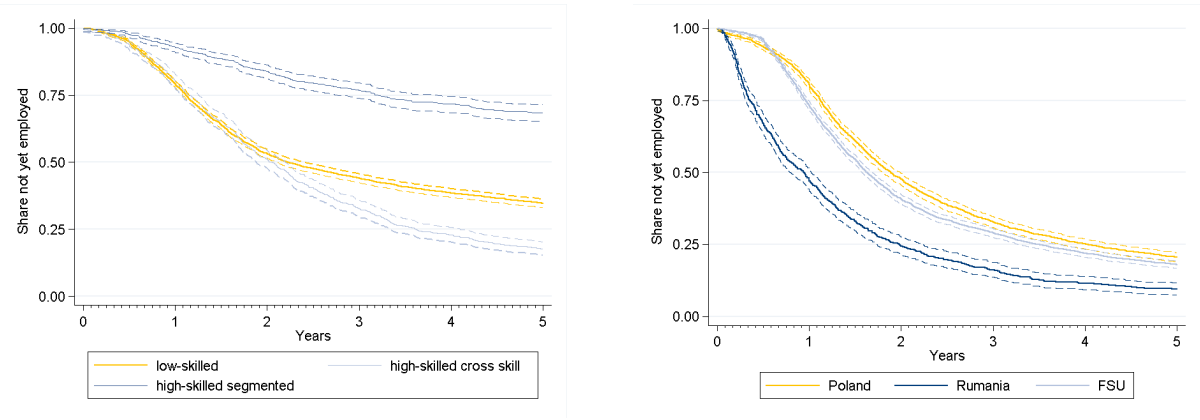


Source: BASiD; own calculations

higher qualificatory status. With regard to the people employed as medium-skilled in their last job before emigration, on average only about 4% are then employed with a higher qualificatory status. This result is not surprising as there is no reason to expect why the skills obtained abroad should transfer into a higher qualificatory status in the destination country. Far more likely – and this happens to more than 50% of the medium- and high-skilled immigrants – is that the skills are "downgraded", i.e. their first job in Germany requires a lower skill level than their last one in their country of origin. Obviously, there are a number of reasons for this. For example, it could be that they had difficulties in the accreditation procedure or it could be that they first took up a low-skilled job in the hope of finding a higher skilled job later.

Of primary interest here is not only whether individuals are employed at the same, a higher or lower skill level than before, but also what role the skill level (in both countries) has on the amount of time an immigrant needs to find his or her first job in the country of destination. Before providing detailed multivariate regression results on the factors which influence the job-search process, we first provide two Kaplan-Meier graphs showing the share of job-seekers up to five years after immigration. The graphs show the duration from the end of the last job in the country of origin until the start of the first job in Germany (and the respective 95% confidence intervals). Panel (a) of Figure 4 differentiates between the search strategies used as described in the theoretical model. In this case, the definition of the first job differs between the displayed sub-groups. For Ethnic Germans who last worked as low-skilled before immigrating, the time analysed is the time until they find their first low-skilled job in Germany. For the high-skilled in the presence of cross-skill matching, it shows the time until the start of a job at any skill level in Germany, whereas in case of ex post segmented matching, the time until the beginning of the first high-skilled job in Germany is shown. In contrast, panel (b) of Figure 4 displays differences in job-start durations between the country of origins as it was shown in the theoretical model that these will differ if the signals associated with degrees from these countries will differ if the signal variance differs. For reasons of clarity, we only plot the time until the start of the first job in Germany of any skill level, i.e. irrespective of the job-search strategy in this graph.

Figure 4: Kaplan-Meier Estimates



(a) by Job-Search Strategy

(b) by Country of Origin

Source: BASiD; own calculations

As shown in the theoretical model above, whether the high-skilled have the shortest job-search durations decisively depends on their job-search strategy. If only high-skilled jobs come into consideration, then it is possible that they need longer to find a job than someone who is (also) looking for or willing to accept a low-skilled job. The descriptive results clearly support the theoretical model as can be seen from panel (a) of Figure 4. High-skilled Ethnic Germans only searching for high-skilled jobs show the longest transition times. After three years only 25% are successful in finding a high-skilled job, whereas high-skilled that also take up low-skilled jobs find jobs more easily, at about the same rate that low-skilled people find low-skilled jobs. However, after roughly two years, the high-skilled taking up lower qualification jobs find jobs more quickly than the low-skilled which may be a sign that the high-skilled change their search strategy after a certain amount of time.

In panel (b) of Figure 4 we have plotted the Kaplan-Meier estimates (and again the respective 95% confidence intervals) differentiated by the different countries of origin from which Ethnic Germans mainly immigrate. In line with the theoretical model from which follows that higher uncertainty about the signal values of a degree leads to longer job-finding rates, it can be seen that Ethnic Germans from the FSU (which have the largest "cultural distance") show the longest job-search times after immigrating to Germany. Ethnic Germans from Poland perform slightly better at the beginning. However, this changes after six months. From there on, the Ethnic Germans immigrating from Poland require the longest time to find a job, followed closely by the one coming from the FSU. Even after five years, still roughly 20% have not yet found a job. People emigrating from Rumania perform best. These observed heterogenous transition times are in line with the prediction of our formal model that productivity signals differ between the outlined groups. Another explanation could be, for example, different labour-market conditions holding at the time people from different countries mainly immigrated. On the other hand, then we would also expect Ethnic Germans from Rumania to have similar job-search durations as those coming from Poland which clearly is not the case. This clearly highlights the importance of the regression analysis below to see if these differences persist even after controlling for other factors.

It becomes clear from Figure 4 that the time needed to find a job in Germany is fairly long. As shown in Table 2 (column [3]), men need on average 1.5 and women 3.6 years before they find their first regular employment (i.e. a job subject to social security contributions lasting at least seven days).[10]

The last four columns in Table 2 show the proportion of time the immigrants spend in different labour market states during their job-search. Amongst all groups – especially amongst the male immigrants – times in registered unemployment or registered job-search represent the largest shares. The only exception are the high-skilled who spend a slightly larger amount of time in low-skilled employment. This could both be a sign that they cannot find high-skilled jobs or that this time may be useful (and more useful than unemployment) in obtaining skills which then subsequently help them to find higher skilled jobs.

[10] This table does not include Ethnic Germans that never find a job in Germany until 2009.

Table 2: Transition times – Average elapsed time until first regular employment in Germany

	Since entry		**States during job search**			
			Proportion of time in ... [a]			
	Days	Years	Employ-ment[b]	Unemp-loyment	Not in l. force	Educa-tion
	[2]	[3]	[4]	[5]	[6]	[7]
Men	532	1.5	0.1	63.8	9.6	17.3
Women	1,290	3.5	0.0	46.1	24.6	15.9
Total	960	2.6	0.1	53.3	18.4	16.5
Country of origin						
Poland	1,148	3.1	0.2	49.7	22.9	11.4
Rumania	630	1.7	0.1	50.1	32.4	9.0
FSU	902	2.5	0.0	56.3	12.8	21.3
Skill level of last job in country of origin						
Unknown	840	2.3	0.5	66.0	17.6	5.6
Low-skilled						
(in low-skilled empl.)	1,147	3.1	13.2	45.5	16.5	12.5
High-skilled						
cross-skill-matching	1,040	2.8	0.0	48.6	16.0	21.6
ex-post segmentation	1,666	4.9	38.7	28.3	10.9	11.2

a) The displayed proportions do not add up to 100 percent due to gaps in the data for which it is not possible to determine the individuals' labour market state.
b) Under 7 days or in employment of a different skill-level

The higher proportion of time women are not in the labour force indicates that – as is common for all migration groups – women come together with their spouses (who are actively looking for a job) but then spend much more time in the household and look after children.

The shares in the respective states are fairly similar for Ethnic Germans originating from Poland or Rumania. However, with respect to those immigrating from the Former Soviet Union there are large differences. The latter group spends far more time in the education and training schemes and also more time in unemployment. This could reflect both the fact that this group came at different times as well as there being (large) differences between the groups. Again, this highlights the importance of potential heterogeneity in productivity signals as suggested in the theoretical model.

Looking at the different skill levels of the last jobs the immigrants had in their country of origins it can be seen that especially the high-skilled – if they do not immediately find an equivalent job in Germany – spend a large share of their time in education. Whilst in education or training, it is likely that they are not actively looking for a job (or have a lower search intensity) but are upgrading their skills to subsequently have better chances on the labour market. Hence, there are two counteracting effects. The time spent in education is likely to increase the amount of time a person needs to find a job. However, if a person subsequently has skills which better match the requirements of the German labour market, this should reduce the time they need to find a job.

In the next section we perform a more in-depth analysis of the factors influencing the transition rates to employment to provide empirical evidence if the predictions of the theoretical model hold.

Regression Analysis

As shown above, survival rates differ between the search strategy used as well as with regard to the countries from which Ethnic Germans emigrate from. In this section, we therefore perform multivariate survival analysis regressions to gain more insight into the causes for these differences and to test if the results of the theoretical model hold when studying job-search processes of Ethnic Germans upon entry to Germany. Thus, we start observing Ethnic Germans from the end of their last job in their country of origin and follow them until they take up their first job. Both inflows (i.e. immigration times) and outflows (i.e. transitions into employment) span the time period from 1976 until 2009. We define a job-transition as *the start of an unsubsidised job, liable to social security that lasts at least seven days.*[11] This can include full-time or part-time jobs. The covariate we are mainly interested in is the dummy that controls for the qualificatory status of the last job in the country of origin. This tells us if Ethnic Germans who were last working in a high-skilled job perform better relative to their peers working in low-skilled jobs or not.

Our dataset includes detailed labour-market information on both the destination country and the country of origin. To account for the different labour-market and socialisation conditions depending on where an Ethnic German migrates from, we clustered our regressions for these three migration groups to allow for intragroup correlation. In addition, as an indicator both of their labour-status and potential reservation wage in Germany, we include the wage in their last job before they emigrated. We further include labour-market experience in the country of origin, i.e. the time (in days) spent in employment abroad. Especially information on this last variable is very rare in most datasets but is likely to play an important role on the labour-market outcome in Germany. In addition, we can observe when a person migrated to Germany. Thus, we include age at entry and years since migration (as time-varying variables). Even amongst Native Germans, age (at least above a certain age) plays a decisive role in the job-finding chances. We expect the time spent in Germany to have a positive impact on the transition rates as with time, immigrants will have an increasing knowledge about the German labour market. In addition, in order to account for different labour-market and business cycle conditions, we also include dummies for the year of entry.

With regard to the labour-market information in Germany, we include the qualificatory status as noted by the Federal Employment Office and the information coming from social security notifications of employers.[12] As it has been shown that this recorded information is not always accurate we also impose the imputation corrections as suggested by Fitzenberger *et al.* (2006).[13]

[11] To see whether our results are robust to the quality of a job, we also perform all models with the restriction that jobs have to be at least 30, 90 or 180 days.

[12] The placement officers at the Federal Employment Office only record accredited educational degrees.

[13] We use their 2b imputation rule as this leads to a distribution of educational degree which is closest to results

The educational degree serves as an important signal to potential employers. Further, as shown above in the theoretical model, a higher skill level may or may not reduce the time needed to find a job (relative to the low-skilled) depending on which search strategy the high-skilled adopt. We expect that the job-search intensity depends on the current labour-force status, i.e. someone registered as unemployed is likely to be looking more intensely for a job than someone not in the labour force. Hence, we include the relative amount of time in other employment, i.e. short-term or employment of a different skill level, unemployment, in the education system or not in the labour force (as in Table 2). Similarly, job-search intensity may also depend on the current unemployment benefits a person receives. Hence, we include dummies if a person receives unemployment benefits or social assistance.[14]

To further account for local labour-market conditions, we also include the lagged unemployment rate. Seeing as (at least until 1985) we can only calculate average yearly unemployment rates, we use the one year lag of the unemployment rate at the time the individual starts searching for a job. We allow this variable to vary over time to correctly measure the labour-market conditions during job search. In addition, as ethnic networks might help in finding a job, we include the local (at the federal state level) share of employed foreigners who have either Polish, Rumanian or FSU nationalities.[15] Similarly, we also account for the qualificatory structure of the local (at the federal state level) labour force since it might be easier to find, for example, a high-skilled job in regions with higher share of high-skilled. Again, we only have yearly information so that we use the one-year lagged values.

As outlined in the theoretical model, our main interest is to compare job-transitions of high-skilled and low-skilled Ethnic Germans with respect to the job-search strategy used. To see whether the high-skilled find jobs more easily in comparison to low-skilled in presence of cross-skill and ex post segmented matching, we estimate two Cox proportional hazard models. In case of cross skill matching, the event we are interested in is the start of any job. Thus, for low-skilled Ethnic Germans we count the days to their first low-skilled job, for high-skilled we are interested in their first job, no matter what qualification is needed for that job (model 1). In case the high-skilled are only searching for high-skilled employment (ex post segmented matching), we perform the same Cox proportional hazard model, but now only count high-skilled employment as transitions (model 2). As time in low-skilled employment is likely to have an effect on the time needed to find a high-skilled job, we include the share in low-skilled employment in the regression.

Consequently, the Cox models we estimate are defined as:

$$h(t|x_\iota) = h_0(t)exp(\mathbf{x}_\iota \boldsymbol{\beta}_x)$$

obtained using the German microcensus – a 1% yearly household survey. With this imputation rule, a person's educational degree can change over time but is only allowed to move to higher degrees. Further, it is checked whether a degree a person obtains is consistent with the age of the person.

[14] Until 2005, people becoming unemployed generally first received unemployment benefits and after roughly two years (this duration was changed several times) received slightly lower social benefits (*"Arbeitslosenhilfe"*) which was still based on the last income a person had. With the labour-market reforms in Germany in 2005, the social benefits were abolished and a means-based social assistance was introduced. We set the dummy for social assistance to one if a person either received social benefits or social assistance.

[15] As this data stems from the Establishment History Panel and employers only record nationality of their employees, we cannot uniquely identify Ethnic Germans in this part of the data.

where $h_0(t)$ is the (unspecified) baseline hazard and $\boldsymbol{\beta}_x$ the regression coefficients. Again, vector $\mathbf{x}$ denotes labour market and individual characteristics of individual ι.

We now present our estimation results, focusing mainly on our covariate of interest, but also addressing other important covariates included in the models.[16] Model 1 in Table 3 shows the results in the Cox model for the case that the high-skilled are prepared to take up any job in Germany. In this case, there are no significant differences between the transition times of low- and high-skilled. However, we also performed separate regressions where we increase the length of time a job needs to last before we count it as a successful transition. As can be seen from Table 4, once only jobs lasting at least 180 days are counted as transitions, then the high-skilled have hazard rates which are more than 36% higher than those of the low-skilled.

Model 2 in Table 3 contains the results of the second Cox model. Now the hazard ratio for the high-skilled is 50% lower than for the low-skilled. Hence, if we analyse how long the high-skilled need to find jobs of the same qualification level as their last jobs in their countries of origin, we find that they need much longer than those that are low-skilled. Further, as seen from Table 4, this result is very robust with respect to the durations of the jobs taken up.

Table 3: Regression Results

	Model 1 *ls in ls empl. hs in any empl.*		**Model 2** *ls in ls empl. hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
Home country (ref. FSU)				
Poland	1.077***	0.022	1.096***	0.006
Rumania	1.824***	0.199	1.953***	0.165
Employment in home country				
High-Skilled	0.815	0.137	0.503**	0.152
ln(last wage)	1.203	0.152	1.127*	0.074
Experience (years)	1.015*	0.009	1.007	0.008
Age at entry	1.014	0.010	1.021***	0.007
State before job take up in Germany				
Years since migration	1.078***	0.017	1.077***	0.014
Share time unemployed	1.006	0.006	1.007	0.006
Share time in education	1.015**	0.008	1.018**	0.007
Share time in empl. $<$ 7 days	0.971***	0.005	0.969***	0.005
Benefits				
Unemployment insurance	1.717***	0.145	1.73***	0.111
Social assistance	1.445***	0.137	1.302***	0.091
Demographics				
Male	2.219***	0.302	2.332***	0.351
w/o vocational degree	1.110	0.226	0.92	0.237
with vocational degree	0.991	0.158	0.857	0.174
education unknown	0.673***	0.096	0.514***	0.098
below 20	0.702	0.156	0.673**	0.111
20 - 24	1.074	0.110	1.093	0.073
30 - 34	1.017	0.066	1.086***	0.029
35 - 39	1.007	0.117	1.02	0.065
40 - 44	0.910	0.132	0.952	0.050

continued on next page . . .

[16] Tables A.2 – A.5 show the mean values of our regression covariates.

. . . Table 3 continued

	Model 1 *ls in ls empl.* *hs in any empl.*		**Model 2** *ls in ls empl.* *hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
45 - 49	0.730***	0.082	0.727***	0.069
50 - 54	0.411***	0.038	0.423***	0.042
55 - 59	0.187***	0.041	0.154***	0.028
60 - 64	0.065***	0.010	0.08***	0.036
65 and above	0.103***	0.071	0.106***	0.045
Regional				
Share of foreigners in federal state on June 30	0.040	1.977	9.44E-10	0.000
Share of low-skilled in federal state	0.236**	0.146	0.378	0.655
Share of skilled in federal state	0.902	1.573	2.480	7.913
Regional unemployment rate	0.944***	0.010	0.941***	0.007
Nr. of obs.		71,322		89,920
Nr. of subjects		4,602		4,602
AIC		13,616,063		11,593,195
BIC		13,616,082		11,593,223
Linktest				
xb = 1 (95 % KI)	✓		✓	
xb2 insign. (5% sig.niveau)	✓		✓	

Abbreviations used: *ls in ls empl.:* low-skilled in country of origin taking up low-skilled jobs in Germany; *hs in any empl.:* high-skilled in country of origin taking up any job in Germany; *hs in hs empl.:* high-skilled in country of origin taking up high-skilled jobs in Germany
Notes: ***/**/* denotes statistical significance at the 1/5/10 percent level. All models include further controls describing regional labour market structures upon entry to Germany. Regional covariates, age and years since migration are included as time varying covariates.

As shown in the theoretical model, not only does the job-search strategy play an important role in the time needed to find a job. The "quality of the educational signal" is also of crucial importance. If (potential) employers only have little information about the productivity a certain educational degree signals, then this higher uncertainty translates into lower job-finding rates. As shown above, both the time when the different migrant groups came to Germany as well as their "cultural distance" to Germany differed substantially. Especially those coming from the FSU had the most difficulties in living according to their German roots in their countries of origin (see Baaden, 1997; Blaschke, 1989). Hence, it is this group where we expect the labour-market difficulties to be the largest. That this is indeed the case can be seen both in Table 3 and 4. In the first table – in both models – the hazard ratios are significantly higher for the Ethnic Germans migrating from either Poland or Rumania. To further test this hypothesis, we ran the models separately for our three immigrant groups.[17] As can be seen from Table 4, the above result that we find no significant differences between the low- and high-skilled (when the latter take up both low- and high-skilled jobs) only holds for Ethnic Germans stemming from Poland or Rumania. The high-skilled emigrating from the FSU actually need longer than the low-skilled from these countries even if they look for both kinds of jobs. This clearly illustrates a mismatch between formal qualifications in the country of origin and their value on the German labour market. Hence, even if all Ethnic Germans have the same accreditation rights and legal possibilities to work in Germany, there seems to be a – just as or perhaps even more important – barrier depending on the signal value associated with such foreign degrees.

[17] See Tables A.6 – A.8 in the Appendix for the full results.

The fact that the high-skilled need longer than the low-skilled to find jobs if they concentrate on high-skilled jobs (model 2) is also reinforced in Table 4. This result holds independently of which country an Ethnic German emigrated from. However, the hazard ratio is by far the lowest for the people coming from the FSU, highlighting the special situation this migrant group faces.

Table 4: Difference in Job-Finding Rates of High- and Low-Skilled Ethnic Germans

	Model 1 *ls in ls empl. hs in any empl.*		**Model 2** *ls in ls empl. hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
Home country				
Poland	1.151	0.124	0.815	0.110
Rumania	0.985	0.166	0.724	0.152
FSU	0.682***	0.051	0.517**	0.163
Employment in Germany				
≥30 days	0.856	0.141	0.517**	0.163
≥90 days	0.996	0.186	0.592	0.197
≥180 days	1.359**	0.178	0.599*	0.185

Abbreviations used: *ls in ls empl.:* low-skilled in country of origin taking up low-skilled jobs in Germany; *hs in any empl.:* high-skilled in country of origin taking up any job in Germany; *hs in hs empl.:* high-skilled in country of origin taking up high-skilled jobs in Germany
Notes: This table only includes the coefficient indicating if a person worked in a high-skilled job prior to entry to Germany (ref. low-skilled job) estimated in separate models for the country of origins and the quality of a job match. ***/**/* denotes statistical significance at the 1/5/10 percent level. All models include further controls describing regional labour market structures upon entry to Germany. Regional covariates, age and years since migration are included as time varying covariates.

It is a well-known fact that labour-market experience has an important positive influence on finding a job. With the dataset we use here, we also have very precise information about the amount of this experience in the home country. As can be seen from Table 3, we find that this foreign experience also has a significant positive influence on finding a job in Germany. However, it needs to be noted that this is only the case if the high-skilled accept jobs below the skill-level they had abroad. Foreign labour-market experience becomes insignificant if the high-skilled concentrate their search on high-skilled jobs in Germany. This again is a sign that experience in high-skilled jobs abroad is not directly transferable to the German labour market even if these skills are documented.

Of more importance seems to be the time spent in Germany, i.e. the years since migration. Although these are by definition times in which a person is not (regularly) employed or, if they are employed, then we additionally control for this fact (see below), it seems to be a time which is very valuable in finding a job. Each additional year in Germany increases the hazard rate of finding a job by 8%. This fact holds controlling for labour-market experience in Germany. If they spend time in "short jobs", i.e. those lasting less than 7 days or in jobs below their skill level, they actually need longer to find a regular job (see the hazard ratio for "share time in empl. <7 days"). If they spend the time in Germany in education then this has a significantly positive

influence on their chances of finding a job. In this case it is very likely that employers have more information about the nature and contents of such educational signals. Obviously the time in Germany could be used to build social networks. However, we include the share of employees from Poland, Rumania or the FSU in the regressions but find no significant influence.

As expected, males find jobs significantly faster than females. This supports the hypothesis, that the males are the people driving the decision to migrate to Germany and hence are under more pressure to find a job, or that the gender roles might be more traditional in some countries of origins. Finally, the older a person is, the lower are their chances of finding a job.

Conclusion

In 2012 Germany introduced a new "Recognition Act" in the hope of easing the transferability of degrees obtained abroad to the German labour market. With this act all immigrants have the right to a formal accreditation procedure of their foreign degrees. However, Ethnic Germans have always had the right to such a procedure. Hence, we focus on this large immigration group to find evidence how in general high-skilled immigrants might perform under the newly introduced law compared to low-skilled immigrants in their job-search process when immigrating to Germany. We do this using a novel administrative dataset which includes detailed labour-market information about both times abroad as well as in Germany. Hence, we are able to classify the skill level a person was employed at in her or his last job before emigrating and then subsequently, how long it takes to find a (equivalent) job in Germany. In addition, we are able to precisely differentiate between which country an Ethnic German emigrated from. This information is important as Ethnic Germans are a very large but hence also heterogeneous group of immigrants.

We first show theoretically that – especially for the high-skilled immigrants – the time they need to find a job depends firstly on their search strategy, i.e. are they also willing to accept jobs below their original skill level or not, and secondly, on the signal contents of the foreign degrees. If a (potential) employer has only imprecise information about the productivity level associated with a certain foreign degree, then this uncertainty leads to lower job-finding rates. Especially Ethnic Germans emigrating from the Former Soviet Union had difficulties living their German roots in their countries of origin. If such a "cultural distance" leads to less economic interaction with Germany and hence to less information about the degrees that they bring with them, then we also expect them to have the most difficulties when it comes to finding a job in Germany.

The accreditation procedure is of particular importance to the high-skilled immigrants as in Germany a person's formal degree is a very important signal to potential employers. In general, the higher the vocational degree, the better are the prospects on the German labour market. Therefore, we focus on how quickly high-skilled immigrants find jobs relative to the low-skilled labour. Our results show that – if the high-skilled also accept jobs of lower skill levels (cross-skill matching) – then there are no significant differences between the transition times between them and the low-skilled. However, if the "quality" of a job match is also considered and job matches must last at least 180, then the high-skilled have hazard rates which are more than 36% higher than those of the low-skilled.

Although the high-skilled in Germany have by far the lowest unemployment rates and very high employment rates, we find that if a high-skilled immigrant concentrates her or his search on high-skilled jobs (ex post segmented matching), then they have much longer job-search times than the low-skilled. On average, their hazard rate is 50% lower. Particularly the Ethnic Germans emigrating from the Former Soviet Union face tremendous difficulties in this case. This confirms our theoretical result that – even if all Ethnic Germans have the same legal rights for example with regard to the accreditation of their degrees – that these rights do not guarantee equal labour-market chances. Obviously, the "signal" quality of such degrees still varies greatly even after accreditation.

Hence, we conclude that the new Recognition Act introduced in Germany in 2012 is undoubtedly an important signal to people living abroad that Germany's labour market is being made more attractive for them. However, the right to have degrees accredited is only one part of the labour-market integration process. The fact that we observe very different transition rates for Ethnic Germans emigrating from different countries highlights the fact that the accreditation process on its own does not always lead to fast labour-market integration.

Appendix

Table A.1: Condensed and Original Blossfeld Classification Scheme

Condensed Blossfeld	**Original Blossfeld**
Low-skilled	Agricultural jobs Simple manual jobs Simple services Simple sales jobs
Medium-skilled	Medium-skilled manual jobs Medium-Skilled services Technicians Medium-skilled sales jobs
High-skilled	Engineers Semi professionals Professionals Managers
Unknown	Others or missing

Table A.2: Sample Means of Main Covariates

	Total		**High-skilled**		**Low-skilled**	
	Mean	std. error	Mean	std. error	Mean	std. error
Poland	0.40	0.007	0.39	0.021	0.29	0.010
Rumania	0.13	0.005	0.15	0.015	0.11	0.007
FSU	0.48	0.007	0.47	0.020	0.59	0.010
ln(last wage)	4.36	0.005	4.47	0.012	4.24	0.006
Experience (years)	11.45	0.110	10.28	0.279	12.10	0.150
Age at entry	32.36	0.114	33.25	0.280	32.93	0.157
Year of entry	1988.91	0.081	1988.81	0.214	1989.81	0.109
Years since migration	8.90	0.042	8.80	0.112	8.49	0.056
Share time unemployed	55.22	0.539	30.16	1.187	47.01	0.728
Share time in education	17.32	0.386	11.17	0.749	12.67	0.431
Share time in empl. $<$ 7 days	0.09	0.040	37.66	1.458	15.65	0.612
Share not in the labour force	18.42	0.449	12.07	0.888	15.72	0.528
Receipt of unemployment insurance	0.13	0.002	0.13	0.005	0.13	0.002
Receipt of social assistance	0.02	0.001	0.02	0.002	0.02	0.001
Male	0.48	0.007	0.28	0.017	0.47	0.010
w/o vocational degree	0.28	0.005	0.12	0.011	0.38	0.008
with vocational degree	0.57	0.006	0.53	0.018	0.50	0.008
university degree	0.06	0.003	0.26	0.016	0.01	0.002
education unknown	0.10	0.002	0.10	0.006	0.11	0.004
below 20	0.00	0.000	0.00	0.000	0.00	0.000
20 – 24	0.04	0.001	0.02	0.002	0.04	0.002
25 – 29	0.08	0.002	0.07	0.004	0.08	0.002
30 – 34	0.13	0.002	0.14	0.005	0.13	0.002
35 – 39	0.17	0.002	0.17	0.004	0.17	0.002
40 – 44	0.19	0.001	0.20	0.004	0.19	0.002
45 – 49	0.17	0.002	0.17	0.004	0.17	0.002
50 – 54	0.12	0.002	0.13	0.004	0.13	0.002
55 – 59	0.07	0.001	0.07	0.004	0.07	0.002
60 – 64	0.02	0.001	0.02	0.002	0.02	0.001
65 and above	0.00	0.000	0.00	0.001	0.00	0.000

Weighted means displayed.

Table A.3: Sample Means of Main Covariates (only Ethnic Germans from Poland)

	Total		**High-skilled**		**Low-skilled**	
	Mean	std. error	Mean	std. error	Mean	std. error
ln(last wage)	4.38	0.009	4.47	0.018	4.21	0.015
Experience (years)	8.71	0.159	7.01	0.383	8.88	0.251
Age at entry	29.87	0.171	30.46	0.398	30.65	0.2839
Year of entry	1985.50	0.111	1985.23	0.287	1985.49	0.177
Years since migration	10.48	0.061	10.41	0.169	10.44	0.100
Share time unemployed	51.96	0.937	28.81	2.118	43.08	1.425
Share time in education	13.91	0.622	10.24	1.149	8.39	0.738
Share time in empl. $<$ 7 days	0.18	0.101	35.74	2.544	17.02	1.186
Share not in the labour force	21.47	0.788	16.01	1.694	20.80	1.126
Receipt of unemployment insurance	0.13	0.003	0.12	0.009	0.13	0.005
Receipt of social assistance	0.02	0.001	0.02	0.004	0.03	0.003
Male	0.48	0.013	0.27	0.029	0.40	0.020
w/o vocational degree	0.22	0.009	0.06	0.014	0.32	0.016
with vocational degree	0.62	0.010	0.56	0.031	0.55	0.017
university degree	0.06	0.006	0.27	0.028	0.02	0.007
education unknown	0.10	0.004	0.10	0.010	0.11	0.007
below 20	0.00	0.000	0.00	0.000	0.00	0.001
20 – 24	0.04	0.002	0.02	0.004	0.04	0.003
25 – 29	0.10	0.003	0.10	0.007	0.09	0.004
30 – 34	0.15	0.003	0.16	0.007	0.14	0.004
35 – 39	0.18	0.002	0.18	0.005	0.17	0.003
40 – 44	0.18	0.002	0.18	0.004	0.18	0.003
45 – 49	0.16	0.002	0.16	0.005	0.16	0.004
50 – 54	0.11	0.002	0.11	0.006	0.12	0.004
55 – 59	0.06	0.002	0.06	0.006	0.07	0.004
60 – 64	0.02	0.001	0.02	0.003	0.02	0.002
65 and above	0.00	0.000	0.00	0.001	0.00	0.000

Weighted means displayed.

Table A.4: Sample Means of Main Covariates (only Ethnic Germans from Rumania)

	Total		**High-skilled**		**Low-skilled**	
	Mean	std. error	Mean	std. error	Mean	std. error
ln(last wage)	4.24	0.016	4.30	0.026	4.10	0.024
Experience (years)	10.85	0.316	10.15	0.678	11.22	0.440
Age at entry	31.96	0.335	34.11	0.677	32.16	0.482
Year of entry	1986.46	0.205	1986.16	0.472	1986.96	0.281
Years since migration	9.94	0.111	9.78	0.266	9.75	0.149
Share time unemployed	50.79	1.719	38.34	3.894	34.86	2.347
Share time in education	9.31	0.964	5.10	1.379	4.12	0.796
Share time in empl. $<$ 7 days	0.08	0.046	35.50	4.035	26.55	2.384
Share not in the labour force	32.18	1.657	13.54	2.444	28.04	2.271
Receipt of unemployment insurance	0.09	0.004	0.10	0.012	0.10	0.006
Receipt of social assistance	0.01	0.001	0.01	0.003	0.01	0.002
Male	0.49	0.022	0.40	0.052	0.39	0.031
w/o vocational degree	0.20	0.014	0.02	0.011	0.33	0.023
with vocational degree	0.59	0.018	0.33	0.044	0.58	0.025
university degree	0.12	0.014	0.55	0.044	0.02	0.007
education unknown	0.08	0.005	0.09	0.014	0.08	0.007
below 20	0.00	0.001	0.00	-	0.00	0.001
20 – 24	0.04	0.003	0.01	0.004	0.04	0.005
25 – 29	0.09	0.005	0.06	0.010	0.08	0.007
30 – 34	0.13	0.005	0.12	0.013	0.13	0.007
35 – 39	0.16	0.004	0.16	0.010	0.17	0.006

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	Total		**High-skilled**		**Low-skilled**	
	Mean	std. error	Mean	std. error	Mean	std. error
40 – 44	0.17	0.003	0.19	0.009	0.17	0.005
45 – 49	0.16	0.004	0.18	0.009	0.16	0.006
50 – 54	0.13	0.004	0.15	0.009	0.13	0.007
55 – 59	0.08	0.004	0.10	0.010	0.08	0.006
60 – 64	0.03	0.003	0.04	0.008	0.03	0.004
65 and above	0.01	0.001	0.01	0.002	0.01	0.001

Weighted means displayed.

Table A.5: Sample Means of Main Covariates (only Ethnic Germans from the FSU)

	Total		**High-skilled**		**Low-skilled**	
	Mean	std. error	Mean	std. error	Mean	std. error
ln(last wage)	4.37	0.006	4.52	0.017	4.28	0.006
Experience (years)	13.84	0.149	13.04	0.384	13.87	0.188
Age at entry	34.53	0.153	35.31	0.398	34.21	0.196
Year of entry	1992.40	0.083	1992.61	0.183	1992.49	0.109
Years since migration	7.31	0.043	7.15	0.103	7.28	0.056
Share time unemployed	59.11	0.665	28.74	1.360	51.26	0.872
Share time in education	22.28	0.553	13.85	1.187	16.42	0.595
Share time in empl. $<$ 7 days	0.02	0.003	39.94	1.920	12.91	0.698
Share not in the labour force	12.24	0.466	8.32	0.974	10.86	0.506
Receipt of unemployment insurance	0.14	0.002	0.14	0.007	0.14	0.003
Receipt of social assistance	0.03	0.001	0.02	0.003	0.03	0.002
Male	0.48	0.010	0.25	0.023	0.52	0.012
w/o vocational degree	0.35	0.008	0.19	0.019	0.41	0.010
with vocational degree	0.52	0.008	0.56	0.023	0.47	0.010
university degree	0.04	0.003	0.15	0.017	0.01	0.002
education unknown	0.10	0.004	0.09	0.009	0.11	0.005
below 20	0.00	0.000	0.00	0.000	0.01	0.001
20 – 24	0.03	0.002	0.02	0.003	0.04	0.002
25 – 29	0.07	0.002	0.06	0.006	0.07	0.003
30 – 34	0.12	0.003	0.13	0.008	0.12	0.003
35 – 39	0.17	0.003	0.17	0.007	0.17	0.003
40 – 44	0.20	0.002	0.21	0.007	0.19	0.003
45 – 49	0.18	0.002	0.18	0.007	0.18	0.003
50 – 54	0.13	0.003	0.13	0.007	0.13	0.003
55 – 59	0.07	0.002	0.08	0.006	0.07	0.003
60 – 64	0.02	0.001	0.02	0.003	0.02	0.001
65 and above	0.00	0.000	0.00	0.001	0.00	0.000

Weighted means displayed.

Table A.6: Regression Results for Ethnic Germans Emigrating from Poland

	Model 1 *ls in ls empl.* *hs in any empl.*		**Model 2** *ls in ls empl.* *hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
Employment in home country				
High-Skilled	1.151	0.124	0.815	0.110
ln(last wage)	0.900	0.110	0.921	0.119
Experience (years)	0.999	0.012	0.992	0.012
Age at entry	1.035	0.029	1.032	0.030
State before job take up in Germany				
Years since migration	1.112***	0.046	1.098**	0.049
Share time unemployed	0.998	0.002	1.001	0.002
Share time in education	1.008***	0.002	1.014***	0.003
Share time in empl. $<$ 7 days	0.966***	0.003	0.966***	0.002
Benefits				
Unemployment insurance	1.611***	0.149	1.660***	0.153
Social assistance	1.467*	0.323	1.220	0.298
Demographics				
Male	3.009***	0.288	3.138***	0.316
w/o vocational degree	1.875***	0.416	1.522*	0.337
with vocational degree	1.598**	0.342	1.305	0.264
education unknown	0.893	0.201	0.663*	0.151
below 20	0.773	0.620	0.774	0.639
20 - 24	1.151	0.227	1.201	0.254
30 - 34	0.939	0.164	1.066	0.198
35 - 39	0.984	0.279	1.051	0.308
40 - 44	0.961	0.380	1.085	0.443
45 - 49	0.786	0.430	0.990	0.568
50 - 54	0.456	0.320	0.583	0.424
55 - 59	0.249	0.239	0.417	0.389
60 - 64	0.165	0.209	0.322	0.385
65 and above	0.000***	0.000	0.000	0.000
Regional				
Share of foreigners in federal state on June 30	1.8E-10	0.000	0.000	0.000
Share of low-skilled in federal state	1.216	3.004	72.560	353.013
Share of skilled in federal state	0.200	0.686	93.470	649.304
Regional unemployment rate	0.926***	0.015	0.929***	0.018
Nr. of obs.		21,407		28,269
Nr. of subjects		1,235		1,235
AIC		3,249,559		2,784,921
BIC		3,249,957		2,785,325
Linktest				
xb = 1 (95 % KI)	✓		✗	
xb2 insign. (5% sig.niveau)	✗		✗	

Abbreviations used: *ls in ls empl.:* low-skilled in country of origin taking up low-skilled jobs in Germany; *hs in any empl.:* high-skilled in country of origin taking up any job in Germany; *hs in hs empl.:* high-skilled in country of origin taking up high-skilled jobs in Germany
Notes: ***/**/* denotes statistical significance at the 1/5/10 percent level. All models include further controls describing regional labour market structures upon entry to Germany. Regional covariates, age and years since migration are included as time varying covariates.

Table A.7: Regression Results for Ethnic Germans Emigrating from Rumania

	Model 1 *ls in ls empl.* *hs in any empl.*		**Model 2** *ls in ls empl.* *hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
Employment in home country				
High-Skilled	0.985	0.166	0.724	0.152
ln(last wage)	1.235	0.220	1.202	0.227
Experience (years)	1.060***	0.021	1.048**	0.022
Age at entry	1.016	0.043	0.996	0.044
State before job take up in Germany				
Years since migration	1.082	0.089	1.087	0.095
Share time unemployed	0.995**	0.002	0.993**	0.003
Share time in education	0.991**	0.004	0.991**	0.004
Share time in empl. $<$ 7 days	0.957***	0.003	0.955***	0.003
Benefits				
Unemployment insurance	1.653***	0.290	1.774***	0.344
Social assistance	3.616***	1.439	2.346	1.335
socio-economics				
Male	2.254***	0.305	2.728***	0.421
w/o vocational degree	1.508*	0.353	1.263	0.383
with vocational degree	1.163	0.257	1.080	0.315
education unknown	0.776	0.188	0.617	0.193
below 20	2.035	1.540	1.494	1.127
20 - 24	1.651*	0.428	1.347	0.371
30 - 34	0.753	0.200	0.955	0.271
35 - 39	0.544	0.240	0.783	0.370
40 - 44	0.393	0.240	0.705	0.460
45 - 49	0.332	0.263	0.605	0.515
50 - 54	0.183*	0.184	0.446	0.472
55 - 59	0.058**	0.080	0.164	0.226
60 - 64	0.020**	0.034	0.090	0.158
65 and above	0.000***	0.000	0.000	0.000
Regional				
Share of foreigners in federal state on June 30	1.4E-58*	0	0.000*	0.000
Share of low-skilled in federal state	0.009	0.101	151.400	1826.848
Share of skilled in federal state	1.7E+6	2.6E+7	2.8E+6	4.6E+7
Regional unemployment rate	0.975	0.031	0.969	0.034
Nr. of obs.		6,785		8,719
Nr. of subjects		479		479
AIC		1,217,601		1,013,119
BIC		1,217,949		1,013,451
Linktest				
xb = 1 (95 % KI)	✓		✓	
xb2 insign. (5% sig.niveau)	✗		✓	

Abbreviations used: *ls in ls empl.:* low-skilled in country of origin taking up low-skilled jobs in Germany; *hs in any empl.:* high-skilled in country of origin taking up any job in Germany; *hs in hs empl.:* high-skilled in country of origin taking up high-skilled jobs in Germany

Notes: ***/**/* denotes statistical significance at the 1/5/10 percent level. All models include further controls describing regional labour market structures upon entry to Germany. Regional covariates, age and years since migration are included as time varying covariates.

Table A.8: Regression Results for Ethnic Germans Emigrating from the FSU

	Model 1 *ls in ls empl.* *hs in any empl.*		**Model 2** *ls in ls empl.* *hs in hs empl.*	
	Haz. Ratio	std. error	Haz. Ratio	std. error
Employment in home country				
High-Skilled	0.682***	0.051	0.349***	0.039
ln(last wage)	1.323***	0.129	1.069	0.114
Experience (years)	1.006	0.010	1.001	0.011
Age at entry	1.009	0.018	1.021	0.020
State before job take up in Germany				
Years since migration	1.143**	0.067	1.108*	0.061
Share time unemployed	1.014***	0.001	1.014***	0.001
Share time in education	1.026***	0.001	1.027***	0.002
Share time in empl. < 7 days	0.976***	0.002	0.975***	0.002
Benefits				
Unemployment insurance	1.966***	0.137	1.898***	0.138
Social assistance	1.338	0.279	1.335	0.288
socio-economics				
Male	1.956***	0.114	1.998***	0.127
w/o vocational degree	0.912	0.138	0.703*	0.139
with vocational degree	0.860	0.127	0.691*	0.134
education unknown	0.550***	0.090	0.397***	0.083
below 20	0.574**	0.143	0.562**	0.146
20 - 24	0.903	0.135	0.949	0.155
30 - 34	1.083	0.130	1.087	0.139
35 - 39	1.180	0.213	1.116	0.213
40 - 44	1.113	0.278	1.029	0.273
45 - 49	0.872	0.281	0.734	0.252
50 - 54	0.508*	0.205	0.435*	0.188
55 - 59	0.262***	0.133	0.156***	0.084
60 - 64	0.074***	0.059	0.0597***	0.049
65 and above	0.230	0.290	0.185	0.238
Regional				
Share of foreigners in federal state on June 30	1.7E+22	5.7E+23	2.6413E+13	9.5E+14
Share of low-skilled in federal state	0.165*	0.172	0.127*	0.139
Share of skilled in federal state	0.156	0.190	0.172	0.211
Regional unemployment rate	0.952***	0.013	0.945***	0.014
Nr. of obs.		43,130		52,925
Nr. of subjects		2,888		2,888
AIC		8,111,153		6,894,147
BIC		8,111,647		6,894,670
Linktest				
xb = 1 (95 % KI)	✓		✓	
xb2 insign. (5% sig.niveau)	✗		✗	

Abbreviations used: *ls in ls empl.:* low-skilled in country of origin taking up low-skilled jobs in Germany; *hs in any empl.:* high-skilled in country of origin taking up any job in Germany; *hs in hs empl.:* high-skilled in country of origin taking up high-skilled jobs in Germany

Notes: ***/**/* denotes statistical significance at the 1/5/10 percent level. All models include further controls describing regional labour market structures upon entry to Germany. Regional covariates, age and years since migration are included as time varying covariates.

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